BURN THE FAT FEED THE MUSCLE

Fat Burning Secrets of the World's Best Bodybuilders & Fitness Models

By Tom Venuto

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MEDICAL DISCLAIMER

This program is for educational and informative purposes only and is not intended as medical or professional advice. Always consult your doctor before making any changes to your diet or nutrition program. The use of diet and nutrition to control metabolic disorders and disease is a very complicated science, and is not the purpose of this program. The purpose of this program is to help healthy people reach their cosmetic fitness goals by educating them in proper nutrition and exercise guidelines.

No health claims are made for this program. This nutrition and exercise program will not help cure, heal, or correct any illness, metabolic disorder, or medical condition. The author is not a medical doctor, registered dietitian, or clinical nutritionist; the author is a fitness and nutrition consultant.

If you have diabetes, chronic hypertension, high blood cholesterol, cardiovascular disease, or any other medical condition or metabolic disorder requiring special nutritional considerations, we suggest you consult a health care professional with a clinical nutrition background (MD, RD, or CCN) for your special nutrition program.

Your nutrition plan will not be effective by itself. You must combine a good diet with an appropriate exercise program for optimal results. If you have been sedentary and are unaccustomed to vigorous exercise, you should obtain your physician's clearance before beginning an exercise program.

The American College of Sports Medicine (ACSM) recommends that apparently healthy individuals who are male and over 40 or female and over 50 to have both a physical exam and a diagnostic exercise test prior to starting a vigorous exercise program. A diagnostic exercise test and physical examination is also recommended in individuals of any age who exhibit two or more of the major coronary risk factors (smoking, family history of heart disease, elevated blood cholesterol, elevated blood pressure, and diabetes). Any individual with a known history of heart disease or other heart problems should be required to have a medical evaluation including a graded exercise test before engaging in strenuous physical activity.

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Preface and Dedication

This manual will reveal to you all the secrets of permanent fat loss. It is written by a man who has discovered these secrets the hard way - through long years of trial and error. Using the information in this manual will allow you master the art and science of losing body fat by a shorter and less costly route; by "modeling" those who have gone before you and learning from an expert.

The primary goals of this manual are to help you lose fat permanently without drugs, supplements or gimmicks and to educate you in the process of losing fat. In other words, my goal is to turn you into a "fat loss expert"… to teach you the reasons why and help you to understand the process…and to do so without bias or ulterior motive.

To achieve this goal, I decided - after careful consideration - to self publish and to write this book in layman's terms, with a minimum of scientific jargon and without long lists of scientific references. Instead of long, boring scientific discussions of biochemistry – and instead of long lists of references to scientific papers - you will find sprinkled throughout the manual, brief mention of interesting studies and quotes that are important and relevant to a point being made.

This book was written for you as a simple, yet detailed instruction manual. You get step-by-step instructions: Do this, don't do that, eat this, don't eat that, and so on.
This is not just an informational book – it is a complete system that will take you from where you are now to where you want to be – in the shortest possible period of time.

There are dozens of outstanding books on the subjects of nutrition and fat loss, but far too many of them are mired down in technical details and scientific terminology that are either too difficult to understand or simply too damn boring. Many of these books leave you with more questions than answers. You begin reading confused and when you finish reading, you're even more confused.

Others encode their writing into a cryptic jargon that can only be deciphered by fellow scientists and academicians. Sometimes I think bodybuilding, fitness and nutrition writers are more concerned with trying to impress and to receive the approval of their academic peers than to help their readers achieve their goals.

It never ceases to amaze me how some of these writers can take a simple concept and make it sound mystical, complex, and a thousand times more confusing than it really is.

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They would rather write, “Mr. Aikman propelled the prolate spheroid” instead of, “Troy threw the football.” Maybe they do it unintentionally – they just have poor communication skills. Or perhaps they do it on purpose so their reader remains confused and continues to need the guru’s “help” and “advice” forever. After all, if you learn how simple the process of fat loss really is, you don’t need a “guru” anymore, do you?

Michael Lebouef, a business consultant and author, once wrote, “A great deal of what we read in medical, technical and academic documents is little more than the old professional snow job game - If you can’t dazzle them with brilliance, baffle them with b.s. The purpose of a great deal of the jargon is to ensure the future of the experts rather than the consumer.”

My goal is not to please the establishment. If my peers in the fitness industry don’t like this book, that’s too bad! If they want to criticize the lack of references – bring it on. This book is not for them.

My only goal in writing this book is to help you reach to your goals, to get you leaner than you’ve ever been before, and to clear up all your confusion about fat-burning nutrition and training that may have held you back in the past. If this book helps you succeed in reaching your fat loss goals, then this book is a success with or without accolades from the critics.

This book is for YOU and this book is dedicated to YOU, the man or woman on the path of personal development and the journey to a leaner body.

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Introduction

This book is written by a bodybuilder, but it's not just for bodybuilders.

It doesn't matter whether you're a gym veteran preparing for bodybuilding contest or you've never worked out a day in your life. If you want to lose body fat and keep it off forever, without losing muscle, without slowing down your metabolism and without starvation, drugs or gimmicks, then this book is for you.

If you're tired of being given confusing and conflicting advice on exercise and nutrition and you want simple, but detailed answers to all your questions, then this book is for you.

If you wish someone with integrity (someone who didn't have a financial interest in the latest "miracle" supplement or stomach-reducing gadget) would share honest and unbiased information about fat loss - then this book is for you.

Why would you want to learn about fat loss from a bodybuilder? The answer is obvious: Bodybuilders have mastered the art of shedding fat while maintaining muscle. Conventional diets achieve fat loss at the expense of losing muscle, which downgrades your metabolism. That's one of the reasons "diets" don't work. I prefer to call this a nutrition program rather than a diet.

Not only is the natural bodybuilder's way to fat loss incredibly effective, capable of slashing your body fat well into the single digits (if that's what you desire), it's also a lifestyle. Diets don't work because they are temporary. This program teaches nutrition habits you can maintain for life.

Before we get into the heart of the program, I'd like to share with you exactly what you are going to learn in these pages and a dozen reasons why this program might just be the most powerful fat-burning system ever developed.

1. Burn the Fat Feed the Muscle is truthful, unbiased and objective

The goal of this program is very straightforward - to provide the facts about fat loss with honesty and integrity. There is no hidden agenda. I have worked in the health club industry my entire life encouraging people to take up exercise and good nutrition as a way of life. I have never been involved with the magazine, supplement or exercise

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equipment industry. I do not sell supplements nor have I ever been paid to endorse them. No matter how much money anyone offers me, you will never see me on a late-night infomercial hawking the latest exercise fad. There are no "back end" products to buy. There are no prepackaged foods to pitch. There are no creams, pills, powders, machines or any other gimmicks whatsoever.

My intent is to be a pillar of honesty, integrity and moral character. My website, Fitness Renaissance (www.fitren.com), has been billed as "The Honest Fitness Site," and I have shared this no-hype, no-gimmick, no-B.S., hard work-ethic philosophy with hundreds of thousands of visitors since 1999. To me, nothing is more important than integrity. I make my living from the health, fitness and nutrition business, but I will go broke and starve to death before I will ever "sell out" or compromise my principles.

A brief story will illustrate the level of my integrity: In 1999, the editor of a major bodybuilding and fitness magazine contacted me with a very tempting proposition. He had been reading my online articles and said they were very thoroughly researched and well written. He was so impressed that he wanted to hire me to write for his magazine. For my first assignment, he offered me $1000.00 to interview some of the top supplement "gurus" including the CEO of one of the largest nutrition companies in the world. I was then to write a two-page article about the latest developments with a popular, yet controversial supplement.

A thousand bucks sounded awfully good, but then he threw in the punch line: He told me that his magazine was "sponsored" by a large and well-known nutrition company. I'm sure you can guess what came next. If you guessed that I couldn't write anything bad about the supplement, and that I had to present it "in a positive light" then you guessed right! I turned it down. It went completely against my principles.

Magazines are generally considered one of the most credible sources for nutrition and fitness information. But that's not always the case. You can't believe everything you read. Many magazine publishers own supplement companies. By putting information about "new supplement breakthroughs" into editorial format, they appear much more believable. That's why magazines are the perfect tools for selling supplements and weight loss products. As a result, many magazines have turned into nothing more than thinly-disguised "supplement catalogs."

2. Burn the Fat, Feed the Muscle is not a very low calorie or starvation diet

Most people are dead wrong in the way they diet to lose body fat.

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Almost every conventional diet program ever conceived has one thing in common: Extremely low calories. Nearly all of these low calorie diets produce weight loss in the beginning. The problem is, none of them work for long – it's physiologically impossible to lose fat permanently by starving yourself. The human body is simply too "smart" for this to ever work.

When you starve the fat, you also starve the muscle. When you starve the muscle, you lose muscle along with the fat. When you lose muscle, your metabolism slows down and your body enters the "starvation mode." When your body enters starvation mode, fat loss comes to a screeching halt as your body tries to conserve its energy. When the fat loss stops, you either give up (and gain back the fat you lost), or you grit your teeth and drop your calories (starve yourself) even more. If you drop your calories even more, your metabolism slows down even more. And if your metabolism slows down even more, fat loss comes to a screeching halt again. Eventually, you always end up throwing in the towel because you can't keep dropping your calories forever. It's a vicious cycle. You just can't win the very-low-calorie-diet game.

3. Burn the Fat, Feed the Muscle is not just a nutrition program; it merges nutrition with exercise – a combination essential for permanent fat loss.

To lose body fat, you must create a calorie deficit. There is no other way. A calorie deficit means that you burn more calories than you consume every day. There are two ways you can create this calorie deficit: 1) decrease your caloric intake from food, or 2) increase the amount of calories you burn through exercise.

Both methods should be used, but of the two ways, burning the calories is healthier, more efficient and more permanent. That's where the phrase "Burn the Fat, Feed the Muscle" comes from: It means, don't starve the fat with low calorie diets, instead, Burn the Fat with exercise. It also means keep your muscle mass intact at all costs with weight training and sufficient amounts of nutrient dense food. Losing muscle is unacceptable.

Paradoxical as it may seem, the secret to fat loss is to allow yourself to eat more (of the right foods) and use exercise to burn off the fat. Ironically, most people do the opposite: They slash their calories to starvation levels and exercise little or not at all. This slows the metabolism, decreases lean body mass and invokes the body's starvation response. Exercise allows you to create the calorie deficit and burn fat without slowing down the metabolism.

It's amazing what can happen to your body when you put nutrition, cardio and weight training all together at once. The results are "synergistic." "Synergy" means the whole is greater than the sum of its parts. Synergy means that 1 + 1 + 1 may not equal 3, it may equal 30, or 300! In other words, by using this combination correctly, you can increase your results exponentially!

4. Burn the Fat, Feed the Muscle does not confuse weight loss with fat loss

Weight loss and fat loss are not the same thing. You must learn to distinguish between the two. The scale can be very misleading if it's the only criteria you use for measurement. For example, a woman could weigh 105 pounds and have 33% body fat. That's what I call a "skinny fat person." In contrast, a female bodybuilder could weigh 160 pounds and be quite lean, with body fat in the low teens.

With this in mind, your goal should never be weight loss. Your goal should be losing fat while maintaining muscle. As long as your body is solid muscle, then you shouldn't worry about what the scale says. Your ratio of muscle to fat is what really counts. Burn the Fat Feed the Muscle will explain to you all the common methods of body fat testing and teach you how to use body fat to measure your results and chart your progress. You will also learn how to break a plateau and adjust your approach when your body fat isn't decreasing at the rate you want it to.

5. Burn the Fat, Feed the Muscle is not a temporary "quick fix." It teaches you new habits you can maintain as a lifestyle

A "diet" could be defined as any temporary change in your eating behavior to help you lose weight. This entire concept is flawed. When you say you are "going on a diet" the implication is that it's temporary and at some point you're going to have to "go off" the diet. This is not a program that you go on and off. The only way you'll ever lose fat and keep it off permanently is to adopt new habits and keep them for life.

Initially, your new dietary and exercise disciplines may feel uncomfortable. Sticking with them will take some effort in the early stages. After a short adjustment period, you will discover that it gets easier until eventually your new behaviors become deeply entrenched into your daily routine like grooves in a record. Your new habits will become as much a part of your daily routine as taking a shower, brushing your teeth or going to work. Your positive new habits will become a part of your lifestyle.

6. Burn the Fat, Feed the Muscle is not a generic "one-size-fits-all" program - it's individualized for your goals and your body type

Certain universal nutrition laws apply to everyone. Once you've established a solid foundation by mastering these nutrition fundamentals (also known as "baseline nutrition"), then you need to adjust your nutrition plan to fit your goals and your body type. This program was developed to identify and accommodate for the many differences in individual metabolisms and body chemistries.

What works perfectly for one person might be completely ineffective for the next. There are six billion people on this planet and no two are exactly alike. Each person has a metabolic rate, digestive capacity, hormonal profile, muscle fiber distribution and body structure as unique as their fingerprint. That's why a generic, one-size-fits-all diet or exercise plan is always going to fail. You must learn how to adjust your nutrition and training to fit your unique needs.

This program will teach you how to determine what body type you have and show you how to individualize your nutrition and training to do the very best you can with what Mother Nature gave you to work with.

7. Burn the Fat, Feed the Muscle is not just about cosmetic improvements – it's about your health

The recommendations I make in this program for losing body fat are the same ones I would make for good health: reduce saturated fat, reduce refined sugars, eat a variety of natural, unrefined foods, eat plenty of fiber, eat small, frequent meals, drink plenty of water, and so on. This program is healthy and nutritionally balanced. Any diet program that is not nutritionally balanced is going to fail you in the long run.

If you are a physique athlete (bodybuilder, fitness or figure competitor) or you aspire to become one, you will need a more restricted diet when you reach the level of competition. However, a pre-contest diet is a temporary tool used to help you reach a peak condition. When the competition is over, you will always return the same balanced, healthy baseline nutrition program for maintenance.

8. Burn the Fat, Feed the Muscle is simple

Fat loss is a confusing subject. Lack of information is not a problem anymore. The problem these days is too much conflicting information. There's certainly no

shortage of "gurus," and hundreds of diet and exercise books clutter bookstore shelves. To complicate matters more, the Internet is adding to the information overload at a mind-boggling rate. There are thousands of fitness and nutrition sites on the web and the number is growing by the day. This quagmire of misinformation has left most people frustrated, disillusioned, and thoroughly confused. It's hard to know whom or what to believe anymore.

Even "experts" such as registered dieticians, research scientists, MD's, PhD's, and certified trainers give a tremendous amount of contradictory advice. There are a lot of opinions and everyone seems to tell us something different.

In creating this program, my goal was to clear up the confusion and make this process as simple as possible because the simpler the strategies are, the easier you'll be able to apply them. The easier you can apply them, the more results you will get.

Some of the information you're about to learn may surprise or shock you. Most of it however, is so simple and straightforward, you'll kick yourself for not "getting it" sooner. (But you'll soon get over it when the fat starts melting off your body, revealing the chiseled muscle definition underneath!)

9. Burn the Fat, Feed the Muscle is simple – but it's not easy.

I'm probably the only person in the industry who will tell you losing fat is <u>not</u> easy! The reason no one else wants to tell you this is because "quick, easy, overnight and effortless" are more marketable. "Hard work, blood, sweat and tears" are not marketable – hard work scares people away.

Well, if you're scared by hard work, then this program is not for you. Losing fat is simple but it's definitely not easy –there's a big difference between the two. "Simple" means that something is uncomplicated. "Easy" implies that something can be achieved with little or no effort. Losing fat is mostly just a matter of exercising more and eating a little less. Nothing complicated there. But easy? Not a chance. Despite what most advertisements for diets and nutrition products would lead you to believe, there is no such thing as "quick and easy fat loss."

Hard work is the only way anyone ever accomplishes anything! Nothing good ever comes easy. As you sow, so shall you reap. Everything worth having in life has a price attached to it. Legendary Green Bay Packers Coach Vince Lombardi put it best when he said, "The dictionary is the only place success comes before work. Hard work is the price we must all pay for success."

Do yourself a favor: cultivate the virtue of being a hard worker. In the end, the person who works the hardest will always get the best results. There are no shortcuts.

10. Burn the Fat Feed the Muscle teaches you the secrets of goal setting and mind power to achieve any goal you desire

All the knowledge in the world is useless if you can't get yourself to apply it. What's the difference between someone who knows what to do and someone who does what they know? Why is it that some days you just can't get motivated to work out? Why do you sometimes have those "lapses" in willpower? Why do you follow a diet for weeks and then "fall off the wagon?" Why do you sabotage yourself? These things only happen when you don't know how to set goals properly and you don't understand how to harness the power of your subconscious mind.

The human subconscious mind is a cybernetic goal-seeking mechanism similar to those used to guide missiles or torpedoes to their target. In this program, I will teach you how to set powerful, compelling goals and unleash the virtually unlimited power locked in your mind. Using goal setting, psychology, psycho-cybernetic principles, neuro-linguistic programming (NLP), visualization and affirmations, you'll be able to erase the negative programming of the past and literally re-wire your brain to put you on "automatic pilot mode" towards achieving the body of your dreams.

11. Burn the Fat Feed the Muscle is based on real food you can find right in you local supermarket – no supplements or shakes are required

It's tempting to believe that all you need to solve your excess body fat problem is a pill or diet shake. The supplement companies certainly want you to believe that. The truth is that exercise and good nutrition from whole foods are all you'll ever need. Meal replacement products (MRPs) have no "magical" fat-reducing properties. MRP's are nothing more than powdered food. Their primary benefit is convenience. The so-called "fat burning" pills that rely on stimulants such as ephedrine and caffeine may help a little, but they aren't nearly as effective as the advertisements say and there are many potential side effects with overuse or abuse.

If there's any "secret" to fat loss, it's hard work on your diet and training program. The sooner you accept this fact, the sooner you'll be the proud owner of a lean body. Unfortunately, this isn't what most people want to hear. In this age of instant gratification, people want overnight success and "miracle cures," but that's a fantasy. If

there really were a pill that burned off fat, there wouldn't be 100 million overweight people in this country.

12. Burn the Fat Feed the Muscle is based on real world results

Many of the fat burning techniques used by bodybuilders and fitness models are controversial. The scientific community is often hesitant to accept such "radical" practices as high protein intakes, macronutrient cycling, meal timing and calorie tapering. Just as astronomers and geographers in the middle ages were ostracized for believing the world wasn't flat and the Earth wasn't the center of the solar system, those who dare step into the spotlight with brazen or alternative nutritional theories today are often publicly ridiculed. Questioning the status quo could be like committing academic suicide and risking reputation, recognition and financial reward.

Most scientists live by the credo "prove all things." Wise advice, but being too scientific and analytical can be hazardous to your progress. This book, while it does contain scientifically proven information, is based on real world results, not textbooks, laboratory experiments and classroom lectures.

If you waited for scientific studies to validate every nutrition and training principle that bodybuilders have already demonstrated to be effective, you could be waiting a long time. When it comes to altering body composition, bodybuilders and fitness competitors are way ahead of the science and the results they've achieved prove it. You wouldn't see drug free male bodybuilders at 3-5% body fat and females at 8-12% body fat if these weren't the most powerful fat burning principles on Earth. The proof as they say, is in the pudding!

Be patient in the beginning – all the information in the early chapters will come together in the end

It took me 14 years of work and study to compile this information. It came from literally thousands of separate sources and years of in-the-trenches trial and error. As you begin reading, you may feel overwhelmed with the amount of information I give you in the early chapters and start to wonder when you're going to "get it." Don't be discouraged - it will all come together in the end. There's so much I want to share with you and the only way to do that is to teach it one piece at a time. I've arranged the chapters in the order they appear in for a reason.

As you work your way through the manual chapter by chapter, all the pieces will slowly begin to fit together. By the time you reach the final chapters, everything will fall

right into place all at once and you'll experience a sort of "nutritional enlightenment." But you can't reach this enlightened final state of knowledge and understanding without first passing through all the necessary initial stages and learning the fundamentals from the ground up. It's especially important that you begin with chapter one on goal setting and complete all the goal setting exercises before going on to the rest of the book. Once you've read through the entire manual once, then put together your personal plan using what you've learned, and start immediately! The secret to finishing anything is starting it.

Now get started!

Everything you need to succeed is contained in these pages. Apply it! Knowledge applied is power, but knowledge unused is worthless. Begin using this information immediately. Start with your very next meal. Start today! Start now! If you need further assistance, I'll be standing by to help. If you want to take it to the next level, ask about e-mail mentoring or my 12-week personal coaching program. I'm easy to reach: My e-mail is tvenuto@fitren.com and you can visit me on the web at www.tomvenuto.com or www.fitren.com. Please contact me if you have questions and by all means, please write and share your success stories with me.

Chapter 1: How to Set Powerful, Compelling Goals That Will Propel You Forward and Charge You Up With Unstoppable Motivation

"The greater danger for most of us is not that our aim is too high and we miss it, but that it is too low and we reach it."

- Michelangelo

"The strangest secret in the world is that you become what you think about."

- Earl Nightingale.

The simple procedure you must complete *before* you begin any diet or exercise program.

This might be the most important chapter in this entire book – even though it has nothing to do with calories, protein, carbohydrates, fats, cardio, weights or anything else related to nutrition or training. You see, there is a simple, but critical procedure you must complete before you lift a weight, jog a mile, start a nutrition program or even set foot in the gym. If you successfully complete this procedure, the nutrition and training will come easy and a lean body will soon follow. If you ignore this step – like most people do - you are destined to fail no matter what you do or how hard you try. This crucial first step is goal setting.

A lot has been said and written about goal setting – entire books have been devoted to the subject - but the truth is, most people never decide exactly what they want. Some people give their goals a fleeting thought, but most never get specific and commit their dreams and desires to writing. "Most people," says Denis Waitley, author of The Psychology of Winning, "spend more time planning a party, studying the newspaper or making a Christmas list than they do planning their lives." According to Zig Ziglar, an expert on goal setting and one of the nation's most respected motivational speakers, only 3% of Americans have actually taken the time and effort necessary to put their goals to paper.

This is unfortunate because the number one reason for failure in losing body fat – and in life - is the lack of clearly defined, written goals. Ziglar compares not having goals to shooting at a target with a blindfold on. "How could you possibly hit a target you can't even see?" says Zig. If you don't know where you're going, you're probably not going to end up anywhere! Action without planning is the number one cause of failure.

I'd like to share with you the most powerful goal setting formula in the world, but before I do, you first need to understand the hidden reasons why goal setting is so important.

The difference between knowing what to do and doing what you know.

Nutrition and exercise can be confusing subjects, so when you first get started, the initial challenge is that you don't know what to do. Now that you have this program in your hands, knowing what to do will no longer be a problem. However, gaining knowledge is only half the battle. The far greater challenge for most people is applying that knowledge and taking action. There is a big difference between knowing what to do and doing what you know. Goals are the bridges that span this gap.

Goals, when properly planted in the subconscious mind, produce action. Goals create energy and motivation. Goals get you out of bed early in the morning and into the gym. The secret to staying motivated all the time is to set emotionally charged goals – in writing - and to stay totally focused on those goals day and night, without taking your eyes off them. A goal with a purpose is the fuel that propels you forward.

You might think that you're in total conscious control of your behaviors, but it's really your SUB-conscious that controls your behavior. If you know what to do, but you can't seem to get yourself to do it, you've probably been giving negative or conflicting messages to your subconscious mind. The behaviors that are produced by subconscious conditioning are more commonly referred to as habits. Fortunately, you can re-program your subconscious mind with positive instructions and become a creature of positive habit, just as easily as you can become a victim of negative habits. It all begins with a conscious decision and written goals.

The power of the thought

After competing in dozens of bodybuilding competitions and helping thousands of people with training and nutrition programs, I have become firmly convinced that the most important part of getting in great shape is simply making up your mind to do so. You get in shape by setting goals and thinking about them all day long. I know that sounds a little strange, but stay with me for a minute and I'll explain.

I'm not saying you can simply "think yourself thin." No amount of positive thinking will work without action. Obviously you have to exercise and eat the right foods. What I'm suggesting is that if you don't channel your mental energies properly, even the best diet and training program won't help because you will always "sabotage" yourself. Did you ever wonder why you have lapses and breakdowns in "willpower?" Or why some days you just can't drag yourself to the gym? Or why you "fall off the wagon"

completely? Or why you can't say "no" to those chocolate chip cookies? It's because negative programming in your subconscious mind is controlling your behavior.

This is not a "new age," "Pollyanna" or "pie-in-the-sky" mentality – there's a valid scientific reason why goal setting works. It works because it harnesses the awesome power of your subconscious mind, and your subconscious mind guides your behavior.

How your "mental computer" is programmed for success or failure

Your mind has two components: The conscious and the subconscious. The conscious mind is the rational, logical, analytical, thinking part of the mind. The conscious mind is constantly taking in information from the five senses, then it reasons, analyzes and comes to conclusions about whether the input is true or false. The subconscious is the part of the mind responsible for storing data (memory), for automatic behavior (habits), reflexes and autonomic functions of the body such as digestion, breathing and circulation.

It's important to understand that unlike the conscious mind, the subconscious mind does not "think." It is entirely deductive in nature, which means it works like a computer. All the data programmed into your subconscious "computer" is accepted and assumed to be true. It doesn't matter whether the data is actually true or false. The subconscious unquestioningly accepts everything that reaches it. It then carries out the programming you have entered into it.

Suggestions given under hypnosis or affirmations repeated during deep relaxation are quick ways to access the subconscious mind. Another way to penetrate the subconscious (although much slower) is through repetition. Everything you hear, see, say, read or think repeatedly will eventually filter into your subconscious mind. In other words, you are constantly programming your brain through conscious self-suggestion – or you are allowing your brain to be programmed through external suggestion.

The psychological reason most people sabotage their efforts to lose body fat.

The conscious mind is a lot like the captain at the bridge of a ship. The captain gives a command and sends it down to the engine room. The subconscious mind is like the men down in the engine room. No matter what orders come down from the bridge (conscious mind), the crew obeys, even if the orders are stupid ones that crash the ship into a rocky shore. The reason this happens is because the crew (the subconscious) can't see where the ship is going; they are simply following orders.

Like the ship's crew, your subconscious mind accepts every command your conscious mind gives it – its sole purpose is to obey and carry out your orders, even if you give stupid ones like "I'll never see my abs." Frequent repetition of thoughts (mental orders) is one of the most certain ways to penetrate the subconscious mind. This is why, by repeating "I can't lose weight" over and over, your subconscious will see to it that you never lose weight because that's its job – to follow your every command literally and without question. If you program your subconscious with negative suggestions often enough, your subconscious will lead you right into cheating on your diet, skipping workouts or some other form of self-sabotage.

What you think about repeatedly every day is eventually accepted by your subconscious mind and your subconscious mind guides your actions on "auto-pilot." This is the basis for the entire positive thinking movement. People who say that positive thinking, affirmations and autosuggestions don't work for them aren't using them correctly or consistently; they're canceling out every positive command with a negative command. If a captain gave an order, "Go east," but then kept changing his mind; "No, go west…no, go north, etc.," the ship would never get anywhere! That's why most people don't get anywhere in their fitness, bodybuilding or weight loss endeavors, either. Ironically, the very statement "positive thinking doesn't work" is a negative affirmation that guarantees it won't work!

Dr. Maxwell Maltz, author of the incredible book, Psycho Cybernetics, described the human brain and nervous system as a "perfect goal-striving servo-mechanism." This mechanism helps you achieve your goals much like a self-guided torpedo or missile seeks out its target and steers its way to it. Like the torpedo, the goal-striving mechanism of your brain can only work in your favor if you've specified a target.

Without a target, your mental "servo-mechanism" will simply steer you towards your dominant thoughts. The subconscious mind is always at work 24 hours a day whether you direct it consciously or not. Denis Waitley says, "Since we become what we think of most of the time, whatever we are thinking of now, we are unconsciously moving toward the achievement of that thought. For an alcoholic, this could be the next drink – for a drug addict, the next fix – for a surfer, the next wave. Divorce, bankruptcy, and illness are all goals spawned out of negative attitudes and thought patterns."

The power of focus

Because of the way your subconscious works, it's extremely important for you to focus all your thoughts on what you want to achieve, not on what you want to avoid. This is not mere semantics; it's a very important distinction. If I ask you to close your eyes and not to think about monkeys, you'll (mentally) see monkeys everywhere. You can't

NOT think about something! You either think about something or you don't. And you always move toward what you think about the most, regardless of whether it's positive or negative.

Like the soil, your subconscious mind is totally impartial – it doesn't discriminate. In it will grow whatever seeds you plant there or *allow to be planted there*. Many people have perfectly good intentions, but they unwittingly allow their subconscious to work against themselves by focusing on what they don't want. And, as metaphysical writer Louise Hay reminds us, "The more you dwell on what you don't want, the more of it you create." Others simply pay no attention to their thoughts whatsoever, and like a garden that's neglected, soon enough, weeds start growing. Eventually, the weeds take over your garden. Here are a few examples of negative statements and self-defeating questions:

<u>Negative statements and self-defeating questions</u>
I can't lose weight no matter what I do.
Why can't I lose this last ten pounds?
Why is it so hard for me to lose weight?
I have a slow metabolism.
Why can everyone else lose weight except me? It's not fair.
It's not my fault because I don't have good genetics.
I don't want to be fat anymore.
I wish I could get rid of this gut.
It'll never work because I like food too much.
I don't have the willpower to get lean.
I would work out but I don't have time.
I just can't get myself up that early to work out.
I hate being fat.
I'll never see my abs.
I hate cardio.
I can't.
I'll try.

All day long you carry on a mental conversation with yourself. Psychologists estimate that we think up to 60,000 thoughts a day and that 98% of these thoughts are the same ones we had yesterday – most of them negative. In a year, that's almost 22 million thoughts! If Madison Avenue advertising giants can influence your subconscious mind to make a buying decision by repeating an ad a mere two dozen times (they can), then just imagine the impact that millions of your own thought commands have on influencing your subconscious mind – it's staggering! That's why it's so important for you to take conscious control over your mental dialogue and program your brain with positive goals.

Fortunately, the one thing in life you always have 100% total control over is your thoughts. If you want to be successful in losing body fat or any other endeavor in life, you must master your communication with yourself. You must take charge of your self-talk, "police" your thinking, and literally re-program your brain for success. If you've cluttered your mind with a lifetime of "Stinkin Thinkin," as Mr. Ziglar calls it, this may be challenging at first. It will take time to erase the old programming, but it can be done.

The first step is simply to become *conscious* of what you are thinking. Become aware of your thoughts. Bob Proctor, a master success coach and creator of the Goal Achiever program, suggests saying "NEXT" or "SWITCH" the instant you catch yourself in the middle of a negative thought or self-defeating question. Then, immediately replace it with a positive thought, affirmation, or an empowering question. Simply overwrite the old thought with a new one. Replace "I'll try" with "I'll do it." Instead of "I should" say "I must." Completely banish "I can't" from your vocabulary. Soon you'll find that your mind switches its "polarity" and the negative thoughts pop up less. Here are some examples of how you could change the negative self-talk to positive self-talk:

Positive statements and empowering questions
How can I lose fat and enjoy the process?
What can I do today that will help me get closer to my weight loss goal?
What can I eat right now at this meal that will help me lose body fat?
How great am I going to feel after I finish my workout today?
My metabolism is getting faster every day.
I am getting leaner every day.
I like the way I look.
I am 100% responsible for my results.
Whatever it takes, I'll do it.
I like eating healthy foods.
I love working out.
Training early in the morning is exhilarating.
I have time for anything I am committed to.
I like myself.
I can do it.
I'll do it.

The most powerful goal-setting formula in the world.

In the beginning of this chapter, I promised to reveal to you the most powerful goal setting formula in the world. Now that you understand the nature of your subconscious mind and why goal setting works, you're ready to learn the 11-step formula.

1. Set specific goals

When I ask people what they want to achieve from their fitness programs, I usually get vague answers like, I want to get leaner, "I want to lose weight," or "I want to build muscle." That's a good start, but it's not enough – it's too general. Specific goals have a more powerful impact on your subconscious than general goals. A vague goal is like the captain of a ship saying, "Go west." The ship may be headed in the right general direction, but without a specific destination, it will probably get lost at sea.

Narrow it down. Be specific – right down to the digit. Exactly how many pounds do you want to lose? When do you want to complete your goal? How much body fat do you want to lose? How much do you want to weigh? What measurements would you like to have What size clothes do you want to wear?

2. Set measurable goals

You must have a way to objectively measure your progress; otherwise you'll never know whether you've actually reached your goals or not. The mirror is definitely a useful tool, because ultimately the only thing that really matters is that you're happy with the way you look. However, because you perceive changes in your body so subjectively, (and it's sort of like watching the grass grow), it's also helpful to have other ways to measure your results.

The scale is also a useful tool, but it doesn't give you 100% of the feedback you need. You shouldn't be as interested in how much you weigh as in how much body fat you have. The ideal method to measure your progress is body composition testing. Body fat can be easily measured using a skinfold test. Chapter three will discuss body composition testing methods in more detail and chapter four will teach you how to chart your progress and interpret the results.

3. Set big goals.

Too often, people shortchange themselves and make statements like, "I could never look like that" or "I'm too old." Other people buy into the low expectations of well-meaning family or friends who tell them to "be realistic." Nothing great was ever achieved by being realistic! Most people get scared when setting goals and ask only for what they think they can get, not what they really WANT. This is a mistake because puny, "realistic" goals are NOT motivating. WANTS are motivating.

It's okay if your goal scares you a little. In fact, if your goal isn't scary and exciting at the same time, then your goals are too low. Thinking about a big goal you've never achieved before is always going to make you feel a little uncomfortable and afraid. This discomfort makes most people pull back into their comfort zones. Don't let the fear of failure or the feeling of discomfort prevent you from going after what you really want. Always step forward into growth; never pull back into safety. Refuse to sell yourself short. Raise your standards. The famous architect Daniel Burnham said, "Make no small plans; they have no magic to stir your blood to action. Make big plans, aim high in work and hope."

When you're setting your goals, don't be afraid to think big and set your sights high because you can only hit what you aim at! Decide what would you really like to look like if you could have ANY body you wanted. See the picture in your mind. Make it clear, vivid and dynamic. Dream. Fantasize. You've been endowed with an amazing creative faculty called imagination. Use it - it's the starting point of a new self-image and all lasting changes.

There are certainly genetic limitations to what you can achieve athletically and physically, but *most people never even come close to actualizing their full potential* simply because they don't believe it's possible. Therefore, they don't even try. It's really more a question of *willingness* than genetics. Don't ask yourself, "Is it *possible* to reach this goal?" That's the wrong question. The right questions are, "How can I achieve this goal?" and, "Am I willing to pay the price necessary to achieve this goal?" You can accomplish virtually anything if you're *willing* to pay the price.

4. Set realistic deadlines.

"Lose 30 pounds in 30 days!" "Lose 10 pounds this weekend!" You see ads like these plastered on billboards all the time, and they sure are enticing. But is it really possible? Can you really lose weight that quickly? The answer is yes. It's quite possible to lose 30 pounds in 30 days or 10 pounds over the weekend. However, if you do, you're making a big mistake by confusing *fat* loss with *weight* loss.

Your body is 70% water, so it's easy to lose weight quickly. Any diet that dehydrates you will create quick, dramatic weight loss. If you want to lose ten pounds over the weekend, just stop drinking water! Of course that would be pretty dumb and pretty dangerous too, but that's precisely what you're doing when you lose weight rapidly - you're simply dehydrating yourself (or even worse - you're losing muscle too!) Your goal should be to lose *body fat,* not *body weight*.

The American College of Sports Medicine (ACSM), the largest and most respected health, medical and exercise organization in the world, has established guidelines for healthy weight loss. In their position statement on "Proper and improper weight loss programs," they recommend a weight loss goal of one to two pounds per week. In terms of body fat, that translates to about a half a percent per week. For the impatient, this may seem like an excruciatingly slow process, but the safest and most intelligent approach to fat loss is a gradual one.

It's possible to lose more than two pounds per week, but if you do, most of the additional weight will usually be water and muscle. When you lose water weight, you will gain it back immediately as soon as you re-hydrate yourself. When you lose lean body mass, your metabolic rate slows down and your body goes into "survival mode." As you'll learn in the next chapter, if you let your body slip into "starvation mode," you will almost always gain back the weight you lost and sometimes more. You end up with less muscle and the same amount of fat (or more) than when you started.

Don't be afraid to set big goals, but always set realistic time frames for achieving them. There are no unrealistic goals, only unrealistic deadlines. Be patient: There are definite limitations to how quickly the human body can safely lose fat.

5. Set long-term and short-term goals.

As you begin to think about what you want specifically, don't just write down one goal, make an entire list. Your goal list should include long term and short-term goals. There are six types of short and long-term goals you can include:

1. Your ultimate long-term goal
2. 12 month goal
3. Three month goals
4. Weekly goals (Weekly body composition test and weigh-in)
5. Daily goals (habits to develop, things to do every day repeatedly)
6. **The goal of beating your personal best.**

First set a long-term goal; your ultimate outcome. What kind of body do you ultimately want to have? Let your imagination run wild and dare to dream. Don't listen to anyone who says it can't be done! You can't afford to associate with negative people who always try to tear you down. If you really want it badly and you're willing to work for it, then go ahead and set the goal.

Next, set a one-year goal. A one-year goal is especially important if you have a lot of work to do. For example, if your primary objective is to lose one hundred pounds, that's at least a twelve-month project. Don't expect or even attempt to do it any faster.

Probably the most important goal you can have at any time is your three-month goal. Three months is the perfect time frame for your short-term goal because a lot can happen in three months. Most people can completely transform their bodies in 90 days. A sensible and realistic 90-day goal would be to lose up to 6% body fat and 12 to 24 pounds. The three-month goal is important because long-term goals don't have any urgency. A one-year goal is so distant, you may find that you tend to procrastinate more without the impending deadline.

There's a law in psychology called "Parkinson's Law," which says, "A task takes as long as there is time to do it." Differently stated, "Work always expands to fill the time allowed." Deadlines are motivating. Without time pressure, you'll rationalize missing workouts or cheating on your diet: Your brain will keep saying, "You have plenty of time, so missing this one workout won't matter." With a deadline right in front of you, you'll know that every workout and every meal counts.

You also need to have weekly goals to let you know if you're on track. Weekly goals provide immediate feedback to tell you whether you're moving in the right direction. Each week you should weigh yourself and have your body composition measured with skinfolds. If you're getting the results you want, you simply continue doing what you've been doing. If you're not seeing the results you want, you can immediately adjust your training or nutrition to get yourself back on course. (See chapter four for more information on how to chart your progress and adjust your approach).

To reach your weekly, three-month, twelve-month and ultimate goals, you must develop good habits every day. You develop good habits by setting daily action goals and working on them repeatedly until they become as routine as brushing your teeth or taking a shower. Ninety-nine percent of the actions you take every day are habits. Write out a list of daily goals, to-do's and habits you want to develop - good daily habits that serve you – habits like eating small, frequent meals, cutting down on sugar, getting up early, making your meals in advance for each day and so on. Long-term goals are important, but they can be intimidating and discouraging if you don't have small daily goals, too. If you only look at the "big picture," it can sometimes be unsettling to realize how much farther you have to go.

There's an old saying about tackling big tasks: "The only way to eat an elephant is one bite at a time." When your larger goals are broken down into smaller parts and you

focus on each little step one at a time, you won't be overwhelmed. "By the mile it's a trial, by the yard it's hard, but by the inch it's a cinch." Take baby steps. Every step you take, no matter how small, will give you a feeling of accomplishment and keep your momentum going.

The next time you feel a craving, you're tempted, discouraged, unmotivated or you feel like skipping a workout, focus on your daily goals, not on the huge amount of work that is ahead of you. Tell yourself, "All I have is today. All I have is this moment, this workout, this meal, the next 30 minutes, the next hour. If I just do what I know I must do now, then I know I'll reach my ultimate goal eventually." Concentrate on the task at hand in this moment. As the Zen masters of Japan remind us: "Be here now." The point of power is always in the present moment.

The final type of goal you should set isn't so much a goal as it is a mindset. If you fall into the habit of continually comparing yourself to others, this will ensure that you are perpetually unhappy and unsatisfied, no matter how much you achieve. This is called the law of contrast. There will always be people stronger, leaner, faster, more athletically talented and more genetically gifted than you, so compare yourself only to yourself, not to others.

Set goals to become better than you used to be, not better than someone else. Constantly challenge yourself. Keep aiming to beat your previous bests. Going to the gym can become fun and exciting when you're always working on improving yourself. So make it fun – make a contest out of it. Go for one more rep, five more pounds, five more minutes, or one level higher on the Stairmaster. Aim for hitting your lowest body fat ever. Work on constant and never-ending improvement. Make this process a fun game!

6. Establish the emotional reasons why you want to achieve your goals.

Everyone has days when they don't feel like working out or eating the right foods. The secret to staying motivated at times like these is not just having a goal, it's establishing the "reason why" you want that goal - it is the *purpose* behind the goal. The philosopher Nietzsche said, " If you have a strong enough *why* you can bear almost any *how*."

Determining the reason you want to achieve a goal adds emotion to it. The more emotion you stir up, the more motivated you'll be to go after it. In his Goal Achiever program, Bob Proctor says, "The moment you get emotionally involved with your goal, it instantly and automatically begins to move into physical form." This is true because your subconscious is the emotional part of your mind. Getting emotionally involved with your

goal impresses it deeper into your subconscious and whatever idea is fixed in your subconscious will always express itself in physical form (behavior).

Remember, emotion is "feeling." When you think about the *reasons* you want your goal, you are "feeling" with emotion. What are *your* reasons? Sometimes people have something to prove. Getting in shape for a wedding or vacation is often an important reason for many people to get in shape. So is being attractive to the opposite sex. For others, their reason is fear of health consequences (their doctor tells them if they don't lose 50 pounds in the next six months, they will die of a heart attack!)

After you've set your goals in terms of a specific weight, body fat, etc, then continue to re-write an entire list of goals with as much emotional impact as possible. In particular, answer these two questions: (1) What's important to me about reaching my goal? (2) Why is that important?

Some additional questions you might ask yourself to add emotional impact to your goal list include: Who do you want to look like? Who is your physique role model? Do you want to look like a bodybuilder, an athlete, or a model? Do you want to impress anyone? Do you want to prove something? Do you want more energy so you can enjoy certain sports or activities more? Do you want to win a contest or award? Do you want more self-confidence? Do you want to look great in a certain type of clothes? Do you want to look good for a certain event (vacation, wedding, reunion, etc.)? Do you want to look great on the beach? Do you want to attract someone of the opposite sex? Answering these questions will help you uncover the driving force behind your goals.

7. Make sure your goals are not conflicting. Put all your attention on your number one most important goal.

There's an ancient Chinese saying: "He who chases two rabbits catches neither." One of the most common obstacles blocking the way to reaching a goal is setting two goals that are in conflict. In the case of fat loss, the most common conflicting goal is trying to gain muscle and lose fat at the same time. It's common to see a large decrease in body fat accompanied by a slight increase in lean body mass. It is also common to see a large increase in lean body mass accompanied by a slight decrease in body fat. But one thing you will almost never see is a large increase in lean body mass and a large decrease in body fat simultaneously. It is physiologically impossible to lose fat and gain muscle at the same precise moment in time. In order to lose fat you need a calorie deficit. To gain lean body mass you need a calorie surplus. One process is catabolic and one is anabolic. Therefore, there are big differences in the types of nutritional programs you need to achieve each of these contrasting goals.

Over a period of weeks or months it is certainly possible to see a *net* gain in muscle and a *net* decrease in body fat. However, that is the result of alternating back and forth between short periods of caloric deficit with short periods of caloric surplus (aka, the zig-zag" method). This is the most difficult of all the goals and it is a slow and inefficient process. You are compromising your results in both departments if you set muscle gain and fat loss as simultaneous goals. Advertising for supplements and weight loss products has brainwashed many people into believing that incredible gains of muscle, along with large losses of fat are commonplace – they're not! They're quite rare. When someone successfully makes large muscle gains and fat losses at the same time, usually they're merely regaining muscle they'd previously lost, they're genetic superiors or they're using performance-enhancing drugs.

Charles Glass, who has probably trained more professional bodybuilders than any other trainer advises, "While you are dieting and burning fat, you are not likely to add any more muscle. Burning fat and gaining muscle do not go together. Concentrate totally on getting lean and defined during a pre-contest phase and forsake the thought of adding muscle to what should be an already prepared framework." Although Charles was speaking of competitive bodybuilders, his advice applies to everyone: Get the fat off first, *then* set your new goal for gaining muscle while *staying* lean.

8. Write out an extensive goal list in the form of affirmations

The next step is to write down all your goals on a sheet of paper or on cards in the form of statements called "affirmations." There are three rules you must apply when writing your affirmations:

1. First, your affirmations must be **personal**: Use the word "I." One of the best ways to start an affirmation is to use the phrase "I AM" or "I have." Your subconscious only responds to commands given to it in a personal manner. Anything you say after "I AM" has power. One of the best affirmations I have ever heard comes from Bob Proctor, and it goes like this: "I am so happy and thankful now that I am_____" (fill in your goal).

2. Second, your affirmations must be written in the **present tense**. To your subconscious mind, there is no future. Your subconscious mind only responds to commands given to it in a present tense. It may feel strange to write a goal in the present tense, but if you write it in the future tense (for example, "Next year I will" or "I'm going to"), your subconscious mind will make sure it always *stays* in the future. Always write, think and visualize your goal as if you have already achieved it.

3. Third, you must state your goal in terms of the **positive**. Your subconscious moves you towards whatever you think about whether it's positive or negative. Therefore, write what you want, not what you want to avoid.

9. Read your affirmations (your goal list) at least twice a day and always keep your goals "in front of you" and "on your mind."

Psychologists have proven that *repetition* is an effective way to penetrate and program the subconscious mind. Fortune 500 companies spend millions of advertising dollars every year based on this fact. Why is it that people reach for Coke, Pepsi, Budweiser, Marlboro, Crest, Palmolive and other brand name items? It's because the repetition of the advertising has penetrated their subconscious minds and moved them to action.

You can use the power of repetition to influence your own subconscious and move yourself into action. Once your affirmations are written out, read your list at least twice per day, once in the morning and once at night. Read them more often if you can. If you want to amplify the effect of the affirmation technique even more, don't just read your affirmations; *write them out by hand every single day*.

Once you've set all your goals and written your affirmations, use the power of repetition even more by literally "keeping your goals in front of you" all day long. Post your goal statements in a conspicuous place such as your refrigerator, your bathroom mirror or in your daily appointment book. Keep a goal card of your 90-day goal in your pocket. Paste them onto the dashboard of your car. Stick them on the top of your computer monitor so you have to look at them all day long.

You may have been exposed to this affirmation technique before and shrugged it off as "corny." If so, let me ask you this: Did you really give it an honest trial? Did you put 100% effort into it and put it to the test for at least 21 days in a row? If not, then you're denying yourself the chance of achieving everything you ever dreamed of. Don't let the simplicity of the affirmation technique fool you. Be open and don't judge it.

Affirmations are far more powerful than you can imagine, but they can't work when you just "try" them once or twice. They won't work even if you do them for a few days. They won't work if you say them and then cancel them out with negative affirmations like "this is stupid!" They only work when you continue to repeat them with faith, emotion and belief over and over again so many times that they completely replace your old, negative internal dialogue. Your affirmations must become the new "tape" that

runs over and over in your mind every day. When you reach the point where your affirmations become your new habitual way of thinking, the results will astound you and what you have been imagining will begin to materialize in your life.

10. Read your goals with faith.

William James, the "father" of American psychology, wrote that the subconscious will bring into reality any picture held continually in your mind and backed by *faith*. Napoleon Hill, author of Think and Grow Rich and The Law of Success, said, "All thoughts which have been emotionalized and mixed with *faith* begin immediately to translate themselves into their physical equivalent."

What is faith? Faith is just another word for unshakeable belief. Faith is believing in what you can't see. Faith is knowing that eventually you will reach your goal, even though you look in the mirror and see that little or nothing has changed yet. The opposite of faith is doubt. Shakespeare said, "Our doubts are out traitors, and make us lose the good we oft might win, by fearing to attempt." The poet William Blake said, "If the sun and moon would ever doubt, they would surely go out." In short, you must practice believing in yourself, or "banishing the doubt" as inspirational author Wayne Dyer calls it.

How do you cultivate this attribute of faith? ACT AS IF. Read affirmation statements written in the present tense as if they were already achieved. See mental pictures of yourself as if you had already achieved your goal. When you look in the mirror every day, see what you want to become, not what is presently there. Behave as if you were already there. Speak as if you were already there. "Act as though I am and I will be," says the ancient proverb. If this seems like you're "lying" to yourself; well, yes, that's *exactly* what you're doing. Repeat a "lie" often enough and you'll soon start to believe it and act on it.

To quote personal development expert Denis Waitley again, "Every captain knows his next port of call, and even though he cannot see his actual destination for fully 99 percent of his voyage, he knows what it is, where it is and that he will surely reach it if he keeps doing certain things in certain ways every day." That's the essence of faith – continuing to take action towards your destination even when you can't see it yet!

Read your goal lists with faith! Believe it's going to happen, no matter what is actually happening at the moment. If you read affirmations while at the same time doubting that you can achieve them, you are canceling out the affirmation before it ever has a chance to take root; it never reaches your subconscious mind.

11. As you read your affirmations, mentally visualize them as already achieved.

Visualization means making mental pictures or images – it's thinking without words. The brain thinks in pictures. If you think of a mountain, you probably don't see M-O-U-N-T-A-I-N spelled out in your mind. If you're like most people, you see an image of a mountain. If I ask you to think about your car, you'll instantly get a picture of your car in your mind.

Because your brain thinks in pictures, adding a bright, clear, moving mental picture of what you want to achieve will help you to penetrate your subconscious mind more rapidly and more deeply than if you just read your goals. In Psycho - Cybernetics Dr. Maltz wrote, "Experimental and clinical psychologists have proven beyond a shadow of a doubt that the human nervous system cannot tell the difference between an "actual" experience and an experience imagined vividly and in detail." As with affirmations, visualization is most effective when your body is in a relaxed state, because that's when your subconscious mind is accessed most easily.

In the book Peak Performance, Mental Training Techniques of the World's Greatest Athletes, Charles Garfield writes; "Without a doubt, the most dramatic contribution to the advancement of goal-setting skills in recent years has been the Soviet's introduction of visualization. During mental rehearsal, athletes create mental images of the exact movements they want to emulate in their sport. Use of this skill substantially increases the effectiveness of goal-setting, which up until then had been little more than a dull listing procedure."

Garfield went on to talk about a startling experiment conducted by Soviet sports scientists. The study examined the effect of mental training, including visualization, on four groups of world-class athletes just prior to the 1980 Lake Placid Olympics. The four groups of elite athletes were divided as follows:

Group 1 – 100% physical training
Group 2 – 75% physical training, 25% mental training
Group 3 – 50% physical training, 50% mental training
Group 4 – 25% physical training, 75% mental training

What the researchers found was that group 4 – the group with the most mental training – had shown significantly greater improvement than group 3. Likewise, group 3 showed more improvement than group 2 and group 2 showed more improvement than group 1.

In Psycho-Cybernetics, Dr. Maltz shared a similar account of an experiment on the effects of mental practice on improving basketball free throws. The study, published in Research Quarterly, divided the subjects into three groups. Each group was tested for free throw accuracy once at the beginning of the experiment and again at its conclusion. Group one physically practiced free throws for 20 days. Group two performed no practice at all. Group three spent 20 minutes a day getting into a deeply relaxed state and visualizing themselves shooting free throws. When they missed, they would visualize themselves correcting their aim accordingly. The results were remarkable: the first group, which practiced 20 minutes a day, improved in scoring 24%. The second group, which had no practice, showed no improvement. The third group, which practiced in their minds, improved their scoring 23%! Amazingly, mental practice yielded results almost identical to physical practice.

What does this research on athletes have to do with your losing body fat? Everything! Remember that the subconscious is the part of the mind that is responsible for automatic behavior (also known as *habits*). By visualizing your fat loss or fitness goal as already achieved, you are giving your subconscious mind instructions that will cause you to automatically begin acting in a way consistent with your mental image. You'll go into automatic pilot mode. There will be less struggle and willpower involved. When you're in a situation that used to tempt you, suddenly you'll notice you are no longer tempted. If you used to dread going to the gym, you'll start looking forward to it. If the idea of eating healthy, natural foods used to seem like hard work, you'll actually begin to enjoy it. Everything will seem to get easier and your workouts will become better than ever. The end result of making "mental motion pictures" is that you will see results more quickly than you ever have before.

All great athletes and peak performers use visualization. Jack Niklaus said he never hit a golf shot, not even in practice, without having a very sharp, in-focus picture of it in his head. Tennis superstar Andre Agassi once told an interviewer that he won Wimbledon at least ten thousand times. When asked what he meant by this, Agassi replied, "Since I was five years old I saw it over and over and over again in my mind. When I walked on the court that day, it was my exact vision. I felt like I was stepping into the role I was made for, and I just demolished them!"

Legendary basketball Hall of Famer Bill Russell wrote about his use of mental imagery in great detail: "I was sitting there with my eyes closed, watching plays in my head. It was effortless; the movies I saw in my head seemed to have their own projector, and whenever I closed my eyes, it would run."

Bodybuilders and fitness athletes use visualization in many ways: they visualize their workouts or they see themselves successfully completing a lift or performing aerobic training. They also see pictures of their bodies the way they want them to look when they reach their ultimate goal. Arnold Schwarzenegger visualized his biceps as mountains; "When I am doing barbell curls, I am visualizing my biceps as mountains – not just big, but HUGE!" Former professional bodybuilder Lee Labrada visualized the skin on his abs getting tighter and thinner like cellophane wrap clinging to the abdominal muscles as he was dieting down for competition. Three time Mr. Olympia Frank Zane said that he mentally saw himself winning the Mr. Olympia *at least one million times* before it actually happened. Former Ms. Olympia, Rachel Mclish said, "I visualize the blood surging through my muscles with every repetition and every set I do. When I pose, I've got a mental picture of how I want to look. When you have that in your brain, the physical body just seems to respond. Its important to tell yourself you are good and you look wonderful."

What if you're not good at visualizing? What if you can't see "vivid Technicolor pictures" in your mind? Don't worry about it– everyone creates mental images in their own unique way. Some people see clear vivid pictures, while others get only impressions. You'll get results either way and you'll also get better with practice.

Some real goals

I've given you a lot to think about, so to help jump-start your imagination, I'd like to give you some ideas for how to write your goal list. What follows is a composite list of some real goals from some real people who have completed my personal coaching programs. Use this list to generate some ideas for starting a list of your own.

Women:

I am so happy and thankful now that I am 13% body fat!

I am losing body fat and reaching my goal weight of 110 lbs and my goal body fat of 14% by June 1st.

I am fitting into my Gap stretch jeans, size 4, by early November and looking so good in them when I wear them to work that I leave all the guys' jaws on the floor.

I am a fitness magazine success story. When my success story is published, one of the star fitness photographers is calling me for a photo shoot and including me in the next swimsuit edition. (well, I at least look good enough so that they *could* call me. In fact, they'll definitely be thinking about it.)

I fit perfectly into the slinky black suit I bought this summer and I am wearing it to work.

My spaghetti strap flowered summer dress from the summer of 1998 fits me perfectly and I am wearing it during my winter vacation in the Caribbean.

I am learning enough about my body, diet and exercise that I am easily staying within 2-3 pounds of my optimal weight for the rest of my life.

I am celebrating the New Year with clearly visible abs.

I wake up every morning at 6 to fit in my first meal and cardio before 7 - yes, I am a morning person!

I eat 5 meals a day with proper ratios of lean protein, carbs, fats always on time at 3 hour intervals.

I stay well-hydrated and purify my body by drinking a gallon of water every day.

I strive to constantly improve my body and optimize my genetic potential.

I'm grateful and proud of how good I look today.

I deserve to be healthy and super fit.

I help those close to me choose healthier habits by leading by example (not nagging) and being a reliable source of health and nutrition information.

I am developing clean eating and consistent exercise habits that are so ingrained into my lifestyle that they stay with me for the rest of my life.

Men:

I am so happy and thankful now that my body fat is in the single digits. I am now 9% body fat and I look great!

I am reaching the most aggressive weight and body fat goal possible by the program's end (217 lbs & 19.3% respectively) by January 1st

I can see all of my toes when I look down.

By January 1st, I fit comfortably into size 32" pants without having to inhale

I am surprising (and shocking) my friends and family who I have not seen in a while by the way I look at Christmas time.

I am keeping up these lifestyle changes when the 12-week program is over.

I am reaching my ideal weight and body fat composition by April so I can show off my new body in the summertime.

I always carry my goal card with me at all times and read it as often as possible (at least three times a day).

I am reaching my goal of 15% body fat and 199 pounds by December 31st. I know this is a little fast but it is my dream for New Years Eve – I can do it!

By my 35th birthday on June15th, I am so happy that I have lost 24 pounds of fat and my body fat has dropped by 6%! I look awesome, I feel great, and I'm ready for some summer fun.

I am buying all new clothes to show off my new, lean body: Killer suits, nice shoes, nice casual stuff.

I am now leaner than I was 30 minutes ago (*after finishing every cardio workout*)

Heads are turning when I take my shirt off.

I look good with my shirt off

I am taking on being a body builder and learning about body building (for tone and definition, not massive bulk).

I am continuing the coaching program for another 3 mo and losing another 24 lbs.

I am designing my weekends and vacations to include healthy activities.

I eat six, moderately sized meals every day, each with a serving of lean protein and a complex, all natural carbohydrate and I prepare my food in advance every morning.

What you should do every time you reach a goal.

Every time you achieve a goal you should do three things:

1. **Celebrate and/or reward yourself**. Great managers, great parents and great animal trainers all have one thing in common: They all know how to continually get their "people" (employees, children or animals, respectively), to repeat the behaviors they desire. They do it by *rewarding* the behaviors they want more of ("giving the dog a bone.") You should do the same thing – reinforce your success by rewarding yourself. Did you have a great week of dieting and training? If so, go out and splurge! Have a "cheat meal." Eat some pizza. Treat yourself. Pamper yourself. Take a trip. Get a massage. Go

shopping. Buy yourself something you've always wanted. And don't feel guilty when you really deserve it!

2. **Keep a list of your achieved goals**. It's been said that success breeds more success. That's why you should start a "collection" of all your successes. You will reach many, many small goals on your way to your ultimate goal. Write all of them down on an "achieved goal list." Any time you feel your motivation or enthusiasm flagging, go back and read your list of past successes. This is a sure fire way to lift your spirits when you're feeling discouraged. Even after a few short months, you'll absolutely amaze yourself at how big your list will become and how easily you can get motivated by reflecting on your past successes.

3. **Set new goals continually.** Goal setting never stops – it's an ongoing process. In truth, there never really is an ultimate goal because if there were, and you reached it, what then? When the day arrives that you no longer have any goals, your life ceases to have meaning. Success is traveling towards the goal, not the goal itself. Anthony Robbins wrote in Unleash the Power Within, "The only true security in life comes from knowing that every single day you are improving yourself in some way – that you are increasing the caliber of who you are. I don't ever worry about *maintaining* the quality of my life, because every day I work on *improving* it."

Why you should put this book down and set your goals right now

To conclude this chapter, I'd like to tell you why you should put this book down this very minute and write out your goals - NOW.

In 1987, I read a book by peak performance coach Anthony Robbins called "Unlimited Power." I was so impressed with its contents that shortly after, I purchased Robbins' tape series called "Personal Power" after seeing him on TV. In those tapes, Robbins discussed the importance of setting goals. As I listened to the cassette on goal setting, Robbins urged me to "stop the tape now and do the goal setting exercise." There was a brief pause in the tape and then Tony came back on and repeated his instructions. He said in a teasing voice, "If you just kept listening and you didn't stop the tape and write down your goals, stop the tape and do it now." Guess what I did? I just kept listening. I said to myself "I know what my goals are, I don't need to do any 'corny' goal setting exercise," so I just kept listening to the rest of the tape (dumb, dumb, dumb!)

Eight years later, in 1995, I found myself having achieved some moderate success in several areas of my life, including bodybuilding, but I was frustrated because I hadn't reached my biggest, most important goals and I couldn't figure out why. Then I thought about the Tony Robbins tape. I remembered that even though I definitely knew what I wanted, I never took the time to write it down and read it every day.

Frustrated with my mediocre results, I conceded and went back the goal setting exercise I had "blown off" eight years earlier. Sure enough, the next year I won two overall bodybuilding titles and within a few short years after committing my goals to writing and reading my goal list every day, I had accomplished EVERY SINGLE ONE OF THEM! It was amazing – it was almost uncanny! Then I made a new list, with bigger, better goals that I am still working on to this day - and I *know* I will achieve them too.

Put this book down RIGHT NOW, make your goal list and write out your 90-day goal on a small card to carry around with you. Don't worry if it's not "perfect," just start writing. You can always go back to it later and edit. Do it now!

Chapter 2: Why 95% Of All Conventional Diets Fail - And The 8 Most Powerful Strategies to Permanently Lose Fat Without Diets or Deprivation

"Dieting is not effective in controlling weight. You can get a temporary weight loss with a diet, but each scheme ultimately gives way to weight gain, and subsequent losses become increasingly difficult. Worst of all, you get progressively fatter on less food. Dieting actually makes you fatter!"

-Dr. Lawrence Lamb, Author of "The Weighting Game: The truth about weight control."

"Cutting calories backfires. The more you cut, the more your body fights to hold onto its fat stores as reducing calories signals the "starvation response" where the body tries to "survive" and hold onto its calorie reservoir known as fat."

- Chris Aceto, author of "Everything you need to know about fat loss."

Diets Never Work

Let's begin by defining the word "diet." A "diet" is any *severe* restriction of food or calories that's *temporary*. Most conventional diet programs call for extremely low calories: 800-1200 or less for women and 1500-1800 or less for men. Any time you restrict calories drastically like this, you will lose weight. So if your only criteria for success is *weight* loss, and you don't care where the weight comes from, or how long it stays off, then you could say that "all diets work."

There are two major problems with this approach: First, the weight loss from very low calorie dieting almost never lasts; 95% of the people who lose weight on conventional diet programs can't keep it off. The second problem is that most of the weight you lose from low calorie dieting is muscle, not fat. If permanent *fat* loss without losing muscle is your goal (it should be), then it would be closer to the truth to say "diets never work."

Statistics prove that diets never work in the long term. If they did work, then how do you explain the huge obesity problem today? And why is it getting worse? According to the National Institute of Health, there are over 100 million overweight people in the United States. That's 55% of the adult population! Over 20% of U.S. adults are clinically obese, which means they are at risk for one or more of over 30 health problems that are associated with excess body fat.

Despite the fact that there are more diet programs and weight loss products available than ever before, obesity has continued to rise. The Center for Disease Control recently announced that the number of people in the United States who are clinically obese (at least 30% over their ideal body weight) increased from one in eight in 1991 to nearly one in five in 1999.

There's a valid scientific reason why most diets fail dismally. Most people make the classic mistake of trying to "starve" the fat with strict diets. However, because the human body has a complex and infallible series of defense mechanisms to protect you from starvation, it's physiologically impossible to permanently lose fat with very low calorie diets. As soon as your body senses a food shortage, these defense mechanisms start to kick in. The human body is simply too "smart" for the restrictive very low calorie diet approach to ever work.

Why Eating Less Doesn't Always Work

If you eat more calories than you burn, you will store the excess as body fat. If you eat fewer calories than you burn, you will lose fat. Simple mathematics, right? Well, not exactly.

If fat loss were as black and white as calories in vs. calories out, then how do you explain why some overweight people eat less than lean people, yet they still can't lose an ounce? And how is it possible for someone with a 2200-calorie maintenance level to eat only 800 to 1000 calories a day without losing any weight?

Using the strictly mathematical model, if you cut out 1000 calories per day from your maintenance level, that will add up to a 7000-calorie deficit in one week. There are 3500 calories in a pound of stored body fat, so cutting out 1000 calories a day should – in theory – produce a weight loss of two pounds per week. Actual real world fat loss rarely works out with such mathematical precision.

Rob Faigin, writing in the book "Natural Hormonal Enhancement," makes a humorous, but true observation about calorie balance and weight loss. Faigin says, "If there existed an airtight mathematical relationship between caloric intake and weight loss, cutting caloric intake from 3000 to 1000 would result in a 60,000 calorie per year deficit – and would result in a 200 pound weight loss after a year. What if the person began the diet weighing 200 pounds, would he disappear?"

When a calorie deficit is first introduced, weight loss generally occurs rapidly, just as the numbers would dictate, but it never takes long before weight loss slows, and then eventually stops completely. Why does this happen? Why is it that you don't lose 50 pounds in 25 weeks or 100 pounds in 50 weeks with a 1000-calorie deficit?

The explanation is quite simple: Over thousands of years, humans have developed a weight-regulating mechanism that recognizes when there's a food shortage and decreases energy expenditure to "protect you." This survival mechanism is known as the "starvation response."

The Starvation Response

You can survive for months without food. You've probably heard stories about people getting lost in the mountains or wilderness for months with no food at all (only water), or being confined in a prisoner of war camp for years with only tiny amounts of food. What makes surviving under these conditions possible is your body's remarkable ability to slow down its rate of calorie burning.

When your body senses calorie deprivation it says to itself, "It looks like this is all the food we're going to be getting for a while, so we'd better stop burning so many calories and start saving our energy. This way we'll be able to survive longer on the little amount of food we have."

The starvation response developed largely from exposure to adverse environmental conditions like droughts, natural disasters and food shortages. Furthermore, there were no supermarkets ten thousand years ago - if people wanted to eat, they had to either grow their food or kill it. It's likely that at times, ancient man didn't know when the next meal was coming and may have only eaten once or twice a week. The starvation response evolved in humans to ensure the survival of the species.

Your body can't tell the difference between dieting and starvation

This wonderful feature of human evolution is a blessing if you're stranded out in the wilderness with no food. During periods of starvation, the body slowly begins to feed off itself, burning fat stores, muscle and even internal organs for energy. If you continued to burn calories at your normal rate, your limited reserves of stored energy would be exhausted quickly and you would die very soon after you food supply was cut off. The starvation response keeps you alive longer.

Unfortunately, this same life-preserving mechanism can work against you when you're trying to lose weight because your body can't tell the difference between dieting and starvation!

Severe calorie cutting always sends your body into "starvation mode." There's nothing you can do to stop this from happening other than to avoid severe calorie shortages!

7 Reasons why you should stay away from very low calorie diets.

The consequences of low calorie dieting are automatic and unavoidable. The responses are metabolic, hormonal, and psychological in nature, and include: Decreased metabolism, loss of muscle, increased activity of fat-storing enzymes and hormones, decreased activity of fat-burning enzymes and hormones, decreased thyroid output, increased appetite, increased chance of regaining weight, and decreased energy and work capacity. Let's take a quick look at each.

1. Very low calorie diets slow down your metabolic rate

The first thing that occurs during a severe calorie shortage is a decrease in your metabolic rate. The lower your calories, the slower your metabolism becomes. Simply put; *when you eat less, your body burns less. When you eat more, your body burns more.*

In the book, "Everything you need to know about fat loss," Bodybuilding nutritionist Chris Aceto uses a great analogy to describe the way this mechanism works: He wrote, "If you're earning $4000 a month, but your boss suddenly cuts your pay to $2500 a month, you will try to live the same lifestyle on $2500 a month as you did on $4000 a month. After a while, you have to adjust and save money, and change your lifestyle. The same is true with a calorie intake that is simply too low. When calories are cut below basal metabolic needs, the body will accommodate and slow its metabolism, so it becomes difficult to lose fat even on low calories."

This metabolic slowdown is well documented. When calories are restricted, your metabolism decreases by at least 20-30%. With severe calorie restriction, some studies have shown that resting metabolism can become depressed by as much as 45%! That's the equivalent of having your daily energy expenditure drop from 3000 calories per day to only 1650 calories per day! This is why, after prolonged low calorie dieting, you can eat very little food and still not lose weight. This also explains why it is so difficult to lose those last 10 or 20 pounds.

2. Very low calorie diets make you lose muscle

The most devastating effect of the low calorie diet is the loss of muscle tissue. Once the starvation alarm is triggered, your body begins looking for ways to conserve energy. Muscle is metabolically active tissue. Getting rid of it is the body's way of decreasing energy expenditure. It's easy for your body to use muscle for energy. This process is known Gluconeogenesis – converting muscle into glucose. This includes skeletal muscles, and internal organs, even your heart muscle!

Study after study has shown that very low calorie diets without exercise will always cause 40 - 50% of the weight loss to come from lean tissue. Many diets, especially those that are low in carbohydrates, cause large losses in water weight. Between the loss of water, glycogen and muscle, fully 75% of the weight you lose on such plans is not fat! The initial weight loss on most diets is very deceiving, giving you only the illusion of success. Even with exercise, if a diet is too restrictive, much of the weight loss will still be lean tissue.

3. Very low calorie diets increase activity of fat-storing enzymes and decrease the activity of fat burning enzymes

The chief fat storing enzyme is called Lipoprotein Lipase (LPL). When you drop your calories too low, your body will produce more LPL and less *fat burning* enzymes. In other words, when you don't eat enough, your body changes its chemistry to make it easier to store fat in the future.

4. Very low calorie diets decrease output of thyroid hormone.

The Thyroid gland is largely responsible for the regulation of your basal metabolic rate (the rate at which you burn calories at rest). When your body senses a severe reduction in calories, there is a corresponding reduction in the output of active thyroid hormone (T3). The result is a decrease in your metabolic rate and fewer calories burned.

5. Very Low calorie dieting increases the chance of rebound weight gain

Almost everyone loses weight initially on a very low calorie diet, but it never takes long before the body catches on and starts conserving energy. That's when you hit a plateau. Once you hit the plateau, it becomes much harder to keep losing weight even if your calories are extremely low.

This lack of continued results, combined with gnawing hunger pangs and insatiable craving, usually causes people to give up out of sheer frustration. They go off their diet, the weight creeps back on and their body fat ends up back where they started - only now they have less muscle and a slower metabolism.

With a slower metabolism, what used to be a maintenance level now becomes a surplus, and the weight comes right back on. Most people gain back all the weight they lost– and some gain back even more, leaving them fatter than when they started. This up and down pattern of weight loss and weight re-gain is commonly known as the "yo-yo cycle", and it often continues for years or even for an entire lifetime.

With each repeated bout of dieting, your metabolism becomes less and less efficient and you can actually become progressively fatter while eating less food.

6. Very low calorie diets increase appetite and cravings.

When your body goes into starvation mode, this triggers increased appetite and cravings in an attempt to get you to eat more food. The hunger and cravings can be so strong that you become ravenous. It's virtually impossible stay on a diet when you are voraciously hungry and all you can think about is food. Few people have that much willpower.

7. Very low calorie diets decrease your energy and work capacity

Low calorie diets leave you tired, lethargic and unable to sustain high levels of activity or intense workouts. Dr. Lawrence Lamb, author of "The Weighting Game: The truth about weight control" points out that "The first sign of under nutrition is the loss of energy and the inability to sustain prolonged physical work. There is a direct relationship between calories consumed and the physical work a person can do."

If you have no energy to work out, you're going to feel lousy and seriously compromise your results. The ability to train hard aerobically and with weights is critical for your long-term success at fat loss.

Why dieting can actually make you fatter.

Let's take a look at how these physiological and psychological responses to low calories affect the real world results of a typical dieter.

Suppose our "typical" dieter is a male who weights 200 pounds and has 18% body fat. His goal is to lose 20-25 lbs.

Before the diet
18% body fat
36 lbs. fat
164 lbs. lean body mass

Like most people, our hapless dieter assumes that the best way to lose the body fat is to starve, so he goes on a 1500 calorie per day diet. In the 1st week he loses 5 lbs. and is very happy with himself. The second week he loses 4 lbs. Weeks three through six he loses three pounds per week for a grand total of twenty-one pounds lost.

Our dieter now weighs 179 lbs. and he continued to lose weight steadily without hitting a plateau (although the weight loss did slow down). Judging by the scale alone, he has succeeded in his goal. On closer examination, however, we find that he has not been so successful after all.

After the diet
179 lbs.
14.8% body fat
26.5 lbs. fat
Lean body mass 152.5 lbs.
Weight loss: 21 lbs.
Fat lost 9.5 lbs.
Lean body mass lost: 11.5

By judging his success in terms of body composition instead of scale weight, it becomes clear that he has failed. Fifty five percent of his weight loss came from lean body mass. The drop in lean body mass has decreased his basal metabolic rate so he is now burning fewer calories each day than when he started. This has set him up for a relapse.

Now that the (temporary) diet is "over, " he goes off his diet. Few people have the desire or willpower to stay on low calories for long. On a strict calorie and or food-restricted diet, almost everyone "falls of the wagon" sooner or later. After a long period of low calories, his body "tricks him" into binge eating by triggering severe cravings and hunger.

Even if he doesn't binge and he simply goes back to "normal" eating again, his body isn't burning calories as efficiently as before. Therefore, the number of calories that used to maintain his weight now causes him to gain weight. As the weeks pass, the weight gradually creeps back on until he finally gains back all the fat he lost (plus a little extra for interest)

6 weeks after the diet ends:
200 lbs.
20.5% body fat
41.1 lbs. fat
Lean body mass 158.9 lbs.

Now he is right back at 200 pounds where he started, with only one difference: He has less muscle, more fat, and a slower metabolism than when he began. He has damaged his metabolism and it will now be harder than ever to lose weight.

8 Powerful Strategies to Stay Out of The Starvation Mode and Lose Fat Permanently Without Dieting or Deprivation.

You must give up the entire concept of dieting on very low calories to lose weight. You'll never lose weight permanently with low calorie diets – it's physiologically impossible. Temporary dieting can only produce temporary results. You must use other methods. Let's look at the eight strategies you can use to lose fat permanently while staying out of the starvation mode.

1. Adopt the "habit" mindset instead of the "diet" mindset

The first step towards losing fat permanently has more to do with your mindset than it does with nutrition or exercise. You have to change your entire attitude about nutrition and exercise. Instead of adopting the mindset of short-term "diets," you must adopt the mindset of lifelong "habits." A habit is a behavior that you perform automatically without much conscious thought or effort. Once a habit is firmly established – good or bad - it takes enormous strength to break it. It's like trying to swim upstream against the current.

The entire concept of "dieting" for fat loss is flawed. When you say you're "going on a diet" the underlying implication is that it's a temporary change and at some point you're going to have to "go off" the diet. With this type of attitude, you're setting yourself up for failure right from the start.

Permanent fat loss can't be achieved by going on and off diets. It can only be achieved by adopting new exercise and nutrition habits that you can maintain for the rest of your life. Depending on your goal, you may need to make your diet more or less restrictive at certain times, but you always must maintain a baseline of healthy eating habits that never change. Usually you'll eat the same foods all year round. When you want to lose body fat, all you need to do is simply eat a little bit less of those same foods and exercise a lot more.

Nature abhors a vacuum. The best way to get rid of undesirable habits such as poor nutrition or inactivity is by replacing them with new ones, not attempting to overcome them with sheer willpower. Achievement expert Brian Tracy likens this to covering up a bad paint job by layering over with a new paint that is thick enough so the old paint disappears. The new habit then takes over as the old one is filed away in the subconscious mind.

Good nutrition habits are not easy to form, but once you've formed them, they're just as hard to break as the bad ones. Orison Swett Marden put it this way: "The beginning of a habit is like an invisible thread, but every time we repeat the act we strengthen the strand, add to it another filament, until it becomes a great cable and binds us irrevocably."

Initially, there will be a period where starting the new habit feels uncomfortable. Be patient – everything is difficult in the beginning. For a new behavior to become permanently entrenched into your nervous system, it could take months. However, the roots of nutrition and exercise habits can be formed in just 21 days. That's why it's so important to give 100% total effort and commitment for the first 21 days. Once those 21 days have gone by, you'll already be leaner and you'll be on your way to making your new habits as effortless and natural as brushing your teeth or taking a shower.

2. Keep your muscle at all costs

The critical factor in turning your body into a "fat-burning machine" is to build and maintain as much lean body mass as possible. Muscle is the bodybuilder's fat-burning secret weapon! Muscle is your metabolic furnace. The more muscle you have, the more calories you burn, even at rest. With more muscle, you burn more calories even while you sleep.

With a higher lean body mass, you'll also burn more calories during exercise. If you put two people side by side jogging on a treadmill, one of them with 180 pounds of

lean body mass and the other with 150 pounds of lean body mass, the person with 180 pounds of lean body mass will burn more calories from the exact same workout.

The most efficient way to burn more calories and lose more body fat is to gain more muscle. That's why weight training is an important part of the fat loss equation.

3. Use a small calorie deficit.

To lose body fat, you must be in negative calorie balance (a calorie deficit). You can create a calorie deficit by increasing activity, by decreasing calories or with a combination of both. The most efficient approach to fat loss is to decrease your calories a little and increase your activity a lot.

The most commonly recommended guideline is to reduce your calories by 500 to 1000 less than your maintenance level. For example, if you are female and your calorie maintenance level is 2100 calories per day, then a 500 calorie deficit would put you at 1600 calories per day. If you're a male with a calorie maintenance level of 2900 calories per day, then a 500 calorie deficit would put you at 2400 calories per day.

A 500 calorie deficit over seven days is 3500 calories in one week. There are 3500 calories in a pound of fat, so (in theory), a 500 calorie per day deficit will result in a loss of one pound of body fat per week. It follows that a 750 calorie deficit would produce a loss of one and a half pounds per week and a 1000 calorie deficit would produce a two pound per week reduction.

Because of the way the weight regulating mechanism works, fat loss seldom follows these calculations precisely, so don't get caught up in them. An emphasis on exercise with a small reduction in calories is the best approach. 500 to 750 calorie deficit below your maintenance level is usually plenty. Add weight training and aerobics into the mix and this will produce as close to 100% fat loss as possible.

An alternate (and preferred) method is to set your calorie deficit as a percentage of your maintenance level. 15-20% is the recommended starting calorie reduction for fat loss. This is considered a small calorie deficit and a small calorie deficit is the key to losing fat while maintaining muscle.

With a 2100 calorie maintenance level, 20% would be a 420 calorie deficit, which would put you at 1680 calories per day. With a 2900 calorie maintenance level, a 20% deficit would be 580 calories. That would put you at 2380 calories per day.

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The reason the percentage method is better is because using an absolute number like 500, 750 or 1000 calories as a deficit instead of a percentage deficit might drop your calories into the danger zone. For example, if you are a male with a 3500 calorie maintenance level, a 750 calorie deficit to 2750 calories per day is only a 21% drop (a small, safe and acceptable deficit.) However, if you are a female with an 1800 calorie per day maintenance level and you cut your calories by 750 per day to 1050 calories, that is a 41% cut. Using the percentage method is more individualized.

At times, an aggressive calorie deficit greater than 20% may be called for, but calorie cuts greater than 20% are much more likely to cause muscle loss and metabolic slowdown. If you do use a calorie deficit greater than 20%, then it's wise to raise calories at regular intervals using the "zig-zag method" you'll learn about in chapter six. This will "trick your body" and prevent your metabolism from slowing down when you have a large calorie deficit.

Always start with a small deficit. In other words, cut calories out slowly. It's better to start with a small deficit and then progressively increase towards your maximal deficit than to make a sudden drop in calories all at once. The body cannot be forced to lose fat – you must coax it.

Based on what you now know about the body's weight-regulating mechanism, the optimal amount to decrease your caloric intake for fat loss is as little as possible – as long as you're still losing body fat.

4. Use exercise to burn the fat rather than diets to starve the fat

To lose body fat, there must be a calorie deficit. Such are the laws of thermodynamics and energy balance. However, there's more than one way to create a calorie deficit. One way is to decrease your calorie intake from food. The other is to increase the amount of calories you burn though exercise.

Of the two ways to create a calorie deficit, *burning* the calories is the superior method. This is because large calorie deficits cause muscle loss and trigger the starvation response. Ironically, most people do the opposite: They slash their calories to starvation levels and exercise too little or not at all. This causes a decrease in lean body mass and invokes the starvation mechanism.

Paradoxical as it seems, the most effective approach to fat loss is to eat more (keep the calorie reduction small) and let the exercise burn the fat. You don't have to

starve yourself – you just have to choose the right foods and make exercise a part of your lifestyle.

Why would anyone resort to starvation diets when they can burn fat more efficiently through exercise? Perhaps they believe that eating more food and working out at the same time will "cancel each other out. Maybe they shy away from the hard work involved in exercise. There's also a trend these days towards avoiding too much aerobic exercise because of the false belief that it will make you lose muscle. Quite to the contrary, aerobic exercise –combined with weight training - is the only method of fat loss that allows you to create a calorie deficit and burn fat without slowing down the metabolism.

Here are the reasons why exercise - not dieting - is the superior method of losing body fat:

1. Exercise – aerobic and weight training - raises your metabolic rate.
2. Exercise creates a caloric deficit without triggering the starvation response.
3. Exercise is good for your health. Dieting is harmful to your health.
4. Exercise, especially weight training, signals your body to keep your muscle and not burn it for energy. Dieting without exercise can result in up to 50% of the weight loss to come from lean body mass.
5. Exercise increases fat-burning enzymes and hormones.
6. Exercise increases the cells sensitivity to insulin so that carbohydrates are burned for energy and stored as glycogen rather then being stored as fat.

5. Determine your minimal calorie requirements and never drop below them – ever!

One way to ensure that you never go into starvation mode is to determine the minimum amount of calories you can eat without slowing your metabolism. Then, use that as your rock bottom calorie number.

Because nutrition must be individualized, it's difficult to set an absolute single figure for everyone as a minimal calorie requirement, but the American College of Sports Medicine (ACSM) has suggested some guidelines. In their position stand on healthy and unhealthy weight loss programs, the ACSM recommends 1200 calories as the minimal daily calorie level for women and 1800 as the minimum for men. They also suggest a maximum deficit of 1000 calories below maintenance.

The 1000 calorie maximum deficit is good advice, but it's just a guideline. Sometimes a 1000 calorie per day deficit can be too much. People with low bodyweights and/or low activity levels will have relatively low daily calorie needs, so 1000 below maintenance could be too low.

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For example, it's not uncommon for a female to require only 1900 calories per day to maintain her weight. If she were to drop 1000 calories off this already low maintenance level, this would bring her to a dangerously low 900 calories per day. 1200 should be her rock bottom number, and a small 20% deficit of only 380 calories would be even better (1520 calories per day).

6. Eat more frequently and never skip meals

Grazing is better for you than gorging. Chapter seven will discuss the importance of small frequent meals in much more detail. For now, let it suffice to say that *the body interprets missed meals as starvation*. Let's suppose you eat lunch at 12:00 noon and dinner at 7:00 pm. If you skip breakfast the next day, that's 17 hours without food. This sends an unmistakable signal to your body that you are starving, even if your lunch and dinner are large meals.

Your goal should be to eat approximately every three hours. Establish scheduled meal times and stick to them. Regularity in your eating habits is critical.

By eating smaller portions more frequently, you'll be able to eat more food than you've ever eaten before without being deprived or starving yourself. Most people say they eat more on this program than they've ever eaten yet they get leaner than they've ever been before.

7. Don't stay in a negative calorie balance long

The chances are good that you know at least one person who always seems to be on a diet. The odds are also good that although these habitual dieters may achieve some small weight losses, they are among the 95% that always gain it back. Then, discouraged with the failure of their last diet, they quickly embark on the latest "diet of the month" and repeat the cycle.

When fat loss stops or begins to slow down after being in a substantial calorie deficit, most people panic and cut their calories even further. Sometimes this works and it breaks the plateau. More often than not, it digs you into an even deeper metabolic rut. The best thing you can do is to raise your calories for a few days or sometimes even for a few weeks.

Your body's weight regulating mechanism works both ways: It can decrease your rate of energy expenditure when there is a calorie deficit, or it can also increase its rate of

energy expenditure when there is a calorie surplus. When you eat more, your body burns more. A temporary increase in calories when you have hit a plateau will "spike" your metabolic rate. It sends a signal to your body that you are not starving and that it's ok to keep burning calories.

This practice of raising your caloric intake up and down is known as "cycling" your calories (also known as the "zig-zag" method). In general, the lower you go with your calories, the more important it is to take periodic high calorie days. We'll take a much closer look at "cycling" your calorie and macronutrient intakes in later chapters.

8. Make your goal to lose weight slowly at a rate of 1-2 lbs. per week. Be patient.

The best way to lose fat permanently without muscle loss is to lose weight slowly with a focus on exercise rather than severe calorie cutting. In the chapter on goal setting, we already made the suggestion to lose no more than two pounds per week. Let's take a closer look at the logic behind that recommendation.

In the ACSM's position statement on "Healthy and unhealthy weight loss programs," The ACSM recommends losing weight at a maximum rate of two pounds per week. This two pound figure has become almost universally accepted as the standard guideline for safe weight loss.

Why? Because you can lose more than two pounds of *weight* per week, but you're highly unlikely to lose more than two pounds of *fat* per week. Even at two pounds per week, it's difficult to lose 100% body fat with no loss of lean body mass.

Over the years that I've been doing personal coaching programs, I've kept progress charts for every client that meticulously document skinfolds, body fat, body weight, lbs. of fat and lbs. of lean mass. I have literally hundreds of these charts in my files. Analyzing these real-life case studies has proven to me without a shadow of a doubt that when you lose more than two pounds per week, you almost always lose muscle along with the fat. I've seen fat loss greater than two pounds per week on numerous occasions, but this is the exception rather than the rule. Usually this only happens when someone has a large amount of weight to lose.

The more slowly you lose weight, the easier it is to maintain your lean muscle mass and keep the fat off. It's better to lose only one pound of pure fat per week than it is to lose two pounds per week with one pound from muscle and one pound from fat.

Bodybuilders usually set their goal to lose weight at a rate one to one and a half pounds per week. Losing only a single pound a week may seem like an excruciatingly slow process, however, this is one of the best-kept secrets of bodybuilders and fitness models and one of the most important keys to permanent fat loss. Why would you want to lose weight faster if you know you're going to lose muscle and there's a 95% chance that you're going to put the fat back on?

What should you do if you lose more than two pounds per week? It depends; everything is relative to the individual. If you have a large amount of fat to lose, then losing three pounds a week is safe and acceptable during the early stages (as long as you're measuring your body composition and the weight you're losing is fat and not muscle). However, as you get closer to your long-term goal, expect the weight loss to slow to one or two pounds per week.

For most people, losing more than two pounds per week means that you should actually eat more! This may be difficult for you to accept, but if you lose more than the recommended amount, you're not just losing fat – you're losing muscle. Don't let the temporary ego boost from a large drop in scale weight sabotage your efforts in the long run. Be patient. Don't ever confuse weight loss with fat loss.

Chapter 3: Body Composition: How to determine your fat to muscle ratio

"Weight is largely meaningless as an index of fitness, health, physical attractiveness, or practically anything else related to human beings. Unless you are an athlete aiming to compete in a certain weight class, what matters is body composition, not weight. Body fat percentage is a measure of body composition. Unlike weight, body fat percentage addresses the all important question of what your body is made up of."

-Rob Faigin, author of "Natural Hormonal Enhancement"

"Losing weight is the wrong goal. You should forget about your weight and instead concentrate on shedding fat and gaining muscle!"

-Dr, William Evans, author of "Biomarkers"

Muscle vs. fat

Beauty may be in the eye of the beholder, but let's face it – muscle looks better than fat. Fat fills in all the lines and "cuts" that separate each distinct muscle group. It covers up the muscles with a thick layer of spongy insulation, obscuring the muscle definition below and adding a round, soft and doughy quality to the entire body. Muscle is what makes your body solid, chiseled and athletic-looking. But muscle has more than just aesthetic value. Your goal should be to build and maintain muscle not just for how it looks, but also because of what it will do for you.

Muscle is your secret weapon in your war against fat. Muscle is your "metabolic furnace," burning calories even as you sleep and watch TV. Muscle is active tissue – it is the catalyst for a fast metabolism. Fat just sits there idly in clumps on your body. Unfortunately, most people pay little attention to their amount of muscle because they're too busy worshipping the almighty scale. This is a huge mistake!

Most people are totally obsessed with scale weight. The problem with the scale is that it doesn't tell you how much of your weight is fat and how much is muscle. Another problem is that scale weight can fluctuate wildly on a daily basis based on your water levels. This can blur the real picture.

Losing weight is very easy. Losing fat – and keeping it off – without losing muscle, is a much bigger challenge. If you simply wanted to lose weight, I could show you how to drop 10 –15 pounds over the weekend just by dehydrating yourself and using natural diuretics. Bodybuilders and wrestlers do it all the time to make a weight class. But what good would that do if it's almost all water and you're just going to gain it all back within days?

If you want to achieve solid muscle gain or permanent fat loss and get off the diet roller coaster once and for all, you must squash your preoccupation with scale weight and instead judge your progress based on *lean body mass* and *body fat.* Ignoring the scale in favor of body fat is a difficult shift in mindset to make, but it's essential to your long term success.

Height and Weight Charts Are Obsolete

One of the most common methods of determining your so-called "ideal weight" is the height and weight chart. These charts, often used by insurance companies, physicians, sports teams and the military, tell you how much you should weigh based on your height alone. Although these charts are still popular, they're very misleading, especially to athletes and bodybuilders who carry more muscle than most people.

A 5 foot 8 inch male bodybuilder weighing 200 pounds would be grossly overweight according to a height-weight chart. However, such an athlete could have a body fat level well into the single digits with visible "six-pack" abs. On the other hand, people with "normal" body weights could easily be classified as obese when you take into account their body fat level. For example, a 105-pound woman could have 33% body fat. A 172-pound man could be 27%. Both have "acceptable" bodyweights according to the charts, but their body fat levels put them in the "obese" category. These people, who have with low body weights, but a high fat to muscle ratio are what I call "skinny fat people."

Height & weight charts don't account for body fat

The reason for this discrepancy between so-called "ideal weight" and ideal body fat is obvious: "Ideal weights" from height-weight tables don't take body fat into consideration; therefore, they can't accurately recommend how much you should weigh.

Losing weight is not the same thing as losing fat. Weight loss is not a good thing if the weight comes mostly from muscle. Likewise, gaining weight is not the same thing as gaining fat (gaining lean body weight is *always* good). So forget about "ideal weights" and focus more on "ideal body fat."

Body Mass Index – another useless indicator?

Body Mass Index (BMI) is another popular way to determine whether someone is at a "healthy weight." Like the height and weight charts, BMI is a poor measure of fitness because it doesn't take into account fat versus lean tissue.

According to the textbook, Physiology of Sport and Exercise by Wilmore and Costill, BMI is defined as, "A measurement of body overweight or obesity determined by dividing weight (in kilograms) by height (in meters) squared."

The text says you are considered overweight if you're female with a BMI is 27.3 or greater or if you're male with a BMI of 27.8 or higher. It also says that BMI correlates highly with body composition and is a better indicator of fitness than your weight alone. (It even says you're more likely to die if your BMI is 25 or greater).

I'll buy the part about BMI being better indicator of health and fitness than body weight alone, but the part about BMI correlating well to body composition is complete hogwash!

Let me show you an example of how BMI falls short as a measure of body composition.

In the off-season, I weigh about 201 lbs. and I am 5' 8 inches tall. Converted to metrics, 201 lbs. is 91.36 kilograms and 5' 8" is 172 cm or 1.72 meters. So now let's plug my stats into the BMI formula and see what we come up with...

201 lbs. = 91.36 kilos.
1.72 meters squared = 2.96 meters
91.36 kilos / 2.96 meters = 30.86 BMI

If we judge my physical condition according to my BMI of 30.86, then I'm a serious health risk and I need to lose some weight. Obviously, that's not the case. Even when I'm not in a pre-competition mode, my body fat seldom goes into the double digits (it was 8.7% last time I had it measured.)

Body builders and other athletes carry more lean body mass than the average person and will therefore be classified as overweight if BMI is used as the criteria for measurement. Conversely, someone could have a "healthy" BMI of 19 to 22 and yet have a dangerously high level of body fat (a "skinny fat person").

Shape up America, the anti-obesity campaign started by Dr. C. Everett Koop, recently published a statement pointing out the shortcomings of BMI. According to the Shape up America website, BMI misclassifies one out of four people and should not be used by athletes.

BMI is a lousy indicator of your health, fitness or ideal weight. Forget about BMI and height-weight charts; the answer is body fat testing.

Body Fat Testing

The primary reason to measure body composition is so you can distinguish between fat and muscle. Instead of looking only at *body weight*, the body composition test lets you focus on *body fat* and *lean body mass*. Another reason to measure your body composition is so you can monitor your progress and get continual feedback. As you learned in chapter one on goal setting, it's critical to have a way to objectively measure your progress. A weekly body composition test allows you to measure and record the exact effect your nutrition and exercise program is having on your body.

Many people mistake activity for achievement. They are apparently dieting hard and working hard in the gym – the problem is, they're getting no results and not even noticing because *they're not measuring results!* Steven Covey, author of the Seven Habits of Highly Effective People, wrote, "Many people are climbing the ladder of success every day, only to find that it is leaning against the wrong wall!" If you don't measure your results with body composition testing, you could be spinning your wheels (burning up energy but going nowhere), or even heading in the wrong direction!

You might be busy, busy, busy, but without the constant feedback that body composition testing provides, you have no way of knowing if all that activity is moving you closer to your target. The only goals worthy of your effort are fat loss and muscle gain, not weight loss and weight gain.

For example, if you're losing weight but the type of weight you're losing is muscle, then you're headed in the wrong direction and you need to change your program! If you're losing fat and maintaining your muscle, then your program is working and you shouldn't change a thing.

What is an average level of body fat?

Average body fat percentages vary among the sexes and among different age groups. The female hormone estrogen causes women to carry about 5% more body fat than men. The average woman has about 23% body fat and the average man

approximately 17%. In both sexes, body fat increases while lean body mass decreases with age.

According to Dr. William Evans of the USDA Human Nutrition Research Center on Aging at Tufts University, the average American loses 6.6 pounds of lean body mass every decade after age 20. The rate of muscle loss increases after age 45. With advancing age, most people gain fat even when body weight doesn't change much; the muscle shrinks as the fat accumulates. The average male college student (age 20) has about 15% body fat. The average sedentary middle-aged male has 25% body fat or more.

What is an "ideal" level of body fat?

You should note that the body fat levels above are *average* ranges, not necessarily *ideal* ranges. After all, who wants to be just "average?" A body fat of 25% would statistically place a female in the "average" category, but this level wouldn't necessarily be ideal. An optimal percentage of body fat for a non-athlete is around 10-14% for men and 16-20% for women. These ideal body fat goals are realistic, achievable and maintainable by nearly anyone. Desirable body fat levels for athletes may be even lower, depending on the nature of the sport. At these "ideal" body fat levels, you will look lean and for the most part, fat free. If you want the "ripped" look of a bodybuilder or fitness competitor, you may need to drop even lower: Most men will start to show excellent muscle definition when they hit the mid to upper single digits. Women look defined when they reach the low to mid teens.

Body fat rating scale	**men**	**women**
Competition Shape ("ripped")	3-6%	9-12%
Very Lean (excellent)	≤ 9%	≤15%
Lean (good)	10-14%	16-20%
Average (fair)	15-19%	21-25%
Below average (poor)	20-25%	26-30%
Major improvement needed (Very poor)	26-30%+	31-40%+

Typical average body fat for athletes	**male**	**female**
Distance runners	5-10%	10-16%
Elite marathon runners	3-5%	9-12%
Sprinters	5-12%	12-18%
Jumpers & hurdlers	6-13%	12-20%
Olympic gymnasts	5-8%	11-14%
Bodybuilders, contest condition	3-5%	8-12%
Bodybuilders, off season	6-12%	13-18%
Football players, running backs, receivers, def backs	7-9%	NA
Football players, linebackers	14%	NA
Football players, linemen	16-19%	NA

Soccer players	7-12%	10-18%
Baseball/softball players	10-14%	12-18%
Pro basketball players	7-12%	10-16%
Wrestlers	4-12%	NA
Cross country skiers	7-13%	17-23%
Tennis players	10-16%	14-20%
Swimmers	6-12%	10-16%

How much body fat is too much?

High body fat levels have been linked to over 30 health problems including diabetes, high blood pressure, cardiovascular disease, cancer and osteoarthritis. Being categorized as "clinically obese" means that body fat is at such a level that these health problems become more of a concern. Men are considered borderline at 25% body fat and clinically obese at 30%, while women are borderline at 30% and clinically obese at 35% body fat.

High levels of body fat also decrease athletic performance. Studies have shown that high body fat levels cause decreased performance in tests of endurance, speed, balance, agility and jumping ability.

How low should you go?

It's impossible for body fat levels to drop to zero since some fat is located internally and is necessary for normal body functioning. This is called "essential fat." Essential fat is necessary for energy storage, protection of internal organs, and insulation against heat loss. Essential fat is found in the nerves, brain, bone marrow, liver, heart, and in nearly all the other glands and organs of the body. In women, this fat also includes sex-related fat deposits including the breast tissue and uterus. Essential body fat is 2-3% for men and 7-8% for women.

Competitive bodybuilders and endurance athletes such as marathon runners have been known to reach body fat levels as low as 2-4% in men and 8-10% in women. With today's obsession for leanness, the safety of dropping to very low body fat levels has often been questioned. Being extremely lean is undoubtedly healthier than being overfat. However, trying to *maintain* extremely low body fat levels for too long a period of time might not be realistic or healthy.

This is particularly true for women. With few exceptions, most women who try to maintain their body fat levels at or below 10-13% can have problems with estrogen

production, their menstrual cycles and reproductive systems become disrupted and bone density may decrease, putting them at higher risk of osteoporosis as they grow older.

Reaching these extremes of body fat during a competitive season is par for the course. Trying to keep it there for a prolonged period is when the problems may occur. Training and dieting in cycles so that body fat level varies between in-season and off-season is healthier and more sensible. The typical female bodybuilder or fitness competitor will maintain a very lean (and healthy) 13-16% for most of the year, then drop down to 8-12% for competition. Men may drop as low as 3-5% for competitions, then increase to 8-10% in the off-season.

Methods of Measuring Body Composition

The scale, tape measure and mirror are all helpful, but alone they're not enough. Why not go strictly by the mirror? After all, what really counts is that you're happy with what you see when you stand naked in front of the mirror isn't it? The problem is, when you look at yourself in the mirror every day, it is often difficult to "see" the daily and weekly changes because they're taking place so slowly. This can be frustrating and discouraging – kind of like watching the grass grow.

It's also difficult for most people to judge their progress objectively. The best-known example of distorted self-image is anorexia, but it works both ways: Many bodybuilders and exercise addicts suffer from "muscle dysmorphia," a term coined by psychologists that could best be described as "reverse anorexia." These are people can never seem to get big enough or muscular enough.

Almost everyone has some small degree of distorted body image. You seldom see changes in your own physique as readily as others do. That's why you need an objective, accurate and scientific method of measuring your progress. There are at least a dozen methods of body composition testing. The various "experts" will probably debate forever over which one is the best. After weighing the pros and cons of each method, you'll undoubtedly conclude that for your purposes – tracking personal weekly progress - skinfold testing is the easiest and most practical method.

Underwater Weighing (Hydrostatic)

Hydrostatic testing, or underwater weighing, has always been considered the "gold standard" in body composition measurement to which all other methods are compared. Effective as it may be, hydrostatic testing it is not without its drawbacks; the primary one is the inconvenience of getting dunked in water.

To get your fat measured hydrostatically, you are submerged underwater while sitting on a chair that hangs from a scale (picture yourself sitting in a giant grocery scale as you're dunked underwater in a tank or swimming pool). The basis for hydrostatic weighing is the fact that fat floats and muscle sinks. The fatter you are, the more buoyant you will be, and the more buoyant you are, the less you will weigh underwater. The leaner you are, the more easily you will sink, and the more you will weigh underwater.

Hydrostatic weighing does have other disadvantages. Several factors can affect the accuracy of the test. For example, African-Americans have denser bones than other races and as a result, may appear to have lower body fat percentages when measured hydrostatically. Also, men usually have denser bones than women, and younger people have denser bones than older people.

Unless race, age, and sex are all carefully taken into consideration, the estimate of body fat could be significantly in error. Another factor that can influence the results of the test is your "residual volume." Residual volume is the amount of air left in your lungs after a complete exhalation. Before being lowered into the tank, you have to blow all the air out of your lungs. If you can't blow every bit of air out of your lungs before being submerged, you will appear to have a higher body fat percentage than you really do.

Hydrostatic weighing is most often performed in hospital and university research centers. It can also be expensive, although at some universities you can often volunteer to be tested by exercise science students for research projects. All things considered, underwater weighing is not very practical, although it's always interesting to go get it done once in a while just for "fun."

Bio- Electric Impedance Analysis

Bioelectric impedance analysis (BIA) measures body fat by testing the electrical conductivity of your body's tissues. Lean body mass, because of its high water content, is highly conductive. Fat, because of its low water content, has an insulating effect, and is therefore less conductive. The test is performed by attaching electrodes to the skin of your right wrist and right foot. Low amperage current is then passed through your body to measure resistance against muscle, bones, and fat tissue. A reading of resistance in ohms is then given to determine body fat.

Because the test is based on your body's water status, the results can fluctuate based on your state of hydration. If you're dehydrated from alcohol, caffeine, exercise or heavy sweating, the results can be flawed. Because your water balance also varies

depending on the time of day, test results in the morning can fluctuate greatly from results at night.

Research shows that BIA is a fairly reliable and valid measure of body composition. However, this method tends to overestimate body fat in athletic populations (like bodybuilders). Until more population-specific formulas are developed, bodybuilders and athletes would be better off with skinfold testing.

BIA Body Fat Scales and hand grip tests

A relative newcomer to the body fat testing scene are body fat "scales" and hand grip tests. The most popular of the scales is manufactured by Tanita. The most popular hand gripper is produced by Omron. The body fat scales and grippers work via BIA, although they are not the same thing as the standard BIA test done with the electrodes on the hand and foot.

The manufacturers quickly point to all the scientific literature on the validity of BIA testing, but there's little research proving the accuracy of the BIA scale or gripper. Most of the published research on BIA testing was performed with the conventional BIA test in a lab where you lie down and have electrodes attached to your wrist and foot. The results of these studies cannot necessarily be extended to the BIA scale or gripper because these products don't measure whole-body electrical conductivity. The scale measures only the lower body. The hand grip test measures only the upper body.

The advantage of using a BIA scale is convenience and the ability to test yourself at home – nothing beats them for convenience and ease of use. However, what you gain in convenience, you might lose in accuracy. If you decide to use the scale, keep in mind that measuring yourself at different times of the day can produce inconsistent results because your body water level fluctuates throughout the day. If you think the scale is giving you consistent and repeatable measurements, then by all means continue to use it. However, don't be surprised if you get wild fluctuations and strange readings. Until these scales are scientifically validated, consider them "experimental."

Infrared

Near Infrared Interactance (NIR or simply Infrared for short) uses the principle of light absorption and reflection to measure body composition. The measurement is taken by placing a fiber optic wand on the belly of the biceps muscle. The wand sends a beam of infrared light into the muscle where shifts in the reflections of the wavelengths are used to estimate total body fat percentage.

The Futrex machine is the most common of the Infrared devices. Data on height, weight, age, sex, frame size, and activity level are entered into the Futrex machine and the machine prints out the results. The advantages of this method are that it's fast, simple, and noninvasive. The disadvantages include the high cost of the machine (a couple grand), and the questionable accuracy and reliability.

Circumference & Anthropometric

These methods of body composition testing estimate body fat by measuring bone diameters or limb circumferences at several locations. Circumferences are taken with a tape measure while bone diameters are taken with a device called an anthropometer. Both methods are based on the assumption that there is an association between skeletal size, body measurements and lean mass. The diameters or circumferences are used in regression equations to determine fat free mass and thus body fat percentage.

The hip to waist ratio is one example of the circumference method. You may have seen these charts on the Internet or in fitness magazines: You simply plug in your measurements, height and weight and – presto! – you have an estimate of body fat. The tests are simple but they're much less accurate than other methods. Researchers have shown a large degree of error when compared to skinfolds and hydrostatic weighing. I don't recommend this method: Use these charts only if you want a ballpark figure.

Other Methods

There are many other methods used to measure body fat, including total body potassium, total body electrical conductivity, isotopic dilution, urinary creatine excretion, total body calcium, total body nitrogen, total plasma creatinine, computerized tomography, magnetic resonance imaging (MRI), ultrasound, neutron activation analysis, and dual photon absorpitometry. While some of these hi-tech methods may be incredibly accurate and useful in the laboratory, none of these methods are practical for your own personal use on a fat loss program.

If you really wanted the ultimate measure of body composition, it would be "direct measurement"; that is, physically measuring your fat level by dissection. Of course, you have to be a cadaver to have your fat measured this way, so it's not too practical. The reason I mention this is not to make a joke, but to point out that all body fat testing methods are merely estimations, not direct measurements.

Skinfold measurements: The "Pinch an inch" test

When you're choosing a method for body fat testing, you need a method that's practical, easy to perform and provides consistency over repeated measurements: Enter skinfold testing.

Skinfold testing is based on the fact that you store most of your body fat directly beneath your skin. These types of fat deposits are called "subcutaneous fat." The remainder of your body's fat is located around organs (internal fat) and inside muscle tissue (intramuscular fat).

By measuring the amount of subcutaneous fat you have by "pinching" folds of skin & fat at several locations, you can get a very accurate estimate of your overall fat percentage. A skilled tester can produce a body fat measurement with accuracy very close to underwater weighing, the "gold standard" of body composition testing. Most importantly, skinfold testing is extremely practical.

The skinfold test is performed with a simple, vice-like instrument called a skinfold caliper. The jaws of the caliper pinch a fold of skin and fat and measure the thickness of the fat fold in millimeters. There are many different brands of calipers on the market. The Lange, Harpenden, computerized Skyndex, and the Slimguide calipers are among the most common and accurate ones, although the cost of the first three can be high, ranging anywhere from $150.00 to $450.00. If someone else will be testing you, I recommend the Slimguide calipers because they're one of the few inexpensive (plastic) models that give fairly accurate readings. These and a wide variety of other calipers can be ordered from Creative Health Products at 1-800-742-4478 or www.chponline.com.

Skinfold Self-Testing: Can you measure your own body fat?

Another economical skinfold caliper is called the "Accu-Measure." Unlike the others, the Accu-Measure is a caliper that was specifically designed for personal self-testing. In one study, (Journal of Strength & Conditioning Research, 12 (4), 243-247, 1998), the Accu-Measure was found to be just as accurate as the sum of three skinfolds taken by an experienced tester with a Lange caliper. In my opinion, the one-site tests such as the Accu-Measure are not as accurate as being tested at multiple sites by a professional, but it's quite satisfactory for personal home self-testing if no other option is available. The Accu-Measure retails for about $20.00 and can be purchased at many Internet sites or by calling Creative Health products.

Having your body fat tested by an experienced technician with multiple skinfold sites is ideal, but the Accu-measure is definitely good news if you don't have access to any other form of testing. Even if the margin of error is greater than getting your fat

measured by a skilled tester, self testing will at least tell you whether your fat % is dropping or not, because any decrease in skinfold thickness shows that you're losing body fat. And of course, a major advantage is that you can do the Accu-measure test in the privacy of your own home.

Skinfold testing formulas

Using the calipers, skinfolds are taken at several sites around the body (except the Accu-Measure, which only measures one site), and then the sum of the skinfolds is added up. The sum of the skinfolds is then looked up on a percent fat estimate chart that comes with the calipers. These charts are derived from mathematical regression equations and they allow for quick interpretation of the skinfold measurements in millimeters. Computerized calipers like the Skyndex or Accu-Measure "Fat Track" add up the skinfolds and do the calculations automatically for you.

Most body fat formulas require you to measure body fat at three different locations. Different formulas may utilize as few as one or as many as eleven skinfolds, and any number of these sites can be used in various combinations. The standard skinfold sites are usually the abdominal, suprailliac (hip), bicep, tricep, chest, subscapular (back), thigh, axilla, and calf.

Don't get too hung up on where your skinfolds are measured. Some people get concerned if most of their visible fat is in their lower body and the skinfold test only measures the upper body sites. Body fat formulas from skinfolds will give you a very accurate estimate of your *overall* body fat just from one to four sites, even if they're all measured from your upper body.

Taking measurements at three sites has been proven adequate for an accurate reading. Most research has shown that using more than four sites does not increase the accuracy much further, but using fewer than three sites tends to decrease the accuracy slightly.

How accurate are skinfolds?

Skinfolds are sometimes criticized for being inaccurate (especially by the makers of other fat testing devices). Compared to complicated measures such as underwater weighing, or magnetic resonance imaging (MRI), skinfolds may seem too simplistic to be accurate.

Skinfold testing does require a lot of practice. The greatest errors are human errors from not pinching at the right spot or taking the skinfold with improper technique

(for example, taking a horizontal fold when it should be a vertical fold.) The skinfold test is only as accurate as the person doing it.

*Dan Duchaine, author of **"Body Opus**," once wrote**,** "I don't know why calipers are so accurate. Although you can find more glamorous contraptions, a skilled 'pincher' can get a better estimate than with any other method except dissection. The only drawback to using calipers is operator error; but practice does make perfect."*

When performed correctly by a skilled test administrator, skinfold tests are almost as accurate as any other method for testing individuals in the range of 15-35% body fat. For individuals over 35% body fat, the accuracy of skinfolds does decrease somewhat, and for lean individuals, skinfolds might be the most accurate method of all.

Reliability and consistency of skinfold testing

Because there are so many different types of calipers and skinfold formulas, the important thing is to have the same person test you using the same formula and the same caliper every time. The accuracy is not as important as the reliability and consistency of repeated measurements. Even with the most skilled tester, skinfolds – and most other techniques for that matter – are only accurate within three to four percent. However, if skinfolds determine you are 12%, it doesn't matter if your body fat is really 15%. What matters most is that the method you use is reliable so you can chart your progress accurately from one measurement to the next. That's really the only purpose of body fat testing – to measure progress.

How to calculate your fat weight and lean body mass (LBM)

By itself, your body fat percentage is nothing more than a number – it doesn't really give you any benefit, except maybe bragging rights if the number is low. The real value in knowing your body fat percentage is as a tool to monitor progress in terms of pounds of fat and pounds of muscle.

The next step is to use your percent fat measurement to separate your total weight into pounds of fat and pounds of muscle. Then, you can chart progress in terms of total weight, fat weight, LBM and body fat percentage.

Your LBM is the total weight of all your body tissues excluding fat. This includes not only muscle, but also bone and other fat-free tissues. Since muscle is the largest component of the lean body mass, then keeping track of your LBM can tell you if you've

lost or gained muscle. Tracking your LBM is one of the most useful and important purposes of body fat testing.

To calculate your LBM in pounds you need to know two things: your bodyweight and your body fat percentage. First, determine how many pounds of fat you are carrying by multiplying your body fat percentage by your weight. You can then calculate your lean mass by subtracting the pounds of fat from your total bodyweight.

Example:
Your body weight is 194 pounds
Your body fat percentage is 18% (.18)
Multiply your body fat by your weight to find lbs. of fat:
.18% X 194 lbs. = 34.9 lbs. of fat.

Subtract lbs. of fat from total weight to determine lean mass:
194 lbs. - 34.9 lbs fat = 159.1 lbs lean mass

A simple test to determine your true ideal weight.

Now that you understand the importance of body fat versus body weight and you understand that height and weigh charts are worthless, how do you figure out your ideal weight? Well, first of all, it doesn't matter what you weigh! If you are solid muscle without an ounce of visible fat on your body, do you honestly care how much you weigh?

That said, it's still wise to have a weight goal in pounds as well as a body fat percentage goal. You can only determine a "true" ideal weight if you know your current body fat and the body fat level you want to reach.

The ideal weight formula:

To find your ideal bodyweight, you need to know your desired body fat percentage your current weight, body fat percentage, and lean mass. Then, to calculate your ideal weight, you simply divide your current lean mass by your percentage of lean mass at your target body fat percentage. The formula is:

$$\frac{\text{Current Lean Mass}}{1 - \text{Desired Body Fat \%}}$$

Example:
You are male
Your weight: 194
Your body fat: 18%
Your fat weight: 34.9 lbs. (18% of 184 lbs)
Your lean mass: 159.1 lbs. (total weight - lbs. of fat)
Your target body fat percentage: 12% (.12)
Determine your percentage of lean mass at your target body fat by subtracting your desired body fat from 1: (1 -.12 = .88)
Divide your current lean mass by your percentage of lean mass at your target body fat percentage to yield your ideal weight: (159.1/.88 = 181)
Thus, your ideal weight at 12% body fat is 181 lbs.

The Effect of Water Weight on LBM Measurements

When using this formula, you must make some consideration for water weight. Since your body is 70% water, make an allowance of 2-4% for water weight. The higher your total body weight and the greater the amount of fat you have to lose, the more water weight you will lose

It is very common to see weight losses of three to five pounds in the first week when you start a new nutrition and exercise program. Because water is part of the lean body mass number, water losses are going to show up in your LBM calculations during the first week or two. This will make it look like you have lost muscle, but don't panic if you see small drops in LBM – it's only water weight.

After the first week or two, weight loss should stabilize to two pounds per week or less and further decreases in lean body mass should be minimal. Remember that it's difficult – if not impossible – to lose more than two pounds of fat per week. If you lose more than two pounds, some of it is water and or muscle. Small decreases in LBM are almost unavoidable and are not a cause for concern. If you see a repeated pattern of large drops in LBM, then you are losing muscle and you should take immediate corrective action to prevent further losses.

Now that you know how to measure body fat and calculate lean body mass, you're ready for chapter four which will teach you how to use your weekly weight and body composition results to chart your progress. You'll also learn precisely what to do if: 1) you lose lean body mass, 2) you gain body fat, c) you lose fat for a while, then get stuck at a plateau or, d) nothing happens at all - you don't lose or gain anything.

Chapter 4: Charting Your Progress: How to Use Performance Feedback to Get From Where You Are to Where You Want To Be

"If you do what you've always done, you'll always get what you've always got. If what you are doing is not working, do something else."

- Joseph O' Connor & Jane Seymour, "Introducing Neuro-Linguistic Programming"

"Realize that there is no such thing as failure. Keep this in mind and you will achieve all that you conceive in your mind. You never fail, you simply produce results."

- Dr. Wayne Dyer, "You'll See It When You Believe It"

Life's delays are not life's denials

It was a dark and cloudy Thursday in May as I boarded a Continental 757 for a 4:45 pm flight from Newark to San Francisco. I took my seat and waited for takeoff as I anticipated a relaxing week in northern California. 4:45 quickly came and went, but the plane hadn't budged. At 4:55, the captain's voice echoed through the cabin over the loudspeakers: "There are level 4 and 5 thunderstorms just east of Newark and they're headed our way. The winds in these thunderstorms can reach tornado force and believe me, we wouldn't want to get stuck in one of those. We're going to have to wait it out."

As eager as I was to get to California, I couldn't agree with the captain more, so I just sat back, opened up a good book and waited. We sat there on the runway for nearly two hours as fierce winds and a torrential downpour pelted the plane. Finally, at around 6:30 pm, the storm passed and the plane started taxiing towards the runway.

Unfortunately, we still couldn't take off. Because all the planes in the queue had backed up, we slowly inched our way forward and had to wait our turn in line. It wasn't until 7:00 pm that we were in the air at last. With all the turbulence from the storm, it was a bumpy ride on the way up. A few passengers started to panic and some even started to look a little sick. After about five minutes of being tossed around, the air calmed, the plane leveled out and we were smoothly headed towards San Francisco.

But we weren't headed towards San Francisco for long. Within minutes, the plane shifted ever so slightly off course. The onboard computer noted the plane's errant trajectory, the pilot made a small adjustment, and once again we were headed for San Francisco. Amazingly,

this process repeated itself for the entire six hours of the flight. Of course, I couldn't notice this by looking out the window, but I knew it was happening just the same.

You see, an airplane never travels in a perfectly straight line. Even with the most sophisticated guidance systems, a certain amount of drift will always occur due to the effects of the wind. Using a variety of different feedback such as radar, radio beacons, geographical landmarks and aeronautical charts, the navigation equipment in the cockpit picks up the slight change in course. The pilot can then adjust the plane's direction.

How to use performance feedback to lose body fat

I tell you this story because it's the perfect analogy for fat loss. The process of losing body fat is a lot like the takeoff and flight of an airplane. Some people take a long time to "get off the ground." Instead of being patient and waiting out the storm, they quit before they even get to takeoff speed. Others get off the ground, but as soon as they hit any turbulence, they quit and "land the plane." Some people even manage to start coasting comfortably towards their destination, making substantial progress. But the minute they find themselves off course, they too join the quitters instead of simply adjusting their direction.

Each of these people made the fatal mistake of interpreting their results as failure. Because they believed they had failed, they gave up. Can you imagine if a pilot "quit" every time there was a delay, turbulence, or a slight deviation in the plane's course? No one would ever get anywhere! The key to your success in losing body fat starts with a mental re-frame:

There is no such thing as failure - only feedback; only results.

Price Pritchett, the author of 25 books including "The Quantum Leap Strategy," emphasizes that failure is a sign of progress:

"Everything looks like a failure in the middle. You can't bake a cake without getting the kitchen messy. Halfway through surgery it looks like there's been a murder in the operating room. If you send a rocket toward the moon, about ninety percent of the time it's off course – it "fails" its way to the moon by continually making mistakes and correcting them."

If you measure your body fat and there's no change (or it increases), you haven't failed – you've simply produced a result. As long as you're taking action, whatever result you produce is "performance feedback.." It may not be the result you wanted, but it's still valuable feedback. You've learned something: You've learned one way that doesn't work.

If you want to produce a different result, you simply need to try a different approach. One definition of insanity is continuing to do the same thing while expecting a different result. Thomas Edison tried thousands of experiments to find a filament that would burn in the electric light bulb. When asked what it felt like to fail so many times, Edison said he didn't fail:

"If I find 10,000 ways something won't work, I haven't failed. I am not discouraged, because every wrong attempt discarded is another step forward. Just because something doesn't do what you planned it to do doesn't mean it's useless."

You're always going to get some kind of results. It's how you interpret your results that will determine whether you'll reach your final destination or not. Like the pilot, or Thomas Edison, you need to gather feedback and change your course the instant you notice you're not heading in the right direction (while learning in the process).

At the most basic level, the changes you'll make to your program consist of eating less or exercising more. However, from what you've learned about the body's defenses against starvation, you know that eating less only works to a point. That's why increasing the volume of your activity is almost always the best option when you're not getting the fat loss you want.

Even increasing activity only works to a point, because over-training and adaptation can set in, so you need other options – and the more options you have, the better. You'll learn about all these options later in this chapter. All things being equal, the person with the most options is the one most likely to succeed.

The fat loss success system that never fails

In 1976, John Grinder, a linguistics professor, and Richard Bandler, a mathematician, developed a new field called Neuro Linguistic Programming (NLP). Initially designed as a tool for psychotherapy, NLP blossomed into a much broader science focused on communication and personal excellence. NLP teaches you a process for discovering patterns of human excellence and then duplicating those results through a procedure called modeling. NLP also teaches you how to "run your brain" and think effectively so you can achieve any result you want. It teaches you how to communicate with yourself. Perhaps most important, NLP teaches you how to use feedback to unfailingly guide you to your goals.

Based on the principles of NLP, I have developed a seven-step fat loss formula that is 100% guaranteed to help you reach the goals you've set. The system cannot fail – you can only fail to use the system. Think of this system as your own personal "guidance system." Here are the seven steps:

1) Know your outcome. Decide exactly where you want to go

By now you should have already established your goals and put them in writing. If you didn't *write down* your goals on paper yet, then stop reading right now and go back and do the goal setting exercises. Nothing else you read in this book can possibly help you unless you have clearly specified your target. You might try a technique here and a principle there, but ultimately you'll end up floundering because you won't have the direction, purpose or motivation that comes from having written goals. If you don't know where you're going, that's exactly where you'll end up – nowhere!

2) Establish your starting point

It's not enough to know where you want to go; you also need to know exactly where you are now so you can chart the proper course to your destination. Once you've committed your goals to writing, you need to establish your starting point with objective measurements. The most important measurements are your body fat percentage and lean body mass. Your body fat percentage, total body weight, fat weight and lean body mass should all be recorded in the first row of your progress chart (see appendix). It's also helpful to record your skinfold measurements on your chart for accuracy.

3) Formulate a plan of action

The most efficient and effective way to choose a plan of action is to copy (or "model"), those who have already achieved what you want to achieve. Modeling suggests that instead of re-inventing the wheel, you "plug into" a proven formula that already exists. You tap into the collective knowledge and experience of those who have gone before you. You find someone who has achieved what you want to achieve, do what they did, and you'll get the same result. Trial and error can be a long and painstaking process and life is just too short to do it the long way: Learn from the experts by modeling.

If you want to lose body fat permanently, does it make sense to model the 95% of the population who lose weight and gain it back? Of course not! Yet that is exactly what most people do. Following the herd mentality, they do what everyone else does, only to end up one of the 95% who fail in the long run. Someone once said that if you follow the herd, you're going to step in a lot of manure. Don't do that. Instead, model those who have mastered the art and science of *permanently* losing fat while maintaining muscle. No one fits this description better than natural bodybuilders and fitness competitors.

NLP doesn't claim that modeling will allow anyone to become a Mr. Olympia or a Miss Fitness America. This would be implying that every person has the same genetic potential. What modeling will do for you is to allow you to reach the upper limits of your own genetic capabilities in the shortest period of time using a system that has already been proven to work. It allows you to become the best YOU can be. It also allows you to become your best as quickly as possible by bypassing most of the trial and error.

You are a unique creation. Because no other human being has the exact body type or physiology that you do, you will always have to go through a certain degree of experimentation, no matter how time-tested your plan is. However, all people who successfully lose body fat have certain things in common. The fundamental principles apply to everyone; there are laws of fat loss just as there are laws of gravity and electricity. People who get lean and stay lean have mastered these laws and fundamentals. You can learn these laws yourself and duplicate them.

A master chef produces award-winning dishes over and over again by using the same recipe. A recipe is a proven mixture of ingredients, that when combined in the right sequence and amounts, produces the same delicious dish – every time.

This program is your "recipe" for sure-fire fat loss. The techniques you're reading about will provide you with a guaranteed plan that has already been tested and proven to work by the leanest athletes in the world. If you use the same "recipe," it will work for you too – every time.

4) Act on your plan consistently

You can have the best goals and the best plan in the world and if you don't act on it, you won't achieve a thing. A goal without action is worthless. Faith without action is dead. An affirmation without action is delusion. The bottom line is that you have to put the book down, get off your butt and get in the gym! Work at it! Deserve it! Earn it! Sweat blood! Nothing worth having ever comes without effort – don't ever forget that! It takes hard work and consistent action every single day. You have to do something every day to move you closer to your goal.

5) Develop the "sensory acuity" to know if what you are doing is working or not. If it's working, keep doing it (no matter what anyone else tells you!)

After you've put your plan into action, you need to work on developing the "sensory acuity" to know if your plan is working. "Sensory Acuity" is an NLP term used to describe your ability to see, feel and notice even the smallest changes in your body. In a

nutshell it means, "pay attention." As long as you are paying attention, it's ok to make mistakes. In his book Watermelon Magic, Wally "Famous" Amos wrote:

"Mistakes are natural. Mistakes are how we learn. When we stop making mistakes, we stop learning and growing. But repeating the same mistake over and over is not continuous learning – it's not paying attention."

The only person who makes no mistakes is the person who plays it safe and never tries anything. Don't be afraid of mistakes, as long as you don't make the same one twice. Some people have been making the same nutrition and training mistakes for 10 years and they still wonder why they aren't getting any results. You've got to be smarter than that. If you're not paying attention, you may continue to repeat the same mistakes over and over again, and as Emerson once said, *"A foolish consistency is the hobgoblin of little minds."*

Suppose someone asks you, "Is your program working?" If your reply is, "I don't know," then you're not paying attention and you need to focus on developing better sensory acuity. Your program is either working or it's not working, there's no middle ground. Ask any physicist: Nothing in the universe stays the way it is. Everything is growing or dying; creating or disintegrating. You're either moving forward or backward. You must chart your progress towards your goal in writing and pay attention to the direction you're heading – and if it's the wrong direction, change quickly!

Elite bodybuilders and fitness competitors have developed incredible sensitivity to the way they look and feel. They have the uncanny ability to notice even the tiniest difference in their bodies when they change their nutrition or training programs. Then they can decide whether this change was effective or not. Without this kind of sensitivity to your results, your program could be working and you might not even notice. Or even worse, it might *not* be working – and you don't notice!

High levels of sensory acuity aren't developed overnight. It is a science and an art that takes a little time and some trial and error to develop, but anyone can master it. You simply have to know *what* to look for and then pay attention. Ultimately, you need to learn how your own body responds and then be able to make your own adjustments. You must become your own expert. Coaches and trainers are helpful tools, but no one knows your body like you do. Once you've locked onto a winning strategy and you're getting the results you want, don't change a thing! Have the strength to stay your course, no matter what anyone tells you.

6) If it's not working, try something else.

The instant you realize you aren't making progress, you must immediately adjust your approach. Don't get discouraged and don't quit! If you didn't get the result you wanted, remember – you didn't fail; you succeeded at producing a result. You have only failed if you quit. You must develop unflagging persistence.

Use the feedback you receive as a lesson. Find ways to learn from it. Mistakes are ok if you are noticing them and learning from them. Once you see that what you're doing isn't working and you recognize it as nothing more than feedback, then try something different. Later in this chapter, and elsewhere in this manual, you'll learn about the many options you have for changing your strategy when things aren't working the way you planned.

7) Be flexible in your approach and be persistent

Be open minded and flexible. Be willing to adjust your approach as many times as necessary until you reach your goal. Be willing to try as many different things as necessary for as long as it takes. Do not do what it takes for your training partner, or your neighbor, or your spouse or anyone else. Do what it takes for YOU.

Motivation guru Anthony Robbins once told the story of a man at a seminar who was extremely frustrated with his lack of results in his business. The befuddled businessman said he had tried "everything" but nothing worked. Here is the exchange that went on between the two of them:

Robbins: "You've tried EVERYTHING???"
Attendee: "Yes, I've tried absolutely everything!"
Robbins: "Tell me the last HUNDRED things you tried,"
Attendee: " I haven't tried a hundred things."
Robbins: "OK, then just tell me the last FIFTY things you tried."
Attendee: "I haven't tried fifty things."
Robbins: "Alright then tell me the last DOZEN things you tried."
Attendee: (getting somewhat embarrassed) "Well, I haven't tried a dozen things."
Robbins: "I thought you said you tried EVERYTHING! So tell me then, how many things HAVE you tried?
Attendee: (shrinking back into his seat, embarrassed), "Two or three."

Now ask yourself - and be honest – have you quit prematurely? How long have you been working at losing body fat? How persistent have you been? How many different training and nutrition strategies have you tried?

If your initial plan doesn't give you the results you want, the number of exercise and nutritional strategies you can experiment with is virtually unlimited. Don't be too dogmatic or rigid in your approach. Be flexible. It's necessary to have an action plan, but don't get married to your plan. The more options you have at your disposal, the greater your chances will be for success. Leave yourself room to improvise.

In developing the martial art of Jeet Kune Do, Bruce Lee worked hard to quantify and formulate a philosophy for self-defense and personal growth. His formula was: 1) Research your own experience, 2) Absorb what is useful, 3) Reject what is useless, and 4) Add what is specifically your own.

"Formulas can only inhibit freedom," said Lee, "*They are externally dictated prescriptions that only squelch creativity and assure mediocrity. Learning is definitely not mere imitation, nor is it the ability to accumulate and regurgitate fixed knowledge. Learning is a constant process of discovery – a process without end."*

Beware of "gurus" who declare, "It's my way or the highway." There is no single best way. By studying, reading and modeling others, you can quickly master all the universal principles and laws that regulate body composition. Once you've absorbed these fundamental laws, then through persistence, action, dedication and sensory acuity, you can go on to evolve your own "personal formula." Your personal formula is based on your unique body type and the way you respond to various combinations of nutrition and training. By transcending all rigid styles and systems, you'll no longer be bound by a particular "way" of doing things and thereby gain the freedom to reach your highest potential.

Successful people all have certain things in common. "Success leaves clues," said Tony Robbins. Model successful people, but instead of limiting yourself to a single way, model from *many* successful people. Take a little from here, a little from there, keep what works, and throw away the rest. Jim Rohn summed up this process well when he said, "Be a student, not a follower."

Methods of getting feedback

Pilots and ship captains use compasses, gyroscopes, accelerometers, radar, radio beacons and geographical and astronomical landmarks as their methods of feedback. Your optimal method of measuring progress is body composition testing. However, the more ways you have of measuring your results, the better.

10 ways to measure your progress

1) Body fat percentage
2) Skinfold thickness

3) Total body weight
4) Lean body mass (LBM)
5) Fat weight
6) How you look in the mirror
7) Photographs
8) Measurements
9) Clothing sizes & the way clothes fit
10) Other people's opinions

Methods such as the mirror and photographs are useful, but they're also subject to the limitations of your own self-perceptions. Other people's opinions are useful if the feedback is honest, but they can also steer you in the wrong direction if they're just being nice to avoid hurting your feelings. All these methods have value, so use them. However, the best measurements of your progress must be objective measurements such as body fat percentage. The skinfold calipers and scale don't lie.

Adjust your approach according to your weekly results

Very rarely will you ever move in a constant and linear path in the direction of your goals. Usually you will "zig-zag" your way to success. If you work hard enough, you will see progress every week, but your *rate of progres*s will often vary. One week you may lose .05% body fat, the next you may lose .06% and the next only .04%. If you have a bad week, you might not make any progress.

Don't let this zig-zag pattern of fat loss discourage you. Never panic over a one-week fluctuation. The trend over time is much more revealing. Your progress chart is a lot like the stock market. The market fluctuates up and down in the short term, but in the long run, the trend is always upwards. If you are persistent, if you stay focused on the fundamentals and if you continue to make daily investments in your body, your progress chart will always trend in the direction you want.

Just as you need faith in long-term investments in the market, you must have faith in long-term investments in your body, without getting too emotional about your present results. If you look only at one small segment on your body composition progress chart, you're liable to give up or make poor and hasty decisions. Keep your eye on the big picture, keep watching the trends and always keep working daily on the fundamentals.

Why some people get off to a slow start

Most people see results immediately just by cleaning up their diets and starting a consistent exercise program. Others have a more difficult time getting up to "takeoff

speed." Like the airplane that uses nearly half its fuel just to get off the ground, overcoming inertia and gaining momentum are not easy.

Part of this is psychological, part is physiological. Psychologically, if you're off to a slow start, you just haven't given yourself enough time to develop habits. Habits are necessary to get you into "auto pilot mode," therefore, you could be unconsciously making poor food choices or missing workouts by sheer force of old negative habit patterns. Reviewing chapter one and following the instructions to a "T" will help you overcome the old conditioning. Keep at it!

Physiologically, you may be suffering from a slow metabolism, especially if you've gone on and off crash diets for years or you haven't developed any muscle through weight training. A slow metabolism can speed up, but it takes time. If your metabolic rate has slowed down as a result of past habits, be patient; it will gradually increase in time by following the nutrition and training guidelines in this manual.

Also keep in mind that fit people burn body fat more easily than unfit (and fat) people. The higher your starting level of cardio respiratory fitness (as measured in oxygen consumption, also known as VO2 max), the more fat you'll burn at rest (and during exercise). Also, the *leaner* you are to begin with, the more calories you'll burn at rest and during exercise. If you're out of shape and carrying a lot of body fat, it's going to take time to develop momentum.

These facts of physiology can be discouraging because it's kind of like the rich getting richer and the poor staying poor. As with building wealth, you must make consistent, gradual investments in your body. Eventually, as your lean body mass increases from weight training, your metabolic rate will increase and multiply its efficiency like compounding interest in your bank account. Be patient; you're about as likely to get "ripped" overnight as you are to become a millionaire overnight. Never give up if you get off to a slow start!

The first thing you must do if you hit a plateau

You should see some kind of positive result every single week. If you're getting no results after seven days, look back over the past week and ask yourself – honestly; "Am I consistently doing what I know I should be doing – every day - or have I been cheating or "slacking off?" Have I put in a 100% effort or could I have given it more?" Have I been consistent in my eating and training habits every single day? Have I been eating perfectly one day, then eating junk the next?

Fat loss is the result of consistently applying nutrition and exercise fundamentals every single day. If you realize you didn't give it your all, don't beat yourself up, simply re-focus and recommit for the next week. Re-reading and re-writing your goals will help. Plan your training and nutrition strategy for the next seven days in advance; schedule the workouts right in your daily planner with the rest of your appointments. Then go back to work with renewed vigor, motivation and enthusiasm.

If you faithfully followed your program 100% (except for planned, allowed cheats days), and you still got no results, that's your signal to make adjustments to break your plateau.

How to break a fat loss plateau

The first step in breaking plateaus is to stay positive and focused on your goal. Focus on where you want to go, not on where you are. A slow week is not a setback, it is feedback. If you have a week with no results, be like Thomas Edison and say, "This is great! I've learned another way that doesn't work." When you look in the mirror and see no change, and you still keep the faith, knowing that in time you WILL get there if you stay the course, that's the difference between those who ultimately succeed and those who fail. The losers - the unsuccessful ones - they throw their arms up in the air in frustration after a few weeks with slow results and they QUIT, all the while grumbling about how they tried "everything" and it didn't work.

Usually when you hit a plateau, it means you need to work harder: You need to crank up the intensity and frequency of your training. You also need to "tighten up" your diet. People often underestimate the amount of effort it requires to develop a lean body. They've been so brainwashed by the media and advertisements for weight loss scams that their perception of the amount of work required is flawed. It takes hard work to get lean and if the degree of effort you're putting in isn't working, then quietly (without complaining) accept the fact that you have to work harder.

For example, if you're doing 20 minutes of cardio per session, you can increase the duration to 30 minutes. If you're doing 30 minutes, you can increase it to 40 minutes. If your heart rate is 130 you can push it up to 140. If you're eating only 3 meals per day, you can increase metabolism by bumping it up to 5 or 6 smaller ones. If you're cheating 2 or 3 times a week you can drop back to only one cheat meal a week. Basically, reaching peak condition means that you train harder and diet stricter!

Knowing when to push harder and when to rest and recover

Naturally, doing *more* and doing it *harder* is not always the best strategy. Sometimes when you're "stuck in the mud," pushing on the gas even more just digs you into a deeper rut. If you've been on an extremely intense training schedule for a prolonged period of time, your plateau could be due to over-training syndrome.

If you suspect over-training to be the cause of your plateau, then the best thing to do is take a rest. Taking three to seven days off from high intensity training might be exactly what you need. If you're severely over-trained, you may also need to cut back on your volume and slowly work your way back up after your brief layoff. Don't worry about losing ground - even if you do, the rest is like taking one step back to get ready for two steps forward. Once your system has recovered and replenished itself, you'll easily be able to thrust beyond your old plateau to a new peak.

Adaptation syndrome is a frequent cause of fat loss plateaus. Adaptation occurs because your body can easily adjust to a training or nutritional program that has been repeated for a long time. At this point, continuing with the same stimulus will no longer will cause an improvement. The only way to bypass the adaptation syndrome is to change your workouts frequently.

The body will adapt to ANY weight training or cardio program very quickly. To avoid adaptation syndrome, you should change one or more variables in your training program every four to twelve weeks. The more advanced you become, the more quickly your body will adapt and the more often you should change.. Your cardio program should be changed any time you've hit a plateau in fat loss. Almost any change will work: The training variations are literally endless. With weight training you can use new exercises, different set/rep schemes, changes in tempo, shorter rest intervals, changes in grip or stance width, etc. In your cardio workouts, you can change the type of exercise you use, the intensity, the duration, the frequency, steady state vs. interval, or the time of day.

Here's another common cause of fat loss plateaus: Your calories are too low and your body has gone into starvation mode. Once you go into starvation mode, no amount of increased training will help. The only way to get out of starvation mode is to eat more. If you know your caloric intake has been very low for a long time and you suspect the starvation response is the culprit, the best thing you can do is raise your calories. Keep your food quality "clean" (don't eat a lot of junk), just eat more of the same good foods. Depending on the degree to which you have slowed your metabolism, you might need a brief one to three day raise in calories before dropping back down (zig-zag method), or you might need to raise your calories for longer period.

One proven way to give a sluggish metabolism a jolt is by using the "Zig-Zag" or "High - Low" method of dieting: that is, eat one to three days of higher calories and higher carbs followed by one to three days of lower calories and lower carbs. On the low calorie/low carb days, you lose body fat rapidly, but before your body can adapt, you raise the calories back up, which increases your metabolic rate and keeps you out of starvation mode.

The training and nutrition variables you can change.

The most important thing to remember if you have a week with no progress is that *continuing to do the same thing for another week is probably not going to work!* If what you're doing is not working, do something else!

The changes can be in nutrition or training or both. The more options you learn and keep at your disposal, the better your chances of success. The only way to learn your options is to diligently study all the nutrition and training information in this program.

Here's your checklist of the training and nutrition variables you can adjust each week depending on your weekly results.

1) Eat less

Calorie cutting works when you're already at a moderate to high calorie level or if you're eating too much because you underestimated the amount of calories you need. If your calories are already low, then further cutting of calories will have a negative effect in the long run. Ultimately, the "eat less" approach always backfires if taken to an extreme. In any event, cutting calories beyond basal metabolic needs ALWAYS decreases metabolism. The degree of metabolic slowdown occurs in direct proportion to the size of the drop relative to basal metabolic rate.

Some people may disagree, but I believe the first adjustment should almost always be to increase activity before decreasing calories. The conventional approach to dieting says that if you're not losing body fat, then you simply need to decrease your calories. The cornerstone of this entire program revolves around this idea: *It's better to burn the fat than to starve the fat.* Think about it: Decreasing calories causes a reduction in metabolic rate. Cardio always causes an increase in metabolic rate. Eating more also causes an increase in metabolic rate. So why not eat more AND do more cardio for a two-fold increase in metabolic rate? I

suppose it's because people think the two will cancel each other out - they don't – eating more clean food and doing more cardio enhance each other.

2) Manipulate macronutrient composition of diet

Although the conventional high carbohydrate approach (50-55% carbohydrates, 30% protein and 15-20% fat) is effective most of the time for most people, a drop in carbohydrates with a corresponding increase in protein (and/or fats) can often help break a plateau. Decreasing carbohydrates and increasing protein gives you decided metabolic and hormonal advantages over a high carbohydrate diet. You will learn more about these advantages in chapter twelve.

3) Improve food choices.

It's generally not a good idea to "force yourself" to eat anything you don't like, but sometimes you have to make some sacrifices and compromises. Food is one of life's great pleasures and total deprivation of what you enjoy is not wise. However, when it comes to shifting body composition, you have to make most of your decisions based not on taste and pleasure, but on results. Fortunately, there is a middle ground between taste and results. Unfortunately, if the middle ground food isn't getting you the results you want, then you have to upgrade your choices to a higher grade of food.

Nutritional quality traverses a spectrum - it runs in degrees. Food choices aren't good or bad; black or white. There are shades of gray in between. When you want to improve your results or break a plateau, you have to improve your food choices. The way you do this is to eat fewer foods that are processed, and eat more foods that are in their raw, natural state.

Here's an example: an apple is obviously "A" list. An apple gets the highest grade possible because it's in its raw, natural state. Next down the rung you have unsweetened applesauce. It consists of nothing but raw apples and water, but it's been pureed, so it's not in its most natural state anymore and is therefore relegated to a "B" (still a good "grade," mind you). Turn it into apple juice and you're down to a "C" (still a passing grade). Then if you add sugar (sweetened applesauce or apple drink), now you're down to a "D". Finally, if the apples eventually become an apple pie, now you're down to an "F".

Your task is simple: look for places in your diet where you can improve your grade. Then improve it. If you have straight A's already, then you'll have to use other strategies on this list.

4) Manipulate meal timing and frequency

Small, frequent meals have an amazing effect on your metabolic rate. All else being equal, having five or six small meals will always produce better results than two, three or four meals. If you're currently eating only three times a day, increase it to four. If you're eating four, increase it to five. Women should optimally aim for five meals, men for six. If you're already eating five or six meals per day, it is unlikely that adding more meals will help substantially, but you could experiment with as many as seven. Going beyond six or seven is not recommended because you'll probably only be awake 16 to 18 hours per day. Because it takes about two to three hours to digest a meal, compacting your schedule to eat more than six to seven times a day doesn't make sense because you'll be piling more food on top of the last meal's undigested contents.

5) Increase duration of aerobic exercise

Increasing the duration of your cardio workouts is always one of the first strategies you will employ. You should be doing a minimum of 30 minutes of aerobic exercise per session when your goal is fat loss (unless you're a total beginner, then you may need to build up to 30 minutes). If this amount doesn't produce results, increase it incrementally by five to ten minutes at a time until you reach a maximum of 60 minutes per session. Beyond 60 minutes will usually yield a diminishing rate of return for the time spent. At this point, you would be better off increasing the intensity or frequency. Systematically measure the results of each increase on a weekly basis until you find the level where you start to drop body fat at the optimal rate. For most people, 40-45 minutes per session yields optimal results. Only the most genetically gifted individuals can lose fat effectively with 20 minute cardio workouts.

6) Increase frequency of aerobic exercise

If you're already doing long aerobic workouts, continuing to increase your duration beyond 45-60 minutes may be counterproductive and very exhausting physically. At this point, one option is to increase your frequency. You should always start with a minimum of three days per week of aerobic exercise. To break a plateau or increase the rate of fat loss, incrementally add one day per week until you reach six or seven days per week. Some people believe that aerobics seven days per week is excessive. When maintained for months on end, this is probably true. But as a method of breaking through a plateau, a period ranging from one to twelve weeks of daily cardio can work wonders for getting you lean. Most

bodybuilders and fitness competitors do cardio seven days a week for three months prior to competition. When the competition is over, most return to a moderate level of three to four days per week.

7) Increase intensity of aerobic exercise

What if you're already doing six to seven days a week for 45 to 60 minutes, then what? At this point, you still have options. You can now simply push yourself harder to burn more calories in the same amount of time. You can only increase intensity up to a point. For most people, when you get up around 85% of your estimated maximal heart rate (about 150-170 beats per minute, depending on age), you approach the anaerobic threshold. This is the point where if you pushed any harder, you would start to lose your breath and you would have to decrease your speed or stop in order to recover the oxygen debt you created. In other words, if you push too hard, too soon, you'll "crap out" and cut into your duration. If you're working out at around 70% of your estimated maximal heart rate, then you have plenty of room to increase. If you're already at 85% (the top of your target heart zone), then you'll have to use another strategy.

8) Change type of aerobic exercise

If there's one mode of exercise that you know is particularly effective for you, then by all means stay with it and change other variables to break out of your rut, but if you have no preference, then try a change in exercise. Your body has an incredible ability to adapt to anything you throw at it. That's why constant variation is an effective way to break a plateau. For example, if you've been walking, change the type of exercise to stair climber, elliptical machine or stationary bicycle. This one change alone is often the catalyst to reaching a new low in body fat. Remember though, if you're getting good results with a certain type of exercise, don't change it just for the sake of variation. Don't fix it if it's not broken.

9) Incorporate high intensity interval training into your aerobic program.

Okay, so you're doing daily cardio for 45 –60 minutes at the top of your target heart zone. NOW WHAT? First, go back and look at your diet again. When you're doing daily cardio for a long duration and not getting results, 99% of the time it's a nutrition problem. However, if your nutrition is firmly in place, don't worry, there are STILL MORE exercise options available! One of them is high intensity interval training. Interval training is the practice of pushing yourself for

short bursts, then resting for a short period. The length of the intervals is usually one minute and can range from thirty seconds and two minutes (although there are no hard and fast rules when interval training is being done for fat loss). Interval training allows you to push past your normal heart zone (into the 85-100% zone) for a short period, thereby burning an enormous amount of calories, relatively speaking. Then you reduce your intensity just long enough to catch your breath, and repeat for the duration of the workout. Using this method, you can get a very high calorie burn in a fairly short period of time. Even 20-25 minutes of intervals can burn a very high number of calories. Another benefit of interval training is that it increases your metabolic rate dramatically so you continue to burn calories *after* the workout is over. The higher the intensity, the greater the post-exercise "afterburn" effect.

10) Double cardio.

Cardio twice a day? Am I crazy? I have to admit, twice a day cardio is an extreme strategy that the average person simply doesn't have time for. Doing cardio twice a day is not a necessity. It's simply a tool you can use *for short periods of time* to break a plateau or to get extremely lean. Many bodybuilders and fitness competitors use double cardio for six to eight weeks before competitions, then go back to cardio once a day. The benefit of double cardio is an incredible boost to the metabolism and an enormous calorie burn. If interval training is employed, your metabolism starts racing far beyond its normal rate. Reserve this strategy as a last resort or for peaking if you are at the competitive level. Never stay on double cardio for a prolonged period or aerobic adaptation may occur. This is a peaking or plateau breaking strategy.

How to use a weekly progress chart

In the appendix, you'll find a copy of your weekly progress chart. Feel free to make additional copies for your personal use, or simply create your own chart using a spreadsheet such as Microsoft Excel.

Your progress chart has columns for the date, body fat percentage, total weight, lean body mass, fat weight, and the weekly change in each. If you're using skinfolds as your testing method, you can also include columns to keep track of your skinfold measurements (in millimeters). That will give you information on where you store most of your fat and where you are losing the most and least amount of fat. Seeing the previous skinfolds also helps the tester improve the accuracy of each test. Which skinfold sites you use depends on which body fat formula is used. The most common sites are bicep, tricep, iliac, upper back (subscapular), thigh,

abdominal (usually just three or four of these). If you're using an Accu-measure caliper, then you only have to record one skinfold on your chart - the iliac crest (hip bone) – and you can disregard the columns for the other skinfolds.

When you begin your program, weigh yourself and have your body fat measured. Then fill in the first row on your chart including the date, your starting bodyweight, body fat percentage, and lean mass.

Every week, measure your body fat, weigh yourself, and record the results on your chart. Using the lean body mass calculation you learned in chapter three, figure out how many pounds of fat and lean body mass you have. Then record the results on your chart and calculate the change in each. Based on this information, you can decide whether to continue doing the same things you did the previous week or do something different.

How to weigh yourself the right way

Your body weight alone can be misleading. Used in conjunction with skinfold testing to measure pounds of fat and pounds of muscle, it provides you with crucial information.

To get the most consistent weigh-in, always weigh yourself under the same conditions. Call this your "official weekly weigh-in day." Use the same scale on the same day at the same time of day wearing the same amount of clothes. If you weigh yourself with shoes, then weigh yourself with shoes on every time. If you weigh yourself naked, weigh yourself naked every time. Remember, your LBM and fat weight amounts will only be correct if your weigh-in is correct.

Weighing yourself every day is unnecessary. First of all, you won't see significant changes in *body fat* on a day-to-day basis. Second, your *body weight* can fluctuate greatly on a day-to-day basis due to your water balance and this can be discouraging. Daily fluctuations can range anywhere from two to five pounds or more just based on water weight. You will see a statistically significant difference every seven days, so weighing yourself once a week is ideal.

How to calculate muscle loss or gain

By keeping track of changes in your weight, body fat, and lean mass over time, you can determine if you've lost, maintained, or gained muscle. This information will reveal whether your exercise and diet program is working or if you've hit a plateau and need to make changes.

To determine changes in body composition over time, you simply subtract your previous weight, body fat, and lean mass from your current weight, body fat, and lean mass. You record this information on your progress chart and then decide what changes, if any, need to be made to your program.

Example:

Week one:
weight: 194 lbs
body fat: 21.1%
fat weight: 40.9 lbs.
lean mass: 153.1 lbs.

Week two:
weight: 192 lbs.
body fat: 20.5%
fat weight: 39.3lbs.
lean mass: 152.7 lbs.

change in weight: -2 lbs.
change in body fat: -.6%
change in fat weight: -1.6 lbs.
change in lean mass: - .4 lbs.

In this example, our subject has lost two pounds in one week. By taking a body fat measurement, we can see that 1.6 pounds of the weight loss came from fat, and .4 pounds came from lean body mass.

These results are very typical. They're not bad, but not perfect either because .4 pounds of lean mass was lost. It's very difficult to lose more than 1.0 - 1.5 pounds per week without losing some lean body mass. Seeing the numbers makes the case for slow weight loss even more clear.

Why you should weigh yourself and measure body fat on a weekly basis

Some people feel that weekly body fat testing is too often. They argue that weekly changes may be as little as .05% or less. However, unless you get frequent feedback, you could be wasting valuable time by continuing to travel in the wrong direction. As an analogy, if a plane or ship strayed even a few degrees off course without making a quick adjustment in direction, that small deviation would grow larger and larger

over time until eventually, it could end up hundreds of miles off course. Don't let this happen to you – measure your progress often.

What a decrease in Lean Body Mass tells you

As you fill out the rows in your progress chart each week, keep an eye on your lean body mass (LBM), especially the trend over time.

Don't panic if you see an initial drop in LBM. Nearly everyone on a calorie and/or carbohydrate restricted nutrition program will see substantial water weight losses, especially in the beginning. Because water weight losses are reflected in LBM (muscle is mostly water), this will show up in your LBM number. You cannot measure water weight, muscle weight and fat weight separately with a standard body composition test (skinfold, etc). When your first start your program, chalk up this initial LBM drop to water weight and don't be overly concerned.

Water balance can affect your weight in the opposite direction too. Your muscles are like sponges for carbohydrates and water. If you eat more carbohydrates one day than usual, and also increase your fluid and or sodium intake, it's not uncommon to see an increase in bodyweight of three to five pounds – especially if you're on low carbs. Are those three to five pounds overnight solid muscle? Of course not. But if your official weekly weigh-in falls on that day and your body composition is the same or lower, you will show a several pound muscle gain. This simply reflects glycogen and water in the muscles. In bodybuilding lingo, you "filled out."

This is why you must be consistent with your weigh-ins and why you shouldn't panic if you see a small drop in LBM. If your LBM continues to drop week after week in any significant amount, then there may be cause for concern. A continual downward trend over time in your LBM number clearly shows that you're losing muscle tissue. Continuing with this pattern will cause your metabolism to slow down and this will eventually decrease your rate of fat loss.

Look closely at your ratio of fat lost to lean mass lost. If you lose more lean mass than fat, that's a clear sign that some of the weight was muscle. For example, suppose you lose 3 pounds in one week with 1.2 pounds from fat and 1.8 pounds from lean mass; don't pat yourself on the back for losing weight - you lost more LBM than fat. You should also look at the total amount of weight you lose each week. Your optimal goal for fat loss is to lose only one or two pounds per week. If you lose more than two pounds of weight per week, you're probably losing muscle.

Analyzing the data and adjusting your approach

For most people, results come steadily at first, but then become increasingly difficult and sporadic as you advance. The closer you get to your ultimate genetic potential for physical development, the slower your progress will become and the more your body will resist changing. Many people make steady progress for weeks or months at a time, then suddenly hit a plateau for no apparent reason.

If you're "stuck", this is simply the body's natural adaptive mechanism signaling that it has adapted to the stresses you've been imposing on it. You now have an entire arsenal of techniques you can use to blast through to the next level.

There are numerous outcomes that can be produced from your training and nutrition program. Your weight may rise or fall, your body fat may rise or fall, and your lean mass may rise or fall. The beauty of a progress chart is that the instant you're stuck, it shows you in graphic form the data you need to decide what change to make. By watching for changes in body fat, weight, and lean mass, you'll know exactly what to do each week. Your chart is a great motivational tool, because nobody likes to see a "blemish" on their weekly "report card." Your progress chart also keeps you accountable to yourself. If you share your chart with someone else, whether that's a coach, trainer, friend or family member, then you have double the accountability and that will help you stick with your program better.

Based on each week's results, adjust your cardio, weight training and/or nutrition, if necessary. Each time you make a change, watch very carefully for what happens the following week. This will heighten your level of sensory acuity. If you develop a keen eye for changes in your body based on nutritional and training changes, you'll eventually become a master – you'll understand exactly how your body responds and you'll know exactly what to do, every time. It may eventually reach the point where, like many professional bodybuilders, you don't have to count, weigh, or measure anything. Everything becomes instinctual.

Interpreting your progress chart

The following section lists every possible outcome you may encounter and the actions you should take when each occurs.

Lean mass stays the same and body fat decreases

Fantastic! Your diet and exercise program is working as planned and you're on your way to reaching your goal. *Don't change anything*. Keep up the good work!

Lean mass remains same and body fat remains same

Nothing is happening either way; you're at a standstill and you need to make some adjustments to get yourself moving again. First, increase your cardiovascular activity level. You can increase the number of days per week as well as how long you are exercising at each session. If you don't lose body fat within the next week, then you can reduce your caloric intake systematically by 100-200 calories at a time, provided you do not drop below your maximum allowable calorie deficit. Keep your nutrient ratios the same unless you've been stuck for more than two weeks. If you've been stuck more than two weeks, you might want to experiment with a moderate or low carbohydrate diet and or zig-zag carbohydrate cycling (see chapter 12 for details).

Lean mass stays the same and body fat increases

You're in a calorie surplus. You're eating more calories than you're burning and storing it as fat. First increase the frequency and duration of cardiovascular exercise. Then recheck your body fat in one week. If it hasn't decreased, reduce your caloric intake by 100-200 calories at a time, provided you do not drop below your maximum allowable calorie deficit. Keep your nutrient ratios the same.

Lean mass decreases and body fat decreases

You are losing body fat which is good, but you've also lost some lean mass, which is not good. A small loss in lean mass (a few tenths of a pound) is nothing to worry about. If this is the first time you've lost LBM, don't panic because some of the LBM is water weight. If this is a recurring pattern and you've been losing LBM every week for more than two weeks straight, you're losing muscle tissue. You need to eat more, at least temporarily. Increase your caloric intake by 100-200 calories to stimulate your metabolism, while continuing with your current exercise program. Keep your nutrient ratios the same.

Lean mass decreases and body fat stays the same or increases

When you lose LBM and your body fat does not decrease at all, this usually means your metabolism has slowed down and you are burning up muscle for energy; you are not

in fat burning mode. This often occurs when you skip meals. Losing lean mass means that you need to eat more to stimulate your metabolism. Don't be afraid to eat, and keep up your meal frequency to five or six times per day. Remember that it's better to burn the fat off rather than starve it off. Keep your calories as high as possible while using exercise to burn off the fat. Severely restricting your calories below the recommended levels will always result in a loss of muscle mass. Increase your caloric intake by 100-200 calories and maintain or slightly increase the amount of cardiovascular exercise you are doing. Make sure you're consistent with your weight training as well.

Lean mass increases and body fat decreases

This is very unlikely to happen, except for genetically gifted individuals (the pure mesomorph) and sometimes for ectomorphs who have highly efficient metabolisms. If it does happen, terrific! You are leaner and more muscular! Don't change anything. Keep up the good work, you're on your way to reaching your goal.

Lean mass increases and body fat stays the same

Good job, you've gained muscle without gaining fat! This is the ideal outcome for a muscle-gaining program. If you also want to reduce your body fat percentage, you'll need a greater calorie deficit, which you can accomplish by increasing your cardio while remaining at your current caloric intake.

Lean mass increases and body fat increases

You gained muscle, which is good, but you also gained fat, which is not good. You are in a substantial calorie surplus. Some bodybuilders do this habitually in their off season – it's called "bulking up," If you want to stay lean and avoid the "bulked up" look, you need to increase the amount of cardiovascular exercise you are doing. You should also make sure you're being strict enough on your diet. Keep your diet "clean" and free of high fat or high sugar junk foods. Recheck your body fat in one week. If you still continue to gain fat, then you need to decrease your caloric intake.

Conclusion: Let your results dictate your approach.

I always suggest ***letting your results dictate your strategy***. If you can eat bagels and pasta all day long and get ripped, that's great - keep eating them. If you can eat 70% of your calories from carbohydrates and 20% from protein and you get leaner - great, keep eating all those carbohydrates. If you can eat heavy meals late at night and you still get leaner great - keep doing it. If you can get lean with just diet and almost no cardio at

all – fine, don't do any cardio. The results you produce each week are the only true measure of whether you've made the right choices or not. If you're getting lean while breaking every rule in the book, then there's no reason to change. The ends justify the means, provided of course, that everything you're doing is good for your health.

Most important of all, once you discover an approach that works for you, DON'T FIX IT IF IT'S NOT BROKEN! Don't get locked into a single unbending approach like so many diet programs prescribe. You are a unique individual and no single approach could possibly work for everyone. If you find something that works for you, I'd suggest you disregard the comments of other people who disagree with what you're doing and that you judge your success only by your weekly progress.

By following this system – taking continuous action, getting constant feedback, being flexible, having an open mind and being willing to experiment, you will, through an evolutionary learning process, figure out your body type and develop your own personal formula very quickly. Once you've discovered your personal formula by using body composition measurement, performance feedback and progress charting, it will always be there for you for the rest of your life whenever you want to go back to it.

Chapter 5: Metabolic Individuality and Your Body Type: Doing Your Best With What You've Got

"Some people are born with the propensity to become fatter than others. There are naturally skinny ectomorphs and naturally fatter endormorphs. Some individuals are given more fat cells by heredity, some fewer. But the set point is affected by environment and behavior as well as heredity. You can vary your set point considerably depending on what and how you eat, as well as what kind and how much exercise you do."

- Neal Spruce, bodybuilder, author, speaker and founder of APEX fitness

"Whatever you have, you must make the most of it. Rest assured that you can transform yourself, no matter where you started from. The most important body part is the mind. With the will and know-how, you can perform near miracles."

- Stuart McRobert, author of "Brawn"

No two people are exactly alike.

In the Declaration of Independence, it is written, "All men are created equal." This truism could be interpreted in different ways depending on the context: If you are referring – as Thomas Jefferson was - to unalienable rights, such as life, liberty and the pursuit of happiness, then virtually everyone would agree. However, if you're referring to physical and metabolic characteristics, then nothing could be further from the truth: It would be more correct to say that no two people are *ever* created equal.

There are 6.2 billion people on our planet today and no two are exactly the same. Just as individuals are born with various eye, hair and skin colors, people have also inherited different metabolic and physiological characteristics which influence how easily they can build muscle and lose body fat.

The classic example of metabolic individuality is when two people follow identical training and nutrition programs and one makes amazing progress while the other gets no results at all. This proves that no single program could possibly work for everyone. One of the biggest secrets of permanent fat loss is to develop the ability to recognize and understand the uniqueness of your physiology and adjust your nutrition and training accordingly instead of blindly following someone else.

There are four keys to understanding body types. The first is to learn how to recognize which is your predominant body type. The second key is to learn how to adjust your training and nutrition to fit your body type. The third key is to be patient, persistent and maintain a positive attitude as you work towards your goal. The fourth key is to assume responsibility for the outcome, for better or worse.

The genetic bell curve

Dr. Michael Colgan, author of "Optimum Sports Nutrition" said, "As a part of biochemical individuality, people differ widely in their inherited tendencies to accumulate body fat." So true! In the world of bodybuilding and fitness, there are genetically gifted people who seem to just "touch" the weights and their muscles grow. (These are usually the same people who eat McDonalds every day and have ripped abs!)

When I was just a beginner in bodybuilding, seeing other people get results more easily than I did was always very frustrating. I was eating *perfectly*; pushing, working, struggling and straining with every bit of energy I could muster for every ounce of muscle I could get. Then one of these "genetic freaks" would come along and pass right by me, without even breaking a sweat. To add insult to injury, they were often training completely wrong and breaking every so-called "rule" in the book. When some of them took steroids on top of their hereditary gifts, their muscles literally exploded overnight! This goes to show just how widely people can differ in their ability to gain muscle and lose fat.

The law of averages dictates that the distribution of body types will always be statistically predictable. This phenomenon, called "the genetic bell curve," is very similar to the distribution of grades among students. 60% of students will receive passing grades (B's, C's and D's), 20% will fail, and 20% will get A's.

With body types, most people (about 60 % of the population by my estimate) are "genetically average." If you fall into this middle category, you will respond well and predictably to a properly constructed nutrition and exercise regimen. All it takes is starting and sticking to an exercise program and mastering the fundamental laws of nutrition. This includes all basic principles such as proper caloric intake, high meal frequency, balanced nutrient ratios, and smart food choices.

The 20% of the population on the right side of the curve represents the genetically above average. This lucky group will lose fat very quickly and easily, even if their nutrition and training isn't quite perfect. They seem to have more "leeway" (they can "get

away with" fewer workouts and more cheat days). On the extreme right edge of the curve, you have the people who can eat chocolate and donuts all day long, they don't work out at all and they have "six-pack abs." These are the "genetically gifted," or as I affectionately call them, "the genetic freaks."

The final 20%, located on the left side of the curve, are the genetically below average. These people have a more difficult time losing fat and will need to work much harder and be more patient than others. The further to the left side of the genetic bell curve you are, the more difficult it will be to lose body fat. At the farthest edge, you will find a tiny handful of people who have an immensely difficult time getting lean. This tiny group is the "genetically disadvantaged."

The roll of the genetic dice

There's no question about it; some people have the genetic card deck stacked against them, while others were dealt a "royal flush." You can't deny that it's much easier for some people to lose body fat and develop muscle than it is for others. Nor *should* you deny it. An intelligent person will realistically assess their body type to the best of their ability and then adjust their goal time frame and training protocol accordingly. To do otherwise would be counterproductive; it would also be denial.

The best approach is "realistic optimism." Not everyone has the biological raw material to become a Mr. Universe or a fitness model. Nor does everyone have the physical gifts to become an Olympic sprinter, a marathon runner, or world-class swimmer. However, *absolutely everyone can improve their physiques from where they are today.* One of your primary goals should be to achieve your own personal best, while avoiding comparisons to others who may have totally different genetics than you.

The 10 major genetic variables affecting fitness, fat loss, muscle development and athletic ability

There are 10 major genetic variables that can affect your ability to lose body fat, develop muscle, increase strength and reach high levels of athletic achievement. Examining these variables will give you a better understanding of how nutrition and training can affect each person differently.

1. Basal metabolic rate

Your basal metabolic rate (BMR) is the amount of energy (number of calories) you burn at rest just to maintain normal body functions such as breathing, circulation, digestion,

thinking, etc. Genetically gifted people are like cars that idle too fast. They burn off fuel even while sitting still. When they become active, they move fast and burn off fuel at an enormous rate.

2. Number of fat cells

You were born with a predetermined number of fat cells. Some people are born with more than others. The person born with more fat cells is at a disadvantage compared to someone with fewer fat cells. Fat cell number can increase throughout life but it cannot decrease (except through liposuction, which has many potential hazards). Fortunately, what can change is the *size* of the fat cells. Even someone with a large number of fat cells can shrink all of them, thereby becoming dramatically thinner and leaner.

3. Limb lengths

Some people were born with long legs and long arms, others with short legs and short arms. Your limb length can affect the way your body's symmetry appears and it can also affect your strength, athletic prowess and ability to gain muscle mass. Long limbs means long levers, which can create a mechanical disadvantage when performing certain exercises. Some people were born with fantastic leverage and that's why they are naturally strong.

4. Joint circumferences

People may be either large boned, medium boned or small boned. Many people complain of being "big-boned," citing that as a reason they are overweight. Joint size affects the way your body is shaped, however *it has nothing to do with your ability to lose body fat*. The simple test for joint size is to wrap your hand around your opposite wrist. If your thumb and middle finger overlap, you are small jointed (usually 6-7 inch wrists); if your thumb and middle finger touch, you are medium jointed (usually 7-8 inch wrists); if your thumb and middle finger do not touch, you are large jointed (usually 8 inches or more in wrist circumference).

5. Muscle insertions

The muscles insert onto the same bones in all humans; however, the exact point of insertion can vary. Even a tiny difference in insertion points can create large increases in mechanical advantage. This partly explains why certain people are naturally stronger than others (they have better leverage because their muscle insertion points are further from the origin points.)

6. Number of muscle fibers

Like fat cells, you were also born with a pre-determined number of muscle fibers. Hyperplasia, the process of splitting existing muscle fibers into new fibers, has been hypothesized but never conclusively proven in humans. If you were born with a large number of muscle fibers, you will have a greater potential for developing muscle size than someone with fewer fibers.

7. Muscle fiber type

Within each person's predetermined number of muscle fibers, there are also different *types* of muscle fibers. Some fibers are suited to endurance activities (red or slow-twitch fibers) while others are suited for strength, power and explosive activities (white or fast twitch fibers). The differences in each person's ratio of muscle fibers may explain why some people make better endurance athletes while others naturally gravitate to strength or power sports.

8. Digestive capabilities

Some people have highly efficient digestive systems capable of greater absorption and utilization of nutrients from the digestive tract. The length of the intestinal tract can also vary by as much as fifteen feet or more among the various body types.

9. Food allergies and insensitivities

Some people are born with or acquire food allergies and sensitivities. Lactose intolerance (an inability to properly digest dairy products) is a common example. Over the years, people naturally tend to gravitate towards certain foods while shying away from others. Some people become vegetarians while others become carnivores simply because of the way each food or diet makes them feel.

10. Insulin response and sensitivity to carbohydrates

Some people are more carbohydrate sensitive than others. Your level of sensitivity to carbohydrates will have a direct bearing on your ability to lose body fat, and it's one of the most critical factors in determining the correct nutritional strategy for you. Carbohydrate sensitive individuals who do not adjust their nutrition properly often have an incredibly difficult time getting lean. Their blood sugar rises rapidly with the consumption of even small amounts of carbohydrates. This in turn causes the release of

large amounts of insulin. High concentrations of insulin in the bloodstream are lipogenic and anti-lipolytic. This means that when excessive insulin is present, you stop releasing fat from the adipose cells and you go into "fat storage mode." This explains why one person can eat a diet high in bread, pasta, potatoes and other carbohydrates and lose body fat easily, while another person will gain body fat and feel terrible on the same diet.

The importance of understanding variations in body type

Judging from this list of ten genetic variations, it might seem that the only sure-fire road to athletic prowess or extreme levels of leanness is to "choose the right parents." But even if you feel that Mother Nature dealt you a "bad hand," you can take consolation in the fact that success in fat loss is not determined purely by genetics. Most of the factors involved in losing fat are entirely under your control.

Success does not always come from holding a good hand of genetic cards, but in playing a poor hand well. If you're on the below average side of the genetic bell curve, then you must accept that getting lean might be a slower process for you than for others. You'll also need to meticulously tailor your nutrition and exercise program specifically to your body, while ignoring what the "genetic freaks" are doing, because *anything* will work for them.

No amount of positive thinking or visualizing is ever going to change your inherent physical characteristics. The good news is that you can achieve fantastic results, regardless of your genetics, as long as you recognize and understand your body type and then adopt the proper nutrition and training strategies for your type.

Understanding your body type: The theory of somatotyping

In the 1930s, and 1940s, Dr. William H. Sheldon, a professor from Harvard, became engrossed with the study of human body types. As a psychologist, it was Sheldon's primary intention to discover how body types were related to temperaments such as introversion and extroversion. As a part of his extensive research on the subject, which included studying over 4000 photographs and interviewing hundreds of people, Sheldon developed a classification system for body types known as somatotyping.

Sheldon identified three basic body types: endomorphs, mesomorphs and ectomorphs. Endomorphs are the "fat retainers." Characterized by roundness, excess body fat and large joints ("big bones"), endomorphs often have great difficulty in losing body fat. Mesomorphs are the "genetically gifted." They are lean, muscular and naturally athletic. Mesomorphs lose fat and gain muscle with ease. Ectomorphs are the lean,

skinny types. They are usually very thin and bony, with fast metabolisms and extremely low body fat.

Rating body types

Although there are three basic categories, pure body types are very rare. Few people are 100% of one body type and 0% of another. Usually there is a mix of two or even all three types. However, most people will tend to gravitate towards one type predominantly.

In order to more accurately classify people, Sheldon developed a 7-point scale to determine the degree to which each person held attributes of each body type. The first number ranks the endomorph component; the second number the mesomorph, and the third the ectomorph. For example, an extreme endomorph would score 7-1-1:

Endomorph 7
Mesomorph 1
Ectomorph 1

A pure mesomorph such as a world champion bodybuilder who gains muscle easily and was lean and muscular before ever touching a weight might score 1-7-1:

Endomorph 1
Mesomorph 7
Ectomorph 1

Combination body types

Combination body types are more common than pure body types. For example, someone who gains muscle easily, but who also tends to gain fat along with the muscle is an endomorphic mesomorph (endo-mesomorph). This body type is typical of football linemen, heavyweight wrestlers, shot-putters and many bodybuilders. This is the type of person with high levels of muscle, but the muscle is often covered with a layer of fat. Someone with this body type might score 5-6-1:

Endomorph 5
Mesomorph 6
Ectomorph 1

Another example is the ectomorphic mesomorph (ecto-mesomorph). This is the type of person without an ounce of fat and with some fairly substantial muscle development on a tall and linear frame. Basketball players often have ecto-mesomorph body types. An ecto-meso (think Michael Jordan) might score 1-4-5:

Endomorph 1
Mesomorph 4
Ectomorph 5

Because the lines between body types are obviously quite blurry and somewhat arbitrarily chosen, the question is, how do you know which is your *predominant* type? Let's take a closer look at the characteristics of each somatotype to better help you classify yourself.

The Ectomorph

The ectomorph tends to be tall and skinny with small joints and a small waist. Ectomorphs are naturally lean and usually never have trouble with excess body fat during their entire lives. Many ectomorphs can maintain extremely low body fat while doing no cardiovascular exercise whatsoever. Ectomorphs have overly efficient metabolisms. In other words, they "waste" excess calories as body heat, so they can often eat whatever they want without gaining fat. The downside is that ectomorphs also have a very difficult time gaining muscle.

Ectomorphs usually stay close to the same body weight within a fairly narrow range. If they have any weight fluctuations, it's usually in the direction of losing weight, especially if meals are skipped or caloric intake is too low. When an ectomorph increases their activity level, they will usually drop body weight and body fat very rapidly – sometimes too quickly. Excessive cardio is usually counterproductive.

Many ectomorphs begin bodybuilding to fill out their skinny frames. Although ectomorphs will seldom, if ever, develop the massive muscle thickness of the pure mesomorph, with persistence and hard work, most can overcome their body type and build impressive physiques showing excellent muscular definition. However, ectomorphs will usually lose most of the muscle they gained if they quit training or if they allow their calories to drop too low for too long. Without proper ectomorph training and nutrition, they will eventually slide back towards the level of leanness where their body is most comfortable. It takes lifelong commitment for an ectomorph to keep the muscle and body weight up.

Characteristics of the ectomorph

Naturally skinny, wiry
Long limbs, linear
Small joints, small-boned
Small waist, narrow shoulders
Angular, projecting bones
Naturally lean (low levels of body fat without even working out)
Often call themselves "Hardgainers"
Low strength levels prior to starting a training program
Fast metabolism – they burn up everything, even when overeating
Don't store carbohydrates as fat – high carbohydrate diets are ok
High energy levels
Tendency to be overactive and restless (hyperactive)
Natural born endurance athletes (successful at distance/endurance sports)
Sometimes hard to maintain weight
Extremely hard to gain weight
Sometimes insomniacs
Respond best to low volume, brief, infrequent, high intensity weight training
It takes years of hard weight training and heavy eating to overcome this body type

If you're reading this book, the chances are good that you're not an ectomorph, because ectomorphs are the people who lose fat without even trying. However, you may have a combination body type with a small ectomorph component. For example, some people have thin, lean lower bodies, with almost all of their body fat stored in the upper half of the body. Others have small wrists and a light, delicate bone structure, yet they exhibit all the other features of endomorphy such as extreme carbohydrate sensitivity and difficulty losing body fat.

Ectomorph training and nutrition strategies

The common complaint of the ectomorph is: "No matter what I eat, I can never gain weight; I've always been thin and very lean." In bodybuilding, they tend to be the ripped lightweights and middleweights, rather than the massive heavyweight types. When they retire from competition, they tend to stay very lean and their muscle mass usually shrinks down a bit in size. Despite the challenge, many ectomorphs have gone on to become successful bodybuilders after years of consistent hard training and proper eating. The following guidelines will help maximize results for the ectomorphic body type.

Slow down

Ectomorphs are thin, hyperactive people with fast metabolisms. So the first and most obvious solution is less activity. Like an engine idling too fast – an ectomorph has to hold down the brake just to keep from lurching forward. Conservation of nervous energy is important. Ectomorphs must slow down and relax more.

Get extra sleep

By their nature, ectomorphs tend to require less sleep and often suffer from insomnia. Because they burn so many calories even while not physically active, it's important for ectomorphs to get plenty of quality sleep every night and to do so on a regular schedule. Taking naps is also helpful.

Reduce stress and worry

Ectomorphs tend to be high strung, stressed and hyperactive. Stress reduction techniques can help the ectomorph get better results from their nutrition and exercise programs. Taking up meditation can be especially beneficial. An excellent book about meditation from a scientific point of view is The Relaxation Response by Herbert Benson.

Avoid overtraining

Ectomorphs respond best to brief, high intensity training programs. Daily training and marathon workouts are incredibly counterproductive. The ectomorph must get in and out of the gym quickly and allow plenty of recuperation between workouts.

Keep cardio vascular exercise to a minimum

Although there are some people with light, fragile ectomorph bone structures who also are carrying excess fat, body fat is seldom a problem for the ectomorph. As such, cardio should be kept to a minimum and done mainly for health reasons. 15-30 minutes a day, three days a week is usually sufficient.

Keep the calories high and never, ever, ever miss a meal

Ectomorphs need calories - and lots of them. They need to eat high calorie density foods and use moderate amounts of good fats such as flax oil, nuts, seeds, natural peanut butter and cold-water fish such as salmon. Skipping meals is the #1 cardinal sin for the ectomorph.

Use a diet moderately high in complex carbohydrates

Carbohydrate restriction is an effective fat loss strategy, but since ectomorphs burn up nearly everything they consume, there's usually no reason to restrict carbohydrates. Fifty or even fifty-five percent of total daily calories should come from carbohydrates in the ectomorph diet with 30% from lean proteins and 15-20% from fats.

Pay attention to food quality

People with ectomorph tendencies quickly discover that they can "get away with" eating certain foods without ill effects on body composition, so they often do exactly that – eat anything and everything. However, this is not a wise practice because even an ectomorph should be concerned with nutrient density and not just calories. Nutrition is not just for cosmetic improvements; it's about your health. Never use a muscle-building program as an excuse to "pig out" on junk food, even if you find you can "get away with it." Ectomorphs must think about the nutritional value of everything they eat and about the effect of food on their health.

The mesomorph (a.k.a. the "genetic freaks")

Pure mesomorphs are naturally lean and muscular with small waists, broad shoulders, medium-sized joints and large, round muscle bellies. Mesomorphs are the typical natural-born athletes and bodybuilders. Most of them were lean and muscular before they even started working out.

For example, Olympic sprinter Michael Johnson is very mesomorphic (5) with very muscular arms, shoulders and chest. He also has a moderate ectomorphic component (4) with small joints and very low body fat. There is no sign of any endomorphy (1) whatsoever. Johnson would probably score a 1-5-4.

A bodybuilder like Arnold Schwarzenegger is almost pure mesomorph (7) with low body fat and massive muscles. Because of his height and long limbs, he has a small ectomorph component (2). He also seemed to get quite bulky in the off-season, indicating a slight endomorph component as well (2). I would rate Arnold a 2-7-2.

Mesomorphs are the genetically gifted people we all "love to hate" because they gain muscle and lose fat so easily. These are the people who don't seem to train or diet hard at all, yet their bodies respond like crazy.

Characteristics of the mesomorph

Medium joint circumference
Small waist
Broad/square shoulders
Chest dominates over abdominal area
Naturally lean (low levels of body fat without even working out)
Naturally muscular (muscular before they even started working out)
Naturally strong (strong before they even started working out)
High energy levels
Don't store carbohydrates as fat – high carbohydrate diets are ok
Highly efficient (fast) metabolism
Controlling body fat is easy
Gaining strength is easy
Gaining muscle is easy
Losing body fat is easy
Responds very quickly to just about any type of training (fast results)
Natural born athlete (successful at strength and power sports)
Top-level professional bodybuilders are often pure mesomorphs

Mesomorph training and nutrition strategy

There's not much to say about mesomorph training and nutrition. The ironic thing about mesomorphs is that for many of them it doesn't matter what they eat or how they train, they lose body fat and gain muscle anyway!

Yes, we genetically average people envy (hate?) the mesomorphs, but they do have their downfall: They often have the tendency to coast on their genetics. Because they get results so easily, they often don't even train hard. As a result, many of them never realize their full potential. The gift of good genetics sometimes makes a person lazy. Often, the less genetically blessed a person is, the more discipline, willpower and determination they develop, and it's this desire and drive that propels them to high levels of physical achievement. Their weakness actually becomes their strength. Of course, a mesomorph with clear goals and a superior work ethic will always shoot to the top and quickly become a superstar. Here are two tips for the mesomorph to live by:

Don't "coast" on your genetics just because you can

Because mesomorphs are so genetically gifted, they often have the tendency to cheat and skip workouts because they can get away with it and still look good. But just imagine what they would look like if they applied themselves 100%. If you recognize that you are

genetically gifted in any sense, then make the most of your gifts - train and eat to the best of your ability and you could become one of the best in the world in bodybuilding, fitness or athletics. Even if you're not a competitor, why shouldn't you actualize your full potential and be the best you can possibly be?

Pay attention to food quality

Like the ectomorph, those with mesomorph tendencies quickly discover that they can also "get away with" eating certain foods without ill effects on body composition, so they often do exactly that – eat anything and everything. Again, keep in mind that nutrition is not just about cosmetic improvements; it's about your health. "Pigging out" just because you can get away with it is not a wise practice. In the best-case scenario, it will limit your development. In the worst scenario, it could compromise your health in the long run.

The endomorph

Most people who are working hard but still struggling to lose body fat are endomorphs. An endomorph is someone with a slow metabolism who is genetically prone to store fat easily. Endomorphs are usually, but not always, large framed with medium to large joints.

Endomorphs sometimes have varying degrees of carbohydrate sensitivity and insulin resistance, so high carbohydrate diets are usually not effective for body fat control. Processed and refined carbohydrates that contain white sugar and white flour are especially detrimental and tend to convert to body fat more rapidly in endomorphs. Low to moderate carbohydrate diets with higher protein usually work best for endomorphs.

While some genetically gifted mesomorphs and ectomorphs can eat whatever they want and never gain any fat, the endomorph must eat clean and healthy almost all the time. This requires the development of high levels of nutritional discipline. Endomorphs are the types who will tend to gain body fat very quickly if they eat too much or if they eat the wrong types of foods.

Endomorphs cannot "cheat" frequently and get away with it. Their metabolisms are extremely unforgiving. One or two cheat meals per week seem to be the limit. Poor daily nutrition habits or frequent cheat days always set them back.

Endomorphs generally have a very difficult time losing fat with diet alone. Even a nearly perfect diet sometimes won't work by itself because the endomorph needs the boost in metabolism that exercise provides.

A larger quantity of cardio is almost always necessary for the endomorph to lose body fat. Someone with a low endomorph component may stay lean with little or no cardio at all. Extreme endomorphs usually need cardio every day before the body fat begins to come off.

Occasionally, an extreme endomorph (7 on the endomorph scale), will have a difficult time losing fat even while on a well-constructed training and nutrition program. Extreme endomorphs sometimes need to restrict carbohydrates drastically (under 100 g./day for women, under 175 g./day for men) before any substantial fat loss occurs. They may also need to use a carbohydrate cycling approach that rotates high carbohydrate days with low carbohydrate days in order to stimulate their sluggish metabolisms and prevent going into starvation mode. Santa Claus is the archetypical endomorph.

Endomorph characteristics

Naturally high levels of body fat (often overweight)
Usually large boned, large joints, large frame (but not always)
Short, tapering arms and legs
Smooth, round body contours (round or pear shaped body)
Wide waist and hips
Waist dominates over chest
Tendency to always store excess calories as fat (can't get away with overeating)
Keeping fat off after it is lost is a challenge
Tendency to be sluggish, slow moving and lacking energy
Slow thyroid or other hormone imbalance (sometimes)
Fairly good strength levels
Sensitive to carbohydrates (carbs are easily stored as fat)
Responds better to diets with higher protein and low (or moderate) carbs
Naturally slow metabolic rate/low set point (fewer calories burned at rest)
Falls asleep easily and sleeps deeply
A lot of cardio is necessary to lose weight and body fat
Extremely difficult to lose weight (requires great effort)
Bouts of fatigue and tiredness
Often describe themselves as having a "slow metabolism"
Tendency to gain fat easily as soon as exercise is stopped
Tendency to lose fat slowly, even on a "clean," low fat, low calorie diet.
Often overweight, even though they don't eat very much
Respond best to frequent, even daily, training

Endomorph training and nutrition strategy

When it comes to fat loss, a well-planned, strategic approach to nutrition and training is more important for the endomorph than for any other body type. The endomorph strategy focuses on high levels of activity and extreme levels of discipline and consistency in nutritional habits. Most endomorphs also need some degree of carbohydrate restriction with higher protein levels to compensate.

High protein, medium to low carbs

High protein, low to moderate carb diets work best for the endomorph. Endomorphs usually have varying degrees of carbohydrate sensitivity and insulin resistance. Therefore, high carbohydrate, low fat diets are usually not effective. Sugar is a major no-no: Processed and refined carbohydrates that contain white sugar and white flour tend to convert to body fat very rapidly in endomorphs because of the way they affect the hormone insulin.

Exercise is an absolute MUST

Endomorphs generally have a very difficult time losing fat with diet alone. Even a close-to-perfect diet often doesn't work by itself because the endomorph needs the boost in metabolism that comes from exercise. The endomorph must do everything in his or her power to stimulate their metabolism and this means combining good nutrition with weight training and aerobic training. To diet without exercising means certain failure for the endomorph.

Large amounts of cardio

Someone with a low endomorph component may stay lean with little or no cardio at all. Endomorphs need a larger quantity of cardio to lose body fat. Most endomorphs will lose fat with surprising ease by doing some type of cardio at least 4 – 5 times per week. Extreme endomorphs usually need cardio every day (seven days per week). All endomorphs will tend to gain the fat back if they stop doing cardio completely. Often, they successfully lose weight, but then put it back on if they haven't made the commitment to continue exercising for life.

Get more activity in general

Endomorphs usually (but not always) have a tendency towards relaxing as opposed to staying constantly in motion. Their natural inclination is usually to kick back in the easy chair, while their ectomorphic or mesomorphic counterpart might "relax" with a nice 40-mile bike ride.

The best strategy for the endomorph is to get active and stay active! You have to get moving! Take up some sports or recreational activities in addition to your regular workouts in the gym. If you're an endomorph you should get some type of activity almost every day.

Make a lifelong commitment to fitness

Endomorphs must commit to a lifelong exercise program and avoid quick fixes or any short-term approach to fitness. After reaching the long term ultimate body fat and body weight goal, the endomorph needs to commit to at least three days a week of exercise - for life – to keep the fat off. This should be done for health reasons anyway, but for the endomorph, exercise is essential to maintain a desirable body fat ratio. Once you begin, you must keep going or you will lose your momentum. Every time you stop working out, you can be sure the body fat will slowly start to creep back on. Long "vacations" from physical activity are not a good idea. Get your momentum going and keep it going.

Train hard

The basic endomorph disposition is towards taking it easy and relaxing. If you are an endomorph, you must fight this urge and train with high intensity. You have to push yourself constantly. Not only must you train almost every day, you must push yourself to train harder every day and repeatedly beat your own personal best. The best advice for the endomorph that I've ever heard came from a Zen master; Roshi Philip Kapleau. He said, *"Don't relax your efforts, otherwise it will take you a long time to achieve what you are after."*

Increase your training frequency

This is important – the endomorph must stay in motion to keep their metabolic engine revving. Staying still for too long is the death of the endomorph. The boost in resting metabolism from training doesn't last long. For someone with a naturally slow metabolism, the only way to keep it elevated is with a high frequency of training.

Increase your training duration

Losing fat all boils down to burning calories. You must burn more calories than you consume each day. The most obvious way to burn more calories is to do your cardio for a longer duration. 20 minutes is the recommended starting point for effective fat burning, but for the endomorph, this is seldom enough. 20 minutes is a maintenance workout for endomorphs. For maximum fat loss I recommend 30-45 minutes of continuous aerobic activity and in some instances it may be necessary to go as long as 60 minutes until a goal is achieved. Go back to the 20-minute workouts for maintenance only after you reach your goal.

Avoid over-sleeping.

Endomorphs should avoid excessive sleep. They should be early risers. The chances are good that if you're an endomorph, you are not an early riser and you often have the urge to hit snooze and go back to sleep. Resist this urge. Getting up early for morning cardio is one of the best strategies for the endomorph.

Watch Less TV

Any pastimes or hobbies that glue your rear end to a couch are not the preferred option for an endomorph, especially if you also spend 40 hours or more behind a desk each week. This means you should replace as much TV watching as possible with physical recreation or exercise (unless your workout machine is parked in front of the TV and you're on it).

Use metabolism-stimulating exercise

Weight training exercises that utilize large muscle groups like the back and legs are extremely effective for stimulating the metabolism and for stimulating the hormones that increase fat burning. High rep compound leg exercises (squats, lunges, leg presses, etc) are particularly effective for this purpose. Toning classes, yoga, pilates and similar activities have some fantastic benefits, but for the endomorph, this type of activity is NOT the ideal way to lower body fat. Participate in these activities as a supplement to your regular weights and cardio, but not by themselves.

Always be on the lookout for something to motivate and inspire you.

Endomorphs sometimes lack motivation, especially in the beginning. The solution is to be on the constant lookout for anything and everything to motivate and inspire you. Read

biographies. Watch the Olympics, get a training partner, read motivational books, hire a trainer or personal coach, re-write your goals every single day, or enter a before and after fitness contest. Stay pumped up and fired up!

Restrict carbohydrates, but never remove them completely

The endomorph nutrition strategy leans towards higher protein (and slightly higher fat) diet with more moderate carbohydrates (Similar to a "Zone" diet). This is necessary because most endomorphs tend to be carbohydrate sensitive. People with normal carbohydrate metabolisms can consume up to 50-60% of their total calories from carbohydrates and stay lean, while endomorphs will tend to get fat eating this many carbohydrates.

Keep cheat meals to only once per week

Endomorphs have very unforgiving metabolisms. They cannot "cheat" frequently and get away with it. One or two cheat meals per week seem to be the limit. Poor daily habits or frequent cheat days always seem to set them back. Cheat days should be reserved for special occasions or as well-deserved rewards for a week of great training and nutrition.

Be consistent and persistent

The endomorph loses body fat more slowly than ectomorphs or mesomorphs. Therefore, endomorphs must be *very consistent* and diligent in eating and exercise habits 24 hours a day, 7 days a week, 52 weeks a year. Going on and off diet and exercise programs will never work for the endomorph. Endomorphs will lose body fat *just like everyone else*, but it almost always takes a little longer. The results will come, but not without time and effort. Patience is a virtue all endomorphs must cultivate.

The Most accurate measure of your True Body type

One final note should be made about somatotypes: You can't always jump to conclusions about a person's body type based only on the way they *currently* look. If you've been training for years, then how you look now might not be the most reliable indicator of your body type. How you looked *before* you started training is much more revealing.

In addition, the way you respond to training and nutrition is also a good indicator of your body type. If you grow muscle like crazy and the fat melts off with great ease, you

have genetic gifts; you have the mesomorph's muscle-building qualities and the ectomorph's fat-burning qualities.

How quickly you respond to de-training is also a good indicator of your true body type. What happens when you stop training? Do you hold your muscle gains? Does the body fat stay off? If so, you are genetically gifted. If body fat starts accumulating the second you stop training, you have a higher endomorph component.

Beware of absolutes.

Here is one of the greatest truths you will ever learn about nutrition and exercise: There is no single best way! When you read diet and training books, keep in mind that what you are reading is "A" way, but it is not "THE" way.

Since there is such a wide range of different body types, you should always view "absolutes" with great caution. When it comes to nutrition and exercise, be very suspicious of the words "never" and "always." In the bodybuilding, fitness and diet world, there is a tendency for people to dogmatically believe in a single nutrition or training method while refuting all others. Doing this can seriously limit your progress.

The most common example of absolutes is the advice that "carbohydrates will make you fat." This sends people – of all body types – into a state of total fear of carbohydrates. For someone to lump all people into a single category and make the sweeping proclamation that carbohydrates make you fat, totally fails to take into account the issue of metabolic individuality.

The zero carb gurus have caused more confusion by their "carbs are bad" brainwashing than anything in the history of the industry. High protein, very low carb diet programs will work phenomenally well for carb sensitive extreme endomorph body types, while causing other body types to lose their muscle and have their energy levels plummet.

The same premise could be extended to exercise programs. There is no single training program that is best for everyone. Some people need daily cardio, some people hardly need any cardio at all. Some people respond very well to high volume weight training, while others become easily over trained on such programs. Again, you must think in terms of your own uniqueness and individuality without being tempted to copy someone else's program – especially if they are blessed in the genetics department.

While there are few absolutes in developing a better body, there are certain fundamentals and laws that apply to everyone. You will learn all of these laws

throughout this program. Once you've mastered the fundamentals of a good baseline nutrition plan, then you MUST make the adjustments for your goals and your body type. Failure to do so could be the difference between great results and zero results.

Assume 100% responsibility for your results

There's no denying that heredity plays a major role in how difficult it will be for you to lose fat. However, excess body fat is the result of many influences. Genetics is only one of them. Heredity may be a factor that governs your rate of progress and ultimate level of development; however, most of the factors that affect body composition are entirely under your control. Like it or not, the primary cause of excess body fat is your own behavior and attitudes. NO matter what your body type or genetic potential, you can always lose fat by taking consistent action in all the areas you control.

The factors you control
How much you eat
What you eat
When you eat
What type of exercise you do
How frequently you exercise
How long you exercise
How hard you exercise
Your overall lifestyle
Your mental attitude about your situation

This might offend some people, but the truth is, if you have too much body fat, it's your fault; you're responsible. Refuse to accept this, and you'll never reach your full potential. If you have excess body fat, and you want to lose it permanently, the first step is to accept 100% total responsibility for your circumstances.

In a powerful little book called "As a Man Thinketh," the author James Allen wrote, "*circumstances do not make a man, they reveal him."* What he meant was that we are not products of our environment or our heredity (our "circumstances"), instead, we are products of our own thinking and belief systems.

We create our circumstances through positive thinking and positive action, and we create negative circumstances through negative thinking, lack of action and wrong actions. In other words, you are responsible for who you are, where you are, and what you have - and that includes the way your body looks.

Some people get very upset when I tell them this: They say, "Hold on a minute; are you trying to tell me that when bad things happen to me, it's my own fault? That I brought unemployment, financial hardships, failed relationships, weight gain or even health problems onto myself? Because if that's what you're saying, that's totally unfair!"

With very few exceptions, yes, that's exactly what I am saying. When you're not getting the results you want, the easiest thing to do is to cast the blame somewhere else and make excuses: "It's my genetics," "I have big bones," "I have a slow metabolism", "I don't have enough time to exercise," etc. But if you don't accept that you're in control, how can you ever expect to succeed? You might as well grab a bucket of fried chicken wings and plop down in front of the TV.

Make no excuses – you are in control!

Making excuses is relinquishing control. It's conceding that you' are at the mercy of circumstances instead of being the creator of your circumstances. You must avoid blaming and take responsibility for your results and your life. Take action! Start working out. Eat better. Do something - do anything - but don't just sit there on the couch and curse your parents for passing you the wrong chromosomes.

It's no surprise that so many people put the blame outside themselves because so many psychologists, dietitians and physicians argue that your weight is determined completely by genetics and if you're fat, "it's not your fault." Please don't accept this. Genetics are only one factor. Believing that you're destined to be overweight for life because you've inherited "fat genes" is the most self-defeating attitude you could ever adopt.

No one ever said life was fair. In fitness as in other areas of life, there will always be people above you and below you. If you were not blessed with a fast metabolism, you have two choices on how to view your situation; you can either sit around cursing and complaining, or you can get moving and make the best of what you have; you can choose to become the best that YOU can be.

So called "limitations" that force you to learn more about exercise, to eat nutritious foods, to adopt a healthier lifestyle, to develop a strong work ethic and to become a more persistent person can be a blessing in disguise. You'll find that when you finally work your way to your goals, you'll have become a much stronger person than you ever thought you could be. When someone has it easy, they don't develop the qualities of persistence and determination. They often become "coasters." There are a lot of "natural born athletes" and bodybuilders that "coast" on their genetics. Instead of making them

stronger people, being genetically blessed has made them lazier people who never fulfill 100% of their potential. Don't envy them.

Before you get mad at your mesomorph friends who can eat whatever they want and never gain an ounce of fat, remember: The more difficult the challenges, the stronger you will become when you overcome them. And as Richard Bach wrote in Illusions, *"If you don't have problems, you will never be the person who overcame them."*

Every adversity carries with it the seed of a greater or equivalent benefit. The seed of greater benefit to the genetically disadvantaged is the inner strength that is gained by having to work harder to reach a goal. I'm not impressed with someone who shoots to the top easily. I'm more impressed by someone who gets knocked down over and over and keeps getting back up. I'm impressed with the person who overcomes; the person who has a difficult time achieving a goal – and achieves it anyway. Arnold Schwarzenegger put it this way; *"Strength does not come from winning. Your struggles develop your strength. When you overcome hardships, that is strength."*

Understanding your body type doesn't mean throwing in the towel if you're an extreme endomorph. It doesn't mean, "I'm genetically inferior so I won't even bother trying in the first place." Be realistic about your body type and accept the role it plays in changing your body. Don't get discouraged if you feel you don't have Olympian genetics. You can overcome nearly any obstacle if you are willing to work hard enough. No matter what your genetic endowment is, you can totally transform yourself with hard work, dedication, persistence and a positive attitude.

Conclusion

In closing, let me share with you the words of former UCLA Bruins basketball coach John Wooden. Coach Wooden said, *"The good Lord in his infinite wisdom, did not create us all equal when it comes to size, strength, appearance, or various aptitudes. But success is not being better than someone else, success is the peace of mind that is a direct result of self-satisfaction in knowing that you gave your best effort to become the best of which you are capable."*

Don't try to become better than someone else; become better than you used to be. Instead of focusing on comparisons, focus on progress and self-improvement. Do the absolute best you can with what you've got and you'll be able to look at the face in the mirror everyday and with the pride and self-esteem of a true winner.

Chapter 6: The Law of Calorie Balance: The Mathematics of Losing Body Fat

"Knowing what you know about your calorie balance system, you can appreciate that claiming 'calories don't count' is utterly ridiculous."

- Dr. Lawrence Lamb, Author of "The Weighting Game"

"Any discussion about optimal calorie intake is really a total waste of time - unless you are actually counting the calories! Unless you have done this in writing, and over a significant period of time (4-12 weeks), any discussion of this nature is purely academic. Don't kid yourself - get out your diary, buy a calorie/nutrient counter book and do yourself a favor; get to really know what you are doing - and more importantly - what the result of this specific combination is."

- Ian King, strength coach & author of "Get Buffed"

The Definition of a Calorie

Many people talk about calories all the time, but if you asked them to explain exactly what a calorie is or tell you how many calories they eat and burn every day, they wouldn't have a clue. By the time you are finished with this chapter, you will be an expert on calories. You will know exactly what calories are, how they are stored your body, how many you burn every day and how many you should eat to lose body fat without losing muscle. I'll show you why calorie counting is important and you'll learn why guessing or counting only "portions" might be the only thing preventing you from getting leaner. I'll also show you a simple method you can use to make calorie counting a quick, easy and painless process. Best of all, I'll let you in on the single most powerful technique for fat loss ever developed. So let's get started.

The best way to begin is with the definition of a calorie: The technical definition of a food calorie (kilocalorie) is the amount of heat required to raise 1 kilogram (1 liter) of water 1 degree Centigrade. A calorie is simply a measure of heat energy. When food is burned, it releases a certain amount of heat (energy), depending on the type of food. The more calories that are in a food, the more energy will be released when it is burned.

The word "calorie" is used interchangeably to describe the amount of energy in food and the amount of energy stored in the body as adipose tissue (body fat) and

glycogen (stored carbohydrate). For example, a Krispy Kreme glazed doughnut contains about 210 calories and a 25-minute jog on the treadmill burns off about 210 calories.

Body fat is like a reserve storage tank for energy. When we speak of "burning off body fat" we are talking about releasing calories from your "storage tank" and burning them to fuel your activities. If you're inactive, the body fat just sits there in storage until you need it. If you're an average 185-pound man with about 18% body fat, you have 33.3 pounds of adipose tissue. There are 3500 calories in each pound of body fat, which adds up to a grand total of 116,550 calories of reserve energy in storage - enough to last you a long time!

Such a large calorie storage depot, combined with the body's starvation response, explains why you can stay alive for so long without food (as long as you get plenty of water). Fasting has been studied extensively and there are many documented cases of people living for months without eating any food whatsoever.

Your energy reserves served an important evolutionary purpose, but as you learned in chapter three on body composition, only very small amounts of body fat are essential for health. In our modern society where famine is no longer the concern it was for our ancestors, body fat is today little more than an annoying cosmetic problem (and a possible health risk).

Thanks to tens of thousands of years of evolution, you've developed a body that is an incredibly efficient fat-storing machine. That's the bad news. The good news is, by understanding calories and balancing your input with your output, you can easily lose fat or maintain a healthy and attractive body fat ratio.

The calorie bank analogy

A good analogy is to look at your body like a living calorie bank and caloric energy like money. You store calories in your body the way you store money in a bank. You can make energy deposits and withdrawals from your body the way you would make money deposits and withdrawals from the bank, depending on how high your energy costs are.

When your energy costs are equal to the calories you consume, then all the calories you consume are burned immediately and no deposit or withdrawal of calories takes place - your balance stays the same. When your energy costs are greater than the number of calories ingested, you will make an energy "withdrawal" from your calorie bank and your body fat "balance" will decrease. When your energy costs are less than the

amount of calories you ingest, then you will make an energy “deposit” and your body fat “balance” will increase (excess calories go into fat storage).

The exception to this rule is when you are on a high-intensity weight training program to gain lean body weight. In this case, a small part of the calorie surplus is directed into muscle growth. Even when you’re training hard, if the calorie surplus is too large, the excess beyond what is needed for muscle growth will go straight into fat storage.

The reason why calories count!

From these basic explanations and definitions, you can now clearly recognize the importance of counting calories. Keeping track of calories is just as important as keeping track of the deposits and withdrawals to your bank account. If you fail to pay attention to your finances and you make more withdrawals than deposits, you would soon find yourself broke and in debt. It’s the same with your body, although in the case of calories, the reverse is true: If you don’t keep track of your calorie deposits, you’ll soon find yourself with an overstuffed calorie account in the form of unsightly and unwanted body fat!

Despite the obvious importance of watching your caloric intake, many diet programs insist calories don’t matter as long as you eat the right “secret combinations” of foods. For example, in 1961, a book called "Calories Don't Count" was published by Dr. Herman Taller. The program was one of the first to promote high protein, very low carbohydrate diets (VLCDs). Others followed, the most popular of which was “Dr. Robert Atkin's New Diet Revolution.”

The common denominator in most of these VLCDs is the claim that by removing most or all of the carbohydrates, you can eat an unlimited amount of calories from everything else (protein and fat). This is where the phrase “calories don’t count” originally came from and that’s why you hear about this idea so often. Unfortunately, the concepts of eating unlimited anything or of calories “not counting” are dead wrong!

According to the “calories-don’t-count” theory, if you eat certain foods, or certain combinations of foods, you can eat as much as you want and you’ll still lose weight. In our lazy and pleasure-seeking society today, this idea sounds wonderful, but this is physiologically impossible. The reason you lose weight on VLCDs without setting calorie limits or requiring calorie counting is because they tend to reduce appetite and cravings.

VLCDs allow you to eat more fat, which makes you feel full sooner. You also tend to get fewer cravings because eating fat and protein in the absence of carbohydrates levels out your blood sugar and insulin levels. The end result is you automatically eat fewer calories. The weight loss experienced on these programs comes from a calorie deficit, not from any "magical" effect of the diet itself. If you were to follow a VLCD, but you consumed more calories than you burned up in a day, you would still gain body fat. The often-made claim, "Eat all you want and still lose weight," is one of the biggest and most common lies told in the weight loss industry.

The law of energy balance

This brings us to the law of energy balance; the granddaddy of all nutritional laws, and the first fundamental you must understand and obey if you want to get super lean.

The law of energy balance says, if you burn more calories than you consume, then your body must tap into stored fat for energy to make up for the calorie deficit and you will lose weight. The reverse is also true: If you consume more calories than you burn each day, you will store the surplus and gain weight.

The Law of Energy Balance:

To lose weight, you must burn more calories
than you consume each day.

To gain weight, you must consume more calories
Than you burn each day.

The first corollary of the law of energy balance

There are two corollaries to the law of energy balance. The first corollary says that too much of any food – even so-called "healthy" foods – will get stored as body fat. If you consume more calories than you burn, (you're in a calorie surplus), it doesn't matter what you eat; you will gain weight, usually in the form of body fat. If the calorie surplus is beyond what you need for muscle growth, then all extra calories will be converted into body fat.

There's no such thing as a diet where you can "eat all you want" and lose weight simply by eating one particular food, one food group or a special combination of foods – this is physiologically impossible. It's also impossible to eat exorbitant amounts of calories (or protein) thinking that you'll gain more muscle that way. No diet program has a "metabolic advantage" that can override the law of energy balance, no matter what combination of foods it prescribes.

Corollary One of the law of calorie balance

Too much of ANYTHING will get stored as fat - even healthy food.

The second corollary of the law of energy balance

The second corollary of the law of energy balance says, if you are eating fewer calories than you are burning each day (you're in a calorie deficit), then even if you eat "junk food," you won't store it as body fat.

Corollary two should not be interpreted as a recommendation or a free license to eat anything you want in small quantities because you can "get away with it." Obviously calorie *quality* is also important – and we will discuss calorie quality in later chapters. However, knowledge of this corollary takes some of the pressure off you and allows you to relax your diet and enjoy "naughty" foods from time to time without guilt, as long as you do it in moderation. In other words, you can have your cake and eat it too, but you can't eat the whole thing!

Corollary Two of the law of calorie balance

Small amounts of ANYTHING - even junk food - will probably NOT get stored as fat if you are eating fewer calories than you burn up.

Pay attention to portion size and never stuff yourself at one sitting

The law of energy balance is the major law of weight control you must understand and obey if you want to get super lean. The law of energy balance and its two corollaries override all other nutritional laws. Many people do almost everything right: they work out, choose the right foods and eat frequently. Yet they miss the most obvious factor of all: they're simply eating too much! Sometimes, the only mistake holding people back from reaching their goals is failure to pay attention to portion sizes.

Not every overweight person is an overeater. As you learned in chapter three, some people hardly eat at all and they still can't lose weight. However, many people who are overweight *are* overeating and this is often the ONLY thing they're doing wrong. Fat loss requires the discipline and willpower to control your portions at all times.

The major rule is to never stuff yourself in one sitting. Instead, always spread out your calories throughout the day in smaller, more frequent meals. The benefits of small, frequent meals will be discussed in another chapter, but one of the primary benefits is body fat reduction through portion control.

How to determine your daily caloric needs

Once you understand the importance of calories, you're ready to figure out how many you need. The first step in designing your personal fat loss plan is to calculate the total number of calories you burn up every day. This is known as your total daily energy expenditure (TDEE). TDEE is also known as your "maintenance level," because this is the level where your calorie "deposits" are exactly equal to your calorie "withdrawals." TDEE is the total number of calories your body burns in 24 hours, including basal metabolic rate and all activities. Once you know your maintenance level, you will have a reference point from which to start your program.

Some typical calorie averages

Before you learn how to calculate your own calorie needs, it will help you to know the average person's calorie requirements. According to exercise physiologists William McArdle and Frank Katch, the average maintenance level for women in the United States is 2000-2100 calories per day and the average for men is 2700-2900 per day.

These numbers are only averages, of course. Actual calorie expenditures can vary widely and are much higher for athletes or extremely active people. Some triathletes and ultra-endurance athletes may require as many as 5000-6000 calories per day or more just to *maintain* their weight! Endurance cyclists often slog down energy bars and high calorie carbohydrate drinks on the saddle, just to keep from losing weight by the hour! Calorie requirements can also vary among people with the same activity levels because of differences in inherited metabolic rates.

Typical calorie averages for men and women:

<u>For maintaining weight (TDEE):</u>
Men (average): 2700-2900
Women (average): 2000-2100

<u>For losing weight:</u>
Men (average): 2200-2700
Women (average): 1400-1800

<u>For gaining weight:</u>
Men (average): 3200-4000+
Women (average): 2200-2500+

The 6 Factors influencing your daily calorie needs

Your daily calorie requirements depend on six major factors. The formulas for calorie calculations you are about to learn take into account all six of these factors to get the most accurate estimate possible.

1) Basal Metabolic Rate (BMR)

BMR is the total number of calories your body burns for normal bodily functions, including digestion, circulation, respiration, temperature regulation, cell construction, and every other metabolic process in your body. In other words, your BMR is the sum total of all the energy used for basic bodily functions, not including physical activity. BMR usually accounts for the largest amount of your daily calorie expenditure - about two-thirds. BMR is at its lowest when you're sleeping and you're not digesting anything. BMR can vary dramatically from person to person depending on genetic factors. You probably know someone who can eat anything they want yet they never gain an ounce of fat. This type of "fast metabolism" person has inherited a naturally high BMR.

2) Activity Level

Next to BMR, your activity level is the second most important factor in how many calories you need every day. The more active you are, the more calories you burn; it's that simple. Become more active and you burn more calories. Sit on the couch all day long and you hardly burn any.

3) Weight

Your total body weight and total body size are also major factors in the number of calories you require. The bigger you are, the more calories you'll require to move your body.

4) Lean Body Mass (LBM)

Total body weight correlates with the number of calories you require, but separating your total weight into its lean and fat components allows you to calculate your calorie needs even more accurately. The higher your LBM, the higher your BMR will be. This is very significant when you want to lose body fat because it means the more muscle you have, the more calories you will burn at rest. Muscle is metabolically active tissue, and it requires a great deal of energy to sustain it. The best way to increase your BMR is to

increase your LBM. This is why you could say that weight training helps you lose body fat, albeit indirectly.

5) Age

Metabolic rate tends to slow down with age. Therefore, the number of calories the *average person* requires also goes down with age. Fortunately, you can prevent and even reverse the age-related slowdown in metabolism by developing more muscle through weight training and nutrition.

6) Gender

Men usually require more calories than women. The average male has a maintenance level of 2800 calories per day. The average female requires only 2000 calories per day to maintain. The reason for this difference is not so much a sex-related issue as a body weight and muscle mass issue; the average man carries much more muscle mass than the average female and this explains the spread in calorie requirements between men and women. Except for individual genetically-related differences in BMR, a 140 pound man and a 140 pound woman would have the same calorie requirements if their activity levels were identical.

Methods of determining caloric needs

There are many formulas you can use to determine your daily calorie needs using these six factors. Any formula using LBM in the calculations will always be more accurate than one based only on bodyweight. However, you can still get a very accurate estimate of your calorie expenditure just from body weight alone.

The "quick" method (based on total bodyweight)

A fast and easy method to determine how many calories you need is to use your total current weight times a multiplier for TDEE.

Fat loss = 12 - 13 calories per lb. of bodyweight
Maintenance (TDEE) = 15-16 calories per lb. of bodyweight
Weight gain = 18 to 20+ calories per lb. of bodyweight

This is a very easy method to estimate caloric needs, but its most obvious drawbacks are not taking into account activity levels or body composition. If you're extremely active, this formula will underestimate your calorie requirements.

Using this formula, a lightly active 50-year-old woman who weighs 235 lbs. would have a TDEE of 3055 calories per day (235 X 13). Since almost all women will rapidly gain weight on 3000 calories per day, this illustrates another flaw in the quick formula – it will overestimate your calories if your fat is significantly higher than average. Despite these drawbacks, the quick formula is a good way to get a quick ballpark estimate, as long as your body fat is average or less.

Equations based on BMR.

A more accurate method for calculating TDEE is to determine basal metabolic rate (BMR) first, then multiply the BMR by an activity factor to determine TDEE. There are two formulas you can use to calculate your BMR. The Harris-Benedict formula is the one you will use if you don't know your LBM (you don't need body composition information to use this formula). If you know your LBM, you should use the Katch Mcardle formula for the most accurate calorie estimate of all.

The Harris-Benedict formula (BMR based on total body weight)

The Harris-Benedict formula uses the factors of height, weight, age, and sex to determine basal metabolic rate (BMR). This makes it more accurate than determining calorie needs based on total bodyweight alone. The only variable it doesn't take into consideration is lean body mass.

This equation will be very accurate in all but the extremely muscular (will underestimate caloric needs) and the extremely overfat (will overestimate caloric needs).

Men: BMR = 66 + (13.7 X wt in kg) + (5 X ht in cm) - (6.8 X age in years)
Women: BMR = 655 + (9.6 X wt in kg) + (1.8 X ht in cm) - (4.7 X age in years)

Note: 1 inch = 2.54 centimeters
1 kilogram = 2.2 lbs.

Example:
You are male
You are 30 yrs old
You are 5' 8 " tall (172.7 cm)
You weigh 172 lbs. (78 kilos)
Your BMR = 66 + 1068 + 863.6 - 204 = **1793 calories/day**

Once you know your BMR, you can calculate TDEE by multiplying your BMR by the following activity factor.

Activity factor

Sedentary	= BMR X 1.2	(little or no exercise, desk job)
Lightly active	= BMR X 1.375	(light exercise/sports 1-3 days/wk)
Mod. active	= BMR X 1.55	(moderate exercise/sports 3-5 days/wk)
Very active	= BMR X 1.725	(hard exercise/sports 6-7 days/wk)
Extr. Active	= BMR X 1.9	(hard daily exercise/sports & physical job or 2 X day training, marathon, football camp, contest, etc.)

Continuing with the previous example:
Your BMR is 1793 calories per day
Your activity level is moderately active (work out 3-4 times per week)
Your activity factor is 1.55
Your TDEE = 1.55 X 1793 = **2779 calories/day**

Katch-McArdle formula (BMR based on lean body weight)

The Harris-Benedict equation has separate formulas for men and women because men usually have a higher lean body mass and a larger bodies.

Since the Katch-McArdle formula accounts for LBM, this single formula applies equally to both men and women and it is the most accurate method of determining your daily calorie needs.

BMR (men and women) = 370 + (21.6 X lean mass in kg)

Example:
You are male
You weigh 172 lbs (78 kilos)
Your body fat percentage is 14% (24.1 lbs fat, 147.9 lbs lean)
Your lean mass is 147.9 lbs (67.2 kilos)
Your BMR = 370 + (21.6 X 67.2) = **1821 calories**

To determine TDEE from BMR, you simply multiply BMR by the activity factor:

Continuing with the previous example:
Your BMR is 1821
Your activity level is moderately active (you work out 3-4 times per week)
Your activity factor is 1.55
Your TDEE = 1.55 X 1821 = **2822** calories

As you can see, the difference in the TDEE as determined by both formulas is statistically insignificant (2779 vs. 2822 calories) because the man we used as an example is average in body size and body composition. The primary benefit of factoring LBM into the equation is increased accuracy when your body composition leans to either end of the spectrum (very muscular or very obese). This is yet another reason to monitor your body fat percentage and not just your body weight.

Adjust your caloric intake according to your goal

Once you know your TDEE (maintenance level), the next step is to adjust your calories according to your primary goal. The mathematics of weight control are simple:

1) To keep your weight at its current level, you should remain at your daily caloric maintenance level.

2) To lose weight, you need to create a calorie deficit by reducing your calories slightly below your maintenance level (or keeping your calories the same and increasing your activity above your current level).

3) To gain lean body weight, you must increase your calories above your maintenance level (and engage in a program of progressive resistance training).

How to adjust your calories for fat loss

Now let's talk about how many calories you should eat to lose body fat. A calorie deficit that's too large or maintained for too long, will eventually invoke the starvation response and slow your metabolism. Nevertheless, you must have a calorie deficit if you want to lose fat. The secret is to use a small calorie reduction and to avoid any diet that calls for extremely large calorie reductions.

Body fat is nothing more than stored energy. To release stored energy, you must be in a calorie deficient state. Calories not only count, they are the most important factor in a fat loss program. If you are eating more calories than you burn, you will not lose fat, no matter what you're eating or what kind of training you're doing. Some foods may get stored as fat more easily than others because of the way they affect your hormones and blood sugar, but always bear in mind that too much of anything will get stored as fat. You can never override the laws of energy balance.

There are 3500 calories in a pound of stored body fat. In theory, if you create a 3500-calorie deficit per week through diet, exercise or a combination of both, you will lose one pound. If you create a 7000 calorie deficit in a week you will lose two pounds. The calorie deficit can be created through diet, exercise or preferably with a combination of both. Because we already factored in the exercise deficit by using an activity multiplier, the deficit we are concerned with here is the dietary deficit.

The strictly mathematical model of calories in versus calories out doesn't always work because of the body's weight regulating mechanism – also known as the starvation response. Nevertheless, the mathematical model gives you a starting point, and as long as you follow the 8 strategies you learned in chapter two for avoiding the starvation mode, you will continue to get steady, predictable fat loss by using a small, temporary calorie deficit in conjunction with aerobic exercise and weight training.

Calorie deficit thresholds: How low is too low?

It's a fact that cutting calories too severely slows down the metabolic rate and causes the loss of lean body mass, so that leaves us with the question, "How low can you go without negative effects?

There definitely seems to be a certain cutoff or threshold point where further reductions will begin causing problems. The most common guideline for fat loss is to reduce your calories by at least 500, but not more than 1000 below your maintenance level.

For some people, especially those with low body weights and low activity levels, 1000 calories may be too large of a deficit. The ACSM's guideline for recommended safe calorie levels is a 1200-per-day-minimum for women and 1800-per-day-minimum for men. Your lowest allowable calorie level should be: A) 1000 below maintenance or, B) 1200 for females/1800 for males, whichever is higher. A more individualized method is to reduce your calories by a percentage relative to your personal calorie needs.

Reduce your calories by 15-20% below maintenance for optimal, safe fat loss

A more precise way to determine your correct calorie deficit would be to use a percentage deficit relative to your maintenance level. Reducing calories by 15-20% below maintenance level is a good place to start. A larger deficit (25-30%) might be necessary in some cases, but the best approach would be to keep your calorie deficit from diet small, while increasing your activity level to create a bigger deficit, if needed.

Remember, the larger of a deficit you create, the sooner your body will catch on that you are dieting and the sooner it will start slowing your rate of calorie burning.

Minus 500 method:
Your weight is 172 lbs.
Your TDEE is 2822 calories
Your calorie deficit to lose weight is 500 calories
Your optimal caloric intake for weight loss is 2822 - 500 = **2322 calories**

Percentage method:
Your calorie deficit to lose weight is 20% (.20% X 2822 = 564 calories)
Your optimal caloric intake for weight loss = **2258 calories**

Adjust your calories according to your weekly results

All caloric expenditure formulas are just estimations for giving you a starting point. The ONLY way to tell if your estimate is accurate is to get started and watch your results carefully. To see how your body responds to your initial calorie calculations, measure and record your results in terms of weight and body composition using the instructions in chapter three. If you don't get results you expect, you should adjust your caloric intake and exercise levels according to the instructions in chapter four, "charting your progress."

The "skinny" on gaining muscle while losing fat

Supplement advertising in bodybuilding and fitness magazines has brainwashed many people into believing that gaining muscle and losing fat at the same is an easy and common occurrence (with the right "miracle" product, of course). IT'S NOT! It's quite rare.

It's common to see a *large* decrease in body fat with a *small* increase in lean body mass. It's also common to see a *large* increase in lean body mass with a *small* decrease in body fat. But one thing you will almost never see is a *large* increase in lean body mass and a *large* decrease in body fat at the same time (especially if you are drug-free or genetically average).

Because so many people can't make up their minds and they flip flop back and forth between trying to gain muscle and trying to lose fat, they sometimes end up accomplishing neither! Clear goals and a laser-like focus are critical if you want to make

the most efficient use of your time, energy and effort. Make up your mind and follow through!

It's physiologically impossible to lose fat and gain muscle at the same moment in time. You can't gain muscle in a calorie deficit and you can't lose fat in a calorie surplus, it's that simple.

Here's an illustration: The average man with a daily maintenance level of 2800 calories needs approximately 500 calories extra to gain weight – a total of 3300 per day. To lose weight, he needs about a 500-calorie deficit – a total of only 2300 calories per day. The difference between these two nutrition programs is 1000 calories! They are at completely opposite ends of the spectrum.

There are several situations where gaining large amounts of muscle and losing large amounts of fat can occur at the same time:

1) When steroids and/or fat burning drugs are used.
2) In beginners, whose bodies are extremely responsive to exercise (some of the rapid muscle and strength gains in beginners can be attributed to neurological adaptations).
3) In advanced trainees after a long layoff (the muscle gain can be attributed to "muscle memory" i.e., they are not gaining new muscle, they are simply re-gaining what they previously lost).
4) In genetic superiors.

The most efficient method of improving body composition is to put 100% focus on your single most important goal; losing fat or gaining muscle – one or the other. If you have above average amounts of body fat, then your number one goal should be to focus on losing fat first. Then, once the fat is off, you can re-write your goals and work on gaining muscle while maintaining your new, lower body fat level.

The zig zag calorie rotation method for maximum fat loss: the most effective nutritional technique for fat loss ever developed!

Every time you cut calories below your maintenance level, it's never long before your body recognizes the deficit and adjusts your fat burning thermostat so fewer calories are burned. The larger the drop in calories and the longer the drop is maintained, the bigger the drop will be in metabolism.

Your body is an amazing machine that is remarkably adaptable to any situation or environment. Your body likes to stay in a state of equilibrium and will always fight your efforts to change.

Fortunately, there is a way you can "trick" your body into keeping your metabolic rate up while you're dieting for fat loss – It's called the zig zag method and it's without question the most powerful fat burning technique ever developed.

You must have a deficit to lose fat, but what you don't want is a large deficit for a long period of time. The way to "outsmart" your body's starvation response is to avoid prolonged calorie deficits. You simply drop into a calorie deficit for a brief period of three days, then – before your body has a chance to decrease your metabolic rate– you raise your calories back up to maintenance level (or even above maintenance) for one to three days. You then repeat this process until you reach your desired body fat percentage.

Some bodybuilders zig zag their calories completely at random and this seems to be effective for them. Other people use low, medium and high days in a pyramid fashion. My research, based on personal coaching programs with over 600 clients and on 14 years of competitive bodybuilding experience, has shown conclusively that the zig zag method works best in three day cycles. When your calories are kept in a large deficit more than three days, that's when your metabolic rate starts to dip. By raising your calories every fourth day, you spike your metabolism and the starvation mode never fully kicks in.

Here's how the zig zag method works: You will use two separate menu plans – one high calorie day, and one low calorie day. Your low calorie day will be initially set at 15-20% below your maintenance level. Your high calorie day will be initially set at your maintenance level. You will then "cycle" your calories on a three days down, one day up rotation as follows:

<u>Basic "zig zag" rotation</u>

Low calorie days (15-20% below TDEE):	2240 calories – 3 days
High calorie days (maintenance level):	2800 calories – 1 day

Adjustments in calories may need to be made according to your weekly results, and some experimentation is usually necessary before you find your correct numbers. For example, to accelerate fat loss, you could create a larger deficit of 25-30% for the low days and a 10% deficit on the high days. 30% is a large reduction, but as long as you raise your calories every fourth day, your metabolism won't be affected. If loss of LBM ever becomes a problem, you can raise the number of calories you consume on your high days,

or you can even take two or three high calorie days in a row (a three-down, two up or three down, three up rotation)

Accelerated fat loss zig zag rotation
Low calorie days (30% below TDEE): 1960 calories – 3 days
High calorie days (maintenance level): 2520 calories – 1 day

Zig zag rotation to prevent lean body mass loss
Low calorie days (15-20% below TDEE): 2240 calories – 3 days
High calorie days (5% over maintenance level): 2940 calories – 3 days

The zig zag method is without question, the most effective method of fat loss ever developed. It is also one of the best-kept secrets of the world's best natural bodybuilders and fitness models. Bodybuilders frequently use this method prior to competitions to help strip their bodies of all visible fat while maintaining their lean body mass. This method is also effective for breaking plateaus, accelerating slow fat loss, maintaining lean body mass and preventing sluggish metabolisms from slowing down further.

The zig zag method is also great way to make a reduced-calorie nutrition plan work most effectively for an endomorph or "slow-metabolism" body type who tends to lose fat slowly and with great difficulty.

Compare your estimated TDEE to how much you've been eating

In order to know where you should begin, you need to know how many calories you were consuming prior to starting this program. Most people have absolutely no idea how many calories they eat every day. If you fall into this category, then it's time to start the new positive habit of calorie counting!

Before you make any major alterations to the quantity of food you're eating now, figure out exactly how many calories you've been averaging over the past few months. Think back to a recent "typical" day of eating and write down everything you ate from the time you got up in the morning to the time you went to sleep at night. Don't forget the little things like sauces, condiments, the milk in your coffee, the sports drink during your workout, that beer on the weekend and late-night snacks.

Then, get out your calorie list found in the appendix and add everything up. (I also recommend Corinne Netzer's "Complete Book of Food Counts" for an exhaustive listing of over 12,000 foods). If your food intake always varies and you don't have a typical day, then write down three days worth of recent menus, add them up and divide by three to get

a daily average. After you've tallied it all up you may be surprised (often unpleasantly) at the amount you've been eating.

Make it a discipline to learn the calorie values of all the foods you eat on a regular basis and commit them to memory. There are probably only about a dozen or so. For foods you eat only occasionally, have your calorie counter book or calorie chart handy to look them up.

Adjust your caloric intake gradually if necessary

It's usually not wise to make drastic changes to your caloric intake all at once. After you've done all your calorie calculations and determined your optimal calorie level to reach your goal, compare that amount to what you've been averaging over the past few months.

If your current caloric intake has been substantially higher or lower than your new target amount, then you may need to adjust gradually. For example, if your optimal caloric intake is 2600 calories per day, but you've only been eating two meals and 1500 calories per day for the past year, your metabolism may be sluggish from the low meal frequency and calorie intake. An immediate jump to 2600 calories per day might actually cause a gain in body fat if your body has adapted to the lower calories. A sudden increase would create a temporary surplus.

The best approach would be to gradually increase your calories from 1500 to 2600 over a period of weeks to allow your metabolism to gradually increase. Simply eat the same foods and the same number of meals, but gradually increase your portions to let your body acclimate.

The reverse is also true; if you're eating a lot more than your recommended amount, it may be wiser to gradually reduce your calories than to drop them suddenly. Cutting too many calories too quickly often causes diet relapses because the change is too dramatic for some people to handle.

Keep a nutrition journal: Read labels, count calories, and weigh or measure everything…at least once

During the initial stages of this program, I strongly encourage you to keep a "Daily Nutrition Journal" in which you keep track of your calories and other important nutrition information. You'll find a sample page in the appendix. Feel free to make photocopies or set up a similar spreadsheet on your computer. Or, just keep your nutrition journal in a plain old spiral notebook.

If you're not familiar with calories, you should keep a detailed nutrition journal at least once for a period of one to three months. After you've done this exercise, you'll have gained a new perspective on calories that will stay with you for the rest of your life.

Get yourself a good food scale like the "Health-O Meter" (available in the Kitchen section of better department stores or at housewares stores) and get a complete set of measuring cups. For any packaged foods that you don't know the caloric value of by memory, read the "Nutrition Facts" panel on the label. For produce and natural foods that don't come with labels (Potatoes, yams, vegetables, fruits, etc), use your calorie book or chart to look up the food values.

Is all this calorie counting *really* necessary or can you just count "portions"

Some people claim that meticulous calorie counting is not practical. Instead they insist that you should count "portions." Controlling portion sizes instead of calories is a start, but as Ian King said in the display quote at the beginning of this chapter, "Any discussion about optimal calorie intake is really a total waste of time - unless you are actually counting the calories!"

In his outstanding book, "Everything You Need to Know About Fat Loss," Chris Aceto, one of the top bodybuilding nutritionists in the world, wrote, "I feel that number crunching is a very important part of learning about nutrition. You will never be able to build an exact diet, one that really works, and one that it built especially for you without knowing how to count calories, carbohydrates, protein and fat."

Chris is right. Although a few genetically gifted bodybuilders and fitness competitors can just "wing it" and guess at everything with positive results, almost every top-level physique athlete in the world meticulously counts calories. They leave nothing to chance and neither should you. This is especially true during periods when you're working hard on achieving a major goal, whether it's a competition or losing 6% body fat for vacation.

If you don't become familiar with the calorie content of your daily staple foods and keep a detailed nutrition journal at least once, then you're not just serious about your goals - you're guessing! Once you've completed this journal exercise, you'll be able to at least make an educated ballpark estimate of your caloric intake from that point onward.

A simple way to make this process quick and easy is to type out your menu on an Excel spreadsheet with all your calorie and macronutrient totals calculated and then tape

it to your refrigerator (and stick a copy in your Day Timer or appointment book too). If you follow the same basic menu every day, or close to it, then there's no more calorie counting to be done – you only have to do it once to set up your initial menu.

From a practical standpoint, eating the same thing every day takes the painstaking daily calorie counting out of the picture. However, from a nutritional perspective, it's a good idea to incorporate a wide variety of foods over the course of each week so you get the complete spectrum of vitamins, minerals, fiber and other nutrients that are necessary for optimal health and body composition.

With the exchange system you will learn about in an upcoming chapter, you will discover that substitutions are quite simple. Using the exchange system guidelines will allow you to closely monitor your calorie levels even when you diverge from your regular menu. If you really enjoy the variety, you can create a few days or even an entire week of menus and rotate them. I've never met anyone who got bored or who failed to obtain a sufficient variety of foods by creating three or four days of menus. So you see, calorie counting will require a little bit of work and discipline in the beginning, but once your menus have been worked up on a spreadsheet, making exchanges is a cinch and there's really nothing to it.

Calorie counting is a discipline that pays off

Although it's clearly not necessary to write down the calorie amounts of every crumb that goes in your mouth every day for the rest of your life, it's important that you understand the law of calorie balance and you always have at least a ballpark figure of your current daily intake. If you're just guessing and you don't have the slightest clue how much you're eating, you could be *way off* in either direction. If you're not making any progress, this lack of attention to detail might be the only thing holding you back. Do you really want to take that chance?

Ultimately, whether you decide to track calories meticulously should depend on your results. Results are what count. Counting portions and "ballparking it" is fine ONLY if you're getting the results you want. If you're losing fat while maintaining lean body mass without counting calories, then keep doing what you're doing. However, most people who refuse to count calories are NOT getting the results they want because they are guessing, which simply demonstrates a lack of discipline.

You might not consider calorie counting and number crunching fun or easy and you might not feel like doing it. However, calorie counting is a discipline just like anything else. The best definition of discipline I've ever heard was by achievement expert

Brian Tracy, who said, “Discipline is doing what is hard and necessary rather than what is fun and easy and doing it when it’s necessary, whether you feel like doing it or not.”

So if you want the best results, then get out your calorie book, measuring cups, scale, daily nutrition diary (or spreadsheet) and start counting. In the upcoming chapters, get ready to learn about more disciplines you’ll want to adopt in order to slash your body fat to ridiculously low levels, revealing the chiseled muscle definition you’ve always wanted!

Chapter 7: Secrets of Meal Frequency & Timing: How to Turbo-Charge Your Metabolism and Turn Your Body Into a Fat Burning Machine!

"Meal frequency and meal frequency alone has the capability of having some miraculous effects on human physiology!"

- TC Luoma, Bodybuilding writer and editor of Testosterone Magazine

"If you haven't figured it out yet, let me spell it out for you: depending on your goal, it is either five or six meals a day or forget about reaching your potential!"

- Keith Klein, World-renowned nutritionist and author of "Get Lean."

The secret to a fast metabolism

A "fast metabolism." Just the sound of that phrase makes you visualize a rock hard, fat-free body. Having a "fast" metabolism means that you're burning calories efficiently all the time, whether you're resting or training. When you have a slow metabolism, your diet doesn't work as well and even a well-designed training program is rendered less effective. Slow-metabolism syndrome is why it's possible for a person eating very few calories and "aerobicizing their brains out" to see little or no results. Your mission is clear: Find ways to speed up your metabolism and get it revving as fast as possible. This chapter will show you how.

Of all the nutrition strategies in the BFFM system, the practice of eating small, frequent meals – one approximately every three waking hours - is by far the most effective way to speed up your metabolism. It's so effective, in fact, that when you see the results, you may wonder why you've ever had any difficulty losing body fat in the past.

After 12 to 16 weeks of strict pre-contest dieting on super-clean, high protein foods eaten six or seven times a day, competitive bodybuilders often have metabolisms "spinning" so fast, they burn through huge quantities of food – even junk food! (And they just keep getting leaner and leaner). Their bodies become like "human food incinerators," producing enormous amounts of heat and burning off calories at an alarming rate. When frequent eating is combined with the right food choices, your body will literally turn into a turbo-charged fat burning machine!

Coincidentally, eating a properly constructed meal every three hours is also the only way to effectively build and maintain muscle. The longer you consistently practice the five to six meals per day discipline, the more muscle you'll develop. The more muscle you develop, the faster your metabolism will become – it's a positive, self-reinforcing cycle.

Why you will <u>never</u> reach your maximum potential without eating five or six meals a day

Just how important is frequent eating? Well, let me put it this way: Comparing three "squares" to six meals a day is like comparing a 450 horsepower V-10, 8.0 liter Dodge Viper to a four cylinder Honda Civic. There's nothing wrong with a Honda Civic - it will get you where you want to go – eventually - but if you wanted to get somewhere in a hurry, which engine would you rather have? With a top speed of 192 mph, I bet you'd take the Viper wouldn't you?

The odds are good that you invested in this program because you want to get results *faster* and reach your goals *sooner*. There are limits to how fast you can safely lose body fat, but high meal frequency will allow you to do it as quickly as possible. You can eat the right foods and work out daily but if your metabolism is inefficient it's like swimming upstream and fighting against the current.

I'm not saying you can't get any results on three meals a day – of course you can. A traditional breakfast, lunch and dinner, carefully selected using the guidelines in this program and combined with aerobic and resistance training, will definitely get you some noticeable results. Unfortunately, it will take longer, and if you have any substantial degree of endomorph in your body type mix, it might take *much* longer. If you have ambitious goals, such as bodybuilding or fitness competition (or if you just want to look like a bodybuilder or fitness model), then five or six meals per day is an absolute requirement.

What is the *optimal* number of meals? 4, 5, 6, 7… more than 7?

ONE or TWO meals a day is a disaster. If you haven't been eating at least three times a day, you are causing serious damage to your metabolism. If you want to get your metabolism back up to speed, read the rest of this chapter very carefully and follow the instructions to the letter.

Eat THREE meals a day, properly balanced with the right nutritious foods, and work out hard and you'll get *some* results. But...you'll get about half the results you'd get from six meals a day and it will take you twice as long to get there. If you have less than

"elite" genetics or a naturally slow metabolism, you may have serious difficulty on only three meals. And if you miss even a single meal, then you're causing metabolic damage.

If you eat FOUR meals a day, making intelligent food choices and combining your foods in the ideal ratios, you'll see *substantial* results. But you'll only get about sixty or seventy percent of the results you'd get from six meals a day and it will take you longer to get there, if you do get there.

FIVE meals a day? Now we're getting somewhere. Five meals a day will give you *good* results on a weekly basis. If you're a large, active male, you could still do better by adding a sixth meal.

SIX small meals a day is the answer! Two simple facts of physiology will explain why: (1) It takes about three hours to digest each meal, and (2) protein (amino acids) lasts about three hours in the bloodstream. If you sleep eight hours per night, that leaves 16 waking hours in the day. Six meals over 16 hours equals one meal every 2.7 hours. If your goal is five meals, then your target is one meal every 3.2 hours. Average it up for simplicity, and that's where the guideline of one meal every three hours comes from. Five meals a day seems to be the optimal number for women and six meals is ideal for men. The difference is because men require on average, about 600-900 calories per day more than women.

So, if five or six meals a day is good, then seven or eight or even ten must be even better, right? Well, not exactly. You could experiment with one extra meal and it might produce slightly better results. However, it takes a minimum of two to two and a half hours to digest a meal, so it doesn't make any sense to eat more than six or seven times per day. If you did, you would only be piling food on top of undigested food. How much you eat isn't as important as how much you fully digest and assimilate. Unless each of your meals was tiny, you also might be eating too many calories for the day.

Extremists that they are, some bodybuilders figure that if five or six meals a day is good, then seven or eight is even better. Heck, some of them even set their alarms and get up in the middle of the night to eat! As in most areas of life, when anything is taken to the extreme, there's always a point of diminishing returns or even damage.

If your goal is to gain muscle and you're that die-hard (dare I say crazy?), then knock yourself out. A light protein meal in the middle of the night might fend off some of the muscle loss that occurs naturally overnight as you sleep. But there's a trade off – uninterrupted sleep is important too. If your number one priority is fat loss, you're better off not eating late in the evening at all, let alone in the middle of the night. Get your zzz's – you're gonna need them with the training program I have in store for you.

Why you might resist the five or six meals a day idea– and why you must GET OVER IT if you want to be the proud owner of a lean, fat-free body!

You probably know at least one person who violates this meal frequency rule, maybe a friend who eats no breakfast and two gigantic meals like a pizza for lunch and a Big Mac and French Fries for dinner. Despite these two gluttonous feedings, they never get fat and they look like they're in excellent shape. After seeing such annoying displays of genetic advantage, you might say to yourself that this meal frequency business is a bunch of nonsense.

However, I must caution you; if you refuse to accept the habit of eating small frequent meals, you may see some results, but you'll never reach your maximum potential. If your metabolism and genetic disposition are geared towards gaining fat easily, you can't afford to mess around with three meals a day. And you definitely can't skip meals - EVER! Pay no attention to your mesomorph friends and just do what it takes for you.

The reason most beginners have a hard time accepting the five or six meals concept is because what I'm suggesting, in many cases, is that some people actually eat MORE FOOD than they've ever eaten before; the food is simply spread out into smaller portions. This idea might sound contrary to everything you've ever heard about losing weight. I even said so myself in our previous talk about calories; you have to eat less than you burn in order to lose weight, right?

True, calories count. But the amazing thing about eating frequently is that IT MAKES YOU BURN MORE CALORIES! Five or six meals a day accelerates your body's natural rate of calorie burning.

Why skipping meals is one of the cardinal sins of fat burning nutrition…and how to eat more food and lose more fat at the same time

Skipping meals (or leaving long gaps between meals) is the cardinal sin of fat-burning and muscle-building nutrition. Missing meals slows down your metabolism, causes muscle loss and triggers your body's starvation responses.

Suppose you skip breakfast and you haven't eaten since 8:00 p.m. the previous evening. If you eat lunch at 12:00 pm, you've gone 16 hours without any food. At this point, you are not only in a highly catabolic (muscle wasting) state, you're also sending an unmistakable starvation signal to your body.

If skipping meals is the cardinal sin of fat burning and muscle building nutrition, then skipping breakfast is a capital crime suited for the death penalty! And yet "everybody" is doing it!

When I analyze nutrition programs for my clients, one of the most common errors I see is skipping breakfast or eating it late, around 10:00 a.m. or even later. "I don't have time" is usually the excuse justifying this unforgivable blunder. Let's take a close look at the devastating impact this lack of planning and discipline has on your fat loss efforts:

Suppose you're in a hurry to get to work in the morning and you bolt out the door without eating breakfast. Your first meal of the day is lunch at 12:00 noon. It's moderately sized, let's say 500 calories, consisting of a turkey sandwich on wheat and a banana. Sounds fairly healthy so far. By your customary dinnertime of 6:00 p.m., you are ravenously hungry, and you polish off a massive plate of pasta for a total of 800 calories. Later that night you're still hungry and craving something sweet. Some cookies and low fat milk do the trick – about 300 calories. Then you go right to sleep. Although far from perfect, this menu doesn't sound like a total disaster to the average, uniformed person… But IT IS! It's a nightmare!

If we add up those calories, it totals only 1600 for the entire day. In theory, at least according to the calorie calculations you did previously, you should be losing fat – quite rapidly if you're a man. So why aren't you? It's because you're doing EVERYTHING possible to encourage your body to *store* fat: You are going catabolic by leaving 18 hours between dinner and the next day's lunch. This causes muscle loss and metabolic downgrade. Because you've only eaten one meal during the day, you're famished and you eat too much at dinner. Even though you're in a 24-hour calorie deficit, this causes fat storage anyway because you've eaten more than you can handle at one sitting. By "starving and stuffing," you've also set yourself up for serious cravings at night; usually the wrong foods – like cookies or ice cream!

In the long run, this type of diet is a sure-fire way to slow down your metabolism, lose muscle and gain body fat. On the other hand, 2400 calories spread out into five or six small meals of 400 - 480 calories each (about 300-350 calories per meal for women), will increase energy, accelerate muscle growth, and speed up your metabolism without fat storage. Frequent eating can actually allow you to consume up to 50% more calories without storing an ounce of it as fat!

The 7 reasons why frequent meals are critical to your success in losing fat permanently without losing muscle

If you're still not convinced yet that eating six times a day is worth the effort, then this ought to hammer the point home for you: Here are the seven reasons why frequent meals of the proper quantity and quality will turn your body into a turbo-charged fat burning machine!

1. Frequent eating speeds up your metabolism due to the thermic effect of food

Every physiological process that occurs in your body uses energy. Keeping your heart beating and circulating blood uses energy. Creating new body cells requires energy. So does breathing. Even thinking burns calories. Digestion is no exception. The mechanical breakdown and absorption of food requires a substantial number of calories.

Some of the calories in the foods you eat are burned off just to digest them, so the net amount of calories absorbed is actually less than the amount contained in the food. This process has several names such as "Dietary-induced thermogenesis," the "Specific–dynamic action of food," or most commonly, the "Thermic effect of food." The thermic effect peaks about an hour after each meal and begins to drop about three hours after the meal has been completely digested.

You may have heard the expression, "negative calories." This refers to certain foods, such as asparagus or lettuce, which have a high thermic effect and a low calorie density. It's almost impossible for these foods to be stored as fat because most of their calories are burned off just to digest them!

When fat loss is your goal, your diet should be heavy in foods with a high thermic effect, including fibrous vegetables and lean proteins. You'll never get fat eating lean proteins and green vegetables/salads –it's virtually impossible. Lean protein foods like chicken breast, fish and egg whites have the highest thermic effect of all and that's why this program is centered on protein, with carbohydrates built *around* the protein. Lean protein is a "metabolic stimulator."

The magnitude of the thermic effect can vary from 3% to 30%. Protein foods elicit a thermic effect of up to 30% of the meal's total calories. Natural starchy and fibrous carbohydrates are a close second at around 20%. Fats and refined carbohydrates have a very low thermic effect (fats only elicit a 3% thermic effect). This is one of the reasons dietary fat is so easily stored as body fat.

The fact that dietary fats have only a 3% thermic effect is an important point. There has been a trend in recent years away from high-carbohydrate, low-fat diets towards eating higher fat and higher protein with fewer carbohydrates. To a point, this is

a step in the right direction, but the more fat you eat beyond what you need for your essential fatty acid needs, the slower your metabolism becomes. One reason why diets promoting high fat (above 30% of daily calories) are ineffective is because high fat diets are not thermic!

The promoters of high-fat diets suggest you can eat unlimited fat as long as your carbohydrates are restricted. They also suggest that high fat will stimulate the testosterone and growth hormone release that's necessary for muscle development and fat burning. The problem is, even if there's an extra release of anabolic hormones, it's not going to help you much if your metabolism is as slow as molasses in January.

You'll get more detailed instructions on how to create meals with the highest thermic effect in upcoming chapters. For now, you should understand this: Eating every three hours = high thermic effect/fast metabolism. Missing meals = no thermic effect/slow metabolism.

Once you understand the concept of dietary thermogenesis, you'll never want to miss a meal again because you'll realize that eating properly *increases* your metabolism and gets you *leaner*, while skipping meals *slows down* your metabolism and makes you *fatter*! (Now that's a paradigm shift isn't it?)

2. Frequent meals prevent binges and control cravings

In addition to the metabolism-boosting, energy-increasing and muscle sparing benefits of frequent eating, you'll also find yourself less likely to binge or get cravings. If you're eating every three hours, you'll always feel very satisfied and hunger will rarely be an issue because mealtime always comes around so soon.

The starving and stuffing pattern of eating sets you up for uncontrollable cravings and massive binges later on. When blood sugar plummets from long periods without food, it's nearly impossible to control the hormonally created hunger that follows. You become ravenous. When you're this hungry, you couldn't care less about eating lean proteins and complex carbs, you just want food and you want it now!

Have you ever had strong cravings late in the day for specific foods you don't normally eat and you don't know why? If so, think back to what you ate earlier in the day. Chances are you were NOT eating every three hours or you ate fast-burning sugars by themselves. You set off the hunger alarm by skipping breakfast or leaving big gaps between meals. If you don't want those cravings again, close the gaps and eat every three hours.

On a more serious note, the habit of missing meals and then bingeing on huge meals of processed carbohydrates and fatty foods can lead to the development of Type-II diabetes in those with the genetic predisposition. It even gets worse: This condition often progresses into deterioration of the cardiovascular system and atherosclerotic disease. It has also been associated with increased LDL cholesterol in the bloodstream. Obesity, diabetes and heart disease are no laughing matters. This isn't just about getting lean – frequent eating can save your health and possibly your life.

3. Frequent meals help maintain high energy levels by regulating blood sugar and insulin levels

Here's one of the first benefits you'll notice from following the BFFM eating plan: Your energy will skyrocket almost overnight. Changes in your body composition will take place slowly though steadily, but starting on the very first week you begin the program, you'll get the instant gratification of having more energy than you've ever felt before. No more ups and downs; no more mid morning energy crashes; no more late afternoon drowsy spells, just solid, steady, high energy all day long – and more energy for your workouts too. Here's why:

When you eat carbohydrates, they're digested and absorbed into the bloodstream in the form of glucose (blood sugar). This triggers the pancreas to release the hormone insulin. The amount of insulin released will correspond to the amount and type of carbohydrates consumed. When small amounts of carbohydrates and insulin-stimulating foods are consumed, there's a small output of insulin. When large amounts of carbohydrates and insulin-stimulating foods are consumed, there is a large rise in insulin. When carbohydrates are consumed alone, there's a faster rise in insulin than when they're consumed in combination with protein. When simple, refined carbohydrates are consumed, there's also a greater rise in insulin. One of insulin's jobs is to transport the glucose from the bloodstream into the cells where it can be used for energy or stored as glycogen for later use.

If you over-consume carbohydrates or if you consume the wrong types of carbohydrates, there will be a sharp peak in blood sugar followed by a sharp rise in insulin. The over-secretion of insulin will quickly remove the sugar from your bloodstream and your blood sugar will drop to lower than normal levels (hypoglycemia). Hypoglycemia will cause fatigue and will trigger the intense hunger and cravings that can derail even the strongest willpower. The result is, you invariably consume more sugar to satisfy your cravings, and then the energy peak and energy crash cycle repeats itself over and over again.

Frequent eating with the right types of carbohydrates combined with lean proteins and small amounts of healthy "good" fats will stabilize your blood sugar and insulin levels, and this is what prevents the energy spikes and crashes. This eating pattern will also keep your muscle glycogen levels high, which guarantees that you have plenty of energy to fuel high-intensity weight training.

4. Frequent meals are ANABOLIC: They help promote muscle growth by regulating insulin levels and providing a steady flow of amino acids into muscle cells

The high insulin levels that follow the consumption of refined carbohydrates are definitely undesirable, but a moderate and steady output of insulin is necessary for muscle growth and glycogen storage. Insulin is a powerful anabolic hormone because one of its major roles is to shuttle glucose and amino acids into the muscle cells where they can be used for recovery and muscle growth. By eating a small to moderately sized meal containing protein every 2 1/2 to 3 hours, you provide a steady flow of amino acids into your bloodstream. When you eat complex carbohydrates with your protein every three hours, there is a moderate, but not excessive release of insulin, which delivers the amino acids to "hungry" muscle cells. A steady flow of protein into your system is absolutely critical for muscle growth and maintenance, and the only way to do it is with a meal every three hours.

5. Frequent meals are ANTI-CATABOLIC: they help promote muscle growth by preventing muscle breakdown (you stay in positive nitrogen balance)

Muscle growth isn't just a result of building up the muscle. It's also a matter of preventing it from being broken down. When you skip meals, your body's need for amino acids doesn't stop. When you cut off the continual inflow of amino acids from protein foods, your body simply goes to a different source – your own muscle. Intentionally starving yourself to lose weight, or even innocently missing a single meal puts you in a catabolic state – you literally eat your own muscle tissue - the muscle you worked so hard in the gym to develop.

In one very interesting study reported in the Scandinavian Journal of Medicine & Science in Sports and Exercise (6:5, pgs. 265-272, 1996), the effects of two versus six meals was examined. *Both groups lost the same amount of weight, but the two meal group lost mostly lean body mass while the six meal per day group did not!*

Your body doesn't have the ability to store proteins. Amino acids only remain in your bloodstream for about three hours after each meal. After that, you go into a state

called negative nitrogen balance, a condition where you are burning up your own muscle protein. That's why it's crucial to eat a meal with protein every three hours. Eating massive amounts of protein in two or three large meals doesn't help – it must be spread out.

6. Frequent eating promotes better utilization of nutrients

Protein and carbohydrates aren't the only nutrients you'll get better use of from frequent eating. Eating at regular intervals allows more efficient utilization of vitamins, minerals and virtually every other micronutrient and macronutrient.

7. Eating smaller meals more frequently reduces fat storage through portion control

Eating small, frequent meals helps prevent you from over-consuming calories through simple portion control. Excess calories at one meal will always be converted into body fat. When you consume a meal, the food is digested and directed into any cells requiring immediate energy. Once the cells have received all the energy they need, the body can store the excess fuel in the form of glycogen in the muscles and liver. However, there's only so much glycogen your body can store. Any excess calories beyond this limit will be stored as body fat.

The perfect meal size

Ok, so now you know all the reasons why you must never skip meals and why you must eat small meals every three hours. The next question is, "What is the definition of a small meal?" Well, if you've done your calorie calculations already then this is very easy to figure out.

On average, the optimal intake to lose fat is about 2400-2500 calories per day for men and 1500-1600 for women. Naturally, if you are a serious athlete or bodybuilder with high activity levels, these calorie levels will be higher. To get your ideal calorie intake per meal is easy; simply divide your total daily calories by the number of meals you are aiming for (preferably five or six).

<u>Men:</u>
Average optimal caloric intake for fat loss = 2400
Desired number of meals = 5 or 6
Target calorie intake per meal = 400 to 480 calories per meal

Women:
Average optimal caloric intake for fat loss = 1500
Desired number of meals = 5
Target calorie intake per meal = 300 calories per meal

As you can see, these are fairly small meals. Now let's take a look at the calorie contents of some sample meals you might encounter while eating out:

Big Mac and large fries = 980 calories
Denny's Grand Slam breakfast = 1100 calories
Porterhouse steak, steak-house size portion (one pound) = 1150 calories
Spaghetti with tomato sauce, restaurant serving (3 ½ cups) = 850 calories
Medium movie theater popcorn with butter = 1100 calories
Chinese/Kung Pao chicken with rice (1 order) = 1620 calories

The problem is obvious: Most people are over-eating, big-time! (And these examples aren't even including drinks or desserts.) An average restaurant meal, whether we're talking steak, breakfast, Italian, Chinese, or fast food, can easily top 1000 calories.

An average sized meal for fat loss is 300 calories for women and 400 calories for men, based on five or six meals per day, respectively. Even if you have a large frame and you're highly active, the upper end of the calorie range for fat loss is usually around 400 for women and 550 for men. Your objective is to never, ever eat huge meals – not even on a "cheat day." It's permissible to enjoy cheat foods occasionally in small amounts, but NEVER binge or stuff yourself – EVER! Always spread out those calories!

Taper your calories: Make breakfast your largest meal and dinner your smallest

Although these "average" calorie amounts were divided evenly in each meal, there's one small adjustment that can increase your fat loss even further; it's called "calorie tapering." There's an old saying, "Eat breakfast like a king, lunch like prince and dinner like a pauper." This arrangement of meals from largest to smallest is wise advice. The typical eating pattern of the average American is; no breakfast or skimpy breakfast like a bagel or doughnut, then a big lunch, usually fast food or cafeteria food, concluding with a huge dinner and a late night snack.

This pattern of small to large is the opposite of how bodybuilders eat to get lean. If you want every calorie to be used most efficiently, reverse the order and eat a large breakfast, a small or moderate dinner, and avoid eating late at night. You are much *less* likely to store the early morning meal as fat because you've been fasting overnight. A

heavy evening meal is much *more* likely to be stored as fat because you burn fewer calories at night and your metabolism is slowest while you are sleeping.

Start eating early in the day and eat your last meal at least two or three hours before bedtime

Ideally, you should begin eating early (6:00 a.m. to 7:00 a.m. or earlier), so you can fit in five to six meals and your last meal falls two to three hours prior to going to sleep. If you sleep in and miss your first meal or wait until late morning or early afternoon to start eating, you're leaving a gaping hole between meals. This gap can be 16-20 hours long if you haven't eaten since six or seven the night before. This sends you into starvation mode and causes an incredibly catabolic (muscle-wasting) state.

Yes, this means you must become a morning person if you're not one already. Brian Tracy, one of the world's leading experts on personal achievement said, "In my studies of successful people over the years, I have never found any highly successful person who was a late riser." Get up early and start eating early! If you work third shift, then you should simply eat meal one whenever you wake up and arrange your meals so you eat every three waking hours, even if that's during the wee hours of the morning.

Not all nutritionists and exercise physiologists agree on the theory of eating less at night for fat loss. Real-world results however, have proven this is a tried and true technique. Calorie tapering is accepted and embraced by nearly every successful competitive bodybuilder and fitness competitor in the world. But don't just take my word for it; here's what two of the most respected bodybuilding experts in the world have to say about it:

"Bodybuilders are some of the leanest people on Earth. In an attempt to shed every ounce of excessive fat, bodybuilders often stop eating late at night. Specifically, many will reduce their carbohydrate intake as the day progresses in hope that more fat will be lost. My experience has shown that eating carbohydrates at night, under certain circumstances, cause you to store calories as fat."

-Chris Aceto, author of "Everything You Need to Know about Fat Loss"

"I strongly recommend moving the last intake for the day as far away from bedtime as you can. 3-4 hours is ideal, but at least 2-3. This increases the length of the "fast" which in reality nighttime is - broken by breakfast. Using this method consistently is one of the most effective ways to lower body fat - and it doesn't take a lot of effort."

- Ian King, author of "Get Buffed"

Although many scientists reject the "eat less at night" theory, there are some very logical and scientific reasons why it works:

1. You are less active at night and are burning fewer calories
2. Your metabolism is slowest while you are sleeping
3. You will release more insulin at night compared to in the morning
4. Your glycogen stores are fuller after a day of eating so you are more likely to store excess carbohydrate as fat instead of storing it as muscle glycogen

So, with our slight adjustment for a smaller evening meal and a larger first meal, our sample day might look like this:

Men/2400 calories/six meals:	**Women/1500 calories/5 meals**
Meal 1: 500	Meal 1: 375
Meal 2: 400	Meal 2: 300
Meal 3: 400	Meal 3: 300
Meal 4: 400	Meal 4: 300
Meal 5: 400	Meal 5: 225
Meal 6: 300	

These are simplified examples, of course. Actual calorie amounts will seldom be such precise round figures. You can also taper your calories gradually with each meal as the day goes on, although that makes for some extra number crunching. The most important part of the calorie tapering method is to make breakfast your largest meal and eat sparingly at night, allowing at least three hours before you go to bed.

Maintain a consistent eating pattern seven days a week

Consistency is the hallmark of all people who successfully lose body fat and keep it off. You must work hard to maintain your discipline and keep a regular eating schedule seven days a week. Because most people work on a regular schedule Monday through Friday, it's often easier to follow the BFFM meal frequency guidelines on the weekdays. On the weekends, it's tempting to sleep in, miss meals or fall off your regular schedule.

Habits are a powerful force if you harness them for your advantage. If you follow the program five days a week and let it completely fall apart on weekends, you'll never get into a solid habit pattern, nor will you get optimal results. It's okay to have a cheat meal or two per week, but not an entire "cheat weekend!"

How snacking fits into the BFFM eating plan

Most people's snacks of choice are refined carbohydrates and fatty foods such as crackers, cookies, candy, muffins, potato chips and pretzels. This is largely because "carbo snacks" are so readily available (it's not like you can grab a chicken breast or Salmon steak at the checkout counter of a convenience store!) In the next chapter, you'll be learning why eating "carb snacks" by themselves is not a good idea. On the BFFM program, usually you won't want snacks because you'll be eating meals so often that hunger and cravings between meals will be a thing of the past. If you make healthy choices and stay within your calorie limits, snacks are perfectly acceptable if you want them. Some of the best snacks include fruit, raw vegetables (carrots, celery, cauliflower, etc), nuts and seeds (in small quantities) non-fat or low-fat cottage cheese and non-fat or low-fat sugar free yogurt.

Transition gradually into five or six meals a day if you find frequent eating difficult

If you find it too difficult to eat five or six meals per day right from the start, you may need to use a transitional period. If you've only been eating two or three times a day, there's a simple way to get started on the habit of frequent eating: Continue to eat your three full meals per day, properly combined with a lean protein and a complex carbohydrate. Then simply add two or three snacks; one in between each full meal.

Transitional menu plans

Men/2400 calories/six meals:	**Women/1500 calories/5 meals**
Meal 1: 575 (breakfast)	Meal 1: 400 (breakfast)
Meal 2: 225 (snack)	Meal 2: 175 (mid morning snack)
Meal 3: 500 (lunch)	Meal 3: 400 (lunch)
Meal 4: 450 (mid aftern. meal)	Meal 4: 175 (mid aftern. snack)
Meal 5: 425 (dinner)	Meal 5: 350 (dinner)
Meal 6: 225 (evening snack)	

A "snack" such as a piece of fruit, is only 60-110 calories, and does not by itself constitute a full meal by the standards of this program (it's not a full "meal" without protein). However, it does get you into the habit of eating frequently, and that would be a start. (Snacks such as non-fat cottage cheese or non-fat yogurt with a scoop of protein powder would provide more calories and a solid serving of protein). As you get accustomed to eating more often, you can progress to four full meals and finally to the most effective habit of eating five or six meals, each containing a lean protein and a complex carbohydrate.

Practical considerations for high meal frequency

At this point, you might be in complete agreement that the benefits of having a lean protein and complex carbohydrate meal every three hours are fantastic. However, there's still a little problem: You have a life! How are you supposed to squeeze five or six meals into your busy schedule?

First of all, let me say there's no easy way around it. Eating frequently is hard work and requires discipline. However, advanced planning, preparation and scheduling are the keys to making it as easy as possible. Supplements can also help, but you don't want to go overboard in the meal replacement department. If you really want a fast metabolism, avoid drinking a large portion of your calories. Liquid calories tend to be more concentrated and have virtually no thermic effect compared to solid food.

Here are five tips to make frequent eating as easy as possible*:*

1. Think of where you'll be tomorrow and plan your entire day in advance.

One of my success mentors, the great Jim Rohn, taught me something about time management I'll never forget: He said, "Never start your day until you've finished it." Incredibly simple, yet profound advice. Always be thinking ahead to the next day and plan the entire day in advance so you'll never be caught off guard without your food.

2. Schedule a time for each meal and stick to it

When you design your menus, always select a time for each meal. Once established, make this your permanent meal time so there's as little thought involved as possible. If you stay with the same schedule long enough, eating at the prescribed meal time will become a deeply-ingrained habit. You'll also find that the body thrives on the regularity.

3. Cook your food the night before, for an entire day of meals

It's an absolute must to prepare at least one full day's worth of food at a time. Pack your food in plastic containers, ready to take with you wherever you go.

4. Cook in bulk

Another time saving strategy is to cook in large quantities for several days or even an entire week in advance. Some bodybuilders cook a whole turkey on Sunday, then slice off portions as needed every day. Large portions of lean proteins can also be easily prepared

on a George Foreman grill or on a jumbo Circulon grill pan (available in housewares stores or in the kitchen section of any good department store). Many of your carbohydrate sources such as potatoes, sweet potatoes and brown rice can also be cooked in advance and refrigerated or frozen until they are needed.

5. Plan ahead when traveling

Being on the road or in a plane for a day is not an excuse to fall off the wagon. Road Trip? No problem! Cook in advance and get yourself a portable, easy-to-carry cooler. You can also make foods like tuna or turkey on whole grain sandwiches, which don't need to be refrigerated and are easy to eat on the go. Or, try this amazing recipe for "apple-cinnamon high protein oatmeal pancakes:"

Mix the following ingredients in a bowl until it makes a pancake batter-like consistency: ¾ cup of oatmeal, 1 whole egg, 3-4 egg whites, 1 scoop of vanilla praline protein powder, half a chopped apple, a dash of cinnamon and two packets of equal (optional) Pour the mixture into a fry pan and cook on medium until one side is lightly browned. Flip it over until the other side is done. Presto! Eat it hot, or wrap it in foil and take it with you for a super-convenient travel meal.

Sometimes there are unexpected changes or interruptions in your schedule you never could have anticipated. Once you start to develop the frequent eating mentality, you might be surprised to find yourself getting really upset when you miss meals. That's good to a degree, but when life throws these curve balls at you, and you're late for a meal or you miss one completely, don't get stressed over it. Don't use missing one meal as an excuse to quit or go totally off your schedule for the rest of the day. Just get right back on your schedule with the next meal – that's all there is to it. "Stuff happens." As long as you've done the best you can do under the circumstances, then your best is good enough.

A mental training technique that guarantees you'll stick to your eating schedule and never want to miss a meal

Since you've already read the chapter on goal setting and the subconscious mind, you understand the power that thoughts repeated with emotion and faith have to program your behaviors. You're now going to put that information to a very practical use. You're about to learn a technique that will program your brain so deeply that you'll never want to miss a meal again.

What you're going to do is establish what I call an "eating trigger." The "trigger" is the moment you pass your designated meal time or a maximum of four hours since your last meal. Once this point passes, you're in the danger zone for losing muscle and

setting off the starvation alarm. For example, if you've committed to 10:00 a.m. as the time for your second meal, then the minute the clock strikes 10:01 a.m. and you know you're late, this will be your cue or "trigger." At this point, you're going to have a short conversation with yourself. It will go something like this:

"I'm now beginning to go into starvation mode. Every minute that passes from this moment on is making my metabolism slower and slower. If I don't get my meal immediately, I'm going to set myself up to get fatter and fatter. I have to eat my lean proteins and complex carbs now."

"If I don't eat now, I am eating my own muscle for breakfast. I am cannibalizing all the lean tissue I worked so hard to build in the gym. If I don't eat now, all that hard work and sweat in the gym was totally wasted. If I miss this meal and I don't eat now, I did my last workout for nothing! There's no way I'm missing this meal. I must get my lean proteins and complex carbs now!"

If that doesn't make you want to eat your meals on time and never miss a meal, then nothing will! I have this conversation with myself every time I'm even one minute past my scheduled meal time and believe me – it works! The thought of all that cardio and lifting for nothing gives you some major LEVERAGE on yourself.

The role of meal replacements and protein shakes in high meal frequency

You're going to learn some surprising and shocking things about supplements in chapter fifteen, but while we're on the subject of meal frequency, this would be a good time to talk about meal replacement supplements.

A frequent challenge many people face is that work, school or family commitments often make it difficult to eat five or six meals per day. In some business or personal situations, it's not appropriate to open up your plastic container and have a 20-minute break for yams, green beans and Salmon just because it's time for meal four.

Whole foods should always be your number one choice when time permits, but in a time crunch, a meal replacement product (MRP) can be the difference between getting your meal or going into the danger zone.

MRP's usually come packaged as powders in tubs, canisters or individual packets. Examples include "MET-RX," "Lean Body," "RX-Fuel," and "Myoplex." I don't recommend bars. Protein bars and meal replacement bars are at best a nutritional compromise and at worst they are nothing more than candy in disguise. Read labels

carefully before eating any bar – you're likely to find refined sugars, saturated fats and unhealthy trans-fatty acids in the ingredients.

Your product of choice should be a powder that you mix in water or another liquid (skim milk, juice, etc.) It's never a good idea to replace more than one third of your total calories with shakes, and only do so if it absolutely necessary (that's a maximum of two out of six meals). Remember, these products are food supplements, not a substitute for good eating habits. The only benefit of powdered drink mixes is convenience. Supplements will give you the calories and nutrients you need, but they won't provide the metabolic boost that solid food does. Whole food is what really stimulates the metabolism.

When all else fails, ALWAYS GET YOUR PROTEIN!

Sometimes unexpected interruptions throw a wrench in the most well-laid plans and you find yourself "stranded" somewhere without food or unable to eat. Perhaps you've been in meetings all day or seeing one customer after another back to back. Or maybe you simply didn't prepare enough food in advance and your rations have run out. What do you do?

Although you're going to learn in the next chapter that proteins and complex carbohydrates are the optimal fat burning meal combination, when all else fails, always eat your protein, if possible. The protein by itself (without the carbohydrates) will leave you a little short on calories, but at least you'll be preventing the muscle breakdown and metabolic slowdown that would have occurred if you didn't eat anything at all.

This is why you should always keep a container of protein powder or a meal replacement packet handy in case of "emergency." Keep one in your desk, in your car and in your backpack, briefcase or handbag. Get a small shaker bottle and fill it with two or three scoops of protein powder. Bring along a bottle of water and then you're ready to mix yourself a protein shake any time, any place. Two minutes and you're done.

If there's a juice bar that makes shakes or a health food store such as a GNC nearby, you could pop in for a quick protein drink to tide you over until you get home for that next food meal. Is there nothing but fast food restaurants around? No problem -grab a grilled chicken salad. A convenience store? Get a can of tuna fish - they make them now in foil bags and pop top lids. There's always a way when you're committed. If these situations happen too often, then you simply need to spend more time planning your schedule in advance.

Conclusion

Unless you're a beginner, the information you've learned in this chapter was probably nothing new because the topic of frequent eating has been discussed to death for years. This is common knowledge among bodybuilders and the fitness savvy. However, frequent eating is talked about more often than it's practiced because it's hard to do!

I admit that eating six meals a day isn't easy. Frankly, eating six meals a day is a royal pain in the ass. In the early days of my bodybuilding career, I must confess that eating six times a day was one of the things I didn't particularly enjoy. But I did it anyway, because I understood the amazing power of this positive discipline. Surprisingly, after doing it for months and years, it started getting easier and easier. Eventually, it became such a deeply ingrained habit that today I can't imagine not eating every three hours.

Today there is a decidedly uncomfortable feeling inside me when three hours passes by and I haven't eaten. After four hours without food, I practically get an anxiety attack. All other business gets put aside and I go on a relentless pursuit of lean proteins and complex carbohydrates like a hungry tiger on the prowl. Sure, there are days when I wish I could just "be average" and eat three meals a day like everyone else. Then I look around and see what kind of shape the "average" person is in and the thought passes – quickly!

Chapter 8: Macronutrient Ratios - The Optimal Combination of Proteins, Carbohydrates and Fats For Improving Your Muscle-to-Fat Ratio

"Each meal should be structured to include a lean protein, a starchy carbohydrate and a fibrous carbohydrate. The protein and fiber in this combination of foods slows the digestion of the carbohydrates, consequently providing consistent energy levels, sustained endurance, and a constant supply of nutrients to your body for energy, growth and repair."

- John Parillo, Bodybuilding nutritionist and author of "High Performance Bodybuilding"

"The idea that people should not eat certain food combinations (for example, fruit and meat) at the same meal because the digestive system cannot handle more than one task at a time is a myth. The art of 'food combining' represents faulty logic and is a gross underestimation of the body's capabilities. In fact, the contrary is often true; certain foods eaten together can enhance each other's use by the body."

- Eleanor Whitney and Sharon Rolfes, authors of "Understanding Nutrition"

Why a calorie is not just a calorie

One misconception about fat loss is the conservative scientific view that "a calorie is just a calorie" and the only thing that matters is calories in versus calories out. If fat loss were that simple, then you could eat anything you wanted and you would still lose fat as long as your calories were below maintenance. For example, you could eat nothing but Hershey's bars and drink nothing but Coca Cola and if you were 100 calories under maintenance, you'd lose weight. Common sense alone tells you this isn't true.

If a calorie is just a calorie, then three diets at the same calorie level, the first composed of 100% protein, the second 100% carbohydrates and the third 100% fats, would all have the same effect on body composition. Believe me, a diet consisting of 100% tuna fish (lean protein) will not have the same effect as a diet consisting of 100% potato chips (fat and carbohydrate).

Calorie balance is the most important issue in fat loss but there's more to it than that. Other variables include the thermic effect of food, the effect of each food on hormones and blood sugar levels and the macronutrient ratios of each meal.

Calculate your calories first, then split them up into the proper ratios of protein, carbohydrate and fat

The first step in developing your own custom-tailored fat loss program is to do your calorie calculations. Only then should you divide up your daily allotment among the three macronutrients; carbohydrates, proteins and fats. Many authorities suggest calculating how many grams of protein, carbohydrates and fat you need based on bodyweight and then the calories will take care of themselves. There's some merit to this method if the gram recommendations are figured properly for your personal needs, but the shortcoming of this method is lack of precision; it can only give you a ballpark estimate.

For example, a common guideline for protein consumption is one gram per pound of bodyweight. Serious bodybuilders engaged in high-intensity training are often advised to eat as much as 1.25 to 1.5 grams per pound of bodyweight. One gram per pound is an excellent *general guideline* for bodybuilding or fat loss programs. The problem with this method is the same one we discussed with calorie calculations based only on body weight – it doesn't account for training and activity levels. Always calculate your calorie needs FIRST (based on activity, goals, body weight or lean body mass), then once you've figured out your calorie needs, you can divvy them up like you'd slice up a pie.

Dividing your calories into the right ratios can have a profound impact on your body composition. As in the tuna fish and potato chip example, two diets of equal calories can have totally different effects; one 2400-calorie diet can get you ripped and another 2400-calorie diet can get you fat.

The first rule of macronutrient ratios: Always eat proteins and carbohydrates together

Before we get into specific ratios and percentages, you must first understand the most basic rule of nutrient ratios: Your diet should never consist primarily of one food type or one macronutrient type; there must be a proper balance between proteins, carbohydrates and fats. Without even doing any sophisticated number crunching, you'll always be in the ballpark simply by having a serving of lean protein and a serving of complex carbohydrate at every meal. If you frequently eat carbohydrates or proteins by themselves, your ratios will be "out of balance" and your results will be compromised.

The myth of "food separating" and why it's not effective for improving body composition

A common myth in the diet world says that you should never eat certain carbohydrates and proteins together in the same meal. This diet fad is known as "food combining" (Actually, it would be more accurately described as "food separating," referring to the belief that certain combinations of foods, such as meat and potatoes, shouldn't be eaten together). Popularized in the 1980's by Judy Mazel's Beverly Hills Diet, Marilyn and Harvey Diamond's "Fit For Life Diet," and more recently by Don Lemmon's "Know How" diet, this fad still attracts followers to this day.

Arguments for separating proteins and carbohydrates usually go something like this: Protein digests in an acidic medium of pepsin (a digestive enzyme) and hydrochloric acid, while carbohydrates digest in an alkaline medium. Therefore, when protein and carbohydrates are consumed together, they can't be fully assimilated, resulting in poor digestion, incomplete absorption of nutrients and gastrointestinal disturbances. Mazel went as far as to claim that by eating large quantities of fruit alone, the fruit enzymes would prevent the calories from being stored as body fat. It's also been suggested that poor digestion from improper food combinations will weaken you, sap your energy and stress your immune system.

These ideas make for excellent book sales, but where this fad diet falls flat on its face is that it vastly underestimates the power of the human digestive system. There's no evidence whatsoever supporting the practice of separating carbohydrate and protein feedings.

I know several people who say that these programs removed their gastrointestinal distress and made them "feel" better. However, I don't know a single bodybuilding or fitness champion who successfully uses "food combining" diets to achieve low body fat or excellent muscular development (Although there are some who get paid to say they do). If muscles and low body fat are your goals, then lean proteins and complex carbohydrates should always be eaten at every meal.

The ultimate meal combination for burning fat and building muscle

On the BFFM program, a meal is not a meal if it doesn't contain a complex carbohydrate and a lean protein. Occasionally, eating a piece of fruit, a nonfat yogurt, a cup of cottage cheese, a protein drink, or another carbohydrate or protein all by itself is fine, but that doesn't count as a full meal, it only counts as a "snack."

The ultimate meal combination for burning fat is a lean protein, a starchy carbohydrate and a fibrous carbohydrate eaten together at the same meal

Here are three examples of the "Ultimate meal combination"

Example 1:
Brown Rice (complex carb)
Mixed green salad (complex fibrous carb)
Salmon (lean protein)

Example 2:
Sweet potato (complex carb)
Broccoli (complex fibrous carb)
Chicken breast cutlet (lean protein)

Example 3:
Oatmeal (complex carbohydrate)
Egg white omelet with one yolk (lean protein)
Grapefruit (natural simple carb – optional)

8 reasons why you must eat lean proteins and complex carbohydrates together at every meal to maximize fat loss and muscle growth.

To gain muscle and lose fat, it's not only unnecessary to separate carbohydrates and proteins - it's counterproductive. Here are 8 convincing scientific reasons why. Read them and then you be the judge of whether you want to eat a meal without your protein and carbohydrates.

1) To maintain positive nitrogen balance, a state where you are retaining more protein than you excrete, resulting in a net gain of muscle tissue, you must consume protein approximately every three hours. Proteins cannot be stored like carbohydrates. This requires protein feedings with every meal. Eat carbohydrates by themselves without protein, and your body must break down muscle to get the amino acids it needs (You "eat up" your own muscle tissue!)

2) To get the protein (amino acids) into the muscle cells efficiently requires insulin. Insulin is secreted most readily in response to eating carbohydrates. Therefore, a moderate (but not over-sized) portion of carbohydrate should be eaten with your protein to facilitate the uptake of the amino acids into the muscle cell. The exception to this rule

is when you're on a "contest diet," and carbohydrates are being restricted (More on carbohydrate restriction in chapter 12).

3) Eating carbohydrates by themselves, especially the simple variety, causes a rapid increase in blood sugar. Peaks in blood sugar are always followed by valleys in blood sugar (also known as "hypoglycemia"). Cravings, hunger and fatigue usually follow. If you get hunger or bad cravings, it could be because you're eating too many simple carbohydrates by themselves (Fat-free snack foods, etc.).

4) Quick elevations in blood sugar caused by eating carbohydrates by themselves cause a large release of insulin to remove the excess glucose from the bloodstream. A slow, moderate output of insulin is desirable; a large release of insulin is not. High concentrations of insulin in the bloodstream are lipogenic; they promote the storage of body fat as well as prevent stored body fat from being mobilized. In the long run, this can also lead to a diabetes-like condition in those genetically prone to it.

5) The body's stores of muscle glycogen are very limited (Between 300 and 400 grams). Muscle glycogen is the primary source of energy for weight training. If your glycogen levels become severely depleted, your training will suffer. Advocates of very low carbohydrate, high protein, high fat diets claim that your body will learn to function on fat and protein and they make convincing scientific-sounding arguments to back up their position. However, if you were to ask any champion bodybuilder how a low carbohydrate diet affects their training, virtually all of them would tell you that it reduces their energy, lowers their intensity, and makes it difficult to get a pump. Even on carbohydrate-restricted programs it's important to get *some* carbohydrates or your workouts will suffer badly. If you cut out your carbohydrates completely or separate your protein and carbohydrate feedings in a food-combining diet, your glycogen stores will be compromised. You need a slow and moderate, but steady flow of complex carbohydrates throughout the day. Eating too many carbohydrates at once can cause fat storage, so the ideal way to consume them is in moderate portions at every meal.

6) Protein eaten with every meal slows the digestion of the carbohydrates, resulting in steadier blood sugar and energy levels and a more moderate output of insulin - without the ups and downs of eating carbohydrates by themselves.

7) Eating fiber-containing carbohydrates at every meal slows the digestion of the carbohydrates, resulting in a steadier blood sugar level and more moderate insulin output.

8) Eating protein at every meal enhances the thermic effect, which helps to speed up your metabolic rate. A meal consisting of only carbohydrate is less thermic than one containing a lean protein and a complex carbohydrate. A meal or snack that's high in fat without protein is the least thermic of all (sugar and fat, i.e., doughnuts, pastries, potato chips, etc.).

What are "macronutrient ratios?"

We're now ready to get into the nitty gritty of macronutrient ratios (Also called "nutrient ratios"). The first thing you should know is that nutrient ratios simply refer to the percentage of your total daily calories that come from protein, carbohydrate and fat. For example, 60-30-10 or 40-30-30 are nutrient ratios. A nutrient ratio of 30% protein on 2400 calories per day would be 720 calories of protein (.30% protein X 2400 calories = 720 protein calories).

Developing nutrition plans based on ratios of protein, carbohydrates and fats has been practiced for decades among bodybuilders. However, it wasn't until 1995 that nutrient ratios gained widespread attention from the public with the release of a book by Dr. Barry Sears called "The Zone." This book made "meal ratios" household words because the entire Zone program is based on the nutrient ratio of 40% carbohydrate, 30% protein and 30% fat (or "40-30-30"). By following the 40-30-30 ratios, Dr. Sears claimed you would lose weight, gain muscle, improve athletic performance and cure a whole host of diseases and health problems.

Two valuable lessons you can learn from the Zone Diet - even though 40-30-30 got thumbs down from most mainstream health and nutrition organizations

Despite its popularity and best-seller status, the Zone Diet has some serious shortcomings. The biggest flaw of the Zone program as Dr. Sears prescribed it in his 1995 book, is dangerously low calories. The Zone is basically just another very low calorie diet. That's why Zone dieters often run into to the same pitfall that every other low calorie dieter succumbs to - the starvation mode.

Suppose you weigh 175 lbs. and your body fat is 10%. That means you have 17.5 lbs. of fat and your lean body mass (LBM) is 157.5 lbs. If you work out five times per week for one hour, then according to Dr. Sears, you should consume .8 grams of protein per lb. of LBM. That's an "activity factor" of .8 X 157.5 (LBM), which equals 126 grams of protein.

There are four calories in each gram of protein, so that's 504 calories from protein or 30% of your total calories. Your fats should also be 30% of your total calories. 504 fat

calories, divided by nine calories per fat gram equals 56 grams of fat. Your carbohydrates should be slightly higher, about 40% of your total calories, or 672 carbohydrate calories. There are four calories in each gram of carbohydrate so that's 168 grams of carbohydrates. Add up all these calories and you get 1680 calories for the day:

Zone diet recommendations for a 175-pound moderately active man:

Carbs:	672 calories = 168 grams = 40% of total calories
Protein:	504 calories = 126 grams = 30% of total calories
Fat:	504 calories = 56 grams = 30% of total calories
Total:	1680 calories

1680 calories is too low for a moderately active man. The protein recommendations fall short as well: 126 grams of protein is plenty for a couch potato, but not enough to support a program with cardio and high intensity weight training. Will you lose weight on 1680 calories? Sure - but it won't be long before the starvation mode kicks in.

As a whole, the Zone program was denounced by nearly every mainstream health and nutrition organization in the world, including the American Dietetic Association, the Mayo Clinic, the American College of Sports Medicine, the Center for Science in the Public Interest, and many others. However, you can learn some important things from the Zone by reading it selectively, plucking out the useful tidbits and throwing away the rest.

The Zone made two particularly important contributions to modern trends in nutrition that have shifted the predominant thinking about fat loss in the bodybuilding and weight loss world since 1995.

First, The Zone brought to the public's attention the importance of having a good balance between proteins, carbohydrates and fats instead of being heavily slanted towards mostly carbohydrate at the expense of protein and fat - a big mistake in our day and age of "fat phobia" and “high carbohydrate mania.” It also pointed out the dangers of eating large amounts of processed carbohydrates such as white breads, white pastas, fat free snack foods and baked goods.

The second important point made by the Zone program was the idea of always combining a lean protein and complex carbohydrate food at every meal. This is probably one of the most important aspects of a nutrition program designed for improving body composition, because it helps to control the hormones responsible for fat storage and it provides a steady flow of amino acids from protein foods for muscle growth and maintenance.

No single ratio is "the best" and no single ratio will work for everyone 100% of the time

Many dieters are tempted to believe that there is one perfect or "magical" ratio that will be the answer to all their body fat problems. Contrary to what some "diet gurus" would like you to believe, there is no single best ratio.

- ✓ No ratio has any "magical" fat-burning or muscle-building properties.
- ✓ No ratio will override the law of calorie balance. Any impact nutrient ratios have on your body fat level is minimal compared to the effect that calorie levels have on body composition.
- ✓ No nutrient ratio will prevent you from going into starvation mode if your calories are too low.
- ✓ No nutrient ratio will prevent you from accumulating body fat if your calories are too high.
- ✓ No nutrient ratio will allow you to gain muscle if your calories are too low.
- ✓ No single nutrient ratio will work for everyone. Optimal nutrient ratios depend on goals and differences in body types and carbohydrate sensitivity.

Calories are always the most important factor in fat loss and the first factor you should consider. Only then can you accurately calculate the optimal ratios of protein, carbohydrate and fat specifically for your unique needs.

Any program that suggests only one ratio for everyone is completely ignoring the concept of nutritional individuality. Clearly, your ratios must be customized, but as you will learn shortly, there is a sensible place where *everyone* can start.

Basic definitions of high, low and moderate macronutrient percentages

Drawing a rigid line between ratios is difficult, but for the purposes of our discussions in the BFFM program, let's clarify what we mean when we're talking about high, medium and low carbohydrate, macronutrient percentages.

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Carbohydrate definitions:
Very high carb = 65- 70% +
High carb = 55-60%
Moderate carb = 40-50%
Low carb = 25-35%
Very low carb (ketogenic) = about 5-15% or 30-70 grams per day

Protein definitions:
Very high protein = 41-50%+
High protein = 31-40%
Moderate protein = 25-30%
Low protein = 15-24%
Very low protein = less than 15%

Fat definitions:
Very high fat = 40% +
High fat = 30%-39%
Moderate fat = 20-29%
Low fat = 10-19%
Very low fat = less than 10%

With such a wide range in each category, how do you know what percentage is best? One tip is to avoid the extremes. Extremely low or extremely high ratios of anything are usually not the best approach. There are exceptions of course: Competitive bodybuilders sometimes jack up their protein sky-high to as much as 40-50% for short periods before contests.

Some endurance athletes perform best on very high carbohydrate intakes of 60-70% of their total calories. Carbohydrate sensitive people sometimes have no choice but lower carbohydrate intake to 30% or less of their total calories. These cases are the exceptions rather than the rule, however. Moderate to high complex carbohydrate, with moderate protein and low fat is generally the best approach. Modifications can then be made to this baseline as your needs require.

Popular approaches to nutrient ratios

Before we talk about your starting point or "baseline" ratios, let's take a look at some of the nutrient ratios that popular diet programs recommend.

High carbohydrate, very low fat

In the 80s and 90s, most diet programs called for very low fat, low protein and extremely high carbohydrate. The Pritkin diet, which recommended 70% carbohydrate, 20% protein and 10% fat, is one example. Other programs falling into this category are the Dean Ornish's "Eat More Weigh Less" program, Robert Hass's "Eat to Win" and vegetarianism.

If the right types of carbohydrates are eaten, this is probably a *healthy* way to eat, but it's so lopsided in favor of carbohydrates, you can't really say it's "balanced" and this approach definitely isn't for everyone. When it comes to shifting body composition from fat to muscle, many people simply don't respond well to high carbohydrates, no matter how carefully they are chosen. Very high carbohydrate, low fat diets are also a bit light on essential fats, and the protein levels are too low to support serious weight training. Some extremely carbohydrate-sensitive people actually see increases in cholesterol and triglycerides when their carbs are too high.

Very low carbohydrate /high fat, high protein

On the other end of the spectrum you have the very high fat, high protein, very low carbohydrate diets. The Atkin's Diet is the most popular. Others include Protein Power, The Carbohydrate Addicts Diet, Sugar Busters, The Ketogenic diet, The Anabolic Diet and a whole host of other programs that impose strict regulations on the amount of carbohydrate you can eat.

The basic assumption of the very low carbohydrate approach is that carbohydrates cause fat storage because they increase insulin production. Insulin is portrayed as an evil fat-storing monster that makes everything you eat turn into fat. The objective of these programs is to control insulin by cutting out carbohydrates and this will supposedly cause rapid body fat loss.

There is some truth in these arguments, but unfortunately, the information has been distorted and taken to extremes. Contrary to what certain diet "gurus" tell you, carbohydrates are not fattening. What's fattening is eating more calories than your body can use at one time. Insulin can be a double-edged sword, but insulin control can be easily achieved without extreme measures.

It's true that some people lose weight more quickly on a very low carbohydrate diet, but that's not the same thing as saying carbohydrates are fattening. It's also true that

almost every bodybuilder or fitness competitor uses some variation of the low carbohydrate diet to prepare for competitions.

Very low carbohydrate diets work almost all of the time for all body types. The problem is they also fail to keep body fat off permanently almost all of the time. It's nearly impossible to stay on low carbohydrates for a long time (nor can I figure out why you would want to). It's also up for debate whether the very high saturated fat levels allowed in these programs are healthy or not.

Most people will lose fat simply by adding a regular exercise routine to their schedule and by "cleaning up" their diets. A "clean" diet means you've mastered all the nutritional basics like eating small frequent meals, controlling portion sizes, cutting down on saturated fats, avoiding sugar, drinking plenty of water and eating lean protein at every meal.

Moderate carbohydrate restriction will usually speed up fat loss, but a very low carbohydrate diet is not the ultimate answer to permanent fat loss. At worst it's unhealthy and causes muscle loss. At best it's a temporary tool that should only be used for short periods for specific fat loss goals (such as preparing for bodybuilding competition).

The flaw in the very low carbohydrate approach is the assumption that *everyone* is carbohydrate sensitive. According to my research, I estimate that only 20% - 30% of the population is carbohydrate sensitive and only a fraction of that 20%-30% is *seriously* carbohydrate sensitive. The best way to look at very low carbohydrate /high fat/high protein diets is as a last resort for those with extreme difficulty losing fat the conventional way.

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High carbohydrate/low fat/moderate protein "The bodybuilders diet"

The 60-30-10 nutrient ratio is the program I originally used when I first started bodybuilding. When I began training and competing it was the late eighties and early nineties, right in the middle of the fat phobia era. I ate high complex carbohydrates and low fats simply because it was in vogue and widely accepted. All the experts recommended it: 60-30-10 (or close to it) was recommended in Keith Klein's "Get Lean" system, Cliff Sheat's "Lean Bodies" and Larry North's "Living Lean" Program. Professional bodybuilders like Lee Labrada and bodybuilding nutritionists such as Chris Aceto and John Parillo also endorsed it.

So I conformed and did what every one else was doing, AND IT WORKED! 60-30-10 was effective and I felt great. I later discovered that one small adjustment improved my results even further - and quite dramatically.

My amazing discovery from over 14 years of experimentation and research

It wasn't until the late nineties that I really began to reach my best physical condition, winning multiple overall bodybuilding titles and looking my absolute best ever. For years, I had experimented with every nutrient ratio imaginable and finally stumbled onto a formula that worked beautifully. I gained more muscle in the off-season, lost more fat in the contest season (as low as 3.4%) and stayed leaner all year round, maintaining a 7-9% body fat percentage without much difficulty. I also moved up a full weight class. My energy was better. I was leaner. I was stronger.

What was this adjustment? Believe it or not, I ate more fat! I dropped the carbohydrates by 5-10% and added in 5-10% fat from "healthy fat" sources such as flax oil, natural peanut butter, fatty fish like Salmon and olive oil. I even allowed myself one or two egg yolks a day and some lean red meat. In the next chapter, you'll learn more about the reasons why small amounts of "good fats" are so important.

The BFFM "Baseline Diet" - Here is where you begin

My small adjustment to 50-30-20 might have worked well for me simply because I have an endo mesomorph body type and I'm a bit carbohydrate sensitive, but it also worked for the vast majority of my 600+ personal coaching protégés. The combination of my personal experience with the results from my clients convinced me that this ratio was the best place to start and it became the "baseline" of the BFFM program.

If fat loss is your number one goal and you want to achieve it the healthy way without losing muscle or energy, then you can't go wrong with 50-55% carbohydrates, 30% protein and 15-20% fat as your starting point.

These numbers are not intended as a rigid prescription; for fast metabolism types, 55% carbohydrates or the classic 60% carbohydrates works well. For others, 45% carbohydrates is a better place to start. Your ratios might need to be adjusted slightly depending on your body type. But before you can make any adjustments for your body type and goals, you must first establish a starting point or "baseline."

The starting point for an effective fat-burning and muscle-building diet, often called a "baseline diet" is 50-55% carbs, 30% protein, and 15-20% fat.

The most important lesson you will ever learn about dieting to lose body fat

Whenever you want to master a new subject or learn a new skill, the first thing you MUST learn is the basics. If you have a shaky foundation, then nothing else you do will matter - your castle will crumble. As Emerson wrote in his essays, "The height of the pinnacle is determined by the breadth of the base."

The most important lesson you can ever learn about nutrition and fat loss is to **master the fundamentals first.** The great motivational speaker and writer Jim Rohn once said, "You should always be suspicious of someone who says they've discovered a new fundamental. That's like someone saying they're opening a factory to manufacture antiques."

The problem with most people is they are always looking for the newest, latest, greatest craze, but they are overlooking the fundamentals. Why? Because fundamentals are boring. Fundamentals are basic. Fundamentals aren't glamorous. Fundamentals aren't marketable. *Fundamentals are also responsible for 80% of your results!* It doesn't make any sense to try and squeeze out the last 20% when you haven't even captured the first 80%. But that's exactly what most people are doing - looking for the secret ratios or diet plan, all the while missing the simple and obvious factors that will make the biggest impact on their physiques.

Establish a baseline and master the fundamentals first. Then experiment and adjust as needed

If you want to experiment with various types of diets and macronutrient ratios to satisfy your curiosity and see what works best, by all means do so. *But not until you've mastered the fundamentals, established a baseline and measured the results first!* And if the baseline diet produces good results for you, don't change a thing – no matter what "new" trend comes along.

Most diet programs begin with some kind of "quick start" crash diet program that is extremely restrictive. That's because the creators of these programs want you to see quick weight loss right from the beginning. However, unless you already understand the fundamentals of fat-burning nutrition, it makes no sense to attempt going on an extremely difficult regimen such as a bodybuilding contest diet or a very low carbohydrate ("ketogenic") diet. You'll never stick to it.

I like high protein, low carbohydrate diets at certain times for certain purposes. But a big mistake a lot of people make is trying a strict bodybuilder's pre-contest

regimen, or some unique twist to their macronutrient ratios before they even clean the junk out of their diets or master the fundamental of eating complex carbohydrates and lean proteins every three hours. If you're still skipping meals and eating junk such as sugar and sweets, refined carbohydrates, alcohol and saturated fats, you're not ready for an "advanced" program. Go back and master the basics first.

The only way you'll ever know what the ideal plan is for your body type is to get on a good baseline diet first, monitor the results closely, and then make adjustments based on your results. In other words, don't try anything drastic like a mostly protein diet until you've exhausted all your other options and you're reasonably certain that you're very carbohydrate sensitive.

No single nutrition program will work for everyone

One place where programs like The Zone diet fall short is by rigidly prescribing one nutrient ratio for everyone. By doing so, they fail to account for differences in individual goals and body types. We now know for a fact that there is no single nutrient ratio that is perfect for everyone.

The correct meal ratios can vary greatly depending on your goals and on the type of training you're doing. Nutrition is a highly individualized issue and the same diet will not work for everyone. Bodybuilders, for example, need a higher ratio of protein than people who are sedentary. A marathon runner would never consume the same ratio of proteins, carbohydrates and fats as a bodybuilder or fitness competitor getting ready for a contest. An endurance athlete might do well consuming up to 60% of his or her calories from complex carbohydrates to maintain glycogen stores for training. The pre-contest bodybuilder would probably be better off with as little as 25%-40% of his or her calories from carbohydrates with a higher ratio of protein to help stimulate thermogenesis, mobilize more body fat and reduce water retention.

Adjustments for nutrient ratios by body type

<u>Mesomorph</u>

The mesomorph could probably follow any nutrient ratio and still get results. I know some mesomorphs on the 50 - 50 diet; 50% McDonalds and 50% pizza. They still grow muscle like weeds and have ripped abs. I'm not endorsing this approach, just making a point. If our gifted mesomorph friend would go with 50-55% carbohydrates, 30% protein and 15-20% fat, he would get even better results.

Ectomorph

An ectomorph should almost never restrict carbohydrates. The ectomorph usually isn't concerned with losing body fat. Usually their goal is to gain muscle, and for gaining muscle, a diet composed of 50-55% complex carbohydrates with 30% protein and 15-20% fat would be ideal.

Endomorph

It's the endomorph that needs to pay the most attention to nutrient ratios. Endomorphs are often insulin resistant and carbohydrate sensitive, so the high carbohydrate approach is usually out of the question. A better starting point for an endomorph might be around 50% carbohydrates. Then based on results, they may need further reductions to about 40-45% carbohydrates. In extreme cases, a diet with 25-35% of calories from carbohydrates may work best, although only for short periods of time.

Adjustments to the baseline diet ratios for maximum fat loss

For short periods of time when maximum fat loss is desired, the baseline ratio of 50-55% carbohydrates, 30% protein and 15-20% fat can be shifted to a higher ratio of protein/fat and a lower ratio of carbohydrates. This increases metabolism through the thermic effect of food and it also controls insulin more effectively.

The reduction in carbohydrates is most easily achieved by reducing your intake of concentrated, starchy carbohydrates (such as pasta, bread, rice, potatoes, etc.) at night and late in the day and replacing them with less calorie-dense fibrous carbohydrates (such as green vegetables and salads) using the calorie tapering method you learned in Chapter six.

Avoid extremes on either end of the spectrum

Reducing carbohydrates and increasing protein can give you some interesting hormonal and metabolic advantages when it comes to fat loss. Although a high protein, low carbohydrate diet may cause quicker fat loss, the downside is that it’s much more difficult to follow, and using low carbohydrates for prolonged periods can cause decreased energy, loss of muscle, dehydration, nutrient deficiencies and metabolic slowdown. The more you reduce your carbohydrates, the greater the side effects and the more difficult it will be to maintain your fat loss after you've reached your goal.

A zero or very low carbohydrate diet is simply not necessary for fat loss. A better approach is to reduce carbohydrates moderately, not cut them out completely. A slight

reduction in carbohydrates, particularly in the evening, will accelerate fat loss without the negative side effects of high protein, zero carbohydrate diets. It's always wise to steer away from anything extreme. That rules out the very low carbohydrate diets (VLCD's), and the very high carbohydrate, no fat diets (VHCD's). The middle way is the best way.

The 3-2-1 method for calculating nutrient ratios

A very simple way to estimate your nutrient ratios is to follow the 3-2-1 rule. Here's how it works: Imagine your plate divided into six sections like slices of a pie. Fill up three slices (3/6 or 50%) with natural carbohydrates like potatoes, yams, oatmeal, whole grains, fruits and vegetables. Fill up two sections (2/6 or 33%) with lean proteins like egg whites, chicken or fish. Finish with one section of fat (1/6 or 17%). This simple method puts you very close to the optimal ratios for a baseline diet and you don't need to be a math whiz to figure it out.

The spreadsheet method for calculating nutrient ratios: Number crunching on Microsoft Excel

The 3-2-1 method is a great way to estimate your nutrient ratios, but there's a much more accurate way if you're willing to put in a little effort. I've purchased virtually every nutrition software program on the market and I've always come away disappointed. I've never found a method for creating menus simpler and easier than using a plain old spreadsheet like Microsoft Excel.

A spreadsheet happens to be the most accurate way to calculate your nutrient ratios, and you can use it to track your calories as well. If you don't have a computer or you don't know how to use a spreadsheet, you can do these calculations simply and easily with a calculator, a pen, a piece of paper and a few simple formulas.

Three conversions you need to know to determine your macronutrient ratios:

To calculate your ratios, simply take your total caloric intake for the day and multiply it by your desired percentage of each macronutrient. Then, divide the calories from each macronutrient by the calorie content per gram. You'll need to know these three facts to calculate your ratios:

1 gram of carbohydrate = 4 calories
1 gram of protein = 4 calories
1 gram of fat = 9 calories

Example for a 2400-calorie-per-day diet

Carbohydrates:	55% (.55) X 2400 = 1320 calories from carbs
	1320 carb calories/4 calories per gram = 330 g. of carbs
Protein:	30% (.30) X 2400 = 720 calories from protein
	720 protein calories/4 calories per gram = 180 g. protein
Fat:	15% (.15) X 2400 = 360 calories from fat
	360 fat calories/9 calories per gram = 40 g. of fat

An important thing to remember is that these aren't just ratios for an entire day; they're for each individual meal as well (With the exception of the late day meals if you are tapering calories). If you work on getting these ratios right for every meal, your ratios for the entire day will take care of themselves.

Couch potato nutrition vs. bodybuilding nutrition

Probably the most important reason to follow the 55 - 30 - 15 nutrient ratio as your baseline is because these percentages are designed for people involved in serious aerobic and weight training. Conventional nutritionists and dieticians will tell you that 30% protein is too high. They'll insist that the protein should be 15% and the fat 30%.

This is couch potato advice. It has nothing to do with you if you're training hard. If you're not training hard, you're not following this program properly. Your success is based on the combination of nutrition, cardio and weight training. If you're training hard, your nutritional needs are different than those of couch potatoes.

The importance of a varied, balanced nutrition program

The other benefit of the 55-30-15 ratio is long-term maintenance. These ratios are balanced and healthy for long-term use. A balanced diet in these ratios using a wide variety of foods is important to make sure you get the right balance of all the essential nutrients, including protein, carbohydrates, essential fatty acids, vitamins, and minerals. A wide variety will also guard against excesses of potentially toxic substances. A truly "balanced" diet is one that you can comfortably maintain as your new lifestyle. The BFFM program fits the bill perfectly.

Trusting your intuition

Did you ever notice how some people tend to gravitate toward a certain style of eating without anyone telling them to do it? Why do some people become vegetarians while others are heavy meat eaters? Why do some people avoid wheat and dairy? Why do some people crave certain foods? The reason is their bodies "tell them so," and they listen. While I'm not an advocate of total vegetarianism, if your body "tells you" not to eat much meat, then I believe you should listen and explore other protein sources. If your body tells you your protein is too high, listen. If you think carbohydrates make you fat, listen. If a certain food disagrees with you, listen. Pay close attention to your results each week and listen to your body.

The idea of adjusting your nutrition intuitively will upset some of the left-brained scientific types for sure, but with few exceptions, scientists are usually not the ones with the best bodies. The people with the best bodies are the ones who train hard, eat properly and pay close attention to their results and to what their bodies are telling them, regardless of what the latest research study says.

Most people are looking to be handed a prescription. They want a guru to come along, do all the thinking for them and say "HERE! Eat 33.54% protein, 47.92% carbohydrates and 18.54% fat - these are THE magical ratios." Well, allow me to share the real secret of nutrient ratios: There are no magical nutrient ratios! If you train hard, choose the right foods, eat frequently and monitor your calories, the chances are good that you'll get lean with any reasonable ratio combination.

No ratio should be followed as if by law. You should experiment to find what works best for you. Don't be afraid to do some "tweaking." Allow yourself some leeway in either direction. For example, if you're on the baseline plan of 55-30-15 and you're uncomfortable with the amount of protein, then drop the protein to 25% and bump the carbohydrates to 60% or the fat to 20% - and PAY ATTENTION to the results. If you think carbohydrates make you fat, drop the carbohydrates to 40 - 50% and increase the protein and/or fat by 5% (35% and or 20% respectively.) If you think you're extremely carbohydrate sensitive, gradually bring the carbohydrates down even lower and see what happens.

Macronutrient ratios alone have the ability to improve body fat loss through metabolic and hormonal control. They can also improve muscle growth and maintenance by providing a steady flow of amino acids to your muscles. However, the *ratios* aren't the "secret" to fat loss - *calories* are. Eat too much, you get fat, period -it doesn't matter if you're in the "zone" or not.

Chapter 9: Good Fats Vs. Bad Fats: How to Speed Up Fat Loss, Boost Muscle Growth, Increase Your Energy and Rev Up Your Metabolism By Eating The Right Fats in the Right Amounts at the Right Times

"The fact is that some fats are absolutely required for health, while others are detrimental. Some fats heal, and other fats kill. A substantial amount (15-20%) of our calories should come from fat."

- Udo Erasmus, Ph.D., the world's #1 authority on fats and oils and author of "Fats That Heal, Fats That Kill."

"Unfortunately for the much maligned lipid, fats and oils have been lumped together in the minds of most bodybuilders as having the same properties, with the result of bodybuilders trying to avoid ALL fats and oils for fear of adding body fat and looking like the Pillsbury dough boy. Well, I am here to tell you that fats have gotten a bad rap. There are some good fats and there are some bad fats. The difference between the two is substantial and of great importance."

- Will Brink, author of "Priming the Anabolic Environment"

The missing link discovered: A small dose of "healthy fats"

In the last chapter, I revealed how, after a long period of practically zero fat dieting, I took my results to a higher level with one small change to my diet – I added more fat. But it wasn't just any fat. Dr. Udo Erasmus, the world's #1 expert on dietary fats, says there are "Fats that heal" and "Fats that kill." Adding the *wrong* kind of fats can increase your blood cholesterol, clog your arteries, increase fat storage and wreak total havoc in your body. Adding the *right* kind of fats can increase your energy, increase fat burning, increase muscle-building hormones, increase your strength, improve insulin function, improve your skin texture and strengthen your joints. With benefits like these, "good fats" sound like some kind of wonder drug, and in many respects, the effects *are* almost "drug-like." Surprisingly, these miraculous benefits can be obtained simply by eating small amounts of foods or oils rich in the healthy "good fats."

Fats made simple

Most books on nutrition give a long discussion on the chemistry of fatty acids. They are filled with charts of fat molecules and talk of hydrogen, carbon, bonds, double bonds, methyl groups and carboxyl groups. Although I personally have a keen interest in nutritional biochemistry, I've always found that any time I started discussing this

complicated scientific stuff in detail with my clients, they started dozing off or they just sat there, jaw agape, face expressionless in a blank stare like a deer caught in headlights.

That's why I decided the best approach to a chapter on fats in a manual on practical fat loss techniques would be to skip all but the most basic and essential chemistry, to discuss fats in layman's terms and stick to practical suggestions and guidelines: Eat this, don't eat that, eat a little of this, never eat that, etc. I'm sure you'll be glad I did, and by the time you finish reading this chapter, you'll know exactly (1) *Why* all fats are not the same, (2) *What* kind of fats you should eat, (3) *What kinds* of fats you should *never* eat and (4) *How much* fat to eat for optimal results. You'll also learn about an essential fatty acid supplement that is one of the few products I recommend and wholeheartedly endorse. So without further ado, let's "chew the fat!"

The era of fat phobia has ended

The first time I ever picked up a barbell was in 1983 – right in the heart of the "fat phobia era." During the 80s and early 90s, the magazines, television and nearly all the media pounded the message into our brains that fat was bad. No distinction was made between types of fats – the message was black and white; "Fat is unhealthy and fat makes you fat."

This spawned an entire industry of fat-free foods such as cakes, cookies, candy, ice cream, yogurt, frozen dinners, lunch meats and nearly every other food you can think of. This was the age of the fat-free Snackwell cookies and Entenmanns cakes, and almost all of us partook of these deliciously sweet and seemingly guilt-free goodies. We ate them without fear because we believed it was okay since the label said "FAT FREE!"

Even though the consumption of dietary fat decreased dramatically over the past two decades, a very strange thing happened: The incidence of obesity and health problems continued to rise through the 80s into the 90s and it still hasn't stopped. According to the National Center for Health Statistics, there was a 61% increase in the prevalence of obesity between 1991 and 2000. Today, there are more overweight people than ever before – 100 million, to be exact! Heart disease, diabetes and cancer are still three of the biggest killers and it seems there's no end in sight to these epidemics.

If collectively, we all cut the fat out of our diets in the 80s and 90s, then how could it be that we continued to get fatter and our health deteriorated? Part of the answer is so glaringly obvious it's almost embarrassing:

"FAT FREE" DOESN'T MEAN SUGAR FREE OR CALORIE FREE!

What's happened over the past two decades is that many people cut out the fat, and simply replaced it with refined sugar. Even foods that *always were* fat free all of a sudden started sporting new labels that proudly proclaimed "NO FAT!" A food can say "fat free" on the label and be 100% sugar! If you eat a lot of sugar or if you eat more calories than you burn, it doesn't matter how little dietary fat you eat – you're still going to get fat!

Saturated and processed fats are bad enough, but in my opinion, sugar and processed carbohydrates are more responsible for disease and obesity in our society today than any other single factor. Replacing fat with sugar is going from the frying pan into the fire. It's only when you're eating a mildly calorie restricted diet that's low in refined sugar *and* low in the bad fats that your body fat will finally begin to drop.

Eating more sugar while dropping the fat creates a whole new problem

When people began dropping the fat out of their diets, they created a whole new problem - their blood sugar and insulin levels went through the roof! Without fat, there's nothing to slow the absorption of carbohydrates into the bloodstream. The result is a huge blood sugar and insulin spike. One of the secrets of fat loss is insulin management. A seesaw cycle of blood sugar and insulin ups and downs contributes to fat storage and a variety of diseases. Eating fat-free, high sugar food makes this up and down cycle worse and can eventually create a diabetes-like condition in the body.

Why a zero fat or very low fat diet is no good

In the last chapter we defined a very low fat diet as anything under 10% of the total calories from fat. On 2400 calories per day, that's 26 grams per day or less. On a fat loss diet of 1500 calories, 10% is only 16 grams of fat per day. I've frequently consulted with clients who were so proud that they only ate 10 or 15 grams of fat per day. A few even boasted with glee to be eating almost zero grams! Ironically, they came to me because they weren't losing any fat. By teaching them not to lump all fats together in one category and instead to separate the good fats from the bad, eating the good ones in small quantities, presto – like magic, the results started coming. An added bonus was improved energy and much better workouts.

Why you should always eat a little "good fat"

Fat phobia has been so deeply ingrained into the consciousnesses of most people, it's important that the reasons why you should eat a little good fat are clearly explained.

1. A zero fat or very low fat diet puts you into the starvation zone

Low calories and skipping meals aren't the only things that send you into "survival mode." When dietary fat intake is reduced to less than 10% of total daily calories, this also sets off the starvation alarm.

2. A zero fat or very low fat diet causes large fluctuations in blood sugar

Fat slows down the release of carbohydrates into the bloodstream. When large amounts of simple and refined carbohydrates are eaten alone, they shoot rapidly into the bloodstream, creating a large spike in blood sugar.

3. A zero fat or very low fat diet causes greater insulin release

When your blood sugar spikes, your pancreas releases a lot of insulin to bring blood sugar back down to normal. Moderate amounts of insulin are necessary (and anabolic). Large amounts or insulin are lipogenic (cause fat storage) and anti-lipolyic (prevent fat release).

4. A zero fat or very low fat diet causes hormonally related hunger and cravings

You can have more willpower than a celibate monk in the Playboy mansion, but if you get hormonally induced hunger, you won't to be able to fight it. Whenever there's an unusually large blood sugar spike, it's a law of nature that there must be an equal or greater valley. This blood sugar valley, known as hypoglycemia, is the cause of those intense, almost irresistible cravings that send you frantically to the nearest Baskin Robbins or Krispy Kreme store.

5. A zero or very low fat diet reduces testosterone

Low dietary fat levels are correlated with low testosterone levels. For someone trying to become leaner and more muscular, this spells disaster.

6. A zero or very low fat diet can be deficient in essential fatty acids

Clinical fatty acid deficiencies are rare, but if you intentionally try to remove most of the fat from your diet, you could come up short of the "optimal" levels. Essential fatty acid (EFA) deficiency can impair fat burning, reduce your energy and cause a whole host of other problems. You'll learn more about EFA's in upcoming sections.

Ignore the high fat diet "cult"

Zero fat is definitely not the answer. Now let's talk about the opposite end of the spectrum – the high fat diet. In the weight loss and bodybuilding world, there is a small "cult" of high fat advocates who insist that a very high fat diet (40-70% of your calories) is the ultimate method of losing fat, building muscle and improving athletic performance. Why anyone would fall for such tripe is beyond me, but it's probably because it sounds so off the edge, unusual and controversial. Any diet that sounds "new" and controversial, combined with a ton of marketing is bound to catch people's attention because of its uniqueness.

As I mentioned earlier in this manual, it's easy to overlook the fundamentals and disregard common sense in our quest for some esoteric magical formula. Frankly, there are some really stupid things being said about nutrition these days and eating high fats (especially saturated and processed fats) is one of them. The high fat diet is totally without scientific or practical basis. It's a marketing scheme. They've taken the idea, "You have to eat fat to lose fat," which is true, to its extreme. Unfortunately, these hucksters have done so at the expense of many people's health and appearance.

The high fat diet cult will try to convert you with arguments that sound very convincing. They'll cite scientific studies. They'll say it's the reason the Bulgarian weightlifters achieved world dominance in Olympic lifting. They'll say the metabolic state of ketosis is the #1 secret to fat loss. They'll even say top bodybuilders are using it to get more ripped than ever, and surely, some pro bodybuilder will accept money to have his picture used in the ad –even though he's never even tried a high fat diet!

Proponents of high fat diets such as the Atkins Diet claim that saturated fats are not bad for you. They frequently cite the Eskimos as an example. Eskimos, living in an arctic climate, do not have ready access to fresh fruits, vegetables and grains, so their diet is composed mostly of meat and fat - about 60% fat to be exact – yet they are perfectly healthy.

What the high fat advocates fail to mention is that a very large portion of the fats eaten by the Eskimos come from fish, whale blubber and other unprocessed fats. The omega 3 fatty acids probably had a cardio-protective effect, which prevented the Eskimos from having a high incidence of disease. This is nothing like the high fat diets of modern Americans, which allow processed fatty meats, hydrogenated oils, baked goods, fried foods, supermarket oils and other highly processed fats.

The link between saturated fat and disease is very well documented. However, eating the right amounts of cardio-protective EFAs seems to counter balance some of the negative effects of saturated fats. If you optimize your intake of the good omega 3 and omega 6 fats, then you can use *moderate amounts* of saturated fats without fear. Leaving small amounts of saturated fats in your diet, such as some lean red meat (preferably grass-fed) and/or one or two egg yolks per day (instead of throwing *all* the yolks away), is not only permissible, it can actually be beneficial. Still, it's not wise to eat a lot of saturated fat, nor should you eat a large portion of your total calories from fat – especially if you're eating a mixed diet that also contains ample amounts of carbohydrates.

Why a high fat diet is no good

Even though there are major differences in the various types of fats, you should almost always keep your overall fat intake relatively low (30% or less, preferably closer to 20%). There are eight primary reasons why:

1. Fat is more calorie dense than any other source of calories.

After reading chapter six on calories, you now understand that to lose body fat you have to eat fewer calories than you burn each day. One problem with fats is they are more calorie dense than any other food. Each gram of fat contains 9 calories, while each gram of carbohydrate or protein contains only 4 calories. Since each gram of fat contains more than twice the calories, this means eating fat makes it more likely that you'll eat too many calories. Quite simply, a high fat diet is a high calorie diet, and a high calorie diet is a fat storing diet. There are differences between the various types of fats, but ALL fats contain 9 calories per gram. So if you want to lose body fat, you'll need to reduce your total fats in general in order to keep your calories down.

2. Fats have the lowest thermic effect of all foods

Fats are stored more easily as body fat than protein or carbohydrate because they have the lowest thermic effect of any food. Recall that the thermic effect refers to the amount of energy required to digest and utilize each food. Protein has the highest thermic effect – nearly 30%. Fats have the lowest thermic effect – only 3%. When you eat lean protein foods, 30% of the calories are burned off just to digest and absorb them. When you eat fatty foods, only 3% of the calories are burned off during digestion and absorption.

3. Saturated and processed fats (trans-fatty acids) cause serious health problems.

Certain types of fats, especially the saturated fats and trans fats, are bad for your health. According to Dr. Erasmus, "Degenerative diseases that involve fats prematurely kill over two-thirds of the people living in affluent, industrialized nations." Saturated fats have been linked to heart disease, cancer, diabetes and too many other problems to list.

4. A high fat diet doesn't leave room for enough protein or carbohydrates

High fat diets are often promoted as effective ways of increasing anabolic hormones and controlling fat storing hormones, resulting in increased muscle mass and decreased body fat. The problem with this approach is that eating large quantities of fat doesn't allow enough room within your daily calorie allotment for a sufficient quantity of protein or carbohydrate. Any diet that leans excessively towards one macronutrient is not a balanced diet and will never produce optimal results.

5. Saturated fats reduce insulin sensitivity

Insulin sensitivity refers to the responsiveness of your muscles to insulin. Insulin carries the sugar into the muscles for energy and glycogen storage. It also carries the amino acids into the muscles for growth and repair. When you have poor insulin sensitivity, it's like insulin is standing outside with protein and carbs, knocking on the muscle cell's door, but the muscle cell won't let the insulin bring the carbs or protein (aminos) inside. So blood sugar continues to build up, and you release even more insulin to try to get the nutrients into the cells. Not only are the high insulin levels disastrous to your fat loss efforts, severe insulin sensitivity is essentially an early stage of diabetes.

6. Dietary fat gets stored more easily as fat than any other nutrient

Dietary fats DO get stored as body fat more readily than other types of macronutrients. This isn't just due to the high calories, it's because the process of converting dietary fat into body fat is chemically very easy. Body fat is made of glycerol and fatty acids. Dietary fat is made of glycerol and fatty acids. There's no costly energy conversion that has to take place. This makes dietary fat very easy to store. Too much of anything gets stored as fat, but foods such as lean proteins and complex carbohydrates must go thorough a metabolically costly process to be converted into body fat.

7. Dietary fat is not an efficient fuel source for high intensity muscular work

Muscle glycogen is the primary and preferred fuel for high intensity weight training. Fats are the primary fuel source during prolonged aerobic exercise, but fats do not fuel high intensity weight training. If you're eating high fats at the expense of complex carbohydrates, your glycogen levels will diminish or be completely depleted and your training will suffer. The high fat diet cultists will attempt to persuade you that dietary fat in the absence of carbohydrate will become the primary fuel source. They are often fond of saying, "There's no such thing as an essential carbohydrate, but there are essential fats and essential amino acids." The truth is, carbohydrates ARE essential for high-powered anaerobic workouts in the weight room. Ask any bodybuilder who has been on a very low carbohydrate diet; when no carbohydrates are eaten, their energy goes down the toilet.

8. Large amounts of dietary fat do not assist muscle growth

The high fat cult says fats are anabolic, referring to the fact that fats are necessary for normal muscle building hormone levels. An extremely low fat diet suppresses anabolic hormones such as testosterone - that much is true. They fail to mention that only *small amounts* of essential fats are needed for anabolic hormone release. When the fat in the diet is high, it's actually non-anabolic. Here's why:

When fat is high and carbohydrates are very low, there's nothing to stimulate a moderate insulin release. Fat has very little effect on insulin. In order to drive the amino acids into the muscle cells where they can be used for muscle growth, a moderate release of insulin is necessary, and only carbohydrates produce enough insulin release to shuttle those amino acids into your muscle cells. It's ironic, but so-called "anabolic" high fat diets are anything but muscle promoting.

Good fats have a different molecular structure than bad fats

So now you know why the two extreme approaches – very high fat or very low fat are not effective. You're now ready to start learning exactly which types of fats you should be eating, and which you should avoid. To choose your fats properly, you need to understand the differences between them. This is where a little bit of chemistry is involved. I'll keep it as simple as possible – I promise!

There are three types of fatty acids, some helpful, some harmful. Every fat or oil consists of a combination of saturated, monounsaturated, and polyunsaturated fatty acids. Saturated fats in general are harmful and raise blood cholesterol. Polyunsaturated and

monounsaturated fats, on the other hand, tend to lower levels of blood cholesterol and contain healthy essential fatty acids (EFA's) such as omega 3's and omega 6's.

Now for the boring chemistry part: (And if you're a biochemist, please don't flame me, this is a simplified model just to get a point across).

Fats are made up of chains of carbon and hydrogen atoms linked together. A fatty acid molecule is made of a carbon backbone, like this:

C – C – C – C

With me so far? Good. Now, attached to the carbon backbone are hydrogen atoms, like this:

```
     H   H  H   H
     1   1  1   1
H – C – C – C – C  - H
     1   1  1   1
     H   H  H   H
```

How saturated a fat is depends on whether there are any spaces left on the carbon chain. If all the carbons have a hydrogen attached to them, the fat is saturated. If there are any carbons that aren't hitched up to Hydrogen, then the fat is unsaturated.

```
     H            H
     1            1
H – C – C = C – C  – H
     1   1  1   1
    H    H  H   OH
```

See how those two carbons in the middle don't have a hydrogen atom attached to them? That's what makes a fat unsaturated – the carbons are not saturated with hydrogen, or as some nutritionists like to say, "There are empty seats on the bus."

The reason I bother with this basic chemistry is because you need to realize that not all fats are the same chemically. Depending on the molecular structure, each fat can have totally different properties. The molecular structure of saturated fats makes them "sticky," which makes you more prone to heart attacks and strokes. They also interfere with insulin function, which is important when you want to lose fat.

The unsaturated fats have benefits and protective effects. They can improve insulin function, counteract some of the negative effects of saturated fats (as in the Eskimo example), increase your energy and help you lose body fat.

Three types of fats – three different molecular structures

1.Saturated fat

Saturated fats are the most harmful, leading to increased levels of cholesterol in the blood. They also lack the essential fatty acids you're looking for. Butter, cheese, chocolate, egg yolk, meat fat, dairy fat, shortening, palm oil, palm kernel oil and coconut oil are all saturated fats. With the exception of the tropical oils (Palm, palm kernel and coconut), saturated fats are primarily *animal* fats and for the most part, they tend to be solid at room temperature.

2. Unsaturated fat (Polyunsaturated and monounsaturated)

Vegetable fats are mostly poly or mono unsaturated. Polyunsaturated and monounsaturated fats tend to lower levels of blood cholesterol and contain the healthy essential fatty acids (EFA's) such as omega 3's and omega 6's. Polyunsaturated fats include fish, walnuts, pecans, almonds, flax, some salad dressings, soybean oil, sunflower oil, and safflower oil. Monounsaturated fats include avocados, cashews, peanuts, pecans, natural peanut butter, olives and olive oil.

Essential fatty acids (EFA's)

Like other "essential" nutrients such as "essential" amino acids, an essential fatty acid is one that the body cannot make and must be supplied through the diet. The monounsaturated and polyunsaturated fats contain the essential fats – these are the good guys. Essential fatty acids are found in all the monounsaturated and polyunsaturated fats I mentioned earlier, but some unsaturated fats are higher in EFA's than others.

The two EFA's are
Omega 6 - (linoleic acid or LA)
Omega 3 – (alpha linolenic or LNA)

Most people don't get enough EFA's. People who intentionally restrict fat to very low levels are often borderline deficient. Although a true clinical EFA deficiency is rare, a very low fat diet is clearly not going to give you optimal amounts of these beneficial good fats.

The amazing benefits of good fats (EFA's)

Most people aren't getting optimal amounts of Omega 3 essential fatty acids. The classic symptom of EFA deficiency is dry, flaky skin. Omega 3's can be provided by food or with an EFA supplement. Smooth, velvety skin is just one of many benefits of EFA's. There are at least eleven important function of EFA's in your diet:

- ✓ EFA's improve insulin sensitivity
- ✓ EFA's are required for absorption of fat soluble vitamins
- ✓ EFA's are essential for joint health
- ✓ EFA's are required for energy production
- ✓ EFA's are required for Oxygen transfer
- ✓ EFA's maintain cell membrane integrity
- ✓ EFA's suppress cortisol production
- ✓ EFA's improve skin texture (dry skin is a classic symptom of EFA deficiency)
- ✓ EFA's are growth promoting
- ✓ EFA's increase metabolic rate
- ✓ EFA's help burn fat

The last two on this list probably really got your attention didn't they? In Udo Erasmus's book Fats That Heal, Fats That Kill, he writes, "At levels above 12 or 15% of total calories, they increase the rate of metabolic reactions in the body and the increased rate burns more fat into carbon dioxide, water and energy (heat), resulting in fat burn off and loss of excess weight."

You might want to go back and read that quote again, because this is huge! There goes the entire very low fat diet right out the window as a means of fat loss. Although it only takes a tiny amount of essential fatty acids in the diet to prevent a deficiency, avoiding a deficiency is not the goal when your interest is losing body fat. Your goal is to take in the *optimal* amount that will have fat-reducing and growth-enhancing effects; that amount is at least 12 to 15%.

Avoid saturated fats as much as possible

There's never any good reason to include large amounts of saturated fats in your diet. The only saturated fats you should take in is the small amount that comes in your chicken breasts and poultry and the small amounts you'll get in the occasional cut of lean red meat and egg yolk or two. Many bodybuilders shun dairy products completely because they have a hard time digesting it or it makes them bloated and water retentive.

Others avoid dairy products because they are high in saturated fats. If you tolerate dairy products well, you can use them on a fat-reducing program as long as you select non fat or 1% lowfat sources which contain little or no saturated fat.

Saturated fats should be kept low, but cutting out all the saturated fats isn't necessary. A lean steak once in a while is A-ok and so is an egg yolk or two, especially if you're taking in ample quantities of good fats because the good fats have protective effects that counteract the negative effects of saturated ones. Grass-fed beef has recently become more popular because it's been discovered that its omega 3 fatty acid content is high and it has a better omega 3 to omega 6 ratio than grain-fed beef.

Reduce your total fat intake in general

Keep in mind that every fat or oil gets 100% of its calories from fat. Olive oil for example, is more healthful than partially hydrogenated oil, but one tablespoon still derives 100% of its calories from fat. Regardless of whether an oil or fat is healthy or not, it's still high in calories. A tablespoon of any oil will set you back about 130 calories and 14 grams of fat.

Therefore, you should try to reduce the amount of fats and oils you consume in general if fat loss is your goal. Otherwise, you are much more likely to exceed your daily calorie limits. If you eat macadamia nuts, walnut, cashews or peanuts as your favorite snack every time you watch TV, you could be hundreds – even thousands of calories over your optimal fat burning level! Nuts contain good fats, but watch those calories!

There are now many lower-calorie substitutes for conventional fats such as Butter Buds, Molly Mc Butter, "low calorie butter flavored sprays", fat-free butter spreads, cooking spray, fat-free dressings, and so on. These can add some flavor to your food without overdoing the calories. Using cooking spray is much better than throwing oil in your fry pan because it would take a 15 second spray to equal 1 tablespoon of oil

Hydrogenation, partial hydrogenation and trans fatty acids, the "phantom fat"

Oils are by nature, extremely unstable substances that go rancid very quickly upon exposure to light and air. "Hydrogenation" and "partial hydrogenation" are processes that food manufacturers use to prolong the shelf life of their products and to make cheap spreadable products such as margarine. Dr. Erasmus calls hydrogenated oils "a manufacturers dream: an unspoilable substance that lasts forever."

Unfortunately, the process of hydrogenation makes an unsaturated fat such as vegetable oil take on the dangerous properties of saturated fats. Hydrogenated oils are "processed fats" the same way that white flour is a "processed carbohydrate."

Partially hydrogenated oils contain large amounts of chemically altered fats known as trans fatty acids. Some nutritionists like to call them "funny foods." Partial hydrogenation is what turns oils into spreadable margarines and makes the oils more stable. They also make baked goods moist and flaky. The Center for Science in the Public Interest calls trans fats "the phantom fat" because it's not required that they be listed on food labels; they're" invisible," so to speak, thus the "phantom" moniker.

What foods contain trans fatty acids?

Hydrogenated oils and trans fatty acids are primarily found in margarines and spreads, baked goods and fried foods. Food manufacturers get real sneaky when it comes to trans fats, because they aren't required to list them on their labels. They can say things like "no cholesterol," or "low saturated fat" yet their product is loaded with harmful trans fats. Many people switched from butter to margarine thinking they were doing good by avoiding the saturated fat in the butter. What they missed was that the margarine was full of the "phantom" trans fats! Here is a partial list of foods to watch out for:

Fried foods (Fried chicken, French fries, fried onion rings, tater tots, etc)
Cookies
Crackers
Biscuits
Frostings
Pies
Pastries
Frostings
Doughnuts
Corn chips
Taco shells
Shortening
Partially hydrogenated vegetable oils
Refined vegetable oils
Baked goods (Croutons, crackers, cookies, cakes, breads)
Margarine

What trans fatty acids can do to you

Trans fatty acids are very dangerous. They cause numerous health problems including heart disease and possibly even cancer. They certainly don't help you get any leaner and may hinder the fat-burning process in more ways than one. The trans fatty acids in hydrogenated oil are believed to raise bad blood cholesterol (LDL) even more than saturated fats. Dr. Erasmus once said, "If you see the "H" word on the label, get the "H" out of there!"

10 destructive effects of trans fats:

- Trans fat decreases insulin sensitivity
- Trans fat increases insulin response to glucose
- Trans fat hampers immune system function
- Trans fat raises the "bad" LDL cholesterol in your bloodstream
- Trans fat lowers HDL (good) cholesterol
- Trans fat increases blood triglycerides
- Trans fat interferes with your liver's detoxification processes
- Trans fat may cause cancer
- Trans fat interferes with EFA functions
- Trans fat makes your platelets stickier

How much fat you should eat every day: What the mainstream "experts" say

Most conventional medical, health, and nutrition organizations including the National Research Council and the National Academy of the Sciences, recommend that for good health and weight control, you keep your fat intake below 30% of your total calories. The only reason that 30% of daily calories has been set as the standard guideline for fat consumption is because it's less than what the average American currently consumes. Thirty percent is not necessarily the ideal amount for optimizing fat loss, muscle gain, and physical performance just because the mainstream experts say so.

What the world's leanest natural bodybuilders do

Your best results for fat loss will come from following a low fat, but not a fat free diet. Based on my own research and observations, I believe (And so do almost all the top natural bodybuilders in the world), that you should limit your total daily fat intake to about 20% of your daily calories and not less than 15% of total daily calories.

If you were to selectively pick your fats very carefully, a diet as high as 25-30% fat wouldn't necessarily be a bad idea either. Lean proteins and complex carbohydrates are more thermic than fats, which would favor a lower fat intake. What's even more important than the number of fat grams or the percentage of calories from fat is the *type* of fat you eat.

How food manufacturers are getting away with murder by lying to you on nutrition labels and how you can determine how much fat is *really* in your food using the "Fat Formula"

Hiding or failing to mention trans fats isn't the only dirty trick food manufacturers are using. Many foods being marketed as "low fat" are actually very high in fat when you analyze the percentage of calories from fat. Food companies frequently try to pull the wool over your eyes and fool you into eating high fat foods by listing the percentage of fat by weight or volume. Another deceptive trick is making serving sizes extremely small, which makes a food appear as if it were low in fat.

By reading nutrition labels and using the following formula, you can calculate what percentage of the calories in a food come from fat or even how much of your total daily diet is derived from fat.

Read the "Nutrition Facts" panel on the food label. Make it a regular habit. Look up the number of total calories and the number of grams from fat. Then multiply the number of grams of fat in a food item by 9 to find the number of fat calories. (There are 9 calories in a gram of fat). Then divide that number by the total number of calories in the food to find the **percentage of calories from fat** in that food.

<u>Example 1:</u>
Low fat 2% milk, 1 cup
120 calories, 8g protein, 11g carbs, 5g fat.
5 grams of fat X 9 = 45 calories from fat
45 divided by 120 total calories = 37.5% fat

FAT % LISTED BY VOLUME!

<u>Example 2:</u>
"Low fat" ham, 1 slice
20 calories, 1g fat.
1 gram of fat X 9 = 9 calories from fat
9 divided by 20 total calories = 45% fat

LOW NUMBER OF FAT GRAMS REFLECTS VERY SMALL SERVING SIZE!

Example 3:
"Low fat" 92% lean ground beef, 3 oz
120 calories, 6g fat. FAT % LISTED BY WEIGHT!
6 gram of fat X 9 = 54 calories from fat
54 fat calories divided by 120 total calories = 45% fat

Flaxseed oil - one of the few supplements you can't go wrong with

Many people believe that fish is the richest source of EFA's. However, Flax has about twice as many Omega 3's as fish. Fresh Flaxseed oil is one of the best ways you can ensure that you meet your EFA requirements. You can get Flaxseed oil from any good health food store. One tablespoon a day is a fantastic way to get your EFA's although some people use as many as 3-5 tablespoons per day, depending on their caloric needs and the amount of carbohydrates they use in their diet.

The only disadvantage of using pure flaxseed oil is that the ratio of Omega 3 fatty acids to Omega 6 fatty acids is 4 to 1. Most people's diets are low in Omega 3 and high in Omega 6. Exclusive use of flaxseed oil over the long term can actually cause a deficiency in Omega 6. Dr. Erasmus came up with a solution by developing an oil *blend* which contains flax along with several other nutritionally rich oils including sunflower, sesame, rice bran, oat bran and evening primrose oils. This blend is called "Udo's Choice" and it is available in most health food stores or from the Flora company (1-800-446-2110 or **http://www.florainc.com).** You can also make your own "oil blend" by mixing three parts flax with one part sunflower oil.

When I recommend flaxseed oil or an oil blend containing flaxseed oil, my clients often ask me if they can eat whole flaxseeds instead of oil and sprinkle them in their oatmeal or cereal. The answer is yes, however you must grind them and eat the freshly ground flaxseeds or you won't absorb them. The seeds will pass right through your digestive tract. A regular coffee grinder will work just fine.

Practical suggestions for fat intake

Ok, now that you're an expert on fatty acids and you know which ones are good and which ones are bad, let's talk about some practical, real-world suggestions for managing the fat in your diet.

- ✓ Reduce fats in general; Always eat a low fat diet.
- ✓ Don't cut your fat too low and avoid diets that call for zero fat or very low fat (10% or less).

- ✓ Include a minimum 15-20% of total calories from fat.
- ✓ Experiment with higher fat: (20 to 30% "good" fats) when your carbs are low to moderate (30-40% carbs or less). Never raise your fats when your carbs are high because this is a fat-storing combination.
- ✓ Take 1 tbsp of flax or "Udo's Choice" oil blend for EFA's ("Udo's Choice" is available from the Flora company 1-800-446-2110 or at your local health food store.)
- ✓ Don't be afraid of fatty fish like salmon, trout, mackerel, sardines, eel or herring. Eating salmon at least twice a week is highly recommended.
- ✓ Don't be afraid of nuts, seeds, avocados, olives or natural peanut butter provided you stay within your calorie limits.
- ✓ Avoid trans fats like the plague – recognize the trans fats by avoiding foods with "partially hydrogenated," or vegetable shortening on the labels. Also stay away from margarine and deep fried foods and high fat baked goods. Remember Dr. Erasmus's advice about what to do when you see "Hydrogenated" on the label.
- ✓ If anyone tells you a very high fat diet improves athletic performance, helps you get leaner or helps you gain more muscle, just ignore them – it's a gimmick!
- ✓ Avoid most supermarket oils. These are to fats what refined white flour is to carbohydrates (Empty, processed junk food calories). The exception is extra virgin olive oil, an unprocessed, monounsaturated fat.
- ✓ Salad dressings with Olive oil or canola oil are ok within your calorie limits.
- ✓ Avoid any type of fried food. Fried foods are on the BANNED list of foods you should never, ever eat!
- ✓ Use a non-stick spray instead of coating your pans with oil – you'll get less calories and less fat.
- ✓ Limit butter (Saturated fat) and consider eliminating it completely. Butter is less damaging than processed oils or trans fats, but since it doesn't provide EFA's, it's like "empty calories" and you're using up your allotment of daily calories with something that could be better.
- ✓ Avoid margarine completely (Trans fats)
- ✓ If you want butter flavor, use butter sprinkles or butter flavor spray. If you *must* use margarine or butter, use a "diet" or "light" tub variety (Example: Promise Ultra Fat-free, Fleischmann's squeezable, Weight Watcher's extra light spread, etc – these are essentially, "watered-down" margarines.

Conclusion

Small amounts of the right fats are good for your health, they help you gain muscle and they help you lose fat more easily. Zero fat or very low fat is not the answer.

High fat diets (over 30%) are not the answer either (that rules out the Atkins diet, and any other diets that promote ketosis for weight loss).

The optimal dietary fat intake is probably between 15% and 25% of total calories. If your fat intake falls somewhere in this range, and you're eating the right kinds of fats, you'll be in good shape.

If you're interested in learning more on the subject of fats, I highly endorse and recommend the book, Fats That Heal, Fats That Kill by Dr. Udo Erasmus. Almost anything you read in the magazines about fat these days dealing with the subject of nutrition for bodybuilding or fat loss is based on the research of Dr. Erasmus. Although there's some heavy chemistry in this book, it's worth the effort to study it and it will enhance your education beyond anything else on the subject.

Chapter 10: Protein – The Muscle Builder and Metabolic Stimulator

"The body can use protein most efficiently if protein is consumed frequently during the day. Six small meals, each containing some protein, allows the body to make better use of the nutrient than if you eat it in two or three large meals. And because protein is not stored, not even for several hours, complete protein - a balanced combination of all the essential amino acids plus nonessential ones - must be consumed in the same meal."

- Jane Brody, Author of "Jane Brody's Nutrition Book" and NY Times Columnist.

"Exercise causes substantial changes in protein metabolism. In fact, recent data suggests that the protein recommended dietary allowance may actually be 100% higher for individuals who exercise on a regular basis. Optimal intakes, although unknown, may be even higher, especially for individuals attempting to increase muscle mass and strength."

- Dr. Peter Lemon, world's foremost researcher on protein needs and exercise.

Why you are what you eat - literally

Heraclitus, the Greek philosopher, said, "You cannot step in the same river twice." What he meant was that a river may look the same every day, but it never is the same because of the never-ending flow of new water running through it. The same is true of the human body. Although your body appears quite solid, it's always in a constant state of flux as old cells die and new ones replace them.

Quantum physicists have proven that 98% of the atoms in your body are replaced within one year. Every three months, your body produces an entirely new skeleton. Every six weeks, all the cells have been replaced in your liver. You have a new stomach lining every five days. You are continually replacing old blood cells with new ones. Every month you produce a new skin as dead cells are shed and new cells grow underneath. The proteins in your muscles are continually turned over as muscle is broken down and new tissue is synthesized. Even your actual DNA as physical cells were not there six weeks ago. Every cell in your body is constantly being recycled.

Best-selling author and mind-body expert Dr. Deepak Chopra describes the ongoing cellular renewal process like this: "It's as if you lived in a building whose bricks

were systematically taken out and replaced every year. If you keep the same blueprint then it will still look like the same building. But it won't be the same in actuality. The human body also stands there, looking much the same from day to day, but through the process of respiration, digestion, elimination and so forth, it is constantly and ever in exchange with the rest of the world."

From a molecular point of view, you are not the same person you were a year ago! This is an extremely important concept to understand because it makes you realize that the statement, “you are what you eat” can and should be taken literally. Once you’ve accepted this maxim, it makes you think twice about what you put in your body every day.

Protein is raw building material for the human body

If your body is constantly creating new cells, the question is, where do all these new cells come from? The answer, of course, is from your food - specifically, protein foods. Protein is the actual raw construction material for body cells like bricks are for a building. Body structures made from protein include skin, hair, nails, bones, connective tissue and of course, muscle. Next to water, protein is the most abundant substance in your body, making up approximately 15-20% of your weight. Of most interest to people who want to gain muscle and lose fat is the fact that 60-70% of all protein in the body is located in skeletal muscles.

Nitrogen balance

Like fats and carbohydrates, proteins also are composed of carbon, hydrogen, oxygen. It’s the presence of nitrogen that separates protein from the other macronutrients. Only protein can bring nitrogen into the body. Because muscle tissue contains most of the body's protein and protein contains nitrogen, scientists can study the effect of dietary protein on muscle growth by comparing the amount of nitrogen consumed with the amount excreted (In feces, urine and sweat). If the intake of nitrogen is greater than the amount excreted, then we know that protein is being retained and new muscle is being synthesized. This is known as positive nitrogen balance. If more nitrogen is excreted than consumed, you are in negative nitrogen balance, indicating that protein is being broken down and muscle is being lost.

Amino acids: The building blocks of protein

The smallest units of a protein are called amino acids. Like bricks in a wall, amino acids are “the building blocks of protein.” Just as glycogen is formed from the linkage of

numerous glucose molecules, proteins are formed from the joining of numerous amino acids. There are 20 amino acids that are required for growth by the human body. From these 20 amino acids, there are tens of thousands of different protein molecules that can be formed. Each protein is assembled from the bonding of different amino acids into various configurations. Growth hormone, for example, is a protein chain of 156 amino acids.

Amino acids are a lot like bricks. Individual bricks are building material that can be cemented together into a nearly unlimited number of structures such as a brick house, a brick wall, a brick oven, a brick chimney, a brick road, and so on. In the same fashion, your body takes the individual amino acids and "cements" them together with peptide bonds into various configurations to create muscle tissue and other body proteins.

Amino acids could also be looked at like letters of the alphabet. Eleanor Whitney and Sharon Rolfes, authors of the textbook "Understanding Nutrition," describe amino acids like this: "Amino acids are somewhat like letters in the alphabet. If you had only the letter G, all you could write would be a string of Gs: G-G-G-G-G-G-G-G. But with 20 different letters available, you could create poems, songs, or novels. The 20 amino acids can be linked together in an even greater variety of sequences than are possible for letters in a word or words in a sentence. The variety of possible sequences for polypeptide chains is tremendous."

Essential vs. non-essential amino acids

Out of the twenty amino acids, the human body can make eleven of them. These are called the non-essential amino acids (Also known as "dispensable amino acids). The other nine amino acids are called "essential amino acids" or (Dispensable amino acids). Essential amino acids are those which can't be manufactured by your body and must be supplied from your food.

Essential (Indispensable) amino acids

Histidine
Isoleucine
Leucine
Valine
Lysine
Methionine
Phenylalanine
Threonine
Tryptophan

Non essential (Dispensable) amino acids

Alanine
Arginine
Asparagine
Aspartic Acid
Cysteine
Glutamic acid
Glutamine
Glycine
Proline
Serine
Tyrosine

Why you must eat "complete" proteins every three hours

Foods that contain a balanced combination of all the essential and nonessential amino acids in the exact amounts required by the body for growth are called "complete proteins." In order for the body to synthesize muscle, all the essential amino acids must be available simultaneously. Any non-essential amino acids that are in short supply can be produced by the liver, but if an essential amino acid is missing, the body must break down its own proteins to obtain it. To prevent muscle cell breakdown, dietary protein must supply all the essential amino acids. If your diet is missing any essential amino acids, protein synthesis will be inhibited.

Carbohydrates have a storage depot in the body called glycogen. Glycogen can be stored in the muscles and liver and then drawn upon hours or even days later when it's needed. Proteins can't be stored in the body. There's only a very small and transient amino acid pool in the bloodstream. To maintain the optimal environment for muscle growth (positive nitrogen balance), complete proteins must be eaten with every meal. This explains part of the rationale behind the common bodybuilding practice of eating six protein-containing meals per day (One every three hours or so.)

Protein quality: Complete vs. incomplete proteins

Protein isn't just found in meat, eggs and milk. There's also protein in vegetables, beans, legumes, and grains. However, the protein in these foods is not considered "complete" because it lacks one or more of the essential amino acids. Generally speaking, proteins from vegetable sources are lower in quality and that's the reason bodybuilders eat

so many proteins from animal sources. The complete proteins are those that come from animal sources such as eggs, milk and meat.

Many grains and legumes contain substantial amounts of protein, but none provide the full array of essential amino acids. Beans, for example, are very high in protein with about 15 grams per cup. However, they are missing the essential amino acid Methionine. Grains are lacking the essential amino acid Lysine. It's been frequently pointed out that combining two incomplete sources of vegetable protein such as rice and beans provides you with the full complement of essential amino acids. This may be true, but there's a decided difference between simply meeting your minimum amino acid requirements for health and consuming the optimal quality of protein for building muscle. Combining complementary vegetable sources of protein will help you maintain your health, but it probably doesn't cut it for the serious trainee or bodybuilder.

There are many different methods of determining protein quality, including biological value, protein efficiency ratio, chemical score, and protein digestibility corrected amino acid score. If you've ever seen advertisements for protein powders and supplements, you've no doubt heard of one or more of these measures of protein quality. In fact, protein quality terminology is frequently bandied about to persuade you to buy certain types of protein powders.

Are protein supplements better than protein foods?

When protein manufacturers throw around fancy words like cross flow microfiltration, oligopeptides, ion-exchange, whey isolates, biological value and they list numerous scientific references, it sure sounds convincing. But don't forget that the supplement industry is big business. The truth is that as long as you eat a sufficient quality of whole food proteins at frequent intervals throughout the day, it's not necessary to consume any protein supplements whatsoever to get outstanding results.

The main advantage of protein supplements is convenience. Whey-based protein powders are an excellent way to get protein if you're not consuming enough from whole foods, but they're NOT better than whole foods. The human digestive system was not designed to process liquids all day long; it was designed to digest food. By over-consuming liquid protein supplements you're only short-changing yourself on the thermic effects that solid food provides. Similarly, amino acid tablets provide no benefit that food cannot. Amino acids are nothing more than an extremely expensive way to get extra protein.

Complete proteins must be consumed at every meal to keep you in positive nitrogen balance and to build and maintain muscle

Although protein quality is definitely an issue, it's been enormously overstated and overcomplicated – mostly by protein supplement advertising. On the BFFM program, there's only one guideline for protein intake you must follow: You must consume a source of complete protein with every meal. Whether it's a whole protein food or a protein supplement is up to you, but you should always emphasize whole foods first and foremost.

Because protein can't be stored for later use like carbohydrates, it's necessary to consume a complete protein in every meal to stay in positive nitrogen balance. Complete proteins are the highest quality proteins that contain all of the essential and non-essential amino acids. Your goal on this program should be to include a source of complete protein with every meal and to eat five to six meals per day. Generally speaking, the most complete proteins are those that come from animal sources such as eggs, milk and meat.

Complete lean proteins

- ✓ Chicken breast
- ✓ Turkey breast
- ✓ Fish
- ✓ Shellfish
- ✓ Eggs (Mostly whites-use limited yolks)
- ✓ Lean red meats (Top round, lean sirloin, flank)
- ✓ Nonfat or low fat dairy products
- ✓ Milk, egg, or whey-based protein powders.

The obvious problem with animal proteins is that they also contain large amounts of saturated fat. To get lean and stay lean, you need to keep animal fats low because they are highly saturated. This is easily achieved simply by using mostly egg whites instead of egg yolks (Or limiting your egg yolks), lean meats such as turkey breast and chicken breast instead of poultry thighs, pork and fatty cuts of red meat, only the leanest cuts of red meat (top round, lean sirloin and flank) and 1% lowfat or non fat dairy products instead of whole milk dairy products.

Is "vegetarian bodybuilder" an oxymoron?

A pure vegetarian (Vegan) diet is not conducive to building muscle, and a diet that is not conducive to building muscle is also not conducive to getting and staying lean. One thing you will never see is a rock-hard, massive and muscular vegan. Lacto-vegetarians

(Those who use dairy products) and ovo-lacto-vegetarians (Those who use eggs and dairy products) can build excellent physiques. Bodybuilding champion Bill Pearl is just one example. Pearl is well known for his lifelong aversion to eating meat, but he does use complete proteins from eggs or dairy products. With this semi-vegetarian approach, Pearl won the Mr. America and Mr. Universe titles and became a legend in the bodybuilding and fitness world.

You can get fit, healthy and lean without consuming animal proteins, but unless you at least include eggs, dairy or protein powders, you will never develop a muscular physique. If a lean and muscular physique is what you're after, then heed the advice of Robert Kennedy, publisher of Muscle Mag International and author of "Rock Hard, Super Nutrition for Bodybuilders:"

"The bodybuilder would be ill-advised to adopt a true vegetarian diet. You can be one of the millions who are eating less meat and more vegetables. You may even want to drop all flesh entirely. But it would be a mistake to try for pure vegetarianism. Only 3.7% of Americans consider themselves to be vegetarians, and of those only a fraction of 1% are purists. In the bodybuilding world of champions, that percentage is currently.... ZERO!"

The RDA vs. the "protein pushers"

For years, a heated controversy has raged over whether or not extra protein will boost muscle development. On one side of the debate you have the conservative dieticians and medical professionals who stubbornly insist that the recommended Daily Allowance (RDA) is all you need to develop muscle. The RDA is the official government guideline set by the National Research Council. The RDA is based on total bodyweight and is currently set at .8 grams per kilogram of bodyweight (or .36 grams per pound of bodyweight). For a 172 pound man that's a paltry 62 grams per day.

On the other side of the debate, you have the "protein pushers" who claim that mega doses of protein are the key to muscular growth and fat loss. These high protein fanatics often suggest intakes as high as 350-500 grams a day or more. More often than not, the protein pushers are in some way affiliated with a supplement company and have a vested interest in selling you protein supplements. In other cases, these high protein advocates are professional bodybuilders who may be taking large amounts of anabolic steroids, which can allow the body to utilize more protein than normal.

So who is right, the conservative medical and scientific community or the protein pushers? The answer is that neither is right; the optimal intake is clearly somewhere in between the two extremes. An "optimal" protein intake for fat loss and muscle growth is

still unknown at this time and will require further research, but one thing is for certain: The RDA has been conclusively proven through peer reviewed scientific studies to be insufficient to support the added requirements for intense training.

The RDAs were developed for the "average" sedentary person to avoid deficiency, not for athletes in hard training to gain muscle and lose fat. The RDA handbook even says, "No added allowance is made here for unusual stresses encountered in daily living which can give rise to transient increases in urinary nitrogen output. It is assumed that the subjects of experiments forming the basis for the requirement estimates are usually exposed to the same stresses as the population generally."

Translation: If you're involved in serious aerobic and resistance training, then this represents stress far beyond the usual stress encountered in daily living and will increase your protein needs. If you're not involved in aerobic and resistance training, then you probably don't require extra protein, but if that's the case, then you're not following the guidelines of the BFFM program.

Optimal protein intakes for fat loss and muscle building

We will probably never have conclusive scientific proof of what the "optimal" protein intake is for gaining muscle and losing fat. That's why I believe the best place to look for answers is not necessarily at the research from the laboratory, but at the athletes "in the trenches" who have already achieved what you want to achieve. Bodybuilders and fitness models are among the leanest athletes on earth. Probably the only athletes who ever get as lean are those in ultra-endurance sports such as marathons and triathalons. The difference is that the bodybuilders reach the same low body fat levels while holding on to their muscle! A six-foot male marathoner could be a buck forty soaking wet! That's why it makes sense to find out what the bodybuilders are doing and use them as your role models. Before we do this, let's first look at what the research says as a minimum starting point.

What the current research says about protein needs

Research has conclusively proven that exercise increases protein needs. Dr. Peter Lemon is the world's leading researcher on protein requirements and athletes. In the journal "Medicine and Science in Sports and Exercise" (19:5, S179-S190,1986) Dr. Lemon writes:

"Several types of evidence indicate that exercise causes substantial changes in protein metabolism. In fact, recent data suggests that the protein recommended dietary

allowance might actually be 100% higher for individuals who exercise on a regular basis. Optimal intakes, although unknown, may be even higher, especially for individuals attempting to increase muscle mass and strength."

Dr. Lemon's more recent research published in "Nutrition Reviews," (54:S169-175, 1996) indicates that strength athletes need up to 1.8g of protein per kg. of body weight to maintain positive nitrogen balance. That's .8 grams per lb. of body weight or almost 140 grams a day for someone who weighs 172 lbs. This is very close to the long-held belief of bodybuilders that one gram per pound of body weight is optimal. Some studies have shown that even higher protein intakes may be necessary in hard training strength athletes. In one study of Polish weightlifters (Nutr. Metabolism 12:259-274), 5 of 10 athletes were still in negative nitrogen balance even while consuming 250% of the RDA.

There's been so much research done on protein and athletes, it's amazing that so many conservative dietitians and medical professionals still cling to the outdated notion that the RDA for protein is sufficient for muscle growth. The biggest irony is the fact that many of these "RDA pushers" are overweight, flabby, out-of-shape professors, researchers or "white lab coat types." I don't know about you, but I have a very hard time taking advice from "armchair experts" who don't walk the walk. After years of being criticized by the academic and scientific communities for their "excess" protein intakes, bodybuilders today have received their vindication. It's no longer a theory that protein intakes higher than the RDA are more effective for building muscle; it is now scientific fact. This still leaves one burning question: How do you determine the precise amount of protein that's right for you?

Protein needs by body weight: The one-gram-per-pound of body weight guideline

For body builders, one-gram-per-pound of body weight has been a rule of thumb for years - and it's very close to the .8 grams per pound of body weight recommended in the most recent research. However, .8 grams per pound of body weight should be considered a minimum for strength athletes, bodybuilders and anyone else involved in serious training. When you account for factors such as biochemical individuality, varying metabolic rates and the added protein needed to accommodate for intense cardio and weight training, adding an extra margin of .2g/lb makes sense. Under certain circumstances, one gram per pound may not be enough, but we'll talk more about that later.

The one-gram-per-pound guideline is the easiest and most commonly used method of calculating your daily protein requirement, but it does have drawbacks. If

you're within the normal ranges for body composition, then this method provides a fairly good estimate of your protein needs. If you're overweight and your body fat is considerably higher than normal, then this formula will overestimate your protein needs. For example, a lightly active 275 lb woman with 35% body fat certainly doesn't need 275 grams of protein. This guideline also doesn't take into account whether your goal is to gain or lose weight. Nevertheless, as long you are training regularly and you are within the normal ranges for body composition, then this simple formula is a solid recommendation and a good place to start.

Example 1:
You are female
Your total body weight = 130 lbs.
Your protein requirement = 130 grams per day
If you eat 5 - 6 meals a day, that's 22 - 26 grams of protein per meal

Example 2:
You are male
Your total body weight = 190 lbs.
Your protein requirement = 190 grams per day
Spread over 5 - 6 meals per day, that's 32 - 38 grams of protein per meal

Protein consumption as a percentage of total calories

The best (And most accurate) method for determining protein consumption is to calculate protein needs as a percentage of your total caloric intake. First, you determine your daily calorie needs based on your lean body weight. The next step is to select the optimal percentage of calories from protein. The percentage you choose must be in line with your goals, activity requirements, body type and metabolic rate.

The baseline recommendation for people who participate in cardiovascular and resistance training exercise on a regular basis is 30% of total calories, although this percentage can vary depending on your needs. As we discussed in the chapter on carbohydrates, some people get better results with a lower carbohydrate intake. If carbohydrates are lower, then fats or protein must be higher. This is why, if you're carbohydrate sensitive, you might decrease your carbohydrates to about 40% and increase your protein to as much as 35-40% of your calories.

Once you've selected your percentage of calories to come from protein, simply multiply the percentage of calories from protein by your total calories for the day the same way you did for fats and carbohydrates. This will tell you how many calories should

come from protein. The final step is to divide the protein calories by four (there are four calories in each gram of protein) and this will tell you how many grams of protein you should eat per day.

Example 1:
You are a female, 130 lbs. very active
Your optimal calorie intake to lose fat is 1700 calories per day
To determine your protein intake, multiply your caloric intake by 30%
1700 calories per day X .30% = 510 calories from protein
There are 4 calories per gram of protein
510 protein calories divided by 4 calories per gram of protein = 127.5 grams of protein

Example 2:
You are male, 190 lbs., moderately active
Your optimal calorie intake to lose fat is 2600 calories per day
To determine your protein intake, multiply your caloric intake by 30%
2600 calories per day X .30% = 780 calories from protein
There are 4 calories per gram of protein
780 protein calories divided by 4 calories per gram of protein = 195 grams of protein

As you probably noticed, the 30% figure came out fairly close to one gram per pound of bodyweight guideline. This will always be the case if your body composition is average or better and your goal is fat loss (When there's a calorie deficit)

Three times when higher protein is called for

Obviously, your optimal caloric intake, and therefore your protein intake, will vary depending on what you want to achieve. If you change your goal in the future to maintenance or gaining lean bodyweight, you're going to need more calories, and a substantial portion of those extra calories should come from protein.

There are times when a higher protein intake is necessary. These include:

1) When you are trying to gain muscular body weight
2) When you are using a low carbohydrate diet for fat loss
3) When you are "carbohydrate sensitive"

Protein intake and gaining lean body weight

Let's suppose you're male, you weigh 190 lbs. and you maintain your weight on 3000 calories per day. To gain weight you'll need to increase your calories. Specifically, you'd need about 3500 per day. Now let's do the math: 30% of 3500 calories is 1050 calories per day. 1050 calories divided by four calories per gram is 262 grams of protein a day. That's nearly 1.4 grams of protein per pound of body weight! The lesson: When gaining lean body weight is your goal, the one-pound per gram of bodyweight guideline doesn't work. This shows why the percentage method is more accurate at calculating your protein needs.

After everything we've discussed so far, you're probably wondering, "Isn't that entirely too much protein?" True, 1.4 grams per pound of bodyweight seems like an awful lot. However, there's a very logical reason for this extra protein, so stay with me for a minute. There's no scientific "proof" that protein intakes this high will grow more muscle, but that's not the reason for the extra protein. The reason is your protein intake has to go up along with your calories in order to keep your nutrient ratios "balanced."

You need more calories to gain weight, but if you added all the extra calories in the form of fat or carbohydrate, you would probably find yourself quickly gaining body fat! As bodybuilders know all too well, excess carbohydrates, especially in the presence of a calorie surplus, can easily cause fat storage. The same goes for dietary fats. A high calorie diet with 70% of the calories from carbohydrates might be okay for a long distance runner, but chances are, most people would get as "smooth" as a baby's butt!

Protein intake and low carbohydrate dieting

The other time when more than 30% protein is justified is when you're using a low carbohydrate diet, either because you're carbohydrate sensitive or you're preparing for a bodybuilding or fitness competition (Or photo shoot). A high protein, low-carbohydrate diet may not be appropriate (Or healthy) for year-round maintenance, but there's no question that eating more protein and less carbohydrates makes it easier for some people to lose body fat.

Some people are very "sensitive" to carbohydrates. When they eat a lot of carbohydrates, their bodies "overreact." There's an unusually large surge in their blood sugar and insulin levels, which may increase fat storage and inhibit enzymes that promote the breakdown of stored body fat. One solution to this problem is less carbohydrate and - you guessed it - more protein.

The baseline diet of 50-55% carbohydrates, 30% protein and 15-20% fat is without a doubt the healthiest, most balanced way to eat, and most people will lose fat on these ratios just by making sure their calories are below maintenance. However, take a look at the diets of the world's best bodybuilders and fitness competitors and you'll discover that nearly all of them use some variation of the low carbohydrate or moderate carbohydrate diet to achieve the "ripped" look necessary to win competitions.

If you've reached the competitive level or if you think you're carbohydrate sensitive, you might opt for the lower carbohydrate approach to fat loss. The problem is, if you drop out carbohydrates and leave the amounts of protein and fat the same, your calories might fall into the "starvation zone." If carbohydrates are decreased substantially, the protein (And to some extent, the healthy "good" fats) must be increased correspondingly so the calorie deficit doesn't become too large.

When your carbohydrates are too low and your calories are also low, the result is almost always muscle loss. So, to offset the drop in carbohydrates and keep your calories above "starvation level," your protein intake must be increased - sometimes to very high levels. Exactly what ratio of protein to carbohydrate you take in depends entirely on your type of metabolism and can only be determined through trial and error.

Most people, even endomorphs, lose fat quite rapidly on a "moderate" carbohydrate diet with about 40% carbohydrates, 30-40% protein and 20-30% fat (40-40-20 or a "Zone" type diet of 40-30-30). Bodybuilders preparing for competitions might take in as much as 45-50% of their total calories from protein, although this is a temporary increase strictly for pre-contest preparation (And I would not recommend this extreme for most people).

Not only does a high protein level fend off muscle loss while you're on lower carbohydrates, but it can also speed up the fat burning process. Protein has the highest "thermic effect" of any food. That means that protein foods speed up your metabolism because your body has to work harder to digest, process and utilize this nutrient compared to fat or carbohydrate. The "thermic" effect of protein is one of the reasons that a higher protein diet is more effective for fat loss than a high fat diet or a high carbohydrate diet. Too much of any food type can be stored as body fat, but protein is less likely to be converted to fat than any other nutrient.

There are no hard and fast "rules" for protein intake, only "guidelines"

The one-gram-per-pound of bodyweight guideline is good as a general guideline for fat loss programs, and the 30% of total calories guideline is even better. If you're

carbohydrate sensitive, you might fare better with 35-40% protein and reduced carbs. However, it's impossible to set hard and fast rules about protein intakes, because no single rule could possibly apply to everyone. The amount of protein you need depends on how hard you're training and on whether you want to gain, maintain, or lose bodyweight. It also depends on whether you decide to take the high-carbohydrate, low-fat approach or the high-protein, low-carbohydrate method. No single way is right or wrong. What's right is what works for you.

No single diet will work for everyone. Nutrition must always be adapted to the individual. You must make adjustments based on your metabolism and body type. If you've tried the conventional, high-carbohydrate, low-fat diet and it hasn't produced satisfactory results, a diet with moderate or even low carbohydrates might be the answer. If you decide to take the low-carbohydrate approach, you're going to have to increase your protein to make up for the lower carbohydrates. If you don't, you'll end up losing your hard-earned muscle. You're also going to have to eat more than one gram per pound of bodyweight if you want to shift gears at some point and start gaining lean body weight.

Even though it flies in the face of conventional wisdom and seems excessive, it's entirely possible that you might need as much as 1.25 grams to 1.5 grams of protein per day - or more - to get optimal results.

Isn't too much protein bad for you?

Following these guidelines, many male competitive bodybuilders or people on low carbohydrate diets consume as much as 250-350 grams of protein per day or more. Women often consume as much as 175-225 grams per day. This often raises the question, "Isn't this much protein bad for you?" If you have any kidney problems, you should avoid high-protein diets and you should always check with your physician before making any major changes to your diet. However, the idea that a high-protein diet is bad for you is a myth. It's a myth that never seems to go away, so let's take a closer look at the truth of the matter.

Protein and kidney disease

At one time or another, you've probably heard the myth that high-protein diets are bad for your kidneys, they dehydrate you and cause osteoporosis. Well, here's the truth: If you have a history of kidney problems, you should avoid high-protein intakes at all costs. However, it's a medical and scientific fact that except in the case of pre-existing kidney disease, there's no proof that a high-protein intake will cause damage to a healthy kidney. In fact, there's not a single study that has ever been published in a peer-reviewed

scientific journal using adult human subjects with healthy kidneys that's shown any kidney dysfunction whatsoever as a result of consuming a high-protein diet.

In the textbook, "Total Nutrition: The Only Guide You'll Ever Need," from the Mt. Sinai School of Medicine, the authors, Victor Herbert and Genell Shubak-Sharpe, had this to say about protein and kidney disease:

"High-protein diets have never proven to be a serious hazard for healthy people, although processing excess protein can overburden a liver or kidneys that are damaged by disease. That's why individuals with kidney or liver disease are often put on protein-restricted diets."

Protein and osteoporosis

What about the claim that high-protein diets cause osteoporosis? In inactive people, some studies have shown that increased protein intakes lead to elevated calcium excretion. This is because high-protein intakes increase the acidity of the blood, and the body must "leach" calcium from the bones to buffer the acidity. The researchers theorized that this calcium loss could lead to accelerated osteoporosis, especially in women.

While this phenomenon has been observed in sedentary individuals, there's no clearly established link between high-protein intake and osteoporosis. Women with risk factors for osteoporosis should be more cautious, but if you're athletically inclined and participate in aerobic and resistance exercise, you'll have fewer risk factors. Weight training and weight-bearing exercise increases bone density. Here's what Herbert and Shubak-Sharpe had to say on the subject:

"Our typical high-protein, high-meat diets have also been implicated as a factor in the development of osteoporosis, but these claims may be the results of misinterpreting scientific research. Studies have shown that adding purified protein supplements and amino-acid mixtures that have had their phosphate removed do increase excretion of calcium by the kidney in both animals and humans. However, several long-term controlled human studies carried out by Herta Spencer, M.D., at the Hines VA Medical Center in Illinois have shown that high intakes of protein from natural protein sources such as meat, which have their phosphate intact, do not significantly increase calcium loss."

A post-menopausal sedentary woman would not be well advised to go on a high protein diet, but if you're a bodybuilder, or even if you just train with weights

recreationally, then you'll have denser bones than someone who doesn't work out. Therefore, extra protein should not be a cause for concern.

Protein and dehydration

One legitimate concern for the healthy person when following a high-protein diet is dehydration. Metabolizing protein requires more water than fats or carbohydrates, so it's extremely important to consume extra water if you increase your protein. The standard recommendation is eight to ten 8 oz glasses per day (64 - 80 oz). However, the higher your protein intake, the more water you should drink beyond the standard guideline. For bodybuilders on high-protein diets, a gallon a day (124 oz) is more like it. If in doubt, drink even more!

Final recommendations

Mainstream dieticians and scientists condemn high-protein diets. They argue that it's wasteful and expensive to eat so much protein because the excess will be converted into glucose and used for energy (or stored as fat if there's a calorie surplus). This is true, but in the absence of large amounts of carbohydrates, it's this conversion of protein to glucose, a process called gluconeogenesis, that helps bodybuilders get leaner. The process is "metabolically costly." In other words, you actually burn off calories and speed up your metabolism by eating too much protein.

Critics often question whether this practice is healthy. I have to confess, most bodybuilders eat entirely too much protein, especially before competitions. And perhaps, if sustained for a long period of time, it might not be the healthiest of all diets. I can't argue that a diet with higher fiber content and more variety isn't healthier than one that is mostly protein.

However, a baseline diet with up to 30% of the total daily calories from lean protein is not only healthy, it's a necessity if you're in serious training for bodybuilding or fat loss. If you reduce your carbohydrates and raise your protein above 30% of your total calories, then you sometimes have to be more cautious as issues such as dehydration and nutrient deficiencies might become issues. However, a key distinction must be made: A high-protein, low or moderate carbohydrate diet is a temporary tool. Nutrition programs should be cycled just like training programs. After a fat loss phase (Or competition season) is over, an intelligent person will cycle back to a much more balanced diet that contains a wide variety of foods, with less protein, more carbs and plenty of fruits, vegetables, complex carbohydrates and whole grains.

Chapter 11: Clearing up Carbohydrate Confusion: Are Carbohydrates Fat Loss Friends or Fat Loss Foes?

"Carbohydrates are premium fuel."

- Dr. Michael Colgan: Optimum Sports Nutrition.

"The price paid for severe restriction of carbohydrates is a reduction in the body's protein stores, particularly muscle protein. This causes a significant reduction in lean tissue mass."

- Katch & McArdle, Exercise Physiology: Energy, Nutrition & Human Performance.

Pinpointing your perfect carbohydrate intake

In a previous chapter, you learned that the two extremes - *very low* or *very high* carbohydrate diets - are not the most effective approaches for permanent fat loss. That leaves a lot of room in the middle. The goal of this chapter is to help you narrow down this wide gap and pinpoint the perfect carbohydrate intake for you based on your goals and your body type.

In this important chapter, you'll also learn about the various types of carbohydrates and which ones are best for increasing energy and losing body fat. You'll learn that some carbohydrates are beneficial and some are harmful. You'll learn how to distinguish processed carbohydrates from natural carbohydrates, fibrous carbohydrates from starchy carbohydrates and simple carbohydrates from complex carbohydrates. You'll read about the dangers of processed carbohydrates and the virtues of natural carbohydrates. Finally, you'll learn exactly how many grams of carbohydrates you should eat and what percentage of your total calories should come from carbohydrates.

What are carbohydrates and what are they for?

Unlike proteins, which are used as building materials, carbohydrates are used for energy, particularly for high-intensity exercise. Sports nutritionist Dr. Michael Colgan, author of "Optimum Sports Nutrition," calls carbohydrates "premium fuel." I've never heard a better definition. Fats are also used for fuel, but the difference is that fats don't burn as efficiently as carbohydrates. It's a common misconception that fat is a more *efficient* fuel source, but it's not – it's simply a more *concentrated* fuel source (nine

calories per gram for fat versus four calories per gram for carbohydrate). Carbohydrates are the body's preferred and most efficient energy source. Whenever carbohydrates are restricted, energy levels and performance usually decline.

Fat is stored in the body as a backup energy source (like a "reserve fuel tank"). A 185-pound man with 18% body fat has 116,500 calories stored in his "reserve tank." Your body can also store carbohydrates, but in much more limited quantities. Carbohydrates are stored in your muscles and liver in the form of glycogen - About 400 grams of glycogen can be stored in the muscles (1600 calories) and approximately 100 grams (400 calories) in the liver.

Your body is always burning a mixture of carbohydrate and fat for fuel. During low intensity, long duration exercise, most of your energy comes from body fat. Most of your energy also comes from fat while you are at rest (Although you don't burn many calories worth of fat when you're laying on the couch). During short bouts of high intensity exercise such as sprinting or weight lifting, glycogen (carbohydrate) is the main fuel source. Your primary fuel source also tends to change depending on which fuel is more readily available.

Your body can easily use fat for fuel and even in lean people, there's enough fat stored to last a long time. However, carbohydrates are always the limiting factor in exercise and athletic performance because carbohydrates are the more efficient fuel source. Exercise burns up muscle glycogen very quickly and if you fail to replace it every day by eating high carbohydrate foods, your glycogen stores quickly diminish. Within about three days of a severe carbohydrate cutback, your muscle glycogen will be almost totally depleted.

Glycogen is your primary energy source for weight training and high-intensity exercise, so this explains why your energy will be low and your workouts will suffer when you don't eat many carbohydrates (And if you don't have the energy to work out hard, you won't be burning much fat, will you?) Low carbohydrate diets are seldom appropriate for athletes or anyone else involved in serious training.

The many types of carbohydrates

Eating the right *quantity* of carbohydrate is important, but the *quality* of the carbohydrates you choose is equally important. Ultimately, all the carbohydrates you eat end up in the bloodstream as glucose (blood sugar), but you can't lump all carbohydrates together into one category, because they're not all the same. Before we talk about how to calculate your optimal *quantity* of carbohydrates, you first need to learn about the different *qualities* of carbohydrates.

There are simple and complex carbohydrates, starchy and fibrous carbohydrates, refined and natural carbohydrates, high-glycemic and low-glycemic carbohydrates. Some of these carbohydrates are good and some are bad. The good carbohydrates are your friends; they will supply you with energy and nutrients and help you get leaner and more muscular. The bad carbohydrates are your foes; they have a greater potential for fat storage, they are nutritionally void and rob you of energy.

To lose fat, become more muscular, optimize your metabolism and increase your energy, the secret of carbohydrate nutrition is to learn the differences between the various types of carbohydrates, choose the right ones and eat them in the right amounts at the right times.

Simple Carbohydrates (monosaccharides and disaccharides)

There are two broad categories of carbohydrates: Simple and complex. Let's talk about the simple ones first. Simple carbohydrates consist of a single sugar molecule (monosaccharide) or two single sugar molecules linked together (disaccharide).

The Monosaccharides include fructose, glucose, and galactose. The two we'll refer to the most are fructose (fruit sugar) and glucose (blood sugar.) Glucose is found naturally in food or it can be produced in the body through the breakdown of complex carbohydrates. Fructose is the type of simple carbohydrate found in fruit.

Disaccharides are formed by the combination of two monosaccharide molecules. Examples include Sucrose (table sugar), which is formed by the combination of fructose and glucose, and Lactose (dairy sugar), which is composed of galactose and glucose.

Types of Simple Carbohydrates (sugars)

Monosaccharides	Disaccharides
Glucose (blood sugar)	Sucrose (table sugar) glucose and fructose
Fructose (fruit sugar)	Lactose (dairy sugar) glucose and galactose
Galactose	Maltose (malt sugar) glucose and glucose

Eating too many simple carbohydrates causes blood sugar peaks and valleys

Here's the most important thing you need to know about simple carbohydrates: Due to their "simple" molecular structure, they're digested very quickly and they cause a rapid rise in blood sugar. Your body responds to blood sugar peaks by releasing large

amounts of insulin (the hormone responsible for getting the glucose out of the bloodstream and into the cells where it can be used for energy).

When there's a large blood sugar spike, your body tends to "overreact" and produce too much insulin. The insulin quickly clears the glucose from the bloodstream, leading to a sharp drop in blood sugar known as hypoglycemia. Low blood sugar is accompanied by cravings, hunger, weakness, mood swings and decreased energy. The hunger and cravings tend to cause the sugar consumption to perpetuate itself, resulting in a vicious cycle of ups and downs in energy throughout the day.

High blood sugar and insulin can increase fat storage

To lose body fat more efficiently, your goal is to maintain steady blood sugar levels. Here's why: The over-secretion of insulin activates fat storage enzymes and promotes the movement of triglycerides (fat) in the bloodstream into fat cells for storage. High insulin levels also inhibit enzymes that promote the breakdown of existing stored body fat. You can manage your blood sugar and insulin levels by choosing fewer simple carbohydrates, more complex carbohydrates, eating fiber and having your carbohydrates with lean proteins approximately every three hours.

Insulin is not necessarily the "bad guy" as it is sometimes portrayed, but it can be a double-edged sword if not managed through proper carbohydrate choices. Insulin is an anabolic hormone that's absolutely essential for getting amino acids into the muscles for growth and getting carbohydrates into the muscles where they're needed for energy.

The problem is when there's *too much* insulin and when *resistance to* insulin is produced by eating too many simple and refined carbohydrates. When your blood sugar and insulin levels are abnormally high, you're not in a fat-burning mode – you're in a fat-storing mode.

The *natural* simple carbohydrates are "healthy," but ALL simple carbohydrates should be used in moderation during fat-reducing programs.

When we talk about *simple* carbohydrates, we're often referring to refined sugar and white flour products – these are the "bad carbohydrates." But not all simple carbohydrates are bad. Some simple carbohydrates occur in nature. These "natural sugars" include fructose (found in fruit) and lactose (found in dairy products). Natural sugars are fine when eaten in moderation.

There's no reason to cut out *all* your simple carbohydrates – *just the bad (refined) ones*, but you should reduce simple carbohydrates overall if you want maximum fat loss.

This is one of the many tricks bodybuilders use to get so lean – they cut out refined sugar completely, but they even cut back on natural sugars too, opting for starchy and fibrous carbohydrates instead.

Eat non-fat or low fat (1%) dairy products in moderation if you tolerate them well

Lactose is a naturally occurring simple sugar you can eat in moderation if you tolerate it well. Lactose intolerance is the inability to digest dairy products. People who are lactose intolerant don't have the enzyme necessary to digest lactose, so they get gas, bloating, water retention, abdominal cramps and diarrhea when they eat dairy products. The degree of lactose intolerance can vary greatly. In those with severe intolerance, the symptoms are very pronounced. In those with a minor intolerance, the symptoms can be as subtle as a bloated and puffy appearance. Although it's not fat, "bloat" makes you *look* fat, which is exactly what someone seeking muscle definition doesn't want!

Provided that you choose reduced fat or non-fat sources, dairy products are healthy foods and should be included as a part of a normal, balanced "baseline" diet. Dairy products are a good source of quality protein, Calcium and vitamin D. These days, you can find low fat and non-fat versions of just about anything, including cheese, milk, cottage cheese, cream cheese, sour cream, mayonnaise and yogurt.

Dairy products should not, however be used as your *primary* source of protein or carbohydrates. Overdo it on the dairy and you may end up with a "puffy" appearance. Dairy products contain simple carbohydrates and all simple carbohydrates should be minimized on a fat burning program in favor of complex carbohydrates.

In fact, bodybuilders who want extremely low body fat often completely remove the dairy products from their diets. Many bodybuilders believe that dairy products are more readily converted to body fat and are more likely to cause bloating and puffiness.

There's no conclusive proof that low fat dairy products are "more fattening" than other types of carbohydrates, but it's true that temporarily removing dairy products before competitions may provide the leaner, "sharper" look that bodybuilders are seeking.

Eat fruit in moderation, but focus more on natural fibrous and starchy carbohydrates

Fructose is the other naturally occurring simple sugar. Some experts argue that because fructose (fruit sugar) is "healthier" than sucrose (white sugar), large amounts of fruit should be eaten on a fat burning diet. Although fruit is definitely a healthy food, loaded with antioxidants, vitamins, phytochemicals and fiber, eating a large percentage of

your carbohydrates from fructose is NOT the most efficient fat loss strategy. Fructose is a simple carbohydrate, and you should use all simple carbohydrates in moderation during a fat burning program.

On the BFFM program, fruit is best used as a *small portion* of your carbohydrate calories, not the primary source. One or two pieces of fruit a day is fine, with the remainder of your carbohydrates coming from green fibrous carbohydrates (asparagus, broccoli, etc) and complex starchy carbohydrates (such as oatmeal, brown rice and yams).

You should also reduce your intake of *fruit juices* because they are much more calorie dense than the fruit in its natural, raw state. A large glass of orange juice contains 200 calories, a medium orange contains only 60. When fat loss is your goal and you're watching your calories closely, drinking a large portion of your calories is not a good idea. The whole food has more fiber, lower calorie density, and a higher thermic effect.

Contrary to what some bodybuilding gurus suggest, fruit is not "fattening." Fruit is a healthy food. However, if you're a competitive bodybuilder or fitness competitor or if your body fat is already normal and you want to get *even leaner*, you'll probably get better fat loss results by temporarily substituting the fructose (simple carbohydrate) for less dense green vegetables (fibrous carbohydrate) and more protein.

Complex Carbohydrates (polysacccharides)

The second major carbohydrate category is complex carbohydrates, also known as polysaccharides. Complex carbohydrates are formed when thousands of sugar molecules are linked together in long chains. These chains take longer to break down and digest than simple carbohydrates (which gives them a higher thermic effect). There are two types of complex carbohydrates: Starchy and fibrous.

Starchy Complex Carbohydrates (starches)

Starch is the storage form of energy in plants, much like glycogen is an energy storage form in human muscle. Starchy carbohydrates are found in potatoes, cereals, grains, bread, pasta, rice, oats, wheat and beans. Your body is able to completely absorb and digest all the caloric energy in starches, therefore the calorie density of starch is higher than fibrous carbohydrates.

Fibrous Complex Carbohydrates (Fiber)

Fiber is the indigestible portion of the plant and therefore passes straight through your digestive tract without all the caloric energy being absorbed. Fiber gives bulk to the

intestinal contents, promotes healthy digestion and elimination, speeds the transit time of food through the digestive tract and provides protection from gastrointestinal diseases and colon cancer. You could say that fiber is "nature's internal cleanser." When you're eating every three hours and your diet is high in protein, the importance of fiber for your health is obvious.

Fibrous carbohydrates (green vegetables) help you lose fat because they have a low calorie density

Eating fibrous carbohydrates for the health benefits is important, but fiber also plays a major role in a reducing body fat. The reason is because fibrous carbohydrates such as green vegetables don't contain many calories – they have a "low calorie density." Low calorie density foods are very important for fat loss because they make it easier to stay full without going over your calorie limits.

It's nearly impossible to over-eat green vegetables because the calories are so low. You would literally get tired of chewing before you ate too much. For example, two cups of rice contains more than 400 calories while two cups of cucumbers contains only 48 calories. The *volume* is the same, but the difference in *caloric density* is almost ten fold!

The starches are much more calorie-dense than the fibrous carbohydrates. Some fibrous vegetables are so low in calories that once the thermic effect is factored in, it could be said that such foods have "negative calories." This is the primary reason that a fat reducing nutrition program should be very high in vegetables.

Common Types of Complex Carbohydrates (Starches & Fibers)

Fiber is found in starches such as oats, beans and whole grains as well as in vegetables. For the purposes of this program, however, we will refer to vegetables such as broccoli, asparagus, lettuce and green beans as "fibrous carbohydrates" because the vegetables (especially the green ones) have different properties than starches.

Starchy Carbohydrates	**Fibrous carbohydrates (vegetables)**
Potatoes	Broccoli
Yams	Lettuce
Beans	Cauliflower
Oatmeal	Zucchini
Barley	Tomatoes
Brown Rice	Asparagus
Whole grain bread	Green beans
Whole grain cereal	Squash
Whole grain pasta	Cucumber
Other whole grains	Spinach

Complex carbohydrates should make up the majority of your carbohydrate calories

Complex carbohydrates take longer to digest and absorb than simple carbohydrates. They provide sustained energy levels without the highs and lows in blood sugar and energy levels produced by eating simple carbohydrates. Complex carbohydrates contain fiber, which slows down their absorption and helps stabilizes blood sugar and insulin. Complex carbohydrates are more filling, allowing you to feel more full on less food. Complex carbohydrates from natural sources are also the most nutrient dense carbohydrates you can eat, whereas refined (white) sugar is nutritionally void. Complex carbohydrates have a higher thermic effect and they stimulate less insulin production. For all these reasons, complex carbohydrates are the carbohydrates of choice for fat loss. As a general rule, 2/3 or more of all your carbohydrates should be complex carbohydrates, while 1/3 or less should be simple carbohydrates.

The glycemic index - Much ado about nothing?

The glycemic index (GI) is a scale that measures how quickly a carbohydrate food is broken down into glucose. In general, complex carbohydrates are released more slowly than simple carbohydrates, although this is not true 100% of the time. Some complex carbohydrates such as potatoes and carrots are broken down into blood glucose very quickly because they are high on the GI. Other simple carbohydrates such as apples are converted into blood glucose very slowly because they are low on the GI.

The GI was initially developed as a tool to help people with diabetes keep their blood glucose under control. The GI has recently attracted a lot of attention in the bodybuilding, fitness and weight loss world. Many diet programs base their carbohydrate choices entirely on the GI, stating that high GI foods are fattening and low GI foods are not. One well-known health and nutrition “guru” even wrote, “High-glycemic foods like rice cakes, bread, and potatoes stress the body's insulin system and probably are chief culprits in obesity." Unfortunately, this is a gross oversimplification and has only added confusion to an already confusing subject.

According to advocates of the GI system, foods high on the scale such as rice cakes, carrots, potatoes, or grape juice are "unfavorable" and should be avoided because they are absorbed so rapidly and are therefore more likely to convert to fat. Instead, we are urged to consume carbohydrates that are low on the GI such as black eye peas, barley, oatmeal, peanuts, apples and beans.

The truth about the glycemic index and fat loss

Although the GI has some useful applications, such as in post-workout and pre-workout carbohydrate choices, it's not the most relevant factor when it comes to fat loss. The GI is only one of many criteria you should consider in selecting your carbohydrates during a fat loss program.

The mistake in using the GI as your *only* criteria for making carbohydrate choices is that the GI was developed based on eating carbohydrates by themselves in a fasted state. The BFFM program is based on combining carbohydrates and protein together. When carbohydrates are eaten in mixed meals that contain protein and some fat, the GI loses its significance because the protein and fat slows the absorption of the carbohydrates.

For example, mashed potatoes have a GI near that of pure glucose, but if you combine the potatoes with a chicken breast and broccoli, the GI of the entire meal is much lower than the potatoes alone. Rice cakes also have a high GI. But if you put a dab of peanut butter on them, the fat slows the absorption of the carbohydrates, lowering the GI of the combination.

The GI is also affected by frequent eating. The GI was developed based on eating a food in the fasted state. On this program, you will be eating approximately every three hours – that's about as far from a fasted state as you can get. Because undigested food from each previous meal can slow the absorption rate of the current meal and because frequent eating stabilizes blood sugar levels, this also makes the index lose some of its relevance.

To say that foods like potatoes and carrots are fattening and shouldn't be eaten simply because they are high on the glycemic index is ridiculous. Although some bodybuilders drop out potatoes, opting instead for lower GI starches such as yams and oatmeal, many others, myself included, eat white potatoes up to the day of competition and their body fat reaches the low single digits.

The GI is definitely a factor you can consider when deciding which carbohydrates to eat, but using the GI as your *only* criteria for choosing your carbohydrates is a mistake. If low GI foods were the key to fat loss, then you could eat ice cream, peanut M & M's, and sausages and you'd lose weight. There are more important factors than the GI. For maximum fat loss and optimal health, a much more relevant criteria than GI is whether your carbohydrates are natural or processed.

Natural vs. refined: The most important distinction you can ever make about carbohydrates.

So far you've learned the difference between simple and complex carbohydrates, starchy and fibrous complex carbohydrates and high GI and low GI carbohydrates. These are all significant factors, but the #1 most important distinction you can ever make about carbohydrates is the difference between natural and refined (or processed) carbohydrates.

The "ultimate test" for whether a carbohydrate is natural and unrefined is to ask, "Did this food come out of the ground or off the tree/plant this way?" If the answer is yes, then it's a natural, unrefined food.

The more a whole grain is refined and processed, the finer the particle size becomes. When a complex carbohydrate is refined, it literally loses its complexity and takes on the properties of a simple carbohydrate. Refined breads and grains made from white flour are processed in your body the same way as simple sugars. That's why anything made out of white flour is not recommended in this program (that includes white or enriched pastas, breads, pretzels, crackers and bagels).

Read labels and watch out for refined sugars! Counting fat grams is not enough

In the 1980's the media literally brainwashed everyone into believing that all fat was bad and that fat was the one prime cause of obesity and health problems. This spawned the proliferation of a huge variety of "fat-free" foods as well as the widespread practice of counting fat grams and keeping them to a minimum. However, counting total fat grams is an antiquated weight loss technique. The key to fat loss is to reduce fats and also reduce your intake of refined sugar.

Many fat-free foods are almost one hundred percent refined sugar. Refined sugars are "bad carbohydrates" of the worst kind. Of all the nutritional "bad guys," refined carbohydrates (white sugar, sweets, white flour and enriched bread products) are the worst of all; arguably much worse than fat. In fact, refined sugars and other highly processed foods are probably more responsible for poor health and obesity than any other single factor.

If you did only two things to your diet starting today; (1) remove saturated and processed (trans) fats, and (2) remove processed sugars, the difference in you health, energy and body fat levels would absolutely astonish you!

You might be wondering, "Could refined sugar really be that bad?" After all, if your calories are under maintenance, what harm could a little candy bar do? Well, that

"little" adds up over time. The average American consumes an unbelievable 134 pounds of refined sugar every year. Sugar expert Dr. Nancy Appleton, author of Lick the Sugar Habit, warns that heavy sugar consumption does far more harm than most people suspect. In fact, Dr. Appleton has counted a total of 108 reasons why refined sugar will wreak havoc in your body! (Visit **www.nancyappleton.com** or get her book if you want to know what all of them are)

A dozen of the most important reasons to avoid sugar:

1) Refined sugar can be a contributing factor to gaining body fat
2) Refined sugar can increase the bad LDL cholesterol
3) Refined sugar can decrease the good LDL cholesterol
4) Refined sugar can increase triglycerides
5) Refined sugar can suppress your immune system
6) Refined sugar can deplete your body of important minerals
7) Refined sugar can contribute to the development of numerous types of cancer
8) Refined sugar can cause hypoglycemia
9) Refined sugar can decrease growth hormone
10) Refined sugar can contribute to diabetes
11) Refined sugar can cause food allergies
12) Refined sugar can increase serum insulin

As you can see from this list, the impact of sugar on obesity and health problems can be devastating.

Reduce your intake of "bad" (refined) carbohydrates

Just because a label says "fat-free" or "low-fat" doesn't mean it helps you get lean or it's good for you, because a fat-free food can be high in refined sugars. For example, many nonfat frozen yogurts are loaded with refined sugar. Some "fat-free" cakes and cookies are nearly 100% sugar. Because we are still bombarded with the "fat is bad" message, many people switch to non-fat diet foods, but they completely fail to pay attention to refined sugars. You must work on reducing both!

Beware of hidden refined sugars

Small amounts of refined sugar are hidden in foods you might never even think of such as nonfat salad dressings, steak sauce, pasta sauce, cranberry sauce, sliced lunch meats, ketchup, whole wheat bread, whole grain cereals and too many others to mention. It would be difficult and perhaps unrealistic for you to completely eliminate 100% of the sugar from your diet. What you *should* do is make a concerted effort to cut down your

refined sugar intake as much as possible, especially from the obvious sources such as candy, soda, chocolate, ice cream, table sugar and cookies.

Make label reading a new habit and check the ingredients lists for refined sugars

The BFFM program was designed to teach you new habits that you can adopt and keep for life. One new habit you can begin working on immediately is the habit of reading nutrition labels. Many people already check the "nutrition facts" panel on food labels for calories, fat, protein and carbohydrates. What most people miss is the *ingredients list*. Always check the ingredients list for refined sugar content. Refined sugars are not always listed on the nutrition facts panel as "sugar." They may be disguised in the list of ingredients as high fructose corn syrup, corn syrup, rice syrup, sucrose, glucose syrup, brown sugar and invert sugar. These are all different varieties of refined sugar. If sugar is listed as one of the top few ingredients, then that food is not something you should eat on a daily basis.

The ingredients list on a food package is a good way to determine refined sugar content because labeling laws require that the ingredients be listed in the order of their precedence. The grams of sugar listed on the "nutrition facts" panel can be misleading because it doesn't distinguish between refined and naturally occurring sugars. For example, Dannon makes a sugar free, fat free yogurt called "Dannon Light." On the Nutrition Facts panel, it says that out of 15 grams of carbohydrates, 9 grams are sugar. But if you look at the ingredients list, you'll see that there are no refined sugars because it's sweetened with Aspartame. The 9 grams of sugar come from lactose, the *naturally occurring* simple sugar in dairy products.

Here's another example: Most protein bars, which are marketed as bodybuilding health foods, are loaded with refined sugar. Although the total carbohydrates are not high, if you read the ingredients list, you are likely to see some kind of protein powder as the first ingredient, with corn syrup (refined sugar) as the second ingredient. Don't just judge a food by the grams of carbohydrates or sugar listed, dig a little deeper and check out the ingredient list.

Calorie density of carbohydrates

In addition to choosing carbohydrates on the basis of whether they are refined or natural, another criteria you should use for carbohydrate selection is calorie density. Eating more calories than your body can handle at once is the primary cause of fat storage. Therefore, it makes sense that you should choose foods with a low calorie density if you want to lose fat.

Refined carbohydrates are more likely to make you fat than natural carbohydrates. If all carbohydrates have four calories per gram, then how can this be? It's because refined carbohydrates contain more calories in the same volume of food than natural complex carbohydrates. (They're more calorie dense).

Because refined sugars are so highly processed, a lot of calories get packed into a small serving of food. The milling, grinding, bleaching and enriching of grains decreases their complexity and removes much of the nutritional content. The milling of grains into white flour also decreases the particle size while increasing the calorie density. In general, the smaller the particle size, the higher the calorie density and the quicker it is absorbed. Complex carbohydrates such as breads, pasta, bagels and cereal are processed, so they are metabolized more like simple carbohydrates than complex carbohydrates.

Processed complex carbohydrates may be used on this program, but only in moderation. Pasta is a prime example. With 270 calories per cup, pasta is very calorie-dense. You can include pasta on a fat reducing diet (preferably whole grain pasta), but if you do, watch those calories closely! Most people are more likely to have three cups of pasta than one - that's 810 calories, not even including what you put on it.

Processed and refined carbohydrates are calorie dense but nutrient sparse (They are "empty calories").

Refined carbohydrates provide little or no nutritional value. Sucrose (white table sugar), for example, is 99% pure calories; no vitamins, no minerals, no proteins, just empty calories that do nothing for you. Sugar is worse than zero nutrition – it's negative nutrition because it depletes minerals from your body. It's also stored easily as fat and causes fluctuating blood sugar and insulin levels.

Despite the repeated emphasis in this program on the importance of calories, you shouldn't be concerned only with the *number* of calories you eat each day, you should also be concerned with the *quality* and *nutritional value* of those calories. Your goal is to get the most nutritional value out of every calorie. This is known as "nutrient density."

Carbohydrate recommendations: What the conventional wisdom says

The American Heart Association, the American Dietetic Association, The National Research Council, The National Academy of the Sciences, The Center for Science in the Public Interest and virtually every other health, nutrition and medical organization in the world recommends a moderately high carbohydrate diet containing at least 55% of total calories from carbohydrates.

This is a good guideline for a basic, healthy diet, provided the carbohydrates are chosen with care and the calories are monitored. The problem with this single prescription for carbohydrates is that it doesn't take into account metabolic individuality, carbohydrate sensitivity, activity levels, the type of exercise performed, or the type of goal you are seeking.

Carbohydrate requirements can vary greatly from person to person. Endurance athletes may do best with as many as 60%-65% of their calories from carbohydrates, while competitive bodybuilders in a pre-contest mode might *temporarily* reduce their carbohydrates to half of that or less.

Carbohydrate gram recommendations for the baseline diet

The starting baseline for carbohydrate consumption is 50% - 55% of total daily calories. For most people on fat loss programs including weight training and aerobics, 50% - 55% is the best place to begin. After establishing this as your baseline and seeing how you respond, you can then experiment and make adjustments based on your results.

Baseline carbohydrate recommendations for women

<u>1500 calories per day:</u>
1500 calories X **50% - 55%** = 750 to 825 calories from carbohydrates
There are 4 calories in each gram of carbohydrates
750 to 825 carbohydrate calories divided by 4 = 187 to 206 grams of carbohydrates per day

Baseline Carbohydrate recommendations for men

<u>2400 calories per day</u>
2400 calories X **50 - 55%** = 1200 - 1320 calories from carbohydrate
There are 4 calories in each gram of carbohydrates
1200 to 1320 carb calories divided by 4 = 300 to 330 grams of carbohydrates per day

Keep in mind that these are just examples; your personal carbohydrate intake must be individualized according to your needs. Highly active or athletic people will require more calories and more carbohydrates. For example, a very active female who trains five to six days per week would probably have calorie requirements closer to 1700 per day, with baseline carbohydrate requirements of 212 to 234 grams per day. A very active male would require closer to 2600 calories per day with baseline carbohydrate requirements of 325 to 357 grams per day.

Also keep in mind that these recommendations are for fat loss, not weight maintenance, weight gain or athletic performance. It's a well known fact that endurance athletes require upwards of 500-600 grams of carbohydrate per day to sustain optimal performance. However, these athletes are burning enormous amounts of calories and they almost never have a body fat problem.

Conclusion

So now you're an expert on carbohydrates. You know the difference between simple and complex; natural and refined, starchy and fibrous and high GI vs. low GI varieties. You know how many grams of carbohydrates you should eat and why they're important for your health, energy and physical appearance. In the next chapter, you'll discover at last, the truth about the low carbohydrate diet. I'm going to teach you why – at certain times for certain reasons – a reduced carbohydrate diet can help you break any fat loss plateau and get as lean as you want to be…including a new twist on the old low carbohydrate diet that only a small handful of the world's best bodybuilders and fitness models know about!

Chapter 12: How to Get as Lean as a Bodybuilder or Fitness Model Using A New Twist on the Old Low Carbohydrate Diet

"For those of you who have failed to attain a low level of body fat using a high carbohydrate diet, and for those who have exercised religiously, hour upon hour, week after week, and failed to attain a "six pack rack" of abdominals and low body fat, the low carb approach may be suited for you"

- Chris Aceto: Everything You Need to Know About Fat Loss

"Basically, I manipulate my carbohydrate intake to turn my body into a fat burning machine!"

- Chris Faildo, Team Universe Lightweight bodybuilding champion (one of the world's greatest natural bodybuilding champions)

The low carb vs high carb debate in fat loss

For years, we were taught that carbohydrates were the food of choice for high energy and optimum athletic performance. We were taught that fat made us fat and carbohydrates made us lean and energized. Then everything seemed to change. Low carbohydrate diets have been with us for decades, but from the late nineties into the first few years of the new millennium, there has been a huge resurgence of interest in the low carbohydrate diet.

Everywhere you look today there are low carbohydrate drinks, low carbohydrate meal replacements, low carbohydrate frozen dinners – even low carbohydrate pasta! In the bookstores, low carbohydrate diet books such as Dr. Atkin's New Diet Revolution, Protein Power, The Carbohydrate Addicts Diet and Sugar-Busters have all become best sellers. You can even find high protein, low carbohydrate bars in the checkout aisles of supermarkets where only Snickers and Milky Way bars used to be found.

Low carbohydrate dieting has definitely gone mainstream. Unfortunately, this has created a torrent of confusion and controversy. For every "guru" who says low carbohydrates are the ultimate fat burning diet, there is another "guru" with the opposite opinion. Who is right? In this chapter, you'll learn that it's possible that both sides may be right! Because of metabolic individuality, no single diet program is the best for everyone. At certain times, for certain purposes, a low carbohydrate diet – done with a new twist you are about to learn - can accelerate fat loss beyond anything you've

experienced before. This type of diet is not for everyone and it's also not for people who haven't mastered the nutritional fundamentals first.

Mastering the fundamentals first

Many weight loss programs start you on the strictest version of their diet possible, allowing you to gradually "loosen it up" as you get closer to your goal. I suspect the reason for such crash "quick start" programs is because they don't want you to get discouraged with slow fat loss in the beginning. They want to encourage quick weight loss right from the start so their program appears effective, regardless of what happens in the long run. However, if permanent fat loss is your goal, then it makes no sense to attempt going on the strictest, most advanced and most difficult nutrition regimen (such as a low carbohydrate bodybuilding contest diet), until you already have a "clean" diet and you understand all the nutrition fundamentals.

The low carbohydrate, high protein diet is an "advanced" technique. Before moving into "advanced fat loss strategies," you should be training consistently and you should have mastered the baseline diet (which I also refer to as "PHASE I" of the BFFM program). It's pointless to try to use these advanced carbohydrate-manipulation strategies unless you've mastered the eight fundamentals of the baseline diet:

1. Eating fewer calories than you burn
2. Properly balancing your macronutrient ratios
3. Eating five or six meals per day, properly timed
4. Eating lean proteins with every meal
5. Eating the right types of carbohydrates and avoiding refined sugars
6. Eating low fat and choosing the right types of fat
7. Drinking plenty of water
8. Eating natural, unrefined foods

Have you mastered all these fundamentals yet? If not, the advanced information in this chapter will do you little good. Get back to the basics first. When you've mastered all the fundamentals and you're stuck in a rut or when you're already lean and want to get even leaner, then using the techniques in this chapter will help you get there.

The truth about low carbohydrate diets

The popularity of low carbohydrate diet programs has given carbohydrates in general a bad name and caused the widespread misconception that all carbohydrates are fattening. The truth is that carbohydrates are not fattening and most people don't need low carbohydrate diets to get lean.

Many low carbohydrate programs are based on the assumption that *all* people are carbohydrate sensitive or resistant to insulin. My research and experience has proven the opposite - that *most people* will lose fat simply by lifting weights, doing cardio, eating less than they burn and "cleaning up" their diets. In other words, low carbohydrate diets should be looked at as "last resort" diets or "peaking" diets for special events such as bodybuilding, fitness competition or photo shoots. A low carbohydrate diet is not for year round maintenance. It's a temporary tool for reaching peak condition.

When a low carbohydrate diet is appropriate

Carbohydrate reductions are helpful and effective at certain times and under certain circumstances for speeding up fat loss. Here are the three situations where low carbohydrate dieting may be appropriate:

1. For carbohydrate-sensitive endomorph types

From my experience working with thousands of clients, I would estimate that about 70% -80% of people will lose fat on a baseline diet without carbohydrate restriction. That leaves 20% to 30% who don't respond well to the conventional high carbohydrate, low fat approach. Even on a low fat, low calorie diet combined with regular exercise, these "carbohydrate sensitive" people still have a difficult time getting lean (and they're often extremely frustrated with their lack of results despite their honest efforts). For carbohydrate sensitive people, a reduced carbohydrate diet with more protein and fat may be the answer.

2. Breaking a plateau

It's extremely common for dieters to get excellent results for weeks or even months, then all of a sudden, stop losing body fat completely. That's because all calorie-restricted diets eventually have some negative effect on the metabolism. The more severe you diet and the longer you diet, the greater the metabolic downgrade. This ultimately leads nearly everyone to a plateau at one time or another. If you're stuck at a plateau, then restricting carbohydrates and using the "carbohydrate cycling" method can help break the plateau.

3. Bodybuilding, fitness or figure competition

Low carbohydrate diets are still considered controversial, but almost all bodybuilders and fitness competitors use them. Some restrict carbohydrates quite severely, others more moderately, but I don't know a single successful bodybuilder who doesn't use at least *some* degree of carbohydrate restriction to get ripped for competition. If the low

carbohydrate diet didn't work, then you wouldn't see male bodybuilders peak at 3-5% body fat and female bodybuilders or fitness competitors at 8-12% body fat. Reduced carbohydrate diets give you several important metabolic and hormonal advantages that allow you to get leaner faster than a conventional baseline diet. Bodybuilders have known this for years and that's the reason they are able to get so lean, year after year, contest after contest.

Four advantages of the reduced carbohydrate diet

Low carbohydrate diets have advantages and disadvantages. Although the cons might seem to outnumber the pros, a decrease in carbohydrate with an increase in protein can give you some very powerful advantages in fat loss:

(1) Reduced carbohydrate, high protein diets are highly thermic

A diet high in protein with moderate or low carbohydrates speeds up your metabolism due to the "thermic effect" of protein. Protein has the highest thermic effect of any food (nearly 30%). For example, if you eat 100 calories of chicken breast, 30 of those calories are burned off just to digest it! Therefore, the net caloric value is only 70 calories. Too much of any food will be stored as fat, but due to its high thermic effect, protein is less likely to be converted to fat than any other food type. When carbohydrates are reduced, the ratio of protein increases, and the thermic effect of the entire diet is higher.

(2) Reducing carbohydrates and increasing protein controls insulin

Insulin control might be the primary advantage of a reduced carbohydrate diet for fat loss. Insulin is released the most in response to the consumption of carbohydrates. Fats cause almost no insulin release and protein causes only a small insulin release. When you reduce carbohydrates, you reduce insulin output. Moderating insulin by restricting your carbohydrates can be an effective strategy for losing fat.

(3) Reducing carbohydrates decreases glycogen, forcing your body to use more fat for fuel.

By reducing your carbohydrate intake, your glycogen stays in a depleted or semi-depleted state. Although this may compromise your energy and training intensity somewhat, when done in moderation, this can speed up fat loss because you're less likely to store carbohydrates as fat when glycogen is depleted. Carbohydrates must go to glycogen-starved muscles first before they can be partitioned into fat storage.

(4) Reducing carbohydrates and increasing protein reduces water retention, giving you sharper, more detailed muscle definition.

A high carbohydrate diet tends to increase water retention because every gram of glycogen holds three grams of water. A high protein, low carbohydrate diet has the opposite effect – it tends to decrease water retention, giving you a more defined look to your muscles. Bloating and puffiness from water retention is only temporary and should not be confused with legitimate changes in body composition. However, the improved muscle definition from the high protein, low carbohydrate diet is another reason this type of diet is favored by so many bodybuilders and fitness competitors.

Eight disadvantages of the low carbohydrate diet

Before you consider going on a low carbohydrate diet, it's your responsibility to know all the cons as well as the pros so you can make an educated decision about whether this type of program is right for you. (You should also check with your doctor before making any major changes to your carbohydrate and protein ratios to make sure this type of diet is appropriate for you).

(1) Very low carbohydrate diets are difficult to stay on.

By their very nature, low carbohydrate diets are restrictive and difficult to follow. On a very low carbohydrate diet, you are only allowed to eat protein, meat and fat with limited amounts of low calorie carbohydrates such as lettuce, green vegetables and very small portions of natural starches. How long do you think you could comfortably stay on this kind of program? Extremely restrictive diets require tremendous willpower and almost always set you up for cravings and bingeing. Many people fail simply because they can't faithfully stay "on the wagon."

(2) Weight/fat re-gain is almost inevitable

If you lose weight on a very low carbohydrate diet, the odds of keeping the weight off are overwhelmingly against you. The lower you drop your carbohydrates, the more your body will rebound when carbohydrates are re-introduced. I've seen amateur bodybuilders gain 30 lbs in a matter of *days* after a contest because they went on a carbohydrate and fat binge after a four-month zero carbohydrate diet. Transitions onto and off of low carbohydrate diets must be carefully planned and gradual.

(3) Very low carbohydrate diets can be unbalanced and lacking in essential nutrients.

It's never healthy to remove entire food groups from your diet for a long period of time. The healthiest diet is one that has balance between protein, carbohydrates and fats and includes a wide variety of foods, not an overemphasis on one food or food group.

(4) Very low carbohydrate diets may be unhealthy.

Many low carbohydrate diets suggest eating large amounts of fat, including saturated fats. In the absence of carbohydrates, you can eat fat with protein and still lose weight, but it's never smart to eat large amounts of saturated or highly processed fats. If heart disease or health problems run in your family, you're asking for serious trouble. Furthermore, a high fat diet is never as effective as a low to moderate fat diet because of its lower thermic effect.

5) Very low carbohydrate diets can cause your energy levels to crash.

You can increase fat loss by restricting carbohydrates, but your energy levels and performance are going to drop if you cut them too much. That's why virtually 100% of elite athletes follow moderately high carbohydrate diets, regardless of whether their sport is anaerobic or aerobic in nature (Bodybuilders are an exception because their ultimate goal is cosmetic appearance, not physical performance). Because carbohydrates are your body's preferred energy source, the more you reduce your carbohydrates, the less energy you will have. If your workout intensity suffers, your results will suffer.

6) The weight loss on a very low carbohydrate diet can be deceiving.

Much of the weight loss on a low carbohydrate diet is muscle and water. Five pound per week losses are common, but if you distinguish between the types of weight lost, these results are often quite negative. For example, if one pound is fat, two pounds is water and two pounds is muscle, your five-pound weight loss doesn't look so good after all. Your goal should always be *fat* loss, never *weight* loss.

7) Low carbohydrate levels affect your mood and mental state.

The low carbohydrate diet is infamous for producing "brain fog" because your brain and central nervous system function almost exclusively on glucose. When you deprive yourself of carbohydrates for any prolonged period of time, you will often become tired, weak, moody, irritable and an all around grouchy S.O.B.! Just ask anyone who has ever gone on a strict low carbohydrate diet (or anyone who has lived with a low carb dieter), and they'll tell you – a severe low carbohydrate diet can cause a "Jeckyl and Hyde" effect.

8) Low carbohydrate diets may cause muscle loss

When glycogen stores are severely depleted through dietary restriction, your body can also burn protein for energy, converting muscle tissue into glucose through a process called gluconeogenesis. Carbohydrates have a protein-sparing effect – they help ensure that you don't burn up muscle for energy. (Unfortunately, if your carbohydrates are *too high*, they also have a fat-sparing effect because when carbohydrates are plentiful, you tend to burn more carbohydrate for energy). Advocates of ketogenic and very low carbohydrate diets claim that the very nature of the ketogenic diet prevents muscle loss. In the real world, I have never observed this even once! Extremely strict very low carbohydrate diets invariably cause muscle to be lost along with the fat.

Why do low carbohydrate diet proponents talk so much about "ketosis?"

The goal of some very low carbohydrate diets is to produce the metabolic state known as ketosis. In the absence of carbohydrate, fats burn incompletely, causing by products called ketone bodies to accumulate in the bloodstream. Being in ketosis is a sure-fire indicator that your body has been forced to run on fat for fuel. That's why achieving ketosis is the primary goal of so many low carbohydrate diets.

Ketosis can occur when your carbohydrates are dropped below 100 grams, although most people don't stay in ketosis until carbohydrates go below 30-70 grams a day. Ketosis can be detected with a urine test. Paper strips called "ketostix" are dipped in the urine and when they change to a certain color, this indicates you've achieved a ketogenic state.

The "high carb gurus" often argue that ketogenic diets are dangerous and unhealthy. Ketogenic diets *might* be dangerous, depending on the parameters of the diet and a person's health status, but no sweeping conclusions can be made about their safety because the research is inconclusive. Many people have stayed on ketogenic diets for months or even years without complications – including epileptics who use ketogenic diets to treat their condition.

Whether or not ketogenic diets are unhealthy is uncertain, but the real reason you should avoid them is because ketosis is not a requirement to burn fat. Only a calorie deficit is necessary to burn fat. Ketogenic diets are extremely strict and nutritionally unbalanced. They are what you could call "extreme measures." It's an irrevocable law that the more "extreme" a nutrition program is, the greater the side effects will be and the

more difficult the diet will be to stay on. (Imagine trying to stay on a diet that only allows you a few cups of salad or veggies and nothing but fat and protein for the rest of the day.)

It's simply not necessary to remove all your carbohydrates or go into ketosis to accelerate fat loss. A moderate reduction in carbohydrates is often all it takes to help to control blood sugar and insulin better. It's really just a matter of balancing carbohydrates with protein instead of eating mostly carbohydrates and small amounts of protein. Bodybuilders have been doing this for decades, but the mainstream has been very slow in catching on.

Secrets of low carb dieting: How to get all the low carb benefits without the low carb side effects

Reading the list of side effects and disadvantages might be enough to make you steer clear of ever using a reduced carbohydrate diet. However, most of these problems occur by using a "conventional" low carbohydrate diet. Bodybuilders do things a little differently, and the result is often magnificent muscularity and rock bottom body fat levels – without the negative effects!

There are three secrets to getting all the benefits of low carbohydrate dieting without all the side effects. The first is carbohydrate tapering, which is the practice of eating more carbohydrates early in the day and fewer later in the day. The second secret is using moderate carbohydrate reductions, not the removal of all carbohydrates. The third is carbohydrate cycling. When combined, the results of these three techniques can increase fat loss beyond your wildest dreams and expectations! Lets take a closer look at each one.

The carbohydrate tapering technique for maximum fat loss

In chapter seven, we talked about meal frequency and timing. I mentioned that although you'll be eating a meal approximately every three hours, not all these meals have to be the same size. If you want to get leaner quickly, a simple way to accelerate fat loss is to reduce the size of your late day meals. This technique is known as "calorie tapering" or "carbohydrate tapering."

Simply cut out the starches in your evening and late afternoon meals, leaving the green fibrous carbohydrates, lean proteins and essential fats. Examples of late day fibrous carbohydrate and lean protein meals include; (1) broccoli and chicken breast with a 1/2 tbsp of flaxseed oil, (2) tuna fish in a green salad with olive oil & vinegar dressing, (3) Asparagus and salmon. When you drop the starchy carbohydrates from your last two

meals, your ratios will automatically shift towards less carbohydrates and higher protein. It's an incredibly simple and easy technique to use, yet it can cause massive increases in your results.

The moderate carbohydrate, high protein diet for carbohydrate sensitive endomorphs

How many grams of carbohydrates you should eat for optimal fat loss depends a lot on your body type. Some people have the genetics to "get away with" eating bagels, bread, pasta and other high carbohydrate foods all day long, and as long as their calories are in a deficit, they lose fat without difficulty. Other people seem to be doing everything right, but they lose fat very slowly or sometimes not at all – even *with* a calorie deficit! This is extremely frustrating to many people.

If you're a carbohydrate-sensitive, slow metabolism, endomorph type, you will get better results with a decrease in your percentage of carbohydrates. A 10% – 15% reduction in carbohydrates with a corresponding increase in the percentage of protein and good fats can sometimes work wonders in losing "stubborn body fat." The adjusted ratios might look something like this:

<u>The Maximum Fat Burning Diet ("Phase II")</u>
<u>Moderate Carbs, High Protein</u>
40% carbohydrates
40% protein
20% fat.

These ratios can have a 5% float in either direction. For example, if the carbohydrates were 45% and the protein 35%, the results would be similar. Forty percent carbohydrates would not be considered a "low" carbohydrate diet by most people's standards; rather it's "moderate" in carbohydrates. However, even this moderate reduction is often enough to make a substantial difference for those who are carbohydrate sensitive. (By the way, you may have noticed that with one small shift – adding 10% to the fat and subtracting 10% from the protein, turns this into a 40-30-30 "Zone" diet. In fact, the Zone ratios are very similar to the BFFM Phase II Maximum Fat-Burning Diet. The BFFM moderate carbohydrate diet is simply higher in protein, which is what most bodybuilders prefer.)

In some circumstances, (as during a "competition diet"), larger reductions in carbohydrates may be called for, but there is a definite point of diminishing returns. This point is not the same for everyone, and will require a certain degree of experimentation. You'll definitely know it when you reach your "critical level," because as soon as you've

dropped your carbohydrates too much, all the side effects I mentioned earlier will begin to become more apparent. Even for the serious bodybuilder or fitness competitor preparing for a contest, my recommendation is that 25-30% of total daily calories is the lowest you should ever go. You always need *some* carbohydrates.

Sample moderate carbohydrate menu

Meal 1 – 7:00 am:	oatmeal, whey protein, grapefruit
Meal 2 – 9:30 am:	whole wheat bread, egg white omelet with pepper, onion, tomato
Meal 3 – 12:30 pm:	Brown Rice, chicken breast, broccoli
Meal 4 – 3:30 pm:	Sweet potato, chicken breast, green beans1/2 tbsp flax oil
Meal 5 – 6:00 pm:	Salmon, asparagus
Meal 6 – 8:30 pm:	mixed green salad, olive oil & vinegar dressing, tuna fish

Notice how the carbohydrate tapering method has been used here: there are no starchy carbohydrates in meals five or six (after 3:30 pm). The result is an almost automatic reduction of carbohydrates to about 40% of total calories. Meals one through four all contain a lean protein, and a starchy carbohydrate.

The low carbohydrate, very high protein diet for bodybuilding and fitness competition

For very brief periods, bodybuilders often decrease their carbohydrates to only about 25% of their total calories. This is considered a "low carbohydrate" diet and is PHASE III in the BFFM program. This type of program would only be appropriate for an extreme endomorph or a competitive physique athlete (That's why it's often called a "competition diet.")

The Competition Diet (Phase III)
Low carbohydrate, very high protein
25-30% carbohydrates
50% protein
20-25% fat.

For the average male, the phase III competition diet is about 150 to 200 grams of carbohydrates per day. For the average female, the carbohydrate intake is about 90 to 130 grams. This is just enough carbohydrate to stay alert and fuel high intensity workouts. A larger drop would be overkill.

The protein intake is often extremely high for large and highly active individuals - as high as 300 to 375 grams per day for men and 180 to 220 grams for women. This usually works out to about 1.5 to 2.0 grams per pound of body weight. Most people –

except the world's best bodybuilders, of course – would argue that this is far too much protein, which it probably is if you stayed at this level all the time. However, if you reduce your carbohydrates to 25-30% of your total calories and you don't increase your protein and or fat to compensate, your calorie deficit will be too large. Whenever the calorie deficit is too big, you trigger the starvation mode. If you're uncomfortable with the idea of consuming this much protein, then you'll have to make up the difference in calories with essential fats (for example, 30% carbohydrate, 30% fat, 40% protein).

Keep in mind that the extremely high protein levels are temporary and they shouldn't be maintained for more than 12-16 weeks prior to the contest or photo shoot. Afterwards, you would gradually shift back to a baseline diet with more carbohydrates and less protein for maintenance.

Sample low carbohydrate menu

Meal 1 – 7:00 am:	oatmeal, 2 scoops whey protein
Meal 2 – 9:30 am:	oatmeal, egg white omelet with pepper, onion, tomato
Meal 3 – 12:30 pm:	small serving brown rice, top round steak, broccoli
Meal 4 – 3:30 pm:	Chicken breast, green beans, 1 tbsp flax oil
Meal 5 – 6:00 pm:	Salmon, asparagus
Meal 6 – 8:30 pm:	mixed green salad, olive oil & vinegar dressing, tuna fish

This menu also uses the carbohydrate tapering method, only in this case, the starchy carbohydrates are cut off after 12:30 pm. Meals one through three have a lean protein and a starchy carbohydrates while meals three through six contain only lean proteins and fibrous carbohydrates. In addition, the serving sizes of the starchy carbohydrates in the first three meals has been reduced

3:1 Carbohydrate "Cycling" – The Most Effective Fat Burning Technique EVER!

A low to moderate carbohydrate and high protein diet will cause much faster fat loss than a high carbohydrate diet. However, it may seem like the disadvantages outweigh the benefits. Fortunately, there's a solution to these problems and it's called "carbohydrate cycling." Some people refer to carbohydrate cycling as "zig-zag" dieting, "Hi-low" dieting, "carbing-up" or carbohydrate "re-feeding."

Regardless of what you name it, carbohydrate cycling is probably the most powerful fat burning strategy on the planet. Nothing else even comes close. It is the ONLY guaranteed way to outwit the body's starvation response when calories and carbohydrates are low. Not only do you avoid a negative response, but you also invoke many positive responses that do not occur when holding your carbohydrates and calories

at the same low level day in and day out. That's the main problem with conventional low carbohydrate diets – they suggest that you drop your carbohydrates and keep them low. What I am suggesting is that you drop your carbohydrates for a few days, then increase them again before your body figures out what the heck is going on!

Carbohydrate cycling has been a well-kept secret of bodybuilders and fitness models for decades, but anyone can use it to accelerate fat loss or break a plateau. The beauty of this method is that it allows you to get all the fat loss benefits of low carbohydrate dieting without the low carbohydrate side effects. Most important, it keeps your metabolism elevated and prevents you from going into starvation mode.

Why you shouldn't stay on low carbohydrates for more than three days in a row

After three days in a row on low carbohydrates, your glycogen levels will be almost completely depleted. If you were to continue on low carbohydrates for a fourth day, fifth day, or beyond, you would notice your energy and training intensity begin to diminish. You would also notice that your muscles would "flatten out" and become softer. Your metabolic rate would begin to slow down and your thyroid gland would decrease its output of thyroid hormone. Basically, your diet would become less and less effective the longer you stayed on low carbohydrates beyond the three day period. Your body is so "smart," it simply makes changes in physiology and metabolism to compensate for the prolonged lack of carbohydrates (which it interprets as starvation). That's why you have to "shake things up" and keep your body off guard by throwing in a high carbohydrate day every fourth day.

High days and Low Days

Carbohydrate cycling is based on the concept of rotating low carbohydrate days with high carbohydrate days instead of keeping carbohydrates low all the time. Every fourth day your glycogen levels are restored with a "carb load" or "high carb day" (also known as "high day"). Your energy stays up, your muscles fill out and tighten and your metabolic rate gets a boost as if you squirted lighter fluid on a dwindling fire.

The high day also makes your entire diet easier to stick with because no matter how difficult it is to get through those three low days, you have a "high day" to look forward to (Believe me, eating all those yummy carbs after three days without them is like getting a "high!"). The "high day" also bypasses all the side effects. You get noticeably leaner with every three-day low carbohydrate cycle as your body dips deeply into stored body fat without the carbohydrates readily available for fuel. Surprisingly, you may even

continue to get leaner even on the high carbohydrate days because of the boost in metabolic rate.

Carbohydrate cycling also prevents your body from becoming inefficient at using carbohydrates for energy. When you cut your carbohydrates out for a long time, your body begins depending on fat for fuel and it learns how to use fat for fuel more efficiently. You often hear low carbohydrate diet proponents say that the low carbohydrate diet turns you into a "fat burner" while a high carbohydrate dieter turns you into a "sugar burner." This may be true, but there's a huge downside to staying on low carbohydrates all the time and becoming an *exclusive* "fat burner:" Your body becomes lazy and inefficient at burning carbohydrates. When you eat them again after a long absence, your body doesn't know what to do with them. This is one of the reasons you will simply blow up overnight and gain weight back the minute you re-introduce carbohydrates after a long absence. Unless you plan on never eating a carbohydrate ever again, you'd better think twice about long-term carbohydrate restriction. Low carbohydrate diets are NOT "lifestyle" programs.

What's the alternative? Carbohydrate load every fourth day. When you carbohydrate load a depleted muscle, the carbohydrates are quickly soaked up by the muscle on that fourth day because the muscles are "hungry" for carbohydrates. By repeated cycles of depletion and re-loading, your muscles become extremely efficient at storing carbohydrates as muscle glycogen rather than partitioning them to body fat.

Fine tuning the carbohydrate cycling method

As you get leaner and leaner, you may find that you lose weight too quickly on the 3:1 carbohydrate cycling plan (no kidding!) As you learned in earlier chapters, it's not a wise idea to lose more than 1.5 to 2.0 lbs of body weight per week. If you lose more than two pounds per week, you are much more likely to be losing LBM with the fat.

If you lose lean mass or drop weight too quickly, you should adjust your high to low day ratio by increasing your carbohydrates (and calories) overall or by keeping your low days the same and adding more high days. You can do three low carbohydrate days followed by two or three high carbohydrate days. Taking two or three high days after three low days will not only help reduce muscle loss, it may allow you to gain small amounts of muscle as you lose body fat. It's not uncommon for my clients to lose 18-24 pounds of fat in three months, while gaining three to four pounds of muscle in the same period while using the is technique.

It's very difficult to put down one single example of 3:1 carbohydrate cycling as I've described it here and have it apply to everyone. A little bit of experimentation and

fine tuning will be necessary to discover what amount of carbohydrate works best for your high and low days. It's absolutely essential for these types of advanced diets to be customized.

On average, women would consume about 90-130 grams of carbohydrates on low days and about 200 to 250 grams of carbohydrates on high days. Men would consume 150-200 grams of carbohydrates on low days and 300-400 grams of carbohydrates on high days. Here are examples of what "typical" high-low cycles would look like on a fat loss program for the average person:

Men/2200 calories/3 days low carbs: high carbs

Protein 45% = 990 calories = 247 g
Carbs 30% = 660 calories = 165 g
Fats 25% = 550 calories = 61 g

Men/2700 calories/1 day

Protein 30% = 810 calories = 202 g
Carbs 50% = 1350 calories = 337 g
Fats 20% = 540 calories = 60 g

Women/1400 calories/3 days low carbs:

Protein 45% = 630 calories = 157 g
Carbs 30% = 420 calories = 105 g
Fats 25% = 350 calories = 39 g

Women/1800 cal/1 day high carbs

Protein 30% = 810 calories = 135 g
Carbs 50% = 900 calories = 225 g
Fats 20% = 360 calories = 40 g

These are just averages, as every person is different. The only way to determine how many grams of carbohydrates are right for you is to experiment until you find your "optimal level" and the results start coming.

On your low carbohydrate days, eat protein and starchy carbohydrate in your early day meals (meals one through three), then in your late day meals (meals three to six) eat protein with only fibrous carbohydrates like green vegetables and salad – no starchy carbohydrates! On your high days, you can eat starchy carbohydrates with every meal (and if you're going to have a "cheat day" make it on a high day).

Conclusion

So that's it! I've absolutely emptied out my brain and revealed my most mega-effective secrets to maximum fat loss. These are some very powerful techniques, but remember; carbohydrate cutting taken to the extreme will do more harm than good. Never cut your carbohydrates out completely and never stay on low carbohydrates for a long period of time. It's usually not wise to go to extremes in anything and this is as true for dieting as with anything else in life: Moderation is the key.

Chapter 13: Why water is essential for fat loss, how much you need, and what else you should (and shouldn't) drink

"If you dehydrate your body, it is like dehydrating your plants. Who wants to have a wilted body?

- Dr. Lawrence Lamb, Author of "The Weighting Game - The Truth about Weight Control"

"Alcohol puts fat metabolism on hold. It's not your friend if you're trying to stay lean."

- Susan Kleiner, PhD, RD, author of "Power Eating"

The "secret" to almost instantly increasing your strength by 10-15% and endurance by 20%-30%

What would you say if I told there was a substance that could almost instantly increase your muscle contractile strength by 10-15% and increase your capacity for prolonged aerobic exercise by 20 to 30%? What's more, the substance is totally legal and has absolutely no side effects. Not only that, it can also help you burn fat more efficiently and increase your muscular development. You'd probably think I was talking about some kind of illegal steroid or performance-enhancing drug wouldn't you? (Either that or you'd think I was just full of hot air!) Well, its true! Such a substance really exists, and it's not a drug.

A little known secret for accelerating fat loss, increasing your performance and improving your physique

I'd like to let you in on a little known secret for increasing your performance and improving your physique that is so painfully obvious it's almost embarrassing. Actually it's not really even a "secret." It would be more correct to say it's a "known but ignored fact." When I tell you what this secret is, you'll kick yourself for not realizing it sooner. This "secret" I'm talking about is drinking the correct amount of H2O every single day. Yep - plain old water! If you're even *slightly* dehydrated (and most people are walking around in a constant state of semi-dehydration), your results and performance will improve instantly.

I can hear you grumbling and cursing me already - "Venuto, that's no "secret" - everyone knows you're supposed to drink plenty of water!" That may be true. Everyone *knows it*, but what people know they *should do* and what they *actually do* are often two completely different things. Everyone has heard the maxim, "Drink at least 8 - 10 glasses of water a day." That's a good starting point, but most of the time they don't do it. Now that you have a clear-cut goal and you've made the commitment to become the best you can be, it's time to add another new daily habit to your list – the habit of drinking plenty of pure H20 every day.

The often subtle but devastating effects of dehydration

Most people don't drink nearly enough water, and the effects are subtle but devastating to your training and fat burning efforts. Let me explain. Did you ever wake up in the morning and feel so groggy it almost felt like a hangover? Maybe you didn't even want to get out of bed. Guess what? You were probably dehydrated. In fact, a "hangover" - headache, tiredness, and fatigue is partially caused by the dehydration from the diuretic effects of alcohol.

Here's another example: Do you normally get excellent workouts, but then some days, your butt is dragging and you just can't finish your workout - you "bonk out" at the end, or even worse, you can't really even get started? Guess what? You were probably dehydrated. You see, the effects of dehydration are very subtle. They "creep" up on you. By the time you feel any effects of dehydration, it's too late - you're already dehydrated. Usually you don't even associate these effects with lack of water. You might think you're just over-worked, you didn't get enough sleep or you're coming down with a cold. That's why people so easily overlook this aspect of nutrition.

Every physiological process in your body depends on water

Because there's so much attention placed today on complex issues such as protein and carbohydrate intake, essential fatty acids, macronutrient ratios and high-performance supplements, it's no wonder that something as simple as water could be so easily taken for granted. The importance of drinking plenty of water and keeping adequately hydrated cannot be emphasized enough.

Water is the most abundant nutrient in your body. Approximately 60-70% of your body is comprised of water. Your blood is made up of about 90% water. Your muscles are about 70% water. Even your bones are 20% water. Without adequate water, nothing in your body could function properly. Every physiological process in your body takes place in water or depends on water. Water is necessary to regulate your body's

temperature, to transport nutrients, and to build tissues. Water is required for joint lubrication, digestion, circulation, respiration, absorption, and excretion. Without water, you would die in a matter of days. Sports nutritionist Dr. Michael Colgan says that water is quite simply, "the most important nutrient in the body."

Dehydration decreases endurance, strength and physical performance

As you become dehydrated, your body's core temperature increases. This adversely affects your cardiovascular function and reduces your capacity for physical work. Even a small decrease in your body's hydration level can decrease your performance. Studies have shown that even mild dehydration of 3% of body weight can decrease contractile strength by 10%. When 4% - 5% or more of total weight is lost in water, muscular and aerobic endurance can decrease by 20% to 30%. If more than 10-12% of the body's weight as water is lost, you could die.

Higher protein diets have a diuretic effect and require extra attention to drinking water

Because this program tends to be moderate to high in protein, drinking plenty of water is especially important. The processing of protein foods generates metabolic waste products that must be flushed out and removed by the kidneys. Without adequate water, the kidneys can't remove these wastes properly. It is a myth that high protein diets cause kidney damage. A high protein diet is not harmful to healthy kidneys -- as long as plenty of water is consumed every day.

Water is essential to the fat burning process

Not only do you need plenty of water for good health, you also need water to lose fat. Here's why: One of the important functions of your kidneys is to eliminate toxic waste products from your body through the urine. When you're dehydrated, the body's instinctive reaction is to hold on to whatever water it does have in order to survive. When this water retention occurs, the waste products in the body aren't flushed out, and build up in your system. At this point, the liver will try to help out with the overload. The problem is, when the liver helps out during fluid retention, it can't do its own jobs as efficiently, one of which is burning stored body fat for energy. The result is that your body may not be able to burn body fat as efficiently as normal.

Drinking lots of water does not make you retain water

Many people avoid drinking a lot of water because they think it will make them retain fluid and become bloated. Actually, the opposite is true. When you're dehydrated, your body senses the lack of adequate water and holds on to all the water that's currently in the body. When you consume adequate amounts of water, your body senses that you're no longer dehydrated, and therefore your kidneys flush the water out of your system like they normally do, resulting in *less* water retention.

How much should you drink?

The most common general guideline for water intake is to drink eight to ten 8-oz glasses of water per day (64-80 oz per day). This may or may not be adequate, depending on a variety of factors. The 8 to 10 glasses guideline is okay as a ballpark, but taking into account activity levels and caloric expenditure will give you an even more accurate and individualized estimate of your water needs.

Water needs may vary depending on a number of factors. Large individuals need more water than smaller people, and highly active individuals need more than those who are inactive. Climate can also affect your hydration needs. If you live or work out in a hot and humid environment your water requirements will be higher.

If you want the best estimate of your water needs, you should factor in your activity level and the best way to measure your activity level is by daily calorie expenditure. The National Research Council's recommended dietary allowance for water is 1.0 - 1.5 ml per kcal expended per day. The following chart lists the required water amount based on your total daily energy expenditure (TDEE) (Review the chapter on caloric needs to determine your TDEE).

Calories expended	Water required
2000 calories	66 - 100 oz
2500 calories	83 - 124 oz
3000 calories	100 - 149 oz
4000 calories	116 - 174 oz
5000 calories	132 - 199 oz

Using this formula, a 172 pound man with a daily calorie expenditure of approximately 2800 calories per day would need 93 - 139 oz of water per day (There are 128 ounces in a gallon). The eight to ten glasses guideline (64 to 80 ounces) should be your minimum regardless of calories expended.

Follow these water consumption guidelines regardless of your level of thirst

Your level of thirst is *not* a good indicator of your level of hydration. By the time your body registers the sensation of thirst, you're already somewhat dehydrated. Therefore, you should continue drinking water throughout the day, even when you're not thirsty. The secret is not to let yourself get dehydrated in the first place. If in doubt, drink more, not less.

Drink water before, during and after your workout

You should make it a habit to drink water all day long, but because water is so important for energy production and because exercise dehydrates you, you should make it a habit to drink heavily before, during and after your workout.

Can I get my fluids from other sources?

Almost all of the foods you eat contain water. Some foods, such as fruits and vegetables are as much as 75 to 90 percent water. Even meat is at least 50% water. Other beverages such as milk, fruit juice and sports drinks are mostly water. The question is, should you count these towards your daily recommended intake of water or not? Some sports nutritionists say yes, you can and should count water rich foods towards your water intake. My suggestion is to always err on the side of too much water rather than too little. Therefore, the water recommendations in the chart above are for pure water, not other beverages or water-rich foods.

What else can I drink?

On a fat burning program, it's never a good idea to drink a large portion of your calories. One reason is because liquids don't have the thermic effect that solid food does. But that's not the only reason. According to a study published in the International Journal of Obesity in 2000, people who drank a lot of their calories did not compensate for these extra calories by adjusting their food intake. The result was that they over consumed calories for the day and experienced less weight loss than people who did not consume liquid calories (Some even gained weight). In other words, they simply drank those extra calories *in addition to the food they were already eating.*

If you carefully count your liquid calories (juice, sports drinks, non-fat milk or other beverages) into your daily calorie allotment, there's no reason you can't enjoy these beverages. Be very careful to read the labels on all beverages you consume, especially sports drinks. Some sports nutrition products that are marketed as high performance "health foods" are nothing more than sugar water. Even well-formulated products haven't

been proven to increase performance in athletes. For workouts lasting less than an hour, water is still the best thing you can drink. For fat loss purposes, why would you want all those extra simple carbohydrates anyway?

What about diet drinks and non-caloric drinks?

As long as you're getting your daily allotment of pure water, it's fine to enjoy non-caloric beverages such as diet soda, tea, Crystal Lite, Diet Snapple or any other calorie free diet drink. Coffee is also fine in moderation (one or two cups per day), but be careful what you put in it. (We're talking regular black coffee here with maybe a splash of milk – no sugar). Many nutritionists and trainers suggest avoiding caffeinated beverages. Some studies have suggested that coffee lowers insulin sensitivity, which could hamper fat loss. However, in practice, I've never seen a fitness model or bodybuilder get less "ripped" because they drank coffee. Enjoy your coffee in moderation – a cup or two per day should pose no problem. Keep in mind, however that caffeine is a diuretic and large amounts of any diuretic can decrease your performance and your results.

Alcohol and fat-burning

If you're serious about your health, fitness, and athletic performance and you want the maximum possible benefit from your program, you should drink alcoholic beverages in moderation or not at all. "Moderation" is usually defined as one drink for women, two drinks for men. One or two drinks won't do much harm, and may even have some health benefits such as increased HDL, the good type of cholesterol. Excessive alcohol consumption will definitely compromise the results you'll get from your nutrition and training program.

Alcohol has the second highest calorie density of all food types

At 7 calories per gram, Alcohol is the 2nd most calorie dense nutrient behind fat, which contains 9 calories per gram. Therefore, alcohol contributes a large number of calories to your total daily intake above and beyond the food you normally consume. Because the alcohol is metabolized by the liver, the alcohol is not converted directly into body fat. But this doesn't mean that drinking alcohol won't make you fat.

Alcohol suppresses the body's ability to burn body fat

The body has no storage capacity for alcohol like it does for carbohydrates and fats. Since alcohol must be detoxified as quickly as possible, the oxidation of the alcohol takes top priority over the oxidation of other macronutrients. In other words, while the

liver is busy metabolizing alcohol, the utilization of fats, carbohydrates, and protein has to be temporarily suppressed. The burning of fats is suppressed the most, because it's positioned at the bottom of the oxidative hierarchy. Lyle McDonald, author of "The Ketogenic Diet" says, "The consumption of alcohol will almost completely impair the body's use of fat for fuel." In the book "Power Eating," dietician Susan Kleiner writes, "Alcohol puts fat metabolism on hold. It's not your friend if you're trying to stay lean."

When alcohol is in your system, your body will simply convert more of the food you normally eat into body fat. Regardless of whether the calories come from food or drinks, if you consume more calories than your body needs, the excess will be stored as fat. Since most people usually consume their alcohol in addition to food instead of as a substitute for it, the accumulation of body fat is usually the result.

Alcohol provides little or no nutritional value

Alcoholic beverages provide little or no nutritional value. Alcohol is empty calories just like refined sugar is empty calories. There are trace amounts of some vitamins and minerals, but they're present in such tiny quantities that their nutritional value is insignificant. Aside from providing some energy in the form of a small quantity of carbohydrates, alcohol is empty calories.

Alcohol interferes with the absorption of nutrients

If the lack of nutritional value isn't bad enough, alcohol actually depletes the body of vitamins and minerals from other foods you eat. Alcohol irritates the lining of the stomach and intestinal tract and interferes with proper digestion and absorption of vital nutrients. The metabolization of alcohol by the liver uses up the B vitamins niacin and thiamin. Alcohol can also decrease your body's ability to metabolize zinc.

Alcohol is a poison

Alcohol is a toxin. It's essentially a poison that must be detoxified by the body.

Alcohol dehydrates you

Alcohol is a potent diuretic. It draws water out of the cells and increases the loss of water through the kidneys. The increased fluid output can cause the loss of water-soluble minerals and all of the other negative effects of dehydration.

Alcohol contributes to numerous health problems

Alcohol has been associated with the development of numerous health problems, and degenerative diseases including heart disease, high blood pressure, stroke, cardiomyopathy, abnormal heart rhythms, liver disease, cancer, decreased resistance to infections, gout, and hypoglycemia.

Alcohol decreases natural testosterone production

Alcohol suppresses Testosterone, one of the main anabolic (muscle building) hormones. Enough said.

If you drink, here are some tips for doing it sensibly without seriously compromising your results

1) Factor the alcohol calories into your daily intake.

There's been a lot said about "the beer belly," or how alcohol makes you fat. But let me remind you again, that in the end, fat loss always comes down to calories in versus calories out. If you count your alcohol calories in your daily intake and keep within your calorie limits, then you'll still be able to lose body fat. The problem is, most people forget to count the calories in all those drinks. Drink 1000 calories at night, followed by a big "cheat meal" and you're asking for it! (Major FAT gain!). If you drink, it's better to have light beer or low calorie alcohol, not mixed drinks with high calorie additives like milk, juice, sugar, or tropical drink mixes.

2) Stay hydrated.

Alcohol is a diuretic. If you're dehydrated, you won't burn fat as efficiently and you won't have the energy to train hard. In addition to your regular water intake, drink one EXTRA glass of water for every alcoholic drink and you'll be fine, hydration wise.

3) Limit yourself to two drinks per sitting and NEVER binge

Anything beyond two drinks can do absolutely nothing positive for you. Maybe on a rare celebration occasion you might have more than two drinks, but I can't think of a single reason why any self-respecting human being who is serious about their health and fitness goals would ever binge drink or get drunk on a regular basis. Getting drunk is not an option on this program. If you get drunk, you're not following the program. If you drink in large quantities ANY TIME for ANY REASON, just look in the mirror and admit the truth to yourself; "I 'm just not THAT serious about getting in shape. It's not that high of a

priority right now. I don't really want it THAT bad." At least then you're honest with yourself. If you enjoy social drinking in moderation, by all means go ahead and do it. But if you drink heavily, at least admit the truth to yourself.
4) Don't stay out late

Drinking and late nights often go together. Late nights out mean interrupted sleeping patterns, less sleep and or and a lower quality of sleep. Disrupted sleeping patterns often mean missed meals, poor workouts and poor recovery. Your body needs its rest and it thrives on structure and schedule.

5) Do not drink often (or daily)

You often hear the advice of "drinking in moderation," which we've defined as two drinks a day, so some people do exactly that – they have two every day – fourteen drinks per week. Not a good idea. Save the drinks for special occasions.

6) Don't bother explaining to others why you're not drinking

If peer pressure is a problem for you, don't bother attempting to explain to friends or co-workers the reason why you're cutting back on alcohol. If it's a major problem, you may need to reconsider who you spend time with. You'll always become like those you spend the most time with. Choose your circle of friends carefully. Ninety-five percent of the world doesn't care that you're working on improving yourself. The only ones who care are the other people who are trying to do the same for themselves. Remember, it's easier for a loser to reach up and try to drag you down, rather than to try and climb up and improve themselves.

Instead of "I'm on a diet" or "I'm in training," you can make a game out of it and come up with some funny stories about why you're not drinking or why you're only having a drink or two. For example, "I have a genetically inherited liver disorder. I really wish I could drink with you guys but I just can't take any chances." Or, "My doctor said I lack the proper enzymes to detoxify alcohol, so toxic by-products build up in my liver and internal organs if I drink." Instead of being in a tense peer pressure situation, you could actually have fun with this.

Conclusion

The next time you happen to be in a bar (Hopefully it's not very often), take a good look around. You won't find many successful fitness or bodybuilding champions hanging out there at 1:00 or 2:00 a.m. And the next time you go to the gym, check out the bodybuilders and fitness models. You'll notice that they all lug around a large bottle of water or even a gallon jug – all the time. Then take a look at how lean and muscular they are. Do they know something that you don't? Drink your water!

Chapter 14: The BFFM Eating Plan: How to Choose Fat-Burning Foods, Avoid Fat Storing Foods and Easily Design Your Own Effective and Result-Producing Meals and Menu Plans

"Some people appear to be "getting away" with wrong actions or bad habits. That's an illusion. Sometimes it might take a long while before the damage shows. But when it does, it's significant damage. And the remainder of a lifetime may not be enough to deal with the ill effects. Lung cancer from smoking is only one example. On the other hand, even if you can't see immediate results from clear-headed actions and good habits, the truth is that they're accruing like money in the bank."

- Thomas Leonard, author of "The Portable Coach"

"Lack of planning is the cause of all failures."

- Brian Tracy, author of "Maximum Achievement"

An introduction to meal planning and menu creation

This is the chapter where we put all the nutrition theory together into a practical, actionable plan that you can follow on a daily basis. In this chapter you'll learn exactly which foods are the best for fat loss and which ones are the worst. You'll discover a simple formula for combining individual foods into fat-burning meals and you'll learn how to turn those individual meals into a daily menu plan. Most important of all, you'll learn that you must plan your diet in advance and never "wing it." As achievement expert Brian Tracy warns, "Lack of planning is the cause of all failures."

No food is neutral – everything you eat either helps or hurts

If you've been blessed with an efficient metabolism and you think you can "get away" with frequent dietary indiscretions, you'd better think again! *Everything counts.* No food has a neutral effect. Everything you eat moves you forward or sends you backwards. Once you understand and accept the maxim that you are literally what you eat, and that every food you eat either helps or hurts, you'll start to get extremely careful about what you put in your body every day.

How to Make the Right Food Choices

The results you get on this program will be equal to the sum total of all your food choices. Every little thing you eat counts and adds up over time to produce a cumulative result. This end result – a fat free body – is achieved one tiny step at a time, one meal at a time, one workout at a time. As Motivational speaker Jim Rohn puts it, "Success is a matter of a few simple disciplines, practiced every day. Failure is a few errors in judgment, repeated every day." This is so true when it comes to nutrition. Every choice you make must be thought out and carefully planned into a written daily schedule. When it comes to food, acting without thinking can be disastrous. You're more likely to eat the wrong things when you don't have a written plan and schedule. Without planning and preparation, you're leaving yourself at the mercy of whims, cravings and circumstances.

There are never any good *reasons* for diet failure, only *excuses*

Being in the health club and fitness industries all my life, I must have heard every excuse ever invented for why people eat the wrong things or "fall off the wagon:"

"I was traveling."
"I didn't have anything else with me."
"I had to eat airline food."
"The only place to eat was McDonalds."
"It would be rude to turn the food down because I was a dinner guest."
"It was the only thing on the menu."
"I couldn't help myself…I had a major craving."
"I was starving – I had to eat something."

This is just a small sampling of the reasons I've heard for why people don't eat what they know they should eat. The fact is, there are no good *reasons*, only *excuses*, because you *always* have choices. Even if you're eating at a fast food restaurant, you still have choices, don't you? You can have a chicken salad instead of fried chicken nuggets. Even when it appears that you have no choice at all, you *still* have a choice: You can choose *how much* food you're going to eat. It's better to have a small serving of something bad than a large serving of something bad. The nutritional value might be poor, but at least you're obeying the law of calorie balance.

Grading your food choices

Food quality doesn't fall neatly into two categories: "good" or "bad." Rather, food quality ranges from very poor, to poor, to fair, to good to excellent. It's a scale or

spectrum – the same way temperature and color are spectrums. At what temperature does hot become cold? Where does black become white? Black and white are simply two ends of a spectrum. It's the same with food choices. Food quality can range from highly processed with zero nutritional value on the low end (an "F" grade) to all-natural with high nutritional value on the high end (an "A+" grade).

Your goal is to make the best choice possible from the foods available to you in any given circumstance. You may not always be able to eat the best thing possible, but you don't have to eat the worst thing either. If you're faced with a choice between bad and worse, take bad. Faced with good and great, choose great. With enough advanced planning, scheduling and preparation, you can ensure that you have "A" and "B" grade choices ninety-nine percent of the time. Here are several guidelines to help you make the best choices possible.

Choose foods with a high thermic effect (metabolism-boosting foods)

There are two food groups that have a higher thermic effect than any other foods and these will increase your metabolic rate the most. These food groups are: 1) lean proteins and 2) natural, fiber-containing complex carbohydrates.

Protein foods stimulate the metabolism the most. Studies have shown an increase in metabolic rate of up to 25-30% after eating lean protein. This is one of the many reasons you will be eating a serving of lean protein with each meal.

Natural, fiber-containing complex carbohydrates also have a high thermic effect and boost the metabolism. Complex carbohydrates include fibrous vegetables, whole grains and natural starches such as yams, beans, brown rice, and oatmeal.

Of all the foods, fats have the lowest thermic effect. Refined simple sugars also have a low thermic effect.

Avoid fat producing foods

By now you've had it drilled into your head many times that too much of *anything* will get stored as fat and that calories are the most important factor in fat loss. However, certain foods are more likely to be converted to fat than others – even at the same calorie level. This is due to their thermic effect, the way they are metabolized in the body, or the way they affect your hormones.

The three types of food that promote fat storage the most include:

(1) High fat foods (high calorie density; 9 calories per gram, low thermic effect)
(2) High sugar or refined carbohydrates (high calorie density, absorbed too quickly)
(3) Alcohol (high calorie density; 7 calories per gram. Suppresses fat-burning)

Avoid fat-producing food combinations

In addition to certain individual foods being more "fattening," certain food *combinations* are doubly disastrous when you're trying to lose body fat. The worst of all possible food combinations is fat combined with sugar because it elevates your blood levels of fat, sugar and insulin simultaneously.

Dallas Clouatre, author of "Anti-Fat Nutrients," explains, "When fat is eaten at the same time as simple carbohydrates, both the fat and the carbohydrates are pushed into fat storage. The 'bad' coupling of fats with carbohydrates slows down your metabolism and causes you to gain weight."

The one food combination that you should never, ever eat if you want to get lean

Even though it's a wise idea to allow yourself a cheat meal once a week, some foods or food combinations should be avoided as much as possible. The fat and sugar combination is undoubtedly the worst of all. It's a sure-fire way to gain body fat so fast you won't even know what hit you. Low quality fats and refined sugars, eaten together, are also contributing factors in the development of nearly every major disease. A few obvious examples of the fat + processed carb combination include ice cream, doughnuts, peanut butter cups, and fettuccini Alfredo.

The second worst combination is sugar and alcohol. Alcohol that is mixed in high sugar drinks can contribute to literally thousands of calories over the course of an evening. Alcohol inhibits fat burning. One night with a high-fat, high-carbohydrate dinner followed by un-moderated drinking could set you back an entire week!

Choose nutrient dense foods

Your goal isn't just to eat a specific number of calories. Your goal is to get the maximum nutritional value, or "nutrient density," from every calorie you eat. Any food that has been refined, enriched, preserved, processed, canned, boxed or frozen will usually have less nutritional density than fresh foods in their natural state.

Choose natural foods

The best choice you can make is to eat foods the way they appear in nature. You should choose fresh foods over canned or frozen foods, and natural unrefined foods over more processed foods. For example, vegetables, potatoes, fruit, rice, and oatmeal are less processed and more nutrient dense than crackers, enriched bread, pretzels, or bagels. Remember the "acid-test" question for whether a food is natural or not: "Did this food come out of the ground or off the tree/plant this way?"

Don't choose empty calories & "junk foods"

All calories are not created equal. If a calorie were just a calorie, then any two diets at the same calorie level would have the same effects on your body composition regardless of their macronutrient profile. If a calorie was just a calorie, then a 2400-calorie diet of 100% sugar would have the same effect as a 2400-calorie diet of 100% lean protein - but it doesn't! "Junk foods" have little or no nutritional value and they don't boost your metabolism. That's why they're also called "empty calories." You simply cannot eat "junk foods" on a regular daily basis and expect to get good results.

The top twelve worst junk foods that you should NEVER eat: "The Dirty Dozen"

Probably the best way to start learning how to pick the right foods and make fat burning meals is to tell you what NOT to eat. If you know what not to eat, then through a process of elimination, you'll be much more likely to choose the right things. Make sense?

<u>The 12 worst fat-storing foods you should never eat</u>

- **X** Ice cream
- **X** Fried foods
- **X** Doughnuts and pastries
- **X** Candy, chocolate & sweets
- **X** Soda
- **X** Fruit "drinks" and other sugar-sweetened beverages
- **X** Potato chips
- **X** Bacon, sausage
- **X** White Bread
- **X** Hot dogs, fast food burgers
- **X** Cookies
- **X** Sugary breakfast cereals

How to improve your food choices: Some healthy alternatives to "junk" foods

If you're in tears right now because I just took away all of your favorite foods, and you're wondering, "What the heck does that leave me?" don't worry. I'm going to tell you exactly what new foods to put in place of your old, "low grade" food choices. Although all the foods listed as alternatives are not "A-grade" foods, they are all improvements over the old "low grade" foods.

Poor Choice	Choose Instead
Whole milk	Non-fat, skim or 1% low fat milk
White Bread	100% Whole wheat or rye bread
Ice Cream	Low-fat, non fat, or sugar free frozen yogurt, fruit sorbet
Tuna in Oil	Tuna packed in water
Buttered Popcorn	Light microwave or air popped popcorn
Regular crackers	100% Whole wheat or rye crackers, rice cakes
Dorito's, Potato chips	Baked tortilla chips (Baked Tostitos or Guiltless Gourmet)
Doughnuts	Sugar-free, whole grain muffins, bagels, English muffins
Whole Eggs	Egg whites
Cheese	Low or non-fat cheese (Weight Watchers, Lite & Lively)
Canned Fruit in Syrup	Canned fruit in own juice, fresh fruits
Sugar & Sweets	Fruit
Table Sugar	Equal, Sweet N Low, Stevia
Fried Chicken	Broiled or microwaved skinless chicken breast
Jelly or Jam	All Fruit no sugar jelly (Polander's, Simply Fruit, etc.)
Fruit Drinks	100% fruit juice
Regular Soda	Diet Soda, Crystal Lite, etc
Prime Rib	Round steak, lean sirloin, flank steak
Butter	Fleischman nonfat butter spread, Molly Mcbutter
Supermarket Oils	Pam cooking spray (light coating) extra virgin olive oil
Cream Cheese	Low or non-fat cream cheese
Mayonnaise	Low or non-fat mayonnaise
French Fries	Baked potato
Jell-O	Sugar free Jell-O
Sugary Cereals	Shredded Wheat, or any whole grain, low sugar cereal
Flavored, sweetened oatmeal	Old-fashioned whole oats (Quaker oats)
Ham, cold cuts, Bologna	Turkey & chicken breast
Bacon, Sausage, hot dogs	Very lean ham, chicken, turkey, turkey franks
Fried Chicken	Broiled, baked, or microwaved skinless chicken breast
Popsicles	Frozen juice bars, Frozen yogurt bars, sugar free Popsicles

The top twelve best foods you should eat regularly: "The Terrific Twelve"

OK, now that you know what you *shouldn't* eat, let's talk about what you *should* eat. This recommended food list, called "the terrific twelve," might be the most valuable resource in this entire program.

Although the possible variety in your food choices is nearly infinite, these are the *staple foods* that will make up the foundation of your program. Variety is important, but these are the foods you can't go wrong with and the ones you'll keep coming back to time after time.

<u>The 12 best foods you should eat all the time</u>

- ✓ Oatmeal (or other whole grain cooked cereals such as barley, wheat, rye, etc)
- ✓ Yams (or sweet potatoes)
- ✓ Potatoes (white or red)
- ✓ Brown Rice
- ✓ Whole wheat bread and 100% whole grain products
- ✓ Vegetables
- ✓ Fresh Fruit
- ✓ Low fat & non fat dairy products (yogurt, cheese, milk, etc)
- ✓ Chicken or turkey breast
- ✓ Egg whites (or "egg beaters")
- ✓ Lean red meat (top round, extra lean sirloin)
- ✓ Fish and shellfish

The Six Exchange Groups & Basic Food List

Most mainstream nutritionists still divide foods into the four basic categories; (1) breads and grains, (2) dairy, (3) meats and (4) fruits and vegetables. For our purposes of getting you so lean and completely free of body fat that you look like a walking anatomy chart and total strangers have the irresistible urge to feed you, it's necessary to be much more precise with your food groups.

Because each type of carbohydrate can have vastly different properties and effects on body composition, it's necessary to subdivide the carbohydrates into three separate groups; starchy, fibrous and simple. Proteins will be narrowed down into "lean proteins," eliminating all the high fat proteins from the list, dairy products will be narrowed down to non fat or low fat dairy, eliminating all whole milk and 2% products, and good fats will have a category by themselves.

Group I: Complex Carbohydrates: (Fibrous)

Asparagus	Broccoli	Okra
Cauliflower	Green Beans	Brussel Sprouts
Peas	Cucumber	Squash
Collard greens	Mushrooms	Zucchini
Lettuce	Salads	Pepper, green or red
Tomatoes, pasta sauce, salsa	Spinach	Kale

Group II: Natural Simple Carbohydrates (Fruit)

Apples	Unsweetened applesauce	Blueberries
Bananas	Oranges	Raspberries
Berries	Nectarines	Plums
Grapes	Peaches	Cantaloupe
Grapefruit	Pears	Jelly (all fruit)

Group III: Complex Carbohydrates (Starchy)

Oatmeal, Cream of Rice, Cream of Wheat, Cream of Rye, oat bran, barley, multi-grain
Potatoes (white, red)
Yams, sweet potatoes, carrots
Beans, lentils, legumes
Brown Rice
100% whole grain dry cereals
100% whole wheat or whole grain pasta
100% whole wheat bread & whole grain products

Group IV: Lean Proteins:

Chicken breast, Turkey breast
Fish (Flounder, Haddock, Salmon, Orange Roughy, Cod, Tuna etc.)
Shellfish (Lobster, shrimp, Clams, etc.)
Lean Red Meat (Flank Steak, Round Steak, extra lean sirloin)
Eggs/Egg whites (One yolk for every six whites)
Low or non fat dairy products (milk, cheese, yogurt, cottage cheese, etc.)

Group V: Dairy Products (1% low fat, skim, or non fat)

Milk
Cheese
Yogurt
Cottage cheese

Group VI: Fats
Nuts & seeds, flaxseed oil, olive oil, canola oil, natural peanut butter, olives, fish fat

A simple formula for creating effective, fat-burning meals and menus

Ok, now that you know exactly which foods to choose, you're ready to hand-pick the foods you enjoy and put them all together into your own personalized meals and menu plans. Creating effective, result-producing menus is incredibly easy once you know the simple formula.

Baseline diet formula (50-55% carbs, 30% protein, 15-20% fat)

Step 1: Choose a lean protein from the list for every meal.
Step 2: Choose a starchy carbohydrate from the list for every meal
Step 3: Choose your simple carbohydrates for your breakfasts
Step 4: Choose your fibrous carbs for your lunches and dinners
Step 5: Add essential fats if insufficient quantities are present in your foods
Step 6: Count your meal subtotals and grand totals.
Step 7: Compare your totals to your calorie target and adjust the serving sizes
Step 8: Assign a time a time for each meal

BFFM Breakfasts (meals one and two)

Because you'll be eating five or six meals a day and the first two meals will probably be in the morning, we'll call meals one and two "breakfasts" for simplicity. The first step in creating a breakfast is to select a lean protein such as egg whites. The second step is to choose a starchy carbohydrate such as oatmeal. The third step, which is optional, is to pick a natural simple carbohydrate such as an orange. Now all you have to do is adjust your portion sizes to fit your personal calorie needs. There you have it – as easy as one–two–three – instant meal! Here are several examples.

Example 1	Example 2	Example 3	Example 4
Egg white omelet	protein powder	Egg white scramble	Shredded wheat
Oatmeal	Oatmeal	whole wheat toast	Skim milk
Orange	banana	all-fruit jelly	protein shake

Of course, there's no reason whatsoever why you can't have green vegetables and chicken breast for breakfast if that's what you want (I know many bodybuilders who do!) However, this isn't what most people would consider an appetizing or "traditional" breakfast. Traditional breakfasts usually consist of either hot or cold cereal for complex

carbohydrates, a piece of fruit for simple carbohydrates and egg whites, protein powder or a dairy product for protein.

BFFM Lunches and dinners (meals three through six)

Meals three through six will usually fall in the afternoon and evening, so we'll group these meals together and call them "lunches and dinners" collectively. As with all meals, you begin by selecting a lean protein such as fish or chicken breast. Second, you choose a starchy carbohydrate such as a baked potato. Third, you choose a fibrous carbohydrate such as broccoli. Here are four examples:

Example 1	Example 2	Example 3	Example 4
Chicken breast	Top Round steak	Salmon	Tuna, low fat mayo
Baked potato	Yam	Brown rice	Whole wheat bread
Broccoli	Green beans	Asparagus	Salad

The menu template for the baseline diet

This template allows you to create a virtually unlimited variety of menus. All you have to do is choose the foods you want and plug them into the appropriate slots. Then adjust the portion sizes for your calorie and macronutrient needs.

Meal 1:
Lean Protein, Starchy Carb, Simple carb (dairy or fruit)

Meal 2:
Lean Protein, Starchy Carb, Simple carb (dairy or fruit)

Meal 3:
Lean Protein, Starchy Carb, Fibrous carb (vegetable/salad)

Meal 4:
Lean Protein, Starchy Carb, Fibrous carb (vegetable/salad)

Meal 5
Lean Protein, Starchy Carb, Fibrous carb (vegetable/salad)

Meal 6
Lean Protein, Starchy Carb (small serving), Fibrous carb (vegetable/salad), essential fat

Notes on the Baseline diet menu template

1. This baseline diet template is very balanced and health-oriented. It is suitable for weight loss (with calories below maintenance level), for year-round maintenance (with calories at maintenance level), or even for weight gain (with calories at 10-20% above maintenance level). The baseline diet should include a wide variety of natural, low fat & low sugar foods including whole grain complex carbohydrates, fruits, low or non-fat dairy products, and lean proteins.

2. Eat small, frequent meals - five for women and six for men. Eat approximately every three hours. Allow a minimum of two hours between meals and a maximum of four hours. Early day meals, especially your first one, may be larger than evening meals. The last meal of the day should be light and if possible, eaten two to three hours before going to sleep.

3. This template suggests eating your simple carbohydrates (fruit & dairy products) early in the day. However, there's no reason you can't have fruit or dairy products later in the day as long as your macronutrient ratios stay in balance. For example, you could have non-fat cottage cheese as your protein source for dinner, even though it's not listed that way on the template. You could also have fruit instead of a starchy or fibrous carbohydrate in your late day meals, as long as complex carbohydrates make up the bulk of your carbohydrate calories.

4. This is a low-fat diet, but not a zero-fat diet. Include at least one serving per day of essential fats (Udo's choice oil blend, fatty fish, flaxseed oil, salad dressings, nuts, seeds, olives or natural peanut butter). Avoid eating fats with large amounts of carbohydrates. Essential fats go well with your protein and green vegetable meals.

5. Macronutrient ratios on this plan should be 50-55% carbohydrate, 30% protein, and 15-20% fat. Always combine a lean protein and a natural carbohydrate with every meal.

6. Keep "cheat meals" down to only one or two meals per week.

7. A meal replacement product such as Myoplex, Met-Rx or Labrada Lean Body may be substituted for one or two meals for convenience purposes.

The menu template for the low or moderate carbohydrate diet

Meal 1:
Lean Protein, Starchy carb (large serving)

Meal 2:
Lean Protein, Starchy carb (large serving)

Meal 3:
Lean Protein, Starchy carb (small serving or none), Fibrous carb (vegetable/salad)

Meal 4:
Lean Protein, Fibrous carb (vegetable/salad), essential fat

Meal 5
Lean Protein, Fibrous carb (vegetable/salad), essential fat

Meal 6
Lean Protein, Fibrous carb (vegetable/salad)

Notes on the reduced carbohydrate diet menu template

This reduced carbohydrate menu format is more restrictive than the baseline diet and is designed for accelerated fat loss. It is intended for competitive bodybuilders, fitness competitors or non-athletes who want to get extremely lean or break a sticking point. It is effective for those with an endomorph body type or people who are carbohydrate-sensitive. It works by reducing total carbohydrate intake, thereby depleting glycogen stores and forcing your body to draw on stored body fat for fuel. It also works by managing blood sugar and insulin better than a high carbohydrate diet. Never remove all of the carbohydrates from your diet. Extremely low carbohydrate or zero carbohydrate diets are not necessary to get lean. Instead, you should decrease your carbohydrate intake slightly, eat fewer carbohydrates in the evening and change the *type* of carbohydrates you consume. Switch from processed and simple carbohydrates to natural complex carbohydrates, especially fibrous vegetables. Fibrous carbohydrates include most vegetables (green beans, asparagus, broccoli, lettuce, tomato, cucumber, celery, cauliflower, string beans, squash, zucchini, etc.)

1. Simple carbohydrates such as fruit (fructose) should be minimized on this plan and replaced with more fibrous carbohydrates. Fibrous carbohydrates have a higher

thermic effect, they are slower to absorb into the bloodstream and are less calorie dense.

2. Non-fat and low-fat dairy products, while they are good protein sources, also contain simple carbohydrates (lactose) and have no fiber. On this plan, dairy should be reduced to a minimum and replaced with fiber-containing complex carbohydrates (starchy carbohydrates & fibrous carbohydrates)

3. Timing is everything: Using the calorie-tapering method, make your early day meals, especially meals one and two, larger than your evening meals. Start eating early in the day and finish eating early in the evening. Try to eat your last meal two or three hours before you go to bed.

4. No starchy carbohydrates should be eaten late in the day. Eat only protein and fibrous vegetables/salads after 3:00 PM. This usually means that you eat starchy carbohydrates only with meals one, two and three and no starchy carbohydrates (fibrous carbohydrates only) with meals four, five and six.

5. To make this menu plan even more effective (stricter), remove the starchy carbohydrate in meal three and reduce the serving sizes of the starchy carbohydrates in meals one and two. This would turn the moderate carbohydrate menu into a low carbohydrate menu. For the purposes of this program, "low carbohydrates" would be defined as 25%- 30% of the total calories from carbohydrates.

7. Keep your fat intake low but never attempt to remove all the fat from your diet. Always include at least one or two tablespoons per day of essential fats such as Udo's choice oil blend, flaxseed oil, unprocessed oils (extra virgin olive or canola), fatty fish like salmon, small amounts of nuts or seeds, or natural peanut butter. The further the carbohydrates are reduced, the higher the fats may go, up to a maximum of 20-30% of the calories from fat.

8. Macronutient ratios should be approximately 40% carbohydrates, 40% protein, and 20% fat for the moderate carbohydrate menu. Depending on how sensitive you are to carbohydrates, you may need to make further reductions in carbohydrates depending on your results. If you're doing enough cardio, if your caloric intake is correct, and you still don't lose body fat, then you can reduce your starchy carbohydrate intake further. Never completely remove all the carbohydrates from your diet. 25% carbohydrates is about the lowest you can go without losing all your training energy; that's about 150 – 200 grams for men and 90 - 100 grams for women.

9. One of the secrets of maintaining a high metabolic rate is to never keep your calories and/or carbohydrates low for a long period of time. To prevent metabolic slowdown when you reduce your carbohydrates, cycle your calories and carbohydrate intake up and down on a rotating 3 days low to 1 day high cycle. Eating more every fourth day keeps the metabolic rate from slowing down and it replenishes depleted glycogen stores to keep your energy levels high so you can continue to train hard. If you lose weight too quickly or you're losing lean body mass, use the "zig-zag" carbohydrate cycling method of three low carbohydrate days followed by two or three high carbohydrate days (or simply increase your calories altogether). Do not stay on low carbohydrates for more than three days in a row, and do not stay on high carbohydrates for more than three days in a row.

10. Since you're temporarily reducing certain entire food groups (fruit & dairy), make sure you always take a multi-vitamin. Fruit and low-fat or non-fat dairy products are healthy foods and should be used more freely in maintenance or muscle gaining diets.

11. This is not a maintenance diet. Use it for short periods when maximal fat loss is desired. After you reach your goal, you'll go back to a more balanced baseline diet.

12. The high protein intake of this diet tends to be a diuretic, so it's extremely important to drink plenty of water; as much as a gallon a day or more.

13. Always check with your doctor before making any major changes to your nutritional program or going on any high protein diet. Bodybuilders have used this type of diet successfully for years, but it's not suitable for everyone.

How to make food exchanges for infinite variety

Some diet programs outline exactly what you have to eat every day for every meal. For example, you might be given 30 days worth of menus and be expected to eat a specific food at meal 3 of day 27 of your diet and so on. For long-term success in sticking with your program, it's much smarter to customize your menus to suit your own personal tastes and food preferences, as long as you follow the overall template.

For making substitutions, refer to the chart, "Nutritional values quick reference chart," which is found in the appendix. You are by no means limited to this list, but it will give you some good ideas. I also recommend that you pick up a copy of Corinne Netzer's "Complete Book of Food Counts." This is best calorie counter book available. It lists the calories, protein, fat, and carbohydrate values for over 12,000 foods

The sample menus in this program are just examples. You can and should exchange foods for variety and to avoid boredom. The exchange should be approximately the same number of calories. When exchanging foods, you should refer to the exchange categories and swap the original food with a new food *from the same category*. Carbohydrates should be exchanged for carbohydrates and proteins for proteins. You shouldn't exchange carbohydrates for protein or vice versa. This will keep your meal ratios in balance.

For example, if you want to exchange oatmeal for something else, then you should look on the complex carbohydrate list. You could swap it for any other complex carbohydrate such as wheat toast, buckwheat pancakes, cream of wheat, shredded wheat or any other food from the complex carbohydrate category. The possible variety is almost endless.

Weighing and measuring your food

When making exchanges, pay attention to detail and weigh or measure everything – especially during the initial stages of the program. Use measuring cups to measure amounts of oatmeal, cereal, rice, and other foods. Oatmeal and cereals are measured dry and uncooked, right out of the container. Rice and pastas are generally measured after cooking.

A scale is useful for weighing meats, vegetables, potatoes and yams. You can get a food scale at most department stores, housewares stores, supermarkets, and some health food stores. Weigh your meats before they're cooked as the fluids leak out during cooking resulting in a lighter cooked weight.

If the weight in ounces is listed on a package, sometimes you can figure the serving size from that alone. For example, a typical bag of frozen vegetables is 16 oz, so if you want an 8 oz serving, then use half of the bag. If a package of chicken breast says it's 18 oz. and you need a six ounce serving, just divide the package into thirds.

After a few months of measuring your food, you'll get a knack for portion sizes, and you will then know just by looking, approximately how many ounces are in any particular food item.

WEIGHT & VOLUME MEASUREMENT CONVERSIONS

1 oz	=28 grams		
1 lb	= 16 oz.	= .45 kg	
1 kg	= 2.2 lbs		
1 t	= 5 g	=5 ml	
1/3 T	= 1 t	= 1/6 fl oz.	
1 T	= 3 t	= 1/2 fl oz.	
1/8 cup	= 2 T	= 1 fl oz.	
1/4 cup	= 4 T	= 2 fl oz.	
1/3 cup	= 5 1/3 T	= 2 2/3 fl oz	
1/2 cup	= 8 T	= 4 fl oz.	
2/3 cup	= 10 2/3 T	= 5 1/3 fl oz	
3/4 cup	= 12 T	= 6 fl oz.	
7/8 cup	= 14 T	= 7 fl oz	
1 cup	= 16 T	= 8 fl oz.	= 250 ml
1 pint	= .47 L	= 16 fl oz.	
1 gallon	= 128 fl oz	= 3.79 liters	
1 quart	= 4 cups	= .95 L	= 32 fl oz
1 Liter	= 1000 ml	= 33.3 fl oz	
30 ml	= 1 fl oz		

Spicing and flavoring your food

The sample meals that were listed earlier in this chapter are plain, simple and do not involve any fancy recipes. That might make you wonder, "Am I supposed to just eat this stuff plain?" The answer is no – you can spice up and flavor your food as much as you want. However, eating basic, natural foods is part of the learning process in the beginning. Once you've mastered the fundamentals of combining single foods together in the right ratios and quantities, then you can move on to more fancier, more complicated multi-ingredient recipes.

Feel free to "spice up" and season your food to make it more palatable. You can add any low or non-caloric condiments and sauces such as butter flavor sprinkles, light dressings, low calorie marinades, salsa, cinnamon, or artificial sweeteners (Stevia, Equal, or Sweet N Low). You can also use a wide variety of herbs, spices and seasonings such as pepper, garlic powder, oregano, parsley, sage, thyme, dill, ginger, chopped onion, paprika, Mrs. Dash, and any no-sodium seasoning mix. None of these items will alter the percentages or your caloric intake significantly.

Sample Menus

In the appendix you will find several sample menus, presented just as they would appear as if you created them on an EXCEL spreadsheet. Keep in mind that none of these menus are rigid prescriptions. They are designed only to give you ideas and serve as examples. By all means, customize and inject variety while staying within the framework of the program.

There's an old proverb that goes, "If you give a man a fish, you feed him for a day, but if you teach him how to fish, you feed him for the rest of his life." Most diet programs are "giving you a fish;" they are rigid, inflexible and short-lived. This nutrition program is like "Teaching you how to fish." The purpose of this program is to educate you and give you a template or framework, not hand you a rigid prescription.

Use the sample menus for ideas, but don't feel as if you're locked into them. If I wrote a single menu plan and said you had to follow it to a "T" without deviating, I wouldn't be doing you any good. Following the suggestions in this program, you will learn how to develop your own meals and menus, which is exactly what you need to achieve long term success.

How to make good choices in restaurants

There's no need to avoid eating at restaurants just because you're on a fat burning nutrition program. You can construct meals of lean proteins and complex carbohydrates just as easily at a restaurant as you can in your own kitchen. You just need to know what to ask for. You must carefully read menus, watch for danger items, learn how to make sensible selections, know how your food is prepared, and don't hesitate to tell your server exactly what you want and how you want it prepared. Pay very close attention to calories; restaurant portions are often oversized and extra calories from butter, oils and sauces are frequently added, but not noticed. Make up your mind before you even set foot in the restaurant that you're going to stick with your program.

Of course, you can indulge occasionally, but there's no excuse these days for completely blowing your diet just because you're eating out. Nowadays almost all restaurants are accommodating healthy eaters. Even fast food restaurants now have salad bars, low calorie dressings, grilled sandwiches, sugar free frozen yogurt, and bagels. Use the following Do's & Don'ts to help you eat healthier when dining out.

• DON'T order restaurant or fast food burgers, they are usually loaded with fat and very high in calories. Instead, choose a grilled chicken or turkey breast sandwich.

- DON'T order cheese, cream, egg, or onion soups. Instead choose clear, broth-based soups with noodles or vegetables.
- DON'T order foods described as buttered, buttery, in butter sauce, prime, stuffed, sautéed, fried, pan fried, batter-dipped, creamed, in cream sauce, in cheese sauce, in its own gravy, hollandaise, béarnaise, beurre blanc, parmigiana, parmesan, alfredo, au gratin, au lait, a la mode, au fromage, basted, marinated, or escalloped.
- DON'T order rich, creamy sauces.
- DON'T put croutons, bacon bits, ham, creamy dressing & other high fat toppings on salads.
- DON'T order croissants, pastries, biscuits, butter rolls, or regular muffins.
- DON'T order traditional desserts. If you must, split one dessert with a friend.
- DON'T feel that you must eat everything on your plate.
- DO order food described as broiled, grilled, poached, roasted, baked or steamed
- DO order whole grain breads, toast, breadsticks, rolls, or pitas (no butter).
- DO order your vegetables steamed.
- DO order fresh fruit (no whipped cream or toppings).
- DO order grilled (not fried) chicken breasts and make sure skin is removed.
- DO order red pasta sauces instead of creamy white sauces (like alfredo).
- DO order entrees containing chicken, fish, seafood, rice, potatoes, and vegetables.
- DO order your baked potatoes plain (no butter, no sour cream, no bacon bits).
- DO order green & tossed salads without the high-fat toppings (bacon bits, cheese, croutons).
- DO order low calorie salad dressings.
- DO order low calorie syrup for pancakes (preferably whole wheat or buckwheat).
- DO order bagels or low-fat/sugar-free muffins at breakfast instead of donuts or pastries.
- DO order your eggs cooked with whites only or no more than 1 yolk.
- DO order beverages such as low fat or skim milk, diet sodas, fruit juice, tea, coffee.
- DO eat small portions.
- DO use freely spices, pepper, herbs, mustard, lemon juice and vinegar.
- DO order desserts including frozen yogurt, frozen fruit ices, sugar-free jello.

The startling reason why you SHOULD cheat on your diet once or twice a week

We're going to conclude this chapter on a note that will probably make you very happy. Paying attention to detail and eating healthy, natural, nutrient-dense foods most of the time is important. All the little things count, and if you cheat, it always has an effect on you. However, don't worry about being strict 100% of the time. Food is one of life's great pleasures and when you deprive yourself of this pleasure completely, it can trigger almost overwhelming cravings.

Some cravings are physiological in nature, such as those brought on by skipping meals or eating too many simple sugars by themselves. Other cravings are psychological in origin. If you're too strict on your diet all the time without allowing yourself any leeway for an occasional indulgence, you can trigger these psychological cravings. Being too strict all the time can set you up for serious cravings and bingeing (unless you have the willpower and discipline of a world class athlete.)

It's human nature to want what you can't have or aren't supposed to have. If you have an occasional hankering for junk food, go ahead and get it out of your system. Don't deny yourself completely. In fact, if you've had a great week, you can and should consider your cheat meal as a well-deserved reward.

Designate a "cheat day," perhaps one day on the weekend, and give yourself permission to have one (or at the most two) "cheat meals" of whatever food you want, then get right back on your regular nutritional program. I do NOT recommend having an entire cheat DAY. I am suggesting one or two cheat MEALS per week. Depending on your body type, you may be able to cheat more often and still get results. However, don't fool yourself into thinking that it doesn't matter. Everything matters and every time you cheat you are slowing down the time it takes for you to reach your goals.

Promise yourself one thing right now: If you're going to make a decision to eat something that's not allowed on your regular program, at least do it as a reward and enjoy it, don't do it and feel guilty. If you're going to feel guilty, don't do it at all! Just remember that you need to eat good foods <u>most</u> of the time to get good results. If you eat five times per day, that's 35 meals per week. If 33 or 34 of them are perfect, then a "cheat" meal or two isn't going to have a substantial impact. In fact, it might help. Here's why:

Amazingly, if you eat a "junk food" meal once a week, this not only will satisfy cravings and help prevent you from bingeing, but after weeks of low calorie dieting, a day of higher calories may even give a sluggish metabolism a boost. If your calories and or carbohydrates have been reduced for a prolonged period of time, your metabolic rate can begin to decrease. Once metabolic slowdown begins occurring, there's only one way to speed up your metabolism and that's to eat more. When you're severely depleted, a cheat meal can actually be like fuel in the furnace. It's a welcome treat for most people, but more importantly it can actually give a sluggish metabolism a kick in the pants!

Chapter 15: Supplements: What the Weight Loss and Supplement Companies Hope You Never Find Out!

"No vitamin pill can make up for a diet that's too high in fat, salt, sugar, and too low in fruits, vegetables, and other healthy food. But even people who eat a healthy diet can run short on some nutrients. So it's smart to take a multivitamin and mineral supplement as an insurance policy."

- Center for Science in the Public Interest, publisher of Nutrition Action Health Letter.

"As a coach, I like to see a supplement on the market for about 3 years before coming to too many conclusions. The power of marketing can have a great placebo effect. But after a few years, any supplements that could be described as 'unclear' get sorted out by consumer demand and supply. If you analyzed the 'rage' supplements per marketing dollar each year for the last 10 years, you would be stunned by how many 'almost drug like' supplements have come and gone."

- Ian King, strength coach and author or "Get Buffed"

Most "fat-burning" and "muscle-building" supplements are completely unnecessary and probably a total waste of money. They are long on marketing hype and short on science. The supplement industry – especially the weight loss side of it - is BIG BUSINESS! Marketdata Enterprises, a market research firm from Tampa, Florida, reported that in the year 2000, Americans spent nearly $35 BILLION on diets and weight loss products!

According to the Nutrition Business Journal, the supplement industry reached an all time high of $13 billion in sales in the year 2000. One-thousand different manufacturers produce about 20,000 different products, which are consumed by 100 million people! With billions at stake, fat-cat supplement and weight loss companies will tell you just about anything to get you to buy their products. They'll even lie right to your face if they can get away with it. And the fact that the industry is so loosely regulated allows them to get away with murder.

Why You Can't Believe Everything You Read

Here's why you should view ALMOST ALL nutritional supplements with a skeptical eye:

Most people get their information about supplements from magazines because magazines are generally considered one of the most credible sources for information. But that's not always the case - you can't believe everything you read.

Most bodybuilding and fitness magazine publishers own supplement companies and they use their magazines to promote their products. By putting information about "new supplement breakthroughs" into editorial format, they appear much more believable. That makes magazines the perfect tools for selling supplements and weight loss products. As a result, many magazines have turned into nothing more than thinly-disguised "supplement catalogs" with the single purpose of brainwashing masses of easily-influenced consumers.

The "magazine/supplement company" business plan is nothing new. Certain well-known publications have been doing it for decades. One day, it dawned on the rest of the publishers that more money could be made selling supplements than selling advertising or subscriptions. Soon, almost everyone had jumped on the bandwagon. This is just as true for online magazines as it is for paper and ink magazines.

Even if a magazine doesn't have a vested interest in a particular line of supplements, you still can't count on them to reveal the whole truth to you because publishers don't want to offend the deep-pocketed companies that are spending big money to advertise. Publishing is a tough business. Magazine owners depend on advertising revenue to keep themselves afloat.

A full-page ad in a high circulation national magazine can cost tens of thousands of dollars. With this kind of money at stake, do you think any magazine will print an article about how supplements don't work and run an ad on the next page for the same supplements they are criticizing? Not likely! And do you think they'll turn down advertising dollars just because the effectiveness of the product being advertised is questionable? Also not likely – scarce few human beings have that much integrity.

The Reason Why No Supplement Could Ever Have Drug–Like or Steroid-Like Effects

You should always be skeptical about any drug-like claims that are made for over-the-counter supplements. Whenever a supplement company releases a new product, The Food & Drug Administration (FDA) has their eyes on it with a magnifying glass. So does the pharmaceutical industry. If any "natural" or "herbal" product really had a major effect on the body, the FDA would swoop down on it like a hawk and investigate immediately.

If it panned out and really did have drug-like effects, it would be pulled off the shelves in a heartbeat!

Here's an example: A supplement called Triax was released a few years ago. Man, did this stuff ever work! It worked a little bit too well! People were shedding pounds and sweating bullets on this product. Made the FDA go "hmmmmm." So the FDA scrutinized it closely, and it turns out that Triax contains Tiratricol, which is really not a "supplement" at all but actually a thyroid drug! Triax immediately got yanked.

Also keep in mind that the powerful multi billion-dollar pharmaceutical industry would LOVE to find a product being sold over the counter that really had drug-like effects, and lobby to have it classified as a drug. Why? So they could quadruple the price and sell it by prescription only (with some fancy new drug-like name, of course).

Most people won't listen to me and they'll keep on buying "steroid-like" supplements and “drug-like” fat burners, but if you'll heed my advice, you could save hundreds or even thousands of dollars on products that could never possibly help you burn fat or build muscle.

The Difference Between Supplements and Drugs

Supplements are food. Steroids are drugs. There's a huge difference between the two. Supplements cannot and never will have drug-like effects. Any claims to the contrary are pure marketing hype!

The closest thing to a supplement with drug-like effects is the ephedra-caffeine-aspirin stack. As we now know, this is a powerful central nervous system stimulant, so like all real drugs – it’s not without side effects. In fact, it probably won’t be long before the FDA pulls ephedra from the shelves. Any real drug will always have undesirable side effects.

Supplements will never amount to anything more than food - and all the best supplements like whey protein, meal replacements, flaxseed oil, etc. are really nothing more than powdered food or food derivative.

Real food, weight training and aerobic training - combined properly - are better than drugs because there are no side effects and the results are permanent (as long as you stay on your regimen).

The Real Story – What Supplements are Good For

Supplements have two major benefits:

(1) Convenience – it's easier and faster to drink a shake than to cook a meal
(2) "Insurance" – supplements probably won't make you leaner, faster or stronger, but certain supplements will serve as a "nutritional insurance policy" to make sure you're not missing anything you need to perform at your best. The more restricted your diet is, the more important this "insurance" becomes.

Supplements you can't go wrong with

You can get fantastic results without any supplements whatsoever, although I do recommend at the bare minimum a good multi vitamin/mineral. Here's the BFFM "short list" of the only supplements you will ever need:

Multi vitamin/mineral

A good multi vitamin/mineral is the cornerstone of a supplementation program. According to government funded studies, as many as 60% of Americans are deficient in at least one vital nutrient.

The purpose of taking a multivitamin is to ensure that you don't have any nutritional deficiencies and to provide you with an *optimal* nutrient intake all the time (not just minimums). If you're deficient in any nutrient, it could have a negative effect on your workouts and energy levels and slow down your progress. Because of soil depletion, chemicals, preservatives, food processing, cooking, freezing, stress, incomplete absorption, low calorie dieting, and other reasons, you can't be 100% certain that you're getting all the nutrients you need from your food.

Vitamin and mineral supplements will NOT burn fat, they will NOT build muscle, they will NOT increase performance, and they will NOT increase energy and endurance. What they will do is act as your insurance policy against deficiencies. They simply fill in any gaps that might be left by the food in your diet.

While on a restricted or reduced calorie fat loss diet, nutrient deficiencies are more likely, so under these circumstances it's even more important to include a multi vitamin/mineral. Follow the instructions on the bottle as potencies will vary from brand to brand.

The Truth About Fat-burning Supplements

Nearly all of the advertising you see on television and in the magazines for fat-burning supplements greatly exaggerates their effectiveness. "Take a pill, go to bed and wake up skinny-It's magic!" That pretty much sums up the marketing strategy of most supplement companies today. Here's the cold, hard reality: There is no magic pill that will just "melt" away fat and never will be! Even if such a pill really existed, you would only be addressing the symptom (effect), but not the cause.

Body fat is a symptom (an effect). If you want to get rid of body fat, you cannot merely treat the effect. Instead, you must trace the effect back to its cause and treat the cause. The cause of body fat is inactivity and poor nutrition. Until you increase your activity and improve your nutrition, no supplement or fat burning pill will ever help you in the long run. A sound nutrition program combined with weight training and aerobic exercise maintained for life is the only way to burn fat and keep it off permanently.

Although there is no quick fix, thermogenic supplements may add to the fat-burning effects of your diet and exercise program if you're in good health and you tolerate stimulants well. However, don't let yourself be taken in by the outrageous claims and the even more outrageous before and after photos. These products work, but they don't work miracles. There are also definite risks and side effects.

Thermogenesis is the process of the body burning fuels (fat) without making chemical energy. Instead, the calories are released as heat. Studies published in peer-reviewed scientific journals such as the International Journal of Obesity have shown that the caffeine-ephedrine combination can increase body temperature and metabolism, and encourage the body to burn fat before other sources such as body protein.

The most common ingredients in these products are the herbs Ma Huang (Ephedra) and Kola nut or Guarana. White Willow, Citrmax, Chromium and L-Carnitine are frequently added to the formulations but there's no proof that these increase the effectiveness. Ephedra and caffeine work synergistically for a thermogenic effect and also a stimulant effect, increasing your energy levels. These substances have also been noted to reduce appetite. Examples of these products include "Thermadrene", " Hydroxycut", "Stacker," "Xenadrine,"and "Diet Fuel."

WARNING: Individuals with a history of cardiovascular disease or high blood pressure should never use these products, neither should anyone who is overly sensitive to stimulants. These products are not without side effects and definitely have the potential for abuse and addiction. Use them with caution if you use them at all. For the few percent

they may help, the risks may not be worth the small benefits. Check with your doctor before taking any stimulant-based supplements.

Meal replacement Drinks

Regardless of whether your goal is to lose fat or gain muscle (or both), you must always eat 5-6 times a day, with each feeding spaced 2.5 to 4 hours apart. Admittedly, this practice of frequent eating is not easy and not always convenient, especially if your schedule is busy with work, school, family or other commitments. If frequent eating is a challenge for you, then meal replacement products (MRPs) may be the solution.

How to Use Meal Replacement Products

MRPs can be used daily and counted as a meal, or they can be used occasionally if you normally can eat a meal but occasionally miss one or two because you're pressed for time. MRPs come either in powdered or pre-made liquid form. Examples of meal replacements products include EAS's "Myoplex," Labrada's "Lean Body," and "MET-RX." A good meal replacement product contains both carbohydrates and protein.

Most meal replacements such as MET-RX and Myoplex are about 280-300 calories and are formulated in the ratio of two parts protein to one-part carbohydrates. This leaves you short on carbohydrates, but used by themselves they support low calorie and low carbohydrate diets to stimulate greater fat loss. If you want more calories or carbohydrates, you can mix the MRPs in a calorie containing liquid such as juice or milk.

The secret about meal replacement products that the supplement companies don't want you to know

Supplement companies would like you to believe that MRPs have some kind of anabolic muscle building or fat reducing properties, but the truth is that they're nothing more than "powdered food."

MRPs are only meant to supplement an already good diet, they're not meant to replace food entirely. Whenever you have a choice, always choose whole foods over meal replacement drinks and try not to substitute more than 1/3 of your total calories with shakes unless absolutely necessary.

MRPs are great when you're in a hurry and you don't have time to eat whole foods, but they are not better than food, no matter what any supplement guru says. Owners of supplement companies will say that MRPs are the greatest thing since sliced bread. That

shouldn't come as any surprise; sales of these products run in the tens of millions of dollars each year.

Here's what a top bodybuilding competitor and a top bodybuilding trainer have to say about MRPs:

"The key is to eat complete proteins, complex carbohydrates, and lots of vegetables. When you have that down, then move into supplements. I cannot stress how important food is and that given a choice, I will almost always choose food over a meal replacement if time permits."

- Chris Faildo, Team Universe Lightweight Bodybuilding Champion

"Food is the cornerstone of nutrition. If you do not eat the proper foods - lean proteins, starchy carbohydrates, and fibrous carbohydrates - nothing else matters. No supplement can ever provide you with all the benefits that food supplies. We were built to process foods - proteins, carbohydrates and fats - not powdered or liquid supplements alone. If you want to make the best possible progress with your physique, I suggest that you forget the hype surrounding all supplement diets or meal replacement programs and get back to basics. And that means food."

- John Parillo, bodybuilding nutritionist and author of "High Performance Bodybuilding."

Food - real food - is the secret to your success

The human digestive system just wasn't designed to process liquid products all day long - it was designed to process whole foods. By developing a dependence (I call it "laziness") on MRPs, you are short-changing yourself of the thermic effects that whole food has on your metabolism. Whole foods crank up your metabolism - shakes don't! Supplements will give you the calories and nutrients you need, but they won't provide the thermic effect that food does.

Eating food is a lot more work, but it can multiply your results exponentially!

Eating whole foods five or six times a day is not easy. It often seems like you're constantly shopping, cooking, packing food in plastic containers, etc. No one said this would be easy. But if you've become heavily dependent on liquid products and you're not getting the results you want, then you owe it to yourself to at least try nothing but whole foods for a while to see the impact it has on your physique. I think you'll see a huge difference. If you want to get lean and muscular, save the MRPs for convenience!

My clients just hate me when I take away their Chocolate Myoplex, but the fact is, becoming dependent on MRPs is just plain laziness. If you want to get lean and muscular as possible, by all means, use MRPs, but save them for convenience only – real food is the answer! Man-made products cannot and never will be superior to nature's creations.

Protein Powders

Consuming adequate amounts of protein is absolutely essential for the muscle building process, but many people don't eat enough protein foods for maximum muscle growth. The best way to eat protein is in small quantities with every meal. This speeds up your metabolism and puts you in an anabolic state.

If it's a problem for you to include a protein food such as egg whites, chicken, fish, or lean red meat with every meal, then a protein supplement is a must. A protein powder can be mixed into a shake and consumed with a meal instead of the protein food. Protein supplements can also be "stacked" with other protein foods to boost the total protein content of the meal and to balance out the amino acid profile or bring the protein content higher when you're eating a small serving of protein food.

Creatine Monohydrate

One compound that has received critical acclaim in the past few years is Creatine Monohydrate. Creatine is a metabolite found naturally in red meats which regenerates ATP, the high powered chemical that supplies energy for the initial seconds of muscle contraction. The effects of creatine have been documented in dozens of scientific studies and include increased strength, power, weight gain, and recovery time.

Creatine is unquestionably the hottest supplement in the sports nutrition world today and is being used widely by sprinters, bicyclists, football players, boxers, powerlifters, bodybuilders, and virtually every other athlete who requires strength and power. Supplemental creatine is available in a tasteless and odorless powder which is usually consumed mixed in water or juice. The recommended amount is 4-6 teaspoons per day for the first 5 days (loading phase), then 2-3 teaspoons per day thereafter for maintenance.

Essential Fatty Acids (EFS's): "Udo's Choice oil blend" or Flaxseed oil

All fats are not bad. In fact, "good fats" know as essential fatty acids (EFAs) can actually help you lose fat, gain muscle, increase energy and stay healthy. You should look at EFAs the same way that you look at taking vitamins and minerals – as insurance.

The two EFAs that you must obtain from your foods are omega 3's and omega 6's. EFAs have many important functions in the body; they are required for the absorption of fat-soluble vitamins, for proper nerve function, immune system function, energy production, oxygen transfer, recovery from fatigue, and hormone and prostaglandin production. They make up the major components of cell membranes, they are important for the construction and maintenance of all healthy cells and healthy skin, and are used in special ways in the adrenals and sex organs. EFAs are great for your joints and connective tissue which can help you prevent training related injuries.

EFAs can also help you lose fat and build muscle. EFAs can be anabolic in the respect that they are an energy source and can prevent muscle from being broken down to glucose for use as energy. Keeping some good fats in your diet also sends a signal to your brain to keep you out of starvation mode. “Good Fats” can also help fat loss by smoothing out blood sugar and insulin spikes and helping insulin do its job more efficiently.

Food sources of essential fats include nuts, seeds, cold water fish and unprocessed, unsaturated oils. Probably the best way to get your EFA's is to take an EFA supplement in the form of Flaxseed oil or an oil Blend such as 'Udo's Choice Ultimte oil blend." One to two tablespoons of Udo's or Flax oil will provide you with all the EFA's you need.

Chapter 16: Cardio Training Secrets For Maximum Fat Loss: Why it's Better to Burn the Fat Than to Starve the Fat

"Increasing aerobic exercise activity has the benefit of burning fat without slowing metabolic rate. In fact, aerobic exercise causes metabolic adaptations that make the body more efficient at burning fat."

- John Parillo, Bodybuilding Nutritionist and author of "High Performance Bodybuilding."

"Aerobic exercise such as walking, jogging or cycling is the only type of physical activity that directly burns body fat. For fat to be burned, oxygen must be present and this occurs only through aerobic exercise."

- Cliff Sheets, Certified Clinical Nutritionist and author of "Lean Bodies"

Why it's better to burn off fat than diet off fat

To lose body fat, you must create a calorie deficit. There are two ways you can create a calorie deficit: 1) decrease your caloric intake from food (dieting), or 2) increase the amount of calories you burn (exercising). Both methods should be used, but the healthier, more efficient and more permanent way is to BURN THE FAT with exercise! That's where the name of this program comes from. "Burn the Fat, Feed the Muscle" means, don't *starve the fat* with low calorie diets, *Burn the fat* with exercise and *feed the muscle* with good nutrition. Dieting or severe calorie cutting without exercise is not an effective strategy.

As paradoxical as it may seem, it's always better to eat more and exercise more than it is to eat less without exercise. Ironically, most people do the latter: They slash their calories to starvation levels and exercise little or not at all. This slows the metabolism, decreases lean body mass and invokes the starvation response. Exercise allows you to create the calorie deficit and burn fat while increasing the metabolism.

The ultimate secret to fat loss

Aerobic exercise is the real secret to losing body fat. Except for the genetically gifted people who appear to have been "born ripped," it's extremely difficult - if not impossible - to lose fat permanently with diet alone. Dieting without exercising is one of

the major reasons for the 95% failure rate of weight loss programs today. The reason is simple: A decrease in calorie intake, if extreme and or prolonged, slows down the metabolism while an increase in activity can actually speed up your metabolism. As you learned in chapter seven, eating (and eating often) boosts your metabolic rate. So by doing regular aerobic exercise *and* eating more often, you get a double boost in metabolic rate! Most people are afraid to increase calories and increase cardio simultaneously because they figure the two will somehow "cancel each other out." Surprisingly, the opposite is true; they enhance each other.

What types of exercises are considered aerobic?

When I say "aerobics" I'm not talking about dance music, fancy choreography and jumping up and down in the latest trendy classes. By definition, aerobic means "with oxygen." For fat to be burned, oxygen must be used. For oxygen to be used, the activity must be sustained for a prolonged period. If an activity is intermittent in nature it's not aerobic – it's anaerobic or sugar burning.

For the purposes of this program, "aerobics" is any cardiovascular activity that's rhythmical in nature, involves large muscle groups (namely your legs), and, here's the kicker - can be sustained continuously for long periods of time (at least 20 - 30 minutes and up to as much as 60 minutes). Walking, jogging, bicycling, stair climbing, rowing, cross-country skiing and elliptical exercise all fit the bill perfectly.

Some people prefer to call it "cardio" instead of "aerobics," but whatever you call it, you have to do it if you want to burn the fat.

The difference between effective fat burning exercise and recreation

Certain types of exercise are far more effective than others when it comes to measurable "real-world" fat loss. Tennis, golf, basketball, racquetball, house or yard work, or any other intermittent activities or sports are not efficient for fat burning because they are anaerobic. I'm not saying they don't help at all, and I'm not saying you shouldn't do them. What I'm saying is that these types of start/stop activities should not be your first choice when your goal is maximal fat loss – they should be considered recreation first and fat burning exercise second.

Short bursts of activity burn primarily carbohydrate for fuel. Fat can only be used for fuel in the presence of oxygen and oxygen is only used in longer duration aerobic activities. The question is; does it matter if you're burning fat or carbohydrate for fuel? The answer is yes and no. Any increase in your activity level, regardless of whether it burns fat or carbohydrate predominantly, will have some impact on fat loss. However, it's

been my experience that to achieve low body fat levels, you need to burn as many calories from *fat* as possible by performing longer duration exercise at a moderate to moderately high intensity level.

Choosing the proper type of aerobic exercise will help you burn the most fat calories and achieve maximum fat burning in the shortest time possible. So let's talk now about how to design a maximum fat burning aerobic workout.

The myth of the fat-burning zone: "Long duration and low intensity to burn fat"

One myth that has pervaded the fitness world for a long time is that low intensity aerobic exercise burns more body fat than high intensity aerobic exercise. This theory suggests that once your heart rate rises out of the "target fat-burning zone," you cease to burn fat and you burn mostly carbohydrates. Therefore, the theory goes, the best way to lose fat is low intensity aerobic exercise.

This myth prompted many personal trainers and exercise organizations to promote low intensity aerobic training as the ideal way to lose fat. Their advice: "Exercise at a low intensity for a long duration for fat loss." Unfortunately, they are dead wrong. If this were true, we could extend the low intensity fat-burning zone theory to it's logical conclusion and say that sleeping for twelve hours a day is the ultimate fat burner because when you're sleeping (a very low intensity activity indeed) you're burning the greatest proportion of fat to carbohydrate. The problem is, because sleeping is so "low in intensity," it hardly burns any calories! If the intensity of an activity is too low, you don't burn enough total calories to have any impact on fat loss.

Why moderate to high intensity is better

At lower intensities, you burn a greater *percentage* of calories from fat than carbohydrates, and at higher intensities you burn a greater *percentage* of calories from carbohydrates. High intensity aerobic exercise can use as much as 65% of the body's energy needs in the form of carbohydrate. The most important issue for fat loss is not the ratio of fat to carbohydrate burned, but the total number of calories burned and high intensity aerobic exercise burns the most calories!

The lower the intensity, the lower the total number of calories burned and the higher the intensity, the greater the number of calories burned. High intensity cardio also raises your metabolic rate after the workout to a much greater degree than low intensity cardio. That's why high intensity cardio is better, *provided that you can maintain it for a long enough duration to burn an appreciable number of calories.*

Duration of aerobic exercise (How long should your cardio workouts be?)

The longer you work out, the more calories you'll burn and the more calories you burn, the more fat you'll lose. Makes sense, right? Of course, this only applies if your intensity is high enough. A long workout (30 minutes or more continuously) with an extremely low intensity won't burn enough calories to have any impact on fat loss. There's a minimum intensity threshold you must cross to get maximum benefit from each workout and you'll learn about this "fat burning intensity zone" later in this chapter. Another reason you burn more fat with a longer workout is because you tend to favor the use of glycogen early in the workout, and then as your glycogen becomes depleted, stored body fat becomes the primary fuel source.

Cardiovascular health benefits, such as decreased blood pressure, decreased blood cholesterol, lowered resting heart rate and increased aerobic capacity can be achieved with as little as 12-20 minutes of cardiovascular activity. However, if you stop after only 20 minutes, you're not burning enough total calories to have much impact on fat loss.

Most body types need to do aerobic exercise continuously for at least 30 minutes to burn a substantial amount of fat. Thirty to forty-five minutes continuously per session is the recommended duration on the BFFM program when your goal is fat loss. Sixty minutes should be the maximum. Beyond 60 minutes per session, you tend to reach a point of diminishing returns and increase the likelihood of injury, over-training and adaptation. If you're stuck at a plateau and you wish to do more than 60 minutes per day, you can, but it would be best to split it into multiple sessions, for example; 30-45 minutes in the morning and 30-45 minutes at night.

If you're limited in time and long 30-60 minute cardio sessions are not an option, then it would be most productive to increase the intensity of the time you do have to maximize the calorie burning effects. This way, a 15-25 minute aerobic session can produce a substantial expenditure of calories.

Why are there so many programs recommending short cardio workouts?

One very popular fitness author claims that twenty minutes of aerobics three times a week is the "solution." A supplement company owner claims that sixteen minutes of high intensity aerobics is the optimal duration. Yet another "fitness guru" says that eight minutes in the morning is all it takes.

If I'm right, and a 30 to 45 minute cardio session is the most effective way to train for fat loss, then why do so many "gurus" in the books and on TV talk about these "super-short, super- easy" aerobic workouts? The answer is simple: "Quick and easy" sells,

"Long and difficult doesn't sell. It's all about marketing and the almighty dollar. If an author or promoter of a product can convince you that you can achieve your dreams with a minimum of effort, their sales will skyrocket. A wise person knows nothing good ever comes fast and easy.

Getting in great shape by spending only twenty minutes a day, three days a week (or less!) sounds great, but when things sound too good to be true, they usually are. If your goal is better health and a decent level of cardiovascular fitness, then three days of cardio a week for 20 minutes IS all you need. However, if your goal is to lose a lot of body fat as quickly as possible, then you're probably going to need more than 20 minutes.

If you're one of the few people genetically blessed with a fast metabolism and the ability to burn fat easily, then three days a week for twenty minutes will work for you. In fact, I know a few people with hyperactive metabolisms that stay ripped all year round without doing any cardio at all! Not many of us are that fortunate. I've seen very few people lose fat quickly from just three days a week of cardio. On the other hand, I've never seen anyone do six days a week of cardio for 45 minutes and NOT lose a lot of body fat (provided of course, they were on a good diet).

If you have superior genetics, you might get away with very little cardio. But if you're like most people, be prepared to do more. The bottom line is that you should do as much - or as little - cardio as it takes for YOU to reach your goal. You can only determine how much that is by understanding your body type, getting started and adjusting your program through trial and error. If you can lose fat from just three 20 minute workouts a week - that's GREAT! Don't do more if you don't have to. However, if you've been doing 20-minute workouts three times per week and nothing is happening, then you need to increase your duration and/or frequency until the fat starts coming off.

BFFM Duration guidelines for aerobic exercise

Here's a summary of the duration guidelines for your cardio workouts on the BFFM program:

When your goal is maximum fat loss:
30-60 minutes of continuous activity per session

When your goal is gaining muscle, maintenance or cardiovascular conditioning:
20-30 minutes of continuous activity per session

Frequency of aerobic exercise (How often should you do cardio?)

The number of days per week you do aerobic workouts is largely dependent on your goals. Everyone should always do three days per week of cardiovascular work as a minimum. Three days of cardio a week is a habit you should maintain as a part of your lifestyle for your health if no other reason. If your body fat is already in the desirable range, then three or four 20 to 30 minute workouts per week are usually enough to maintain your low body fat level and stay aerobically fit. It's also enough to help keep you lean when you're working on gaining body weight. If your goal is to lose body fat, then adding a fifth, sixth or seventh day will maximize your results.

How to double your rate of fat loss with more frequent aerobic workouts

How would you like to learn a way to double your fat loss in the next seven days? It's really quite simple: To burn more fat you have to burn more calories. Most beginners start off with three days a week of cardio training. Usually they see good results initially because their bodies aren't accustomed to exercise and any increase in activity above no activity will always produce some results.

More often than not, the results begin to slow down a bit within a few months of training. Then they scratch their heads and wonder why it's not working anymore.

This is why: Because three days a week is for beginners, health, or maintenance. If you want twice as much fat loss and you want it twice as fast, double your cardio.

Suppose you burn 400 calories per workout for three workouts per week. That's a total of 1200 calories per week burned. If you doubled that to six days per week at 400 calories per workout, you would burn 2400 calories. YOU JUST DOUBLED YOUR FAT LOSS EVERY WEEK! That was a real no-brainer, wasn't it?

While we're on the subject of burning more calories, what would happen if, in addition to increasing your cardio from three to six days per week, you increased the intensity so you were burning 600 calories per workout? With six workouts at 600 calories per workout you'd be up to 3600 calories per week….

YOU JUST TRIPLED YOUR FAT LOSS!

Yes it's that simple.

By the way, this kind of cardio training is how I reach 3 - 4% body fat for competitions: I do approximately six days per week of intense cardio, 45 minutes per session. Let me wrap up the topic of cardio frequency this way: If I were overweight and I knew what I now know about fat loss, I would be doing cardio every day, possibly even twice a day, seven days a week until I was happy with my weight. Then and only then would I cut back to three days a week for maintenance.

BFFM Frequency guidelines for aerobic exercise

Here are the frequency guidelines I recommend for your cardio workouts on the BFFM program:

When your goal is maximum fat loss:
5-7 days per week

When your goal is maintenance, health & cardiovascular conditioning
3-4 days per week

Intensity of aerobic exercise (How hard should you exercise?)

The laws of fat loss are relatively simple: (1) Work out longer and you'll burn more calories and lose more fat, and (2) work out more often and you'll burn more calories and lose more fat. Following this line of reasoning it would make sense that; (3) if you work out harder you'll also burn more calories. This is true, but only up to a point. As you push harder and harder, a level will be reached where if the intensity goes any higher, you won't be able to sustain the activity long enough to burn much fat. You'll become fatigued before you can finish your workout. Therefore, selecting an intensity that's not too light but not too hard is critical. This is known as your "training zone," "target zone," or "fat-burning zone." This optimal zone for fat burning and cardiovascular conditioning is generally between 60% and 80% of your functional capacity or 70-85% of your age predicted maximum heart rate.

How to calculate your fat-burning heart rate zone

There are two methods to determine your target heart zone for fat burning. If you don't know your resting heart rate, you can use the "age-predicted" method. This formula takes your estimated maximum heart rate and multiplies it directly by the intensity you want to work at. If you know your resting heart rate, an even more accurate method is the Karvonnen formula. This method accurately predicts your training zone by factoring in your resting heart rate.

Method 1: The Karvonnen method (Use this formula if you know your resting heart rate)

Step 1: Determine your resting heart rate

Your resting heart rate is determined by counting your pulse (at your wrist or the side of your neck) for a full 60 seconds. A true resting heart rate should be measured in the morning as soon as you wake up and before engaging in any activity or consuming any stimulants (coffee, etc). Your resting heart rate is a fairly accurate indicator of your cardiovascular fitness level. The better your level of cardiovascular fitness, the lower your resting heart rate will be. The average resting heart rate is 72 beats per minute (bpm). If your heart rate is substantially higher than the average (80-90 bpm) it may be a sign of poor cardiovascular fitness. A resting heart rate higher than usual can also be a sign of overtraining. Low resting heart rates are usually an indicator of excellent cardiovascular fitness. Some marathon runners have resting heart rates as low as 40 bpm or less!

Step 2: Determine your estimated maximum heart rate (EMHR)

Your EMHR is an estimate of how fast your heart can beat while exercising. The formula below is only an estimate of your maximum heart rate. The only way for you to know for sure what your EMHR is would be to undergo a graded treadmill test. (Where they hook you up to a bunch of monitors and gradually run you faster and steeper until you literally drop from exhaustion)

The formula for estimated maximum heart rate is 220 - your age

Example:
you are 30
220 - 30 = 190
your EMHR is 190 beats per minute

Step 3: Determine your heart rate reserve (HRR) by subtracting your RHR from your EMHR

Example:
your RHR is 58 bpm
your MHR is 190
190 - 58 = 132
your HRR is 132 bpm

Step 4: Select an intensity range to work at based on your goals and on your personal fitness level. The target zone is between 60% and 80%

% of MHR	**Difficulty**
60-65%	moderate
65-70%	somewhat hard
70-75%	moderately hard
75-80%	hard

Step 5: Multiply your HRR by your desired intensity range

example
you are a beginner
select the moderate intensity range of 60-65%
multiply your HRR by 60-65%
132 X .60% = 79
132 X .65% = 86

Step 6: Add your RHR to your HRR to determine your target heart rate

79 (HRR) + 58 (RHR) = 137 (THR at 60%)
86 (HRR)+ 58 (RHR) = 144 (THR at 65%)
Your target zone is 137 - 144 beats per minute

Method 2: The Age-Predicted Method

This is the simplest method of determining your target heart rate and this should be used if you don't know your resting heart rate.

Step 1: determine your estimated maximum heart rate (MHR)
The formula for maximum heart rate is 220 - your age

Example:
you are 30
220 - 30 = 190
your EMHR is 190 beats per minute

Step 2: Select an intensity range to work in based on your goals and on your personal fitness level. The target zone for the age-predicted method is 70-85% of your estimated maximum heart rate

% of MHR	Difficulty
70-75%	moderate (beginner)
75-80%	somewhat hard (intermediate)
80-85%	hard (advanced)

Step 3: Multiply your MHR by your desired intensity range
Example:
You are a beginner
Select the moderate intensity range of 70-75%
Multiply your MHR by 70-75%
190 X .70% = 133
190 X .75% = 142

An important note about target heart rates

Regardless of which method you use, it's important to understand that target heart rates are only guidelines – they are estimates. Heart rate estimates are usually accurate for about 70% of the population. That's why you need to use good judgment about how the exercise feels and how your body is responding. Use common sense; if you're working in your target heart range and it feels ridiculously easy, then don't be afraid to increase the intensity. On the other hand, if it feels incredibly difficult, don't hesitate to decrease your intensity. After you've been working out for a while, you should start to develop a intuitive sense for how it feels to be in your target zone and you can use subjective measures of your intensity such as your rating of perceived exertion.

If you've been completely sedentary, if you're overweight or if you're in poor physical condition, you may need to start at an intensity level lower than your minimum target heart rate. Again, use your judgment, start slowly, and gradually increase the intensity of your workouts as you become more fit until you're eventually in the ideal target zone.

Method 3: Perceived Exertion

Perceived exertion means that you "guess" at the intensity of your workout based on a scale of 1 to 10. According to the American College of Sports Medicine (ACSM), perceived exertion is a reliable indicator of your level of physical exertion during steady-state exercise and can therefore be used as a substitute for target heart rates. Basically, if you think your workout is "hard," it probably is.

The scale of perceived exertion below provides you with a subjective way to quantify the intensity of your workout without having to take your pulse. Your goal is to work at a level you perceive as moderate to hard, but not extremely hard. The scale goes from 0 to 10 with zero being no work (such as sitting) and 10 being maximal (such as a 50-yard all-out sprint). Based on this scale a rating of 4 to 8 would be the ideal range for steady sustained aerobic activity for fat burning.

Rating of Perceived Exertion

0	Nothing (no work: sitting or lying)
1	very, very light
2	very light
3	light
4	moderate
5	somewhat hard
6	moderately hard
7	hard
8	very hard
9	very, very hard
10	Maximal (all out sprint)

Breathing as a measure of exercise intensity

Believe it or not, breathing is actually a very good way to estimate whether you're working out in your target fat burning zone. If you're in the target zone, generally, you'll be breathing much heavier than normal, but not so heavily that you're hyperventilating or gasping for air. You should be able to speak full sentences comfortably without having to stop and catch your breath. If you're so out of breath that you can't hold a conversation, or complete a sentence, then you're probably working out of your target zone (this is known as the "talk test"). Generally, the harder you're breathing, the higher the intensity and the more fat you'll burn, provided you can sustain the activity for the required amount of time. If you're not breathing hard, you're not working out hard

How to measure your heart rate during a workout

During an exercise session, you should periodically check you pulse at your wrist or neck to see if you're within your target range. If you're below your target heart rate, you should increase the intensity by increasing resistance, speed or incline (if applicable). If you're above your target zone, you can decrease your intensity. Taking a full 60 second count would be impractical because it would interrupt your workout too much (You may have to stop moving to check your HR, depending on the type of activity you are doing).

The solution is to use 10-second pulse counts. Simply divide your target heart rate in beats per minute by 6 to find your 10 second count:

Example:
Your target heart zone is 133 - 143
Divide 133 by 6 to for your low end of range 10-second count: = 22
Divide 142 by 6 to for your high end of range 10-second count: = 24

If you want to make the $100- $150 investment, a polar heart rate monitor is the ultimate way to measure your heart rate during exercise (www.polarusa.com). A chest strap transmits your heart rate to a wrist monitor via telemetry. This allows you to workout continuously without the interruption of pausing every few minutes to take your heart rate. Most commercial quality exercise equipment is now polar compatible so the heart rate signal will be transmitted directly to the machine and you can read your heart rate on the console's readout.

Early morning fasted cardio: A simple method to increase the fat burning effects of your cardio by up to 300%

Any time of day that suits your schedule is a good time for cardio. The important thing is that you just do it. However, many bodybuilders and fitness models believe that early morning fasted cardio burns more body fat. Although this is still controversial, the evidence is strong and there are many reasons to consider doing cardio first thing in the morning on an empty stomach. The argument in favor of fasted early morning cardio goes something like this:

1. After an overnight 8-12 hour fast, your body's stores of glycogen are depleted and you burn more fat when glycogen is low.

2. Eating causes a release of insulin. Insulin interferes with the mobilization of body fat. Less insulin is present in the morning; so more body fat is burned when cardio is done in the morning.

3. There is less carbohydrate (glucose) in the bloodstream when you wake up after an overnight fast. With less glucose available, you burn more fat.

4. If you eat immediately before a workout, you have to burn off what you just ate first before tapping into stored body fat (and insulin is elevated after a meal.)

5. When you do cardio in the morning, your metabolism stays elevated for a period of time after the workout is over. If you do cardio in the evening, you burn calories during the session, but you fail to take advantage of the "afterburn" effect because your metabolic rate drops dramatically as soon as you go to sleep.

6. Morning cardio gives you a feeling of accomplishment and makes you feel great all day by releasing mood-enhancing endorphins.

7. Morning cardio "energizes" you and "wakes you up."

8. Morning cardio may help regulate your appetite for the rest of the day.

9. Your body's circadian rhythm adjusts to your morning routine, making it easier to wake up at the same time every day.

10. You'll be less likely to "blow off" your workout when it's out of the way early (like when you're exhausted after work or when friends ask you to join them at the pub for happy hour).

11. You can always "make time" for exercise by setting your alarm earlier in the morning.

A common concern about doing cardio in the fasted state, especially if it's done with high intensity, is the possibility of losing muscle. After an overnight fast, glycogen, blood glucose and insulin are all low. This is an optimum environment for burning fat. Unfortunately, it may also be an optimum environment for burning muscle because carbohydrate fuel sources are low and levels of the catabolic stress hormone cortisol are high. It sounds like morning cardio might be a double-edged sword, but there are ways to avert muscle loss.

All aerobic exercise will have some effect on building muscle, but as long as you don't overdo it, you shouldn't worry about losing muscle. It's a fact that muscle proteins are broken down and used for energy during aerobic exercise. But you are constantly breaking down and re-building muscle tissue anyway. This process is called "protein turnover" and it's a daily fact of life. Your goal is to tip the scales slightly in favor of increasing the anabolic side and reducing the catabolic side with nutrition just enough so you stay anabolic and you maintain muscle.

How do you build up more muscle than you break down? First, avoid excessive cardio. If your lean body mass has dropped, try limiting your cardio on an empty stomach to 30 minutes, and then it would be highly unlikely that amino acids will be burned as

fuel. Bodybuilding nutritionist Chris Aceto suggests, "A strong cup of coffee should facilitate a shifting to burn more fat and less glycogen. If you can spare glycogen, you'll ultimately spare protein too."

Second, give your body the proper nutritional support. Losing muscle probably has more to do with inadequate nutrition than with excessive aerobics.

Third, keep training with heavy weights, even during a fat loss phase. Using light weights and higher reps thinking that it will help you get more "cut" is a mistake: What put the muscle on in the first place is likely to help you keep it there.

Morning cardio is still controversial in academic circles, but in my book, it's a sure-fire way to double or even triple the fat burning effects of your cardio. Ask any high-level bodybuilder or fitness model when they do their cardio and the chances are good that they'll tell you they're working up a sweat before breakfast early every morning.

Does too much cardio make you lose muscle?

One common exercise myth is that doing *too much* aerobic exercise, or doing it *too hard* makes you lose muscle. While it's certainly possible this could happen, only extreme amounts of high impact, high intensity cardio would cause large muscle losses to occur. For example, endurance training and bodybuilding don't go well together. The muscle loss issue is usually highly exaggerated. If you're in doubt, don't guess: Carefully track your lean body mass with skinfold testing and adjust your cardio and nutrition accordingly.

Losing muscle is most likely caused by three factors: Inadequate caloric intake, inadequate protein or dieting without including a weight training program. You're more likely to lose muscle from not eating enough than you are from doing too much cardio. If your lean body mass drops, it's usually because you're missing meals or not eating enough.

Provide yourself with the proper nutritional support, including adequate meal frequency, protein, carbohydrates and total calories, and it's not likely that you'll lose muscle, even with daily 45-minute cardio sessions. It's ironic that so many people are worried about losing muscle from cardio when they're skipping meals and eating meals without protein.

High intensity interval training (HIIT) for fat loss

High intensity interval training, known as HIIT for short, is the technique of alternating 30 to 120 second periods of very high intensity aerobics (sprints, also known as the "work interval") with 30 to 120 second periods of low to moderate intensity (the recovery interval). During the work interval, you actually push yourself outside of your target heart zone (above 85%) to the point where you begin to lose your breath. You then reduce the intensity enough during the recovery interval so you reclaim the oxygen debt just in time to do another work interval.

HIIT has received a lot of press lately as being superior to steady state exercise. In some ways, it IS superior: HIIT burns a lot of calories during the workout, but where it really shines is after the workout. Your metabolic rate stays elevated longer after the workout is over than steady state cardio. This increase in the metabolism is called excess post-exercise oxygen consumption or EPOC for short. That's right – this means you burn calories all day long *after* your workout is over (Imagine burning extra fat as you sit at your desk at work!)

That's the good news. The bad news is, the degree of EPOC is not as great as most people think. It's a myth that your metabolism stays elevated for 24 hours after a regular aerobic workout. That only happens after extremely intense and/or prolonged exercise such as running a marathon.

After low intensity exercise, the magnitude of the EPOC is so small that its impact on fat loss is negligible. Somewhere between 9 and 30 extra calories are burned after exercise at an intensity of less than 60-65% of maximal heart rate. In other words, a casual stroll on the treadmill will do next to nothing to increase your metabolism.

However, EPOC *does* increase with the intensity (and duration) of the exercise. According to Wilmore and Costill in "Physiology of Sport and Exercise," the EPOC after moderate exercise (75-80%) will amount to approximately .25 kcal/min or 15 kcal/hour. This would provide an additional expenditure of 75 kcal that would not normally be calculated in the total energy expended for that activity. An extra 75 calories is definitely nothing Earth shattering, but it adds up over time. In a year that would mean (in theory) you would burn an extra 5.2 lbs of fat from the additional calories expended after the workout.

Studies on the effects of HIIT have demonstrated a much higher EPOC for interval training than steady state training, which can add substantially to the day's calorie expenditure. In one study, scientists from the University of Alabama compared the effects

of two exercise protocols on 24-hour energy expenditure. The first group cycled for 60 minutes at a moderate intensity. The second group performed HIIT, cycling for two minutes at high intensity followed by two minutes at a low intensity. The group that performed the HIIT burned 160 more calories in 24 hours than the low intensity group. That means the HIIT group would burn an extra 11.8 pounds of fat in one year if they did HIIT five days a week instead of conventional training.

Ironically, weight training has a much higher magnitude of EPOC than aerobic training. Studies have shown increases in metabolic rate of as much as 4-7% over a 24-hour period from resistance training. Yes - that means weight training does burn fat – albeit through an indirect mechanism. For someone with an expenditure of 2500 calories per day, that could add up to 100 - 175 extra calories burned after your weight training workout is over. The lesson is simple: Anyone interested in losing body fat who isn't lifting weights should first take up a regimen of weight training, then – and only then – start thinking about the HIIT!

Two examples of HIIT protocols:

Standard Interval	**Ascending Interval (more difficult)**
Level 3: 5 minutes (warmup)	Level 3: 5 minutes (warmup)
Level 4: 1 minute (rest interval)	Level 4: 1 minute (rest interval)
Level 7: 1 minute (work interval)	Level 5: 1 minute (work interval)
Level 4: 1 minute (recovery interval)	Level 4: 1 minute (recovery interval)
Level 7: 1 minute (work interval)	Level 6: 1 minute (work interval)
Level 4: 1 minute (recovery interval)	Level 4: 1 minute (recovery interval)
Level 7: 1 minute (work interval)	Level 7: 1 minute (work interval)
Level 4: 1 minute (recovery interval)	Level 4: 1 minute (recovery interval)
Level 7: 1 minute (work interval)	Level 8: 1 minute (work interval)
Level 4: 1 minute (recovery interval)	Level 4: 1 minute (recovery interval)
Level 7: 1 minute (work interval)	Level 9: 1 minute (work interval)
Level 4: 1 minute (recovery interval)	Level 4: 1 minute (recovery interval)
Level 7: 1 minute (work interval)	Level 10: 1 minute (work interval max)
Level 3: 5 minutes (cool down)	Level 3: 5 minutes (cool down)

These are just examples of course; you'll need to adjust the workout based on your fitness level. You can adjust the duration of the intervals, the number of intervals performed and the difficulty level. You can perform similar workouts on almost any piece of cardio equipment. For fat loss purposes, the duration of each interval should be somewhere between 30 and 120 seconds and the total length of the workout is usually 12

to 20 minutes of intervals (not including the warm up and cool down). Your goal is to push yourself temporarily out of your

HIIT works, but it's not a panacea. What's most important for fat loss is that you burn a lot of calories. If your intensity is moderately high and you sustain a STEADY STATE workout for a long duration, you're likely to burn far more calories than a brief HIIT workout, even when the "afterburn" effect from HIIT is factored in. My advice is to use both forms of cardio training, focusing on total calorie expenditure and leaning towards HIIT when you're short on time. If you're stuck at a plateau, a change in cardio from regular steady workouts to intervals can often work wonders in helping you break through to the next level of leanness.

One last word of caution: HIIT is a advanced technique that is extremely taxing and challenging. This type of workout is not for beginners and you should get your doctor's clearance before attempting any type of extremely vigorous and high intensity cardio work such as HIIT.

"Cycle" your cardio training throughout the year to prevent overtraining and adaptation.

To avoid injury, over-training, loss of muscle and adaptation, your aerobic training should be cycled throughout the year based on your needs and goals at any given time. Doing cardio seven days a week month after month, year after year is unnecessary and will eventually lead to injury, over-training or burnout. It can also cause your body to adapt to the high volume of training. Aerobic adaptation almost always occurs if you continue doing daily cardio sessions for a long enough period. As you become more and more fit aerobically, the same workload becomes easier and eventually your body completely adapts to the workload. At this point, fat loss may come to a screeching halt. When it does, then the only way you can continue to lose fat is to add even more cardio. Before long, you may find yourself doing cardio twice a day just to maintain.

Aerobic adaptation syndrome often happens to aerobics instructors who teach two or three classes a day. Despite their extremely high energy expenditure, they sometimes have difficulty losing body fat because their bodies have grown so accustomed to the same routine every day.

To avoid adaptation and plateaus, you must alternate periods of high volume aerobic work with periods of low volume work over the course of a year. Bodybuilders do this naturally between pre-contest and off-season phases, and that's why they're able to reach peaks of extremely low body fat every year. Once you've achieved what you

consider an ideal weight and body fat percentage, don't continue with six or seven days per week. Three or four times a week usually does the trick to maintain your body fat at your desired level. On the other hand, if you quit doing cardio completely, body fat will tend to creep back on.

Progressive application of aerobic exercise

A beginner who has never worked out before should obviously start with a light workload and gradually build up. Three or four days a week for 20-30 minutes is fine as a starting point. You can then increase your frequency and duration as your results dictate. Build up slowly, but gradually increase your time so you're eventually doing 30 minutes or more if your goal is fat loss. Some people will lose fat easily with 4 days a week for 30 min, while others may need 45 - minutes a day, 7 days a week.

If you do daily cardio, alternate low-impact activities with high-impact activities.

One final suggestion: If you decide to do cardio six or seven days per week for fat loss, then it would be wise to alternate days of no impact or non weight-bearing activity with weight- bearing, higher impact activities. I don't recommend running six or seven days per week. Although many avid marathoners run long distances daily with no ill effects, doing so is more likely to result in overuse injuries and muscle loss. Mix up your cardio.

More is not always better: Do as much or as little aerobics as necessary to produce the result you want

From all my recommendations for frequency, intensity and duration, it may sound like I'm an advocate of always doing tons of cardio for fat loss. But that's not necessarily true. I'm an advocate of being *willing* to do as much as it takes for *YOU*. The results you get from your training are largely dictated by your genetics.

Depending on your body type, you may need more or less aerobic work than other people. Mesomorph or ectomorph body types with fast metabolisms may find that they begin losing body fat with only three or four days a week of cardio with only 20-30 minutes a session. On the other hand, endomorphic types with slow metabolisms may need cardio six or seven days a week in order see results.

If you can get lean with a bare minimum of cardio, then there's no point in doing more. In fact, ectomorphic types who are naturally thin and lean to begin with may find that they lose muscle by doing too much cardio. You should adjust your level of aerobic

work according to the results you get. Do as much cardio as is necessary to produce the desired results – no more, no less.

Recommended types of aerobic activity

Running/Jogging outdoors

Running or jogging is an outstanding cardiovascular workout and the fat burning potential is extremely high. An obvious advantage of running is that it can be done outdoors and doesn't require any equipment.

The only drawback is that running isn't appropriate for everyone and overdoing it can lead to injuries. Also, depending on where you live and what the climate is like, running outdoors may not be a viable or safe option

If you're a beginner, starting off with running may be too intense. Walking or using a cardio machine may be more appropriate until you become more fit. If you're extremely overweight or you have orthopedic injuries to the lower body, running is also not advisable.

Although running is an excellent calorie-burner, if your goal includes becoming more muscular, then running may not be your best choice. Running tends to have a reducing effect on the entire body, including on muscle size. If you examine the physiques of long distance runners, you'll find that they're all extremely thin, some almost to the point of looking emaciated. If you want to look like a runner, then train like a runner. If you want to look lean and muscular, then jogging or running should be used in moderation. Your best bet is that if you enjoy running, then do so, but cross training helps to avoid injury. By using a variety of different types of aerobic exercises, you can lose body fat and develop cardiovascular fitness without losing precious muscle or incurring orthopedic injuries to the lower body.

Walking

Walking is an ideal exercise to start a fat burning program if you're a beginner or if you've previously been sedentary. Walking is also excellent if you are overweight, older, or pregnant. Walking is natural. Anyone can walk. And anyone can walk for 30-60 minutes.

One problem with walking is that the fat burning potential is low to moderate unless you really push your pace and walk quickly. A casual stroll in the park or walking

around downtown between errands or shopping doesn't count as your "real workout." Walking to burn fat should be done at a brisk pace for a period of 30-60 minutes continuously.

Treadmill

Walking, jogging or running on a treadmill offers several distinct advantages over doing it outdoors. Advances in treadmill deck design now offer less impact because the decks flex and have more "give" to them, which lowers the injury potential. Treadmills offer continuous feedback on the electronic consoles including such features as time, speed, distance and even heart rate.

You can increase the fat burning potential by putting the treadmill on an incline. Most commercial treadmills elevate to 15%, which is a fairly steep uphill climb. Walking goes from a moderate fat burner to an excellent fat burner by walking uphill at a brisk pace. Using a treadmill also allows you to continue training despite poor weather or environmental conditions.

Stationary Upright Bicycle

Stationary cycling on an upright bike is an excellent mode of aerobic training for just about anyone. Because it's a no-impact activity, the potential for injury is low. Cycling doesn't require any special skills or coordination. Most stationary bikes offer several pre-programmed courses allowing you to remain on an even keel, ride uphill, or do interval training. You can increase the intensity by pedaling faster or by increasing the pedal resistance. Most bikes, such as the Lifecycle, offer a dozen levels of difficulty and they even have built-in heart rate monitors.

The fat burning potential for bikes is moderate to high. Because the exercise is non-weight bearing, you have to pedal quite vigorously to make cycling a good fat burner. Generally speaking, you'll have to get the rpms up to 70-90 and increase the resistance to maximize the fat burning effects.

One of the drawbacks of stationary cycling is that it can be somewhat monotonous. If you get bored easily, then bike somewhere where you can watch TV or read. (But keep in mind that it's not easy to read if you're pedaling at the proper intensity level). Using the interval programs can also make cycling more of a challenge and help you maintain your interest.

Stationary Recumbent Bicycle

Recumbent bicycling provides all the advantages of upright cycling with a few minor differences. Recumbent cycling is a more comfortable alternative to riding an upright bicycle because your lower back is supported. The ergonomically designed seat of a recumbent bike is sized and shaped perfectly to provide more comfort and support and reduce fatigue without interfering with your range of motion. This makes recumbent cycling the perfect choice if you have lower back problems, high blood pressure, if you're pregnant or overweight. The recumbent bike also targets the gluteal and hamstring muscles more than the upright bicycle because your feet are in front of you and you push the pedals forward instead of up and down.

Outdoor Cycling

In terms of fat burning potential, stationary bikes have one distinct advantage over outdoor cycling - you can't coast. On most battery-powered electronic bikes such as the Lifecycle, if you stop, the machine shuts off. With the immense popularity of mountain biking and cross-country cycling, many people prefer to be outdoors doing their cardio whenever possible. That's fine, but if you ride outside, remember - you must maintain a steady pace for this to count as a fat burner - otherwise it is more "recreation" than training. Push yourself continuously and outdoor cycling can be an incredible fat burner and an immensely enjoyable experience (no coasting!)

Elliptical machine

Elliptical machines first hit the gym scene in 1995, when the Precor EFX machine made its debut. Since then numerous other companies including Lifefitness, Stairmaster and Reebok have come out with their own versions of the elliptical machine in commercial and home models. In the brief time it's been on the market, the elliptical machine has become one of the most popular machines in the history of the fitness industry. The reason is because elliptical machines give you a fat-burning, aerobic conditioning, muscle-developing workout that's easy to learn, fun and entertaining. The no-impact elliptical striding motion removes stress on the knees and lower extremities, making it ideal for rehabilitating injuries and safer than aerobics classes or running outdoors.

On an elliptical machine you stride smoothly in a forward or reverse motion while holding the handrails or swinging your arms at your sides. The Precor model features a patented Cross ramp letting you vary the angle of the elliptical stride with the touch of a key, so you can target the muscles you want to emphasize during your workout. The

cross-training benefits of an elliptical machine with an adjustable ramp are unattainable on any other machine. As the stride changes, the motion targets different lower body muscles, simulating activities such as hiking, cycling, running, walking and cross-country skiing. Depending on the angle of the cross ramp and the direction of the striding motion, you can put slightly greater emphasis on your quadriceps, hamstrings, calves or glutes.

The fat burning potential of the elliptical machine is high to very high, but because it's self-paced, you must make a constant effort to maintain your speed (rpm's). Interestingly, many people report that their level of perceived exertion on the elliptical machine is lower than on other machines at the same heart rate. In other words, the elliptical machine feels easier at a heart rate of 150 than the Stairmaster feels at 150.

Rowing machine

Rowing is regarded by many fitness experts to be the most complete exercise ever. One advantage of rowing is that it works all the major muscle groups in the body, including the legs, buttocks, back, abdominals and arms. In addition, all the muscles involved are worked through a wider range of motion than most other exercises, allowing your muscles to stretch, and thereby increasing flexibility and joint mobility. Rowing is a safe, non-jarring impact-free activity and is ideal for rehabilitative exercise, although it's not a good choice if you have low back problems.

In addition to providing a muscular endurance and strength conditioning workout, rowing is also a superb aerobic workout and an excellent fat-burner. Because it involves the entire body, rowing burns more calories than almost any other type of aerobic exercise, making it an extremely effective fat burning and weight loss exercise if it's maintained for a long enough duration.

The only major drawback of rowing is that because it involves the whole body, it tends to be extremely exhausting, and many people can't maintain a long enough workout on the rower to achieve maximum fat burning. One way around this problem is to incorporate the rower into a circuit of cardio machines. For example, you could do fifteen minutes of rowing, followed immediately by fifteen minutes of jogging, followed immediately by fifteen minutes of cycling for a total of 45 minutes.

St**airclimbers**

Stairmasters and other stairclimbing machines provide an aerobic conditioning workout and they're also excellent calorie-burners, making them ideal for weight loss. Newer models such as the Stairmaster 4400 offer an upright rail-less design with handles in front to encourage an improved exercise posture for the best lower body workout of any stair-climbing machine. Leaning on the handlebars excessively lowers your heart rate

and reduces that fat-burning potential of the exercise. Stairclimbers also effectively target the glutes, quadriceps, hamstrings and calves.

Speed control buttons allow you to increase and decrease the intensity at any time during your workout. With over a dozen levels of difficulty, anyone from beginner to expert can use a stairclimber. There are several different workout programs, from a basic manual program to challenging hill and interval courses. The user-friendly console provides feedback and motivates you by displaying workout statistics including time, calories burned, miles traveled, floors climbed, step rate, relative intensity (METs) and power output (watts). In addition, many stairclimbers provide Polar-Heart Rate monitor compatibility. Stairclimbing is a very safe non-impact workout, although it may aggravate knee pain in those with pre-existing problems. The elliptical machine would be a better choice if you're nursing a knee injury.

Cross Country skiing

Like rowing, cross-country ski machines have a very high calorie and fat burning potential due to the fact that they involve the entire body. Another advantage is that because it is a no impact activity, the injury risk is low. One disadvantage is that using the cross country ski machine does involve a certain degree of skill and coordination. Because the learning curve is longer, many people get on once, feel clumsy and awkward and never get back on. This is unfortunate, because it's truly an outstanding aerobic exercise and a terrific fat burner.

Chapter 17: Weight Training For Fat Loss – Why Diet and Cardio Are Not Enough

"The fastest way to lose fat is with hard, heavy, to-failure weight training with 6 to 12 reps. Don't rely on aerobics exclusively."

- Chris Aceto, author of "Everything You Need to Know About Fat Loss"

"As you increase your lean body weight, your metabolism also increases, both during training and at rest. This is why dieting alone is not an effective means to losing fat."

- Fred Hatfield, Ph.D., author of "Bodybuilding, A Scientific Approach"

A short course in lifting weights for fat loss

You now know everything you need to know about goal-setting, nutrition and cardio to get as lean as you want to be. But we're not finished yet – there's one final piece to the fat loss puzzle: Weight training. It would be far beyond the scope of this single volume to teach you everything there is to know about weight training. Case in point: Arnold Schwarzenegger wrote a book about weight training called, "The Encyclopedia of Modern Bodybuilding" and it's 736 pages long with 850 photographs! Former Mr. Universe Bill Pearl also wrote a hefty volume on the subject with 638 pages called, "Keys to the Inner Universe." Pearl's book is so detailed, it has 151 exercises for the biceps alone!

Weight training is a deep subject and it would take another book (or two) to do the subject justice. However, no fat loss program would be complete without at least a brief discussion of why, when and how you should train with weights, because it plays such a critical role in getting leaner. With this in mind, there are four things this chapter will do for you:

1. Explain what weight training has to do with losing fat and why you can't succeed without it.
2. Dispel all the myths and answer all the most frequently asked questions about weight training and fat loss.
3. Give you not one, but four levels of training programs from beginner to advanced.
4. Conclude with an extensive list of excellent sources for weight training information so you can research the subject even further.

Why you need weight training to lose fat permanently

The focal point of the BFFM fat-burning system is nutrition. In fact, BFFM might be the most comprehensive nutrition system for fat loss ever developed. Although eighty percent of this program is about nutrition, that is only one component in a four part strategy, including: 1) goal setting and motivation, (2) nutrition, (3) aerobic training *and* (4) weight training. All four components are *essential*; neglecting any component is going to compromise your results.

No one really knows what percentage nutrition actually contributes to your results as compared to training - your guess is as good as mine. But one thing is for sure: To go on a diet without a *complete* exercise program including weights, cardio and a crystal clear goal is not only ineffective, it's a prescription for disaster. When you go on a calorie restricted diet and you don't do any weight training, you will almost always lose lean body mass. Weight training is the only way to keep your muscle while you're dieting for fat loss.

Metabolic synergism: The secret to multiplying your results by combining motivation, nutrition, aerobic exercise and weight training.

The secret to losing fat safely and permanently at the maximum possible rate is not weight training, cardio, motivational techniques or nutrition. The secret is the *combination* of all four. The effects of these four disciplines put together are far greater than the sum of their parts. That's called "synergism." Synergism means that 1 + 1 + 1 + 1 might not equal four, it might equal forty or four hundred! Each component of the BFFM program complements and enhances the others, resulting in progress that is exponentially faster than if you only used one or two of them in isolation.

How weight training helps you get leaner

Most people only associate weight training with building muscle and increasing strength. Few people realize the impact weight training has on fat loss. Here's why: Weight training increases your lean body mass. Increasing your lean body mass speeds up your metabolic rate so you burn more calories at rest – and the number of calories you burn at rest (your basal metabolic rate) is directly proportional to the amount of muscle you carry.

For example, if man weighs 176 pounds with a body fat of 19%, his lean body mass is 142.6 pounds and his basal metabolic rate is 1770 calories per day. Suppose he drops his body fat to 9%, and then he builds back up to 176 pounds, while maintaining

his bodyfat at only 9%. His lean body mass is now 160 pounds with a basal metabolic rate of 1940 calories per day.

He now burns 170 calories a day more than before, with no additional exercise or calorie restriction! He even burns more calories when he's doing absolutely nothing (even while he sits at his desk, watches TV or snoozes). Does an extra 170 calories a day make a difference? Well, let's do the math: There are 3500 calories in a pound of stored body fat. Three thousand five hundred calories divided by 170 extra calories burned per day equals an extra pound of body fat lost every 20.5 days, which adds up to 17.7 pounds of extra fat lost per year with no additional activity.

It's a common misconception that if you have a lot of weight to lose, you should lose the fat with cardio first before starting a weight-training program. Actually, the opposite is true; weight training always *accelerates* fat loss, although it happens primarily through an indirect mechanism. Muscle is metabolically active tissue that burns fat, and lifting weights builds muscle, therefore weight training must be a part of every fat loss program. This doesn't mean you need to look like or train like a bodybuilder, unless that's your goal. It simply means that weight training is equally as important as aerobic training even when your goal is fat loss. Aerobics by itself doesn't cut it.

Weight training by itself doesn't cut it either – weights and cardio work synergistically together for maximum fat loss without muscle loss

For years, weight training was like Rodney Dangerfield – it didn't get any respect. Weight lifters were viewed as weirdos or freaks. Athletes were encouraged NOT to lift weights. Even a few short decades ago, it was thought that weight training made you muscle bound, slowed you down and raised your blood pressure. At one time, even the medical establishment suggested avoiding weight training in favor of aerobic exercise.

Today, all world-class athletes do serious weight training. Every pro sports team has a strength and conditioning coach, and meticulously structured training programs have increased athletic performance to levels previously undreamed of. Physicians now recommend weight training for cardiovascular health, improved bone density and other health benefits. In 1990, the American College of Sports Medicine released a new position statement stating that weight training decreased cardiovascular risk factors and was actually good for your health all along. The bodybuilders had received their vindication!

It was great news for the bodybuilders when the scientific, medical and athletic communities began to support strength training, except for one thing. Many self-proclaimed strength training "gurus" are now taking the other extreme, suggesting that

weight training is the best exercise for fat loss and aerobics is some kind of evil muscle-devouring monster. Let me clear this up for the record – weight training is an important part of a fat burning program, but *weight training is not "the best" fat burning exercise*. The best way to burn fat is the *combination* of cardio, weights and nutrition, all directed towards the achievement of a specific, written goal.

The increase in resting metabolism that comes from weight training is not enough to get maximum fat loss for most body types. It's important to realize that the primary fat burning effect of weight training comes *after* the workout from the increase in BMR and from the increase in post-exercise metabolic rate. *During* weight training workouts, you are burning primarily sugar. The increase in post-exercise metabolism from cardio, on the other hand, is relatively small (with the exception of very high intensity cardio). Cardio provides the majority of the fat burning benefits *during* the workout, because aerobic exercise uses oxygen and is therefore fat-burning in nature. That's why immediately after every 30 minute cardio workout you could accurately say, "I am now leaner than I was a half an hour ago."

All calories burned will have an impact on fat loss because overall calorie balance is what really matters in the long run. However, it's my contention that sustained fat burning, oxygen-utilizing aerobic exercise is critical for fat loss – especially in endomorph body types. If you're the type of person with stubborn body fat, weight training alone is never going cut it.

BFFM is, by definition, a weight training, nutrition *and* aerobic exercise program. If you're not doing all three, and you don't have written goals, you're not following the program.

Fundamentals of lifting weights to lose fat: Answers to frequently asked questions

Now that you know exactly WHY you must lift weights to lose fat, the best way to tackle the sometimes-confusing subject of weight training is to answer all of the most frequently asked questions (FAQ's) first. We'll then set up an actual training routine for you – and you can even choose the routine that fits your schedule and level of experience best.

FAQ #1: Shouldn't I lose all the fat first, then start weight training later?

No, no, no, no, no!!!!! This has already been discussed, but it bears repeating over and over: If you diet without weight training, you're almost always going to lose muscle. If you lose muscle, your resting metabolic rate will decrease. If your resting metabolic

rate decreases, you burn fewer calories. If you burn fewer calories, you lose less fat and eventually plateau.

FAQ #2: What if I don't have time to do cardio and lift weights? Can I just do cardio?

If you're expecting me to give you some secret abbreviated routine, like "12 minutes a day to a better body," or some nonsense like what you read in the magazine ads these days, you've come to the wrong place. It's time for someone to cut through the crap and tell the truth about how much effort it takes to develop a great physique.

What most people *want* to hear is that you don't have to work hard; all you need is XYZ diet, pill, machine, routine or some other magic formula. What you *need* to hear is that there's a substantial time and effort commitment that must be made if you want a better body. To think otherwise is delusion or gullibility.

If you're a recreational lifter looking to lose a few pounds and "firm up", your time commitment for weight training might be as little as three days a week for thirty minutes a session. If you're aspiring to become a bodybuilder or fitness competitor, or just look like one, the time commitment will be substantially more. You don't get a body like Miss Fitness Olympia, Monica Brant, or Team Universe bodybuilding champion Skip Lacour from just "minutes a day" in the gym. Physiques of that caliber come from many hours spent in the gym – sometimes even two training sessions a day before competitions.

"I don't have time" is the #1 reason people have for why they can't fit everything in, but it's not a valid reason at all. It's an excuse made by lazy people. We all have the same 168 hours a week. We're all busy. But some people get in shape and some people don't. Why? Is it luck? Is it genetics? Of course not! People who successfully get lean and muscular –and stay that way – have made training a priority in their life. They MAKE time, even if that means setting the alarm an hour earlier every day or giving up an hour of television. Successful people use every hour wisely and never fritter their time away on unproductive and meaningless activities.

The truth is that you will *always* make time for whatever is most important to you in your life. If it's important for you to spend three hours at the bars every night, you'll make the time. If watching a TV show every night is important to you, you'll make the time. If reading a book a week is important to you, you'll make the time. If playing a game of hoops twice a week is important to you, you'll make the time. If being with a

loved one is important to you, you'll make the time. And if your health and appearance are important to you, you'll make the time.

You have to make training a top priority in your life. You're being honest with yourself if you say, "Training isn't that important to me," or "I'm not motivated right now," or " I choose not to spend that much time training," but you can NEVER honestly say, "I don't have time," because that's never a valid reason for missing workouts.

The average person in the United States watches FIVE HOURS of TV per day! And yet those same people still use "no time' as their number one excuse for why they don't work out. Many of my coaching protégés get up at four or five in the morning because it's the only time they can possibly train. The rest of their day is full with work and/or family commitments. You'll never "find" the time; you must "make" the time even if that means sacrificing in other areas.

FAQ #3: Do I have to join a gym or health club?

You can train anywhere you want. The major benefit of home training is convenience. If the time saving and convenience benefits of training at home help you stick to your training program better, then by all means, work out at home. However, the more advanced you become, the more you'll benefit from joining a health club.

As a gym owner and manager, I admit I'm showing my bias by saying everyone should eventually join a gym, but in a well-equipped club, the exercise possibilities are endless, the atmosphere is motivational and people are there to help you.

I started working out in my parent's garage at the age of 14 with nothing more than a barbell set, some dumbbells, an adjustable Joe Weider Bench, with a leg curl/leg extension attachment, a squat rack and an Arnold Schwarzenegger book to guide me. I worked out in that garage for the first six months, then I joined a gym and have been training in a well-equipped gym ever since.

If you decide to train at home, basic free weights are all you need to get started. You can perform hundreds, even thousands of exercises with nothing more than dumbbells. If you also get yourself a bench and barbell set and you clear out a little corner in your favorite room, you're ready to roll! If you want to get really fancy about your home gym set-up, the next pieces of equipment you want are (1) a cable-pulley machine with a low and high pulley, and (2) an adjustable squat rack or power rack.

FAQ #4: What if I don't want to get "bulky" or look like a bodybuilder?

Judging by how often I hear concerns about getting "too big," it's obvious that many people think building muscle mass is easy. Believe me, gaining muscle is far from easy. It's a long, difficult process for everyone except the most genetically gifted. It's even more difficult for women, who have less of the muscle-building hormone, testosterone. Despite my reassurance, almost 100% of the women I've coached (and some of the men) have still been worried about getting big "bulky" muscles. If this is a concern for you, let me put you at ease…

This fear of "getting too big" usually comes from seeing pictures of professional bodybuilders in the magazines. Almost 100% of professional bodybuilders take steroids and other anabolic drugs to get abnormally large muscle mass. If you've ever seen pictures of female bodybuilders with massive, masculine-looking muscles (and faces), the odds are good that they were using steroids, male hormones, or other muscle enhancing drugs.

Unless you're a "genetic freak" with a high mesomorph component, you're not going to get too big from weight training. You're also not going to wake up one morning and notice that you've sprouted massive bulk overnight. The process takes place slowly, and you're totally in control of how you want your body to look. If you ever reach the point where you have all the muscle you want, it's very easy to change your training and nutrition to maintenance.

FAQ #5: What if I stop lifting – won't the muscle turn to fat?

If you stop lifting, your muscles will shrink - partially or completely - back to their original size, but they will not *turn into* fat. Muscle can shrink (atrophy), but it can't *change into* fat because fat and muscle are two completely different types of tissue. If your muscles shrink from disuse and your body fat increases from eating too much, it can appear as if the muscles have "turned to fat."

Elite collegiate and professional athletes often practice, train and compete for hours every day, burning staggering amounts of calories. When their athletic career ends, their activity levels drop drastically. If they continue to eat the same amount of food they did while they were in heavy training, they instantly have a huge calorie surplus. The result is dramatic and rapid fat gain, which often leads unknowing observers to assume that the formerly muscular athlete "turned to fat" when they stopped working out.

The goal of the BFFM program is to help you develop a long-term perspective and new lifestyle habits, not to look at any changes you make as temporary. When you start the BFFM program, you're not making a commitment to exercise for 12 weeks or even 12 months, you're making the commitment for life. Don't EVER plan on stopping your weight training and you'll never have to worry about shrinking muscles and increasing body fat.

If your activity level ever does drop dramatically because of an injury or other reasons beyond your control, you must re-calculate your calories according to your new activity level and adjust your food intake.

FAQ # 6: I don't want to get muscle bound – won't lifting reduce my flexibility?

Weight training does not reduce flexibility; inactivity reduces flexibility. If you perform weight training exercises through the full range of motion, this will actually *increase* your flexibility (although not to the same degree as specific stretching exercises). Some particularly massive bodybuilders lose range of motion, but that's mostly due to their sheer bulk. However, there are also many male bodybuilders with massive muscles, weighing 250 pounds or more who can do full splits (you often see this at bodybuilding competitions as part of the posing routines). So much for the "muscle bound" theory.

If you still have any doubt about the effect of weight training on flexibility, attend or watch a video of a national or professional fitness show like the Fitness Olympia. The fitness competitors are among the most hyper-flexible athletes in the world, even though they train with weights every bit as hard and heavy as the bodybuilders.

For maximum flexibility, stretching should be performed in addition to your weight training. An easy way to fit stretching into your routine is to stretch in between sets. To maintain good flexibility, you should stretch three or four times per week. To increase flexibility to the maximum level possible, you need to stretch on a daily basis.

FAQ #7: Should men and women train differently?

For the most part, men and women should train the same. It's not uncommon to see books or programs about special types of training for women. Usually they use words like "sculpting," "shaping", or "toning." That's great for marketing to women, and if you want to use these words to describe your weight training program, that's fine. But technically, there's no such thing as "toning." You won't find this word in any scientific text. Muscle development is muscle development and it takes place in exactly the same

fashion in women as it does in men. The adjustments you should make to your training program have more to do with your body type and goals than with your gender.

For example, suppose you're an endo-mesomorph body type and you describe your body as "thick" but you want to get thinner and more streamlined-looking. In this case, you wouldn't want to follow mass building guidelines, which generally involve heavy weight, low to medium reps and long rest intervals between sets. Instead, you would use more moderate weights, slightly higher reps and/or shorter rest intervals. You'll learn more about the sets and reps that are best for you later in this chapter.

FAQ #8: How long should each workout last?

Your weight training workouts should not last more than one hour. The optimal workout duration is probably even shorter; around 45 minutes. Overly long workouts exhaust your nervous and endocrine system, decrease your levels of growth hormone and testosterone (anabolic hormones) and increase your level of cortisol (a catabolic hormone that breaks down muscle). If your workouts exceed 60 minutes, you should change your split routine, decrease your volume (number of sets, number of exercises) or decrease your rest intervals between sets. Most people can get excellent results with as little as 30-45 minutes of weight training per session. If you add 30 minutes of cardio at the end, your total workout time for the session is 60 to 75 minutes.

FAQ #9: Should I do my cardio and lifting in the same session or in separate sessions?

When you do your training is not nearly as important as just doing it consistently. Timing is a secondary and highly overrated factor. Don't lose sleep over this or get caught up in the arguments either way. However, if you're doing cardio and weights on the same day and your schedule allows it, it's probably ideal to split your cardio and weights into separate sessions (especially if you're interested in gaining muscle as well as losing fat). For example, you could do 30-45 minutes of cardio early in the morning and 30-45 minutes of weight training in the late morning, afternoon, or evening. This twice a day schedule has several potential benefits:

1) It allows you to get a meal quickly after your weights, which maximizes recovery and muscle growth (very important if muscle growth is one of your goals).
2) It gives you a double boost in metabolism instead of a single post exercise metabolic increase.
3) It allows you to get the benefits of fasted morning cardio (refer to back to chapter 16).

4) It gives you more energy for each individual session, instead of one long, energy-draining session. When you do weights and cardio together, whichever you do last tends to suffer because your energy levels start to decline.

5) It maximizes hormonal response to exercise for maximal fat loss and muscle growth.
6) It minimizes the possibility of overtraining.

Unfortunately, twice a day training isn't always practical. If two sessions a day doesn't fit into your schedule, then doing your cardio immediately *after* your weight training is also effective. The only drawback to doing weights and cardio in the same session is that the workouts can become very long and tiring; sometimes 75-90 minutes (for example, 45 minutes of weight training, followed by 30-45 minutes of cardio).

Some people are terrified about the possibility of losing muscle when doing these long sessions. Ironically, the worrying probably causes more muscle loss than anything! Worry and stress are highly catabolic. Instead of worrying, simply measure your body fat, chart your progress using the information you learned in chapters three and four and keep a close eye on lean body mass. As long as you're not restricting calories too severely, you'll probably discover that you maintain your LBM just fine.

FAQ #10: How often should I train?

Unless you're a genetic superior (pure mesomorph), I don't recommend training more than two days in a row without taking a day off. If you work the same muscles intensely two days in a row or allow insufficient rest between body parts, your muscles can't repair the microscopic fiber damage. The result is lack of progress, overtraining and injury.

Recovery is the name of the game in building muscle. The goal is to train hard, then get your butt out of the gym and let the muscles rest. Your muscles don't grow *during* the workouts, they grow *after* your workouts – but only if you allow them enough time to recover. This is how weight training differs from cardio. When rapid fat loss is your goal, daily cardio can be beneficial. Weight training every day is *always* counterproductive.

Unless you're a serious athlete or competitive bodybuilder, three or four days a week of weight training is plenty to begin with. An advanced program is usually four or five days a week at most. Lifting more than five days per week is NOT recommended on the BFFM program, even if you're advanced and have been training for years.

There's no single ideal training frequency. How many days per week you train depends on your goals, your genetics, your level of experience and your weekly schedule. Here are some general guidelines:

BFFM Frequency guidelines:

Beginners:	Three workouts per week on nonconsecutive days, full body each workout
Intermediate:	Three or four workouts per week on two day split routine; half the body one day, half the next (each muscle group worked no more than twice per week)
Advanced:	Four or five days per week, on a three or four day split routine, each muscle group worked once every five to seven days.

FAQ #11: How many sets should I do?

There will probably be a heated debate over the ideal number of sets forever. Some experts argue for one set taken to absolute failure, while others argue for multiple sets. When I was a teenager, I read all the "one set to failure" training books and I followed their instructions to the letter. It didn't work. I got stronger, but there wasn't much difference in my physique.

The one set to failure philosophy is attractive to consumers because it's short and simple. After all, who wouldn't want to get more from doing less? It's also attractive to marketers because savvy businesspeople know that in general, human beings are lazy and always want a shortcut. By promoting a method that claims to give more results in less time, they sell more books or training courses and make more money.

If you look at the training programs of top physique competitors, you'll discover that nearly 100% of them use multiple sets on multiple exercises – usually two to three exercises for three sets per exercise (not counting warm ups). Arnold Schwarzenegger himself once said that back in his heyday, he and training partner Franco Columbo tried these abbreviated training methods and the results were very negative, so they quickly went back to multiple sets.

The BFFM program generally calls for three sets per exercise. Beginners are the exception. When you're first starting out, you should do one set your first week, two sets your second week, and then three sets your third week. After the third week, you would stay with three sets on a full body routine, one exercise per body part. If you're an intermediate on a two day split, you would move up to two exercises per body part and three sets per exercise for a total of six sets per body part. If you're advanced and you're using a three or four day split routine, you could perform as many as three exercises per

muscle group and three to four sets per exercise for a total of nine to twelve sets per muscle group.

Why three sets per exercise? There are scientific and practical considerations. From a practical standpoint, your objective is to keep your weight training workouts between 30 and 60 minutes. To do this, you simply adjust your volume (number of sets) according to the time you've allotted. From a scientific perspective, you simply cannot activate and fatigue enough muscle fibers to cause maximum growth with a single set. Studies looking at single set versus multiple set programs also found that multiple sets increased growth hormone and testosterone more, which provides a better environment for muscle growth and fat loss.

In general, you can't go wrong with three sets per exercise, but there are times when you might perform more. For example, the larger the muscle group, the more volume it can handle. The back and legs, being large, complex muscle groups, could easily handle four sets per exercise or up to twelve per workout on advanced programs. The bicep, on the other hand, is a very small, double headed muscle, which can be worked quite thoroughly with as few as 6-9 sets. Here are the general guidelines for sets on the BFFM program split routines:

<u>BFFM set guidelines</u>
<u>Advanced:</u>
Large muscle groups: 9 -12 sets per body part
Small muscle groups: 6 - 9 sets per body part

<u>Intermediate:</u>
Large muscle groups: 6 - 8 sets per body part
Small muscle groups: 5 - 6 sets per body part

FAQ #12: How many reps should I do?

The number of repetitions you use depends primarily on your goals. For example, athletes like football players would do a lot of training in the 3 – 5 rep range with extremely heavy weights for strength, while a bodybuilder would do more training in the 8-12 rep range with moderate weights for size.

For overall muscle development and fat loss, the majority of your reps should be performed in the 6-12 reps range. The basic rule is: If you can't perform at least six reps, the weight is too heavy and you should reduce it. If you can do 12 reps *easily*, it's time to increase the weight. Here are the general rep guidelines for the BFFM program:

BFFM repetition guidelines

Strength/Power	1 – 5 reps
Hypertrophy (size) & some strength	6 - 12 reps
Local endurance/ little size	12-20 reps
Abs & Calves	10-25 reps

One last thing you might be wondering: If the ideal rep range is 6 – 12, which is better, 6 reps or 12 reps? If your goal is strength, you would definitely want to do a fair share of training in the lower rep range (closer to six), whereas the 8-12 range seems to be ideal for size. However, the whole idea is to use a rep RANGE, not a single rep target. That's why the BFFM program recommends rep ranges, such as 3 X 8-12 (three sets of eight to twelve reps) instead of a single rep goal like 3 X 10 (three sets of ten). Giving yourself a RANGE helps you to know when its time to increase the weight and it helps you utilize the progressive resistance principle, which you'll learn about in FAQ #14.

FAQ #13: Will high reps help me burn more fat?

It's a myth that high reps burn more fat. In fact, quite the opposite it true. Remember what I said earlier about high lean body mass burning more fat at rest because of a higher BMR? Well, if that's true, then wouldn't you want to use the repetition range that builds the most muscle?

The actual performance of a repetition is not what burns the fat. Calories are burned with every rep, of course, but the fat burning effect from weight training comes into play after the exercise from the increase in post workout calorie expenditure (EPOC) and the increase in BMR from having more lean body mass.

Weight training burns the most body fat after the workout. Cardio training burns the most fat during the workout. The real fat burning value in weight training is the increased metabolic rate after the workout, which has nothing to do with the number of repetitions you perform. Building more lean mass increases your metabolic rate and keeping your reps in the six to twelve range is the most efficient way to build lean mass. Therefore, as Chris Aceto pointed out in the display quote for this chapter, six to twelve reps is the ideal rep range for fat loss.

FAQ #14: How many exercises should I do?

Some programs recommend only one exercise per muscle group. Others recommend as many as four or five exercises per muscle group. The best way to choose the proper number of exercises is according to your level of experience. The other important consideration is the amount of time you have. You should never perform more

exercises than you can fit into a 45 – 60 minute workout. With that in mind, three or four exercises per muscle is usually the upper limit and that's for advanced trainees and bodybuilders.

If you're a beginner, you'll be starting with just one exercise. As an intermediate, you'll do two exercises, and ultimately, you may do as many as three or four – seldom more.

BFFM Exercise guidelines

Beginner:	One exercise per muscle group/full body routine
Intermediate:	Two exercises per muscle group/ two day split
Advanced:	Three exercises per muscle group/three day split
Advanced II:	Three or four exercises per muscle group/four day split

FAQ #15: How long should I rest between sets?

As a general guideline, you should rest approximately one minute between sets. You might need slightly longer (90 to 120 seconds) for large muscle groups (legs, back) in order to recover and catch your breath.

Rest intervals also vary depending on your goals. If you're training for general fitness, you can't go wrong with 60 seconds rest between sets. If you're training for strength and power, increase your rest intervals to two to four minutes. If your goal is to decrease body fat, it may be beneficial to gradually reduce your rest intervals to as little as 20-45 seconds between sets as this will add an aerobic effect to your weight workouts and increase growth hormone release.

FAQ #17: How quickly should I raise and lower the weight?

Perform all your repetitions slowly and under control. The general guideline for rep speed is to take two or three seconds to raise the weight and three to four seconds to lower the weight. Never use a fast, jerky, or uncontrolled movement. Raising or lowering the weight too quickly uses momentum and takes the stress off the muscle you're trying to develop. It also increases the likelihood of injury. Some athletes train explosively, but unless you're involved in sport-specific training, make it a general rule to keep your rep speed controlled.

BFFM rep speed guidelines

2-3 second concentric (lifting the weight)
3-4 second eccentric (lowering the weight)

How quickly you lift and lower the weight is also known as "tempo." Tempo can be written in your training journal with a four digit "tempo prescription" as follows:

3020 tempo =
3 – eccentric (lowering weight)
0 – pause at the bottom (stretch position)
2 – concentric (lifting/raising the weight)
0 – pause at the top (contracted position)

FAQ #17: When should I increase the weight and/or reps? (Progressive Overload)

Pay close attention here: *Progression is the single most important part of any weight training program*. Progression means that you must challenge yourself to improve at every workout. The best method of progression is to increase the amount of weight you use. However, increasing weight is not the only method of progression. Any type of physical work you do that is above and beyond what you've done in the past will produce an adaptive response (you'll get stronger and/or more muscular). Your goal at every workout is to lift more weight, do more reps, lift the same amount of reps and weight in less time, or perform some type of workout or exercise you've never done before.

The biggest roadblocks to progression for most people are impatience and not keeping a training journal. Progression must be approached in a slow, steady and cyclical fashion. Progression occurs very slowly and is often done only one rep at a time. Sometimes progression even follows a pattern of two steps forward, then one step back.

Each time you start a new routine, you'll pick a weight that you know you can handle easily for approximately 6-12 reps. The starting weight may even feel a little on the light side. With each successive workout, you'll add reps and/or weight whenever possible. Obviously, it's not possible to add weight on every exercise at every workout indefinitely, otherwise you'd eventually be bench pressing 1000 pounds and squatting 2000 pounds. But that's ok: If you aren't ready to move up to a heavier weight, your goal is simply one more rep. When you reach the upper end of your rep range (usually 12 reps), then it's time to increase the weight. This system of increasing reps, then weight, is known as the double progressive system.

Here's an example of what workout progression on an exercise like the squat might look like over a period of two months:

245 lbs X 8 reps
245 lbs X 9 reps
245 lbs X 10 reps
245 lbs X 11 reps

245 lbs X 12 reps (goal achieved -time to increase)
255 lbs X 8 reps
255 lbs X 9 reps
255 lbs X 10 reps
255 lbs X 11 reps
255 lbs X 12 reps (goal achieved - time to increase again)
265 lbs X 8 reps

This is just an example, and seldom is your progression this linear. Sometimes you get stuck at the same reps, like when you're stressed, undernourished or sleep deprived. Some workouts, you're on top of the world and you jump up 3 or 4 reps at a clip. The example above is just meant to illustrate the principle.

On workout days when you feel strong enough to add weight, increase the weight in small increments. The problem with making large weight jumps at each workout is that you will plateau on your cycle much sooner. Sometimes you'll make fast progress and that's great, but other times you must be extremely patient and move up a rep at a time. In the example above, it took 11 workouts or about 8-9 weeks to move up 20 lbs – and that's fine! That's 115 pounds on your squat in a year! Be patient. Slow and steady wins this race.

Don't get too caught up in pre-planning your entire cycle of progression or getting too scientific about it. Sometimes trainers, books or articles make this topic of progressive overload and periodization seem incredibly complicated. It's not! Just observe the overall principle: Make your body do something - anything at all – that it's not used to doing and you will grow stronger and increase your lean body mass. That's what it's all about; that's the only "secret" in this entire game called bodybuilding. Just move forward in some way, shape or form at every workout; on at least one exercise.

The biggest mistake you could ever make (and it's a common one), is to repeat the same workout over and over again – this will only *maintain* your current condition, not *improve* it! You have to get out of your comfort zone and push yourself. Challenge yourself. Go into every workout with a mindset that you won't tolerate standing still; that you MUST move forward and make progress above and beyond the previous session. And don't hope for it – expect it!

It will help you with your progressive workouts if you add this to your goal and affirmation list: *"I don't go to the gym to maintain,. I go to the gym to improve. And if I want to improve, then today, I must beat my previous workout and do something I've never done before."* This mindset makes training extremely exciting. It makes you look forward to your workouts with an aggressive "I want to" attitude instead of a dragging your heels "I have to" attitude.

You should have a constant succession of little daily and weekly goals that keep you motivated. Never wing it. Always go into the gym knowing exactly what must be done each day. Use the visualization principle and see yourself doing it. Then do it. Move ahead. Move forward. Any little way will do. One rep at a time is fine; adding weight is even better.

FAQ #18: How hard should I train? (Should I train to "failure?")

How "hard" you work out or the amount of effort you put into your training, is also known as "intensity." If you've selected the proper weight, and you're training hard enough, the last two or three reps in your set should be difficult. You will often feel the pain of lactic acid buildup, also known as the "burn." This is not be confused with the pain of injury. The pain of the burn and muscle fatigue is actually considered by bodybuilders to be "good pain." If you complete your set of 6-12 reps and it felt easy (there was no burn or fatigue), then the weight was too light. You're babying yourself.

If you've selected the right weight, you should reach a point where you momentarily can't do another rep. That point is known in bodybuilding as reaching "failure." Whether you should push yourself this hard is another topic of great controversy. However, among champion bodybuilders and fitness competitors, there's no question – every set is taken to failure, or at least close to it.

I believe in training hard with high intensity, and that means often training to failure or just short of failure. I don't believe in stopping a set when I have three or four reps left in me. Push yourself – but push yourself safely and intelligently (use a spotter where appropriate).

Although most bodybuilders train to failure the majority of the time, there's one thing more important than going to failure - that is, progressive resistance. Just because you haven't gone to failure doesn't mean your workout was unproductive.

For example, suppose you do dumbbell chest presses for 3 sets of 8 reps with 50 lbs dumbbells. If you stop short of failure on those 3 sets, that's fine. But what you MUST do is perform at least 9 reps with 50 pounds on your next workout. Then your next workout, you must do 10....then 11...then 12. When you hit 12, you then go up to the 55 lb dumbbells and do 6-8 reps, then repeat the whole process. This is progressive resistance, and this, above all else is what makes muscles grow (and maintains muscle on a fat loss diet).

FAQ # 19: How do I choose my exercises?

Bill Pearl and Arnold Schwarzenegger's encyclopedia-sized books contain hundreds and hundreds of exercises. In fact, there are so many exercise variations, that if you wanted, you could change your workout every time you hit the gym and never repeat the same routine twice.

Most exercises, however, are simply variations on a few basics, and it's the basics that are the most effective. These include exercises such as free weight squats, lunges, rows, chin ups and presses. It's the basic exercises that tend to be the most difficult, so most people shy away from them and gravitate toward the easier exercises such as machines and "isolation" cable movements. This tendency towards the path of least resistance will short circuit your results.

Regardless of whether you're just starting out or you're a competitive bodybuilder, you should emphasize the basics. What's different between beginning and advanced training is the number of exercises, how many sets, the amount of weight used and the level of intensity, not the choice of exercises.

Naturally, you should vary your exercises regularly and the possible choices are nearly infinite. However, if I were going to choose the 5 best basic exercises for each muscle group, they would include the exercises listed in the chart below.

Here is "Tom's Top 5 List:"

Quads	**Hamstrings**	**Calves**	**Abs**	**Back**
Squats	Lying leg curl	Standing calf raise	Crunch	Barbell rows
Leg Press	Stiff leg deadlift	Seated calf raise	Reverse crunch	Dumbbell rows
Lunges	Seated leg curl	Calf press	Hip lift	Chin ups
Hack Squat	Single leg curl	Donkey calf raise	Hanging knee-up	Pulldowns
Leg Extension	Hyper extension	One leg calf raise	Cable Crunch	Cable rows

Chest	**Shoulders**	**Biceps**	**Triceps**	**Forearms**
BB bench press	Military BB Press	Barbell Curl	Lying Tricep Ext.	Barbell wrist curl
DB bench press	Dumbbell Press	Dumbbell Curl	Close Grip Bench	Reverse wrist curl
DB flyes	Dumbbell Laterals	Preacher Curl	Tricep Pushdown	Reverse Curl
Wide Grip Dips	DB rear laterals	Concentration curl	Parallel Bar Dips	Hammer Curl
Cable Crossovers	DB front raise	Cable/mach. curl	French Press	DB wrist curl

There are many variations on these basics. For example, the bench presses can be performed on a flat, incline or decline bench. It can also be performed on a Smith machine or on weight stack equipment such as Cybex, Flex, Icarian or Life Fitness. The tricep French presses (behind head extension) can be done with barbells, dumbbells, cables or machines. Many exercises can be done unilaterally (one arm at a time), which is a great way to even out an imbalance if one side is stronger than the other. For more ideas on exercise variations, check the bibliography at the end of this chapter.

FAQ #20: What order should I do the exercises in?

In Steven Covey's Best Selling book, The Seven Habits of Highly Effective People, Covey's third habit is, "Put First Things First." The essence of this habit is to "organize and execute around priorities." In order to do this, you must know what your priorities are, which all comes back to the goals you set in chapter one.

The basic rule of prioritizing your exercises is to focus on the areas that need the most work first, both cosmetically and physiologically. Most people do the opposite, emphasizing their favorite exercises first while neglecting the ones they don't enjoy. For example, calves are a typical "blow off" muscle. They are often left for last in a routine and then blown off. Chest is often over-emphasized while the upper back and lats are neglected. This, along with poor form, is one of the most common causes of injury and muscle imbalance. Always train every muscle group and put the ones that need the most emphasis first, even if you don't enjoy training them as much.

Another general guideline for exercise order is to perform your large muscle groups (chest, back, shoulders) before the small muscle groups (biceps, triceps). If you exhaust your triceps first, then go on to chest or shoulders, you'll find that your pre-fatigued triceps prevent you from getting an efficient chest or shoulder workout. If you train your biceps before your back, your pre-exhausted biceps will limit your back workout.

FAQ #21: How long should I stay with the same workout program?

You should change your routine the minute it stops working – whether that's in three weeks or in three months. Your goal should be noticeable, visible results on a weekly basis. When you stop seeing results, or the results slow to a crawl, it's time for something different.

You don't necessarily have to change the *entire routine,* but *some new stimulus* must be put into the program or you're not likely to make further progress. Changing

often is also a good idea for adherence because it helps prevent boredom and lack of motivation. New routines keep things interesting.

The frequency of change is different for everyone - it depends on how long you've been training and what your goals are. When you're a beginner, you can make progress on the same workout routine for a long time. The more advanced you get, the more quickly your muscles adapt.

Advanced bodybuilders can adapt to a training routine in as little as 3-5 weeks. Strength coach Charles Poliquin says, "Any training program is only as good as the time it takes to adapt to it." Poliquin recommends that advanced trainees change routines every six workouts.

On the other hand, you don't want to change too often because this fails to provide any continuity. It's more efficient to "milk" each routine for all its worth, then change, than it is to change every workout at random (although some successful bodybuilders change routines nearly every workout – using the "muscle confusion" principle).

FAQ #22: Should I train my abs every day to lose fat?

Training your abs every day doesn't burn more fat! In fact, abdominal training has NOTHING to do with fat loss! Fat loss comes from nutrition and cardio. Abdominal training develops the muscle underneath the fat but doesn't remove the layer of fat on top of the muscle. It's entirely possible that you could have a GREAT set of abs that are completely covered up with fat, so you can't see them! On the BFFM program, you will train your abdominals just like any other body part, or at the most, twice per week. If you want to add a second ab workout, you can squeeze it in on your non-weight training days or at the beginning or end of one of your weight training workouts.

FAQ #23: Do I have to warm up or stretch before I lift?

Although experts bicker back and forth about the value of warm up (as they do with nearly every training variable), my advice is to avoid lifting weights cold. This seems more like common sense than anything (like something your mother would tell you!) Think of warm up this way: If you drop a rubber band in a glass of ice cold water, then pull it out and stretch it, it will snap in two very easily. If you put a rubber band in a glass of warm water it will become more elastic and stretch much further without snapping. Your joints and soft tissues are very much like the rubber band; they are more elastic and less likely to be injured when they're warm.

There are two components to your warm up: General warm up consists of 5-10 minutes on a piece of cardio equipment. You know you're warm when you just begin to break a sweat. Next is the specific warm up. Do one or two light, non-fatiguing warm up sets at the beginning of each muscle group.

You don't need warm up sets for every exercise, just for every body part. The exception of course, is for heavy basic, compound exercises like squats. A pyramid structure is desirable for heavy exercises like squats because you wouldn't want to jump to your heaviest set first. The pyramid allows you to warm up before going heavy, and is also a good bodybuilding program because it works all repetition ranges starting with 12-15 reps and finishing with as few as 4-6 reps.

One last point: stretching is not the same thing as warm up. Stretching does not warm you up. In fact, stretching is better *after* you're warm, when your muscles are more elastic. That's why its better to stretch at the end of your workout or between exercises than it is in the beginning when you're cold.

FAQ # 24: What days of the week should I train?

On the BFFM program, you can have a lot of flexibility in your weekly training schedule; you can train on the days you want to train and rest on the days you want to rest. For example, some people prefer to have weekends off, while others like to have Mondays and/or Tuesdays off to avoid crowds at the gym. Either way is fine.

Suppose you choose one of the programs that require you to train four days per week;. I'll give you some guidelines about how to structure your weekly schedule, but within those parameters, you can choose which four days of the week you train. (Generally, its best to break up your weight training so you don't lift more than two days in a row without a rest day).

FAQ #25: Should I train my entire body in one session, or split it up?

Split routines are almost always the most effective way to train. The more advanced you become, the more you'll need to split up your workouts and the more time you'll need between training each body part.

Training your entire body in one session is ok when you're a total beginner, but the longer you've been training, the less efficient these full body workouts become. A full body routine performed three days per week is probably the best way for a beginner

to start weight training, but it gets "old" fast. Within just months, you will outgrow it and you'll need to add exercises.

As you advance, you need additional exercises to work each muscle group completely. For example, a muscle like the deltoid has three heads, anterior, medial and posterior. For complete overall muscle development, you need to work all three heads. The problem is, the more exercises you add, the longer your workouts will become. If your workouts get too long, you reach a point of diminishing returns, and ultimately, the excessive duration has a negative impact on your results.

Split routines are the solution. A split routine allows you to perform multiple exercises on each body part without spending all day in the gym. Split routines also allow you to concentrate your mental and physical energies more efficiently. Training your entire body, or even half of your body in a single session is exhausting, mentally and physically. When you only have to work two or three muscle groups per session, you not only finish more quickly, but you can also give more energy and intensity to each muscle group. If you have to train too many body parts in one session, whatever you do last is going to suffer because you run out of energy.

FAQ #26: If I split my routine, which muscle groups should I train together?

There are more possible body part groupings for split routines than I have space to write about. If you want to learn some of the variations, I suggest looking into some of the excellent weight training books I recommend in the bibliography. However, here's an important guideline:

It's wise to place a large muscle group and small muscle group together instead of all the large muscle groups in one session. For example, if you trained multiple exercises on legs, back and chest all in the same workout, it would be terribly exhausting. If instead you did back, biceps and abs, you would have one large muscle group and two small muscle groups, which is a more efficient body part grouping, energy wise. Check out the sample split routines later in this chapter to see some recommended body part groupings.

The BFFM weight training programs

BFFM offers not one, but four separate programs, one for every level from beginner to advanced. Each program is simply a basic framework within which you can change exercises, sets, reps, tempos and every other training variable to provide all the variety you want and need.

Why four programs and not one? Well, as you learned in chapter five, individualization to accommodate your body type and genetics is just as important for training as it is for nutrition. No single program could possibly be ideal for everyone - be cautious when you read books or programs that recommend the same thing for everyone.

It's important to understand that these routines (especially the advanced programs), were designed with one thing in mind: cosmetic improvement. The BFFM program is first and foremost for improving your body composition and the way you look. These workouts are designed to help you lose fat, gain muscle, and sculpt your body into a specimen of magnificent proportions. These are not sports specific programs nor are they strength or powerlifting routines. You will get stronger, but you will primarily improve your physique and secondarily increase your strength.

The beginners workout (Level 1): The full body workout

This is a very simple routine, but it's the ideal way for a first-timer to start. Why not start with a split routine? If you're ambitious, you certainly could do that, but beginners often have a difficult time remembering technique on 8 exercises, let alone the 16-20+ in a thorough split routine. Multiple exercises can also leave a beginner quite sore and overtrained. It's probably best to keep it basic in the beginning. Set up a simple routine you'll remember and stick to.

Beginners Workout, Variant 1: Three days per week (more aggressive)

Mon	Tues	Wed	Thur	Fri	Sat	Sun
Full body weights	Off	Full body weights	Off	Full body weights	Off	Off

Beginner's workout, Variant 2: Two days per week (more conservative)

Mon	Tues	Wed	Thur	Fri	Sat	Sun
Off	Full body weights	Off	Off	Full body weights	Off	Off

Beginner's workout: sample exercises

1. Bench press with dumbbells, barbell or machine (chest)
2. Dumbbell side lateral raise (shoulders)

3. One arm dumbbell row or lat machine pull down (upper back)
4. Dumbbell extension behind head (triceps)
5. Dumbbell Bicep curl (biceps)
6. Leg extension or lunge (thighs)
7. Standing calf raise (calves)
8. Lying leg curl (hamstrings)
9. Crunches (abs)

These exercises are just suggestions. Feel free to substitute any of these exercises for any others you find in the "Top 5" list. If you're just starting, do this routine for 2-3 sets of 8-12 reps per exercise, except calves and abs, where you can go up to 20-25 reps. Rest one minute between sets. You'll train your whole body in each workout, 2 -3 three days per week, non-consecutive days. Stay with this routine for at least your first three months of training. After three to six months, you'll want to add exercises and move up to a split routine.

The intermediate workout (Level II): The Two Day Split

The two day split is probably the most popular weight training program in use today. It's ideal for intermediate bodybuilders and recreational lifters of all experience levels because you can get very good results with only three days a week of training.

This type of split is generally considered an intermediate level workout. However, if you're not a competitive bodybuilder and you simply want to stay fit, healthy, lean and look good on the beach, then you could conceivably stay with this program indefinitely (although if your goal is to put on some serious muscle mass or compete in a physique competition, you'll definitely need to move up to a three or four day split eventually).

This two day split can be set up on a three day or four day per week program, depending on your schedule. The three day per week variant of this program may look familiar if you've read Bill Phillip's book Body For Life (BFL), because a two day split with three workouts per week is the BFL weight program. Mr. Phillips didn't invent this routine, of course, he simply popularized it – it's an oldie but a goodie.

BFFM two day split: body part groupings
Day 1: Chest, Shoulders, Triceps, Abs
Day 2: Legs, Back, Biceps, calves

Variant 1: Four day routine (more aggressive)

Works each muscle once every three to four days

Mon	Tues	Wed	Thur	Fri	Sat	Sun
Chest Shoulders Triceps Abs	Legs Back Biceps calves	Off	Chest Shoulders Triceps Abs	Off	Legs Back Biceps calves	Off

Repeat each week exactly as shown above

Variant 2: Three day routine (more conservative)

Works each muscle once every four to five days

Mon	Tues	Wed	Thur	Fri	Sat	Sun
Chest Shoulders Triceps Abs	Off	Legs Back Biceps calves	Off	Chest Shoulders Triceps Abs	Off	Off

Repeat following Monday picking up with day 2 workout

Intermediate workout: sample exercises

Chest, Shoulder, Triceps, Abs (Day One)

1. Flat Bench Press: dumbbell, barbell or machine (chest)
2. Incline Dumbbell flyes or pec deck flye machine (chest)
3. Seated Dumbbell or machine overhead press (shoulders)
4. Dumbbell side lateral raise (shoulders)
5. Tricep Pushdown (triceps)
6. Overhead tricep extension with dumbbell (triceps)
7. Crunches (abs)
8. Reverse Crunches (abs)

Legs, Back, Biceps, calves (Day two)

1. Leg Press machine (quads)
2. Leg extension machine (quads)
3. Lying Leg Curl (hamstrings)
4. Low back extension/hyperextension (lower back/hamstrings)
5. Pull-ups or lat pulldowns (lats/upper back)
6. Seated Cable Rows (lats)
7. Barbell curl (biceps)
8. Seated alternating dumbbell curl (biceps)
9. Standing Calf Machine (calves)
10. Seated Calf Machine (calves)

Each exercise should be performed for 3 sets of 8-12 reps, except calves and abs, which can be trained with higher reps. You will perform two exercises per body part for 3 sets of 8-12 reps each (calves and abs can go higher in reps).

Again, let me emphasize that this is considered an "intermediate" routine, but you could stay on this program indefinitely if you're getting good results. Once you're as lean as you want to be, if your goal changes to gaining muscle mass, you'll want to advance to a three or four day split (as long as you have six to twelve months of training experience under your belt).

The advanced workout (Level III): The Three Day Split

The first of the advanced training programs is the three-day split. A three-day split means that you subdivide your body even further over three days so you only have to work three muscle groups per session.

BFFM Three day split body part groupings:
Day 1: Chest, back, abs
Day 2: Quads, Hamstrings, Calves
Day 3: Shoulders, biceps, triceps

Variant 1: Two days on one day off (more aggressive)
Works each muscle once every four days

Mon	Tues	Wed	Thur	Fri	Sat	Sun
Back Chest Abs	Quads Hams Calves	Off	Shoulders Triceps Biceps	Back Chest Abs	Off	Quads Hams Calves

Repeat following Monday, picking up with day three workout

Variant 2: Two days on one day off, two days on two days off (more conservative)
Works each muscle once every five days

Mon	Tues	Wed	Thur	Fri	Sat	Sun
Back Chest Abs	Quads Hams Calves	Off	Shoulders Triceps Biceps	Back Chest Abs	Off	Off

Repeat following Monday picking up with day two workout

Chest, Back, Abs (Day one)
1. Flat Barbell Bench Press (chest)
2. Incline Dumbbell press (chest)
3. Cable Crossovers (chest)
4. Wide Grip pull up (back)
5. Seated cable rows (back)
6. T-Bar Rows (back)
7. Hanging Leg raises (abs)
8. Cable Crunch (abs)

Quads, Hams, Calves (day two)
1. Barbell Squats (quads)
2. Hack Machine squats (quads)
3. Lunges (quads)
4. Stiff Legged Deadlift (hamstrings)
5. Lying Leg Curl (hamstrings)
6. Standing Calf Machine (calves)
7. Calf press on leg press machine (calves)

Shoulders, Biceps, Triceps (day three)
1. Seated Dumbbell Press (shoulders)
2. Dumbbell Side Lateral Raise (shoulders)
3. Rear Deltoid Machine (shoulders)
4. Barbell Curl (biceps)
5. Seated Alternating Dumbbell Curl (biceps)
6. Hammer Curl (bicep/forearms)
7. Close grip Bench Press (triceps)
8. Lying Tricep Extension (triceps)
9. Rope pushdown (triceps)

Three-day split routines have a lot of flexibility built into them. Suppose you want every Thursday and Sunday off – you can do that; you simply train around your desired rest days; 3 on 1 off, 2 on 1 off. A three day split can also be performed 2 days on 1 day off if you want more recovery between workouts. It would be ideal to work each muscle at least once every 5-6 days, but if you're really pressed for time, you can even use a three day split every other day (Mon – Wed – Fri), which works each muscle once per week.

The advanced workout (Level IV): The four day split

This is the big daddy of all the routines – it's the program I use and personally endorse for bodybuilders or advanced trainees seeking muscle growth. I have never found a more effective muscle-building program for an advanced bodybuilder. To use this routine effectively, you need a solid base (at least a year or more of consistent training), you must be familiar with multiple exercises for each muscle group, and you need 4 - 5 days each week to train.

On the four day split, you only have to train two muscle groups per session (three at most if you count abs). This keeps your workouts brief and allows you to concentrate better and generate more intensity on each exercise (ideal for bodybuilding). Another advantage of working only two muscle groups per workout is energy conservation. Intense, heavy training is extremely energy consuming. If you work a large muscle group such as legs for multiple sets on multiple exercises, you're not going to have the energy left for two or three more body parts.

In full body workouts and even two-day splits, whatever body parts you do last get a half-hearted effort because of your fatigued state. You also tend to hold back on the initial exercises, (consciously or unconsciously) because you know you have a lot ahead of you. The result is that you don't train as hard as you would if you only had two body parts to work per session.

A final advantage of training only two muscle groups per workout is the excellent recuperation each muscle receives between sessions. As a beginner, you can recuperate very quickly because your workouts are not as intense. A beginner could easily hit the same muscle group after resting only 48-72 hours (once every two to three days).

The advanced trainee blasts each muscle with much greater intensity, breaking down more muscle fiber in the process. This requires at least 96 hours to recuperate, and most advanced bodybuilders allow 5-6 days (120-144 hours) before training the same muscle again.

BFFM Four day split body part groupings:

Day 1: Chest, Biceps, abs
Day 2: Back, Calves
Day 3: Shoulders, Triceps, abs
Day 4: Quads, Hamstrings

Variant 1: Two days on, one day off (more aggressive)

Works each muscle group once every six days

Mon	Tues	Wed	Thur	Fri	Sat	Sun
Shoulders Triceps abs	Back Calves	Off	Chest Biceps abs	Quads Hams	Off	Shoulders Triceps abs

Repeat following Monday, picking up with day two workout

Variant 2: Two days on, one day off, one day on, one day off (more conservative)

Works each muscle group one every seven days

Mon	Tues	Wed	Thur	Fri	Sat	Sun
Shoulders Triceps abs	Back Calves	Off	Chest Biceps abs	Off	Quads Hams	

Repeat same sequence every week

Shoulders, Triceps, abs

1. Military press (shoulders)
2. Cable Side lateral Raise (shoulders)
3. Bent over Rear Dumbbell Laterals (shoulders)
4. Straight Bar Pushdown (triceps)
5. Lying extension aka “skull crusher” (triceps)
6. One arm overhead dumbbell extension (triceps)
7. Cable Crunches (abs)
8. Reverse Crunches (abs)

Back, Calves

1. Reverse grip pull ups (upper back)
2. Seated cable rows (upper back)
3. One arm dumbbell rows (upper back)

4. Donkey calf machine raise (calves)
5. Seated calf machine (calves)

Chest, Biceps, Abs
1. Incline Barbell Bench Press (chest)
2. Flat Dumbbell Flyes (chest)
3. Pec Deck machine flyes (chest)
4. Standing Barbell curl (biceps)
5. Dumbbell Preacher curl (biceps)
6. Reverse Barbell Curl (biceps/brachialis/forearm)
7. Cable Crunches (abs)
8. Reverse Crunches (abs)

Quads, Hamstrings
1. Barbell Squats (quads)
2. Leg extension machine (quads)
3. Walking Lunges (quads)
4. Seated Leg Curl Machine (hamstrings)
5. Low back extension/hyperextension (lower back/hamstrings)

Bibliography and recommended reading

Because training programs always require continuous change, these routines are only a starting point and they should only be considered examples. Use these routines exactly as outlined if they suit you, otherwise, develop your own routines merely using these as templates. These routines are not meant to be static. Everything must change: exercises, intensity, sets, reps, rest intervals, exercise combinations, order of exercises, poundage and so on. The number of potential workout programs you can create using these acute training variables is literally infinite. There's no reason for you to EVER get stale or bored with your workouts.

Because program design is such a complex subject that cannot possibly be covered in the space of a single chapter, I'd like to close this section by giving you a list of excellent training resources. I urge you not only to re-read this chapter again and again, but to take up a serious study of the subject. As you begin your quest for further knowledge, read all the books with an open mind and never feel that you have to accept any one teaching completely or reject it completely. Take what you feel is relevant to you and your unique goals and body type and test it. Keep what works for you and throw away the rest. Put all the useful pieces together and ultimately you will develop *your own* training system! Here are some great places to start:

Recommended Bodybuilding & Training Book Bibliography

Get Buffed by Ian King (*Get this one first. This info applies to everyone*)
The Poliquin principles by Charles Poliquin (*Get this one next. Great source of advanced bodybuilding routines and techniques*)
Modern Trends in Strength Training by Charles Poliquin (*A technical look at sets & reps*)
Championship Bodybuilding by Chris Aceto (*Excellent! Get it! Study it!*)
Understanding bodybuilding Nutrition & Training by Chris Aceto (*also excellent*)
Keys to the Inner Universe by Bill Pearl (*Four Time Mr. Universe Bill Pearl has created the most comprehensive illustrated guide to weight training exercises in the world. Literally thousands of exercise variations*)
Brawn by Stuart McRobert (*best explanations of progressive training you'll ever find*)
Beyond Brawn by Stuart McRobert (*also outstanding; information dense, no glossy pics*)
Strength Training Anatomy by Frederick Delavier (*An absolute must for every beginner; great reference guide; keep it within reach*)
Science and Practice of Strength Training by Vladimir Zatsiorsky (*Very technical; heavy stuff*)
Power a scientific approach by Fred Hatfield (*read everything by Hatfield*)
Bodybuilding a Scientific Approach by Fred Hatfield (*ditto*)
Hardcore bodybuilding a Scientific Approach by Fred Hatfield (*ditto*)
Supertraining by Mel Siff (*a long and challenging read; worth the effort*)
Facts & Fallacies of Fitness by Mel Siff (*some things that might surprise you*)
Unleashing the Wild Physique by Vince Gironda (*Bodybuilding secrets you won't find elsewhere*)
High Performance Bodybuilding by John Parillo (*For the serious bodybuilder*)
50 Workout Secrets by John Parillo (*More info for the serious bodybuilder; an easy read*)
Encyclopedia of Modern Bodybuilding by Arnold Schwarzenegger (*Might be overtraining for some, but this is still the definitive source from the best of the best*)
Education of a Bodybuilder by Arnold Schwarzenegger (*more biography than training instruction, but get it anyway for the motivation*)
Body for Life by Bill Phillips (*Actually pretty good for beginners; just skip the supplement plugs*)
Designing Resistance Training Programs Fleck & Kraemer (*textbook and reference guide*)
Essentials of Strength & conditioning by Thomas Baechle (*textbook and reference guide*)
Target Bodybuilding by Per A. Tesch (*Enlightening, photographically illustrated look at which muscles are activated in each exercise*)
RIPPED 1, 2 & 3 By Clarence Bass (*nutrition and training info by Mr. 2% body fat himself*)

Fabulously Fit Forever by Frank Zane (*Three time Mr. Olympia's guide to staying lean and muscular at any age*.)
Keys to Progress by John Mcallum (*a complete collection of John McCallum's strength training articles. Written as dialogue; easy to read*)
Priming the Anabolic Environment by Will Brink (*Short, 128-page guide to nutrition and training; excellent info from a well known industry expert*)
Brother Iron, Sister Steel by Dave Draper (*Dave has an entertaining and readable style*)
Loaded Guns by Larry Scott (*Some very interesting, effective and little-known bodybuilding tricks from the first Mr. Olympia*)
Robert Kennedy (*too many books to list – man, he is one prolific dude!*)
Kinesiology of Exercise by Dr. Michael Yessis (*a bit dry and technical, but very good*)
Beyond 2001:New Approaches to Scientific Training (*very technical but excellent stuff you definitely won't find anywhere else*)
Super Squats by Randall Strossen (*the infamous 20 rep squat routine*)
Fitness and Strength Training for all Sports by Hartmann and Tunnemann (*weight training for sports; best appreciated by athletes, strength coaches and personal trainers*)
Science of Sports Training by Thomas Kurz (*Strength training for sports; not bodybuilding*)
Awesome Abs by Paul Chek (*47 page guide to scientific ab training – learn ab anatomy and physiology and you'll be less likely to get scammed*)
The Strongest Shall Survive by Bill Starr (*A classic oldie but goodie on strength training for sports and football*)
Weight training: A Scientific Approach by Stone & O'Bryant (*Technical and scientific. Excellent reference for the serious student*)

Conclusion

So many "experts" have dogmatic, narrow-minded opinions about training and there are so many conflicting opinions out there, that it's very easy to get overwhelmed and confused. The most important thing you can do is to avoid paralysis by analysis and just get your butt in the gym, working out *consistently*. Go into the gym with a goal, an intelligent plan and a pre-determined, written weekly schedule. Then gather feedback, record your progress and don't be afraid to fine-tune your program as you go (based *only* on your results, not on the fad of the day).

Never let yourself get caught up in the arguments about which training method is the best, because there is no single best way train. Just get started, use meticulous progressive overload, and don't ever stop. Action is always superior to analysis. Legendary bodybuilder Dave Draper put it best; "You guys can argue about training theories all you want… I'll be in the gym…. It's leg day."

Conclusion – The Journey is Just Beginning…

I want to congratulate you for coming this far. Did you know that 80% of the people who invest in books or audio courses for health, fitness or personal development never even read the book or listen to the cassettes? Unbelievable, but true! Many people won't even read this entire manual, let alone put the techniques to use.

Because you've invested the time and effort to study this life-changing material, you've already taken the first step towards the lean, fat free body you've always wanted. You've gained the knowledge and now you simply have to *apply it*. They say knowledge is power, but it's not, really. Knowledge *applied* is power!

You see, I haven't just written this course to entertain you or give you information. I've written this manual with the hopes of inspiring you to take the action necessary for you to develop the body you've always wanted… and to take action immediately. I urge you to take what you've learned and begin now! No, not even tomorrow! You should begin today, with your very next meal. You should start working out today, if you're not doing so already. I've noticed that nearly everyone I meet has a reason they want to put it off: They're waiting until New Year's when the holidays are over, or after the kids start school, or the first day of the month, or after final exams are over, or whatever – there's always some excuse to procrastinate. PLEASE! Don't wait!

You now have all the tools and information you need to begin working on a leaner, healthier, more muscular and attractive body today.

You've learned:

- The importance of goal setting; how to set goals…how to reach them
- Why diets don't work and how to avoid becoming one of the 95% who fail
- Why body composition is more important than body weight and how to accurately measure your body fat percentage.
- How to chart your progress and interpret the results.

- Why calories count and how to calculate your exact calorie requirements for losing fat as quickly as possible without going into starvation mode.

- All the secrets of meal frequency and timing to get your metabolism racing like a turbo charged engine.

- Everything you need to know about protein, carbohydrates and fat, including the truth about low carb diets.

- How much water to drink to keep your energy levels high and your fat burning machinery running smoothly.

- How to construct your own meals and menu plans.

- The truth about the supplement and weight loss industries and which supplements are actually worth taking.

- How much cardio you really need for maximal fat loss.

- Why weight training is critically important for fat loss.

Although I'm sure you feel eager to put all this knowledge to use and to reach your goals quickly, don't be impatient. Remember that the most rewarding part is actually in *getting* there, not in *being* there. As Cervantes said, "The journey is better than the inn." My friend, you can enjoy this journey.

Right here at your fingertips you have all the knowledge you need to begin your journey - and to begin it knowing for sure that you're doing it the right way. One of the reasons so many people procrastinate or give up is because they're tormented by uncertainty and self-doubts. Some people stay frozen with paralysis by analysis and never get started at all. They just keep reading, analyzing, studying and collecting information, but they never do anything. Other people do the right thing and begin taking action, but since they're not sure if they're doing it right, they second-guess themselves and quit or sabotage themselves.

Now that you have this material, you'll be able to start your program and follow through with an amazing sense of calmness, confidence and certainty. When the going gets tough and you look in the mirror and don't see anything changing yet, the one thing that will keep you going is the knowledge that you're using a proven plan that works. You'll know that it's just a matter of time before all the hard work pays off. Don't second-guess yourself by chasing after short cuts. Be patient and do this the right way.

Your hard work *will* pay off. There is perfect compensation in the universe. Everything you put in through effort, you will take out in rewards.

You won't have to embark on your journey alone, either. You'll be hearing from me regularly through the Bodybuilding and Fitness Secrets E-zine. If you ever change your e-mail address, make sure you re-subscribe at **http://www.fitren.com/listserv.cfm** so I can always stay in touch with you. As a BFFM owner, you'll also be receiving free updates, extra newsletters and special offers from me that no one else will get. To make sure you get all the updates to future editions of BFFM, e-mail me directly at **tvenuto@fitren.com** if your e-mail changes and tell me you're a BFFM owner.

I'd like it very much if you'd stay in touch with me. Whether you want to share a comment or personal experience, ask me for suggestions or advice, or take it to the next level and become a protégé in my personal coaching or e-mail mentoring programs, please e-mail me. Visit the Fitness Renaissance website regularly and contact me any time at **tvenuto@fitren.com.**

Last but not least, absolutely, positively, contact me in three months, then again in six months and again in a year to tell me how you're doing! I want to hear your success story and I'd love to get a testimonial from you about how the BFFM system has helped you. Maybe you could inspire others with your success story the way I have, hopefully, inspired you.

I congratulate you and salute you and I'm look forward to a lasting friendship.

Warmly,

Your friend and coach,
Tom Venuto

APPENDIX

NUTRITIONAL VALUES QUICK REFERENCE CHART

Lean Proteins

Food Item	Qty	Calories	Protein	Carbs	Fat
Chicken Breast, skinless	4 oz	196	35.1	0	5.1
Turkey Breast, skinless	4 oz	178	33.9	0	3.7
Beef, ground extra lean	4 oz	265	21.1	0	19.3
Beef, top sirloin	4 oz	229	34.4	0	9.1
Beef, top Round	4 oz	214	35.9	0	6.7
Tuna, water packed	4 oz	120	26	0	1.0
Salmon, Atlantic	4 oz	206	28.8	0	9.2
Swordfish	4 oz	176	28.8	0	5.8
Cod	4 oz	119	25.9	0	1.0
Lobster	4 oz	111	23.2	1.5	0.7
Shrimp	4 oz	120	23	1	2.0
Protein Powder, Whey	2 scoops	180	35	4	3.0
Egg whites	6	102	21	1.8	0.0
Egg, whole	1	75	6.3	0.6	5.0
Turkey, Grnd, extra lean	4 oz	120	28	0	1.0

Fruit

Food Item	Qty	Cal	Protein	Carbs	Fat
Apples	1	81	0.3	21.1	0.5
Banana	1	105	1.2	26.7	0.6
Canteloupe	1/2	94	2.3	22.3	0.7
Grapefruit	1/2	46	0.6	11.9	0.1
Grapes (seedless)	10	36	0.3	8.9	0.3
Jelly, all fruit (no sugar)	2 tbsp	80	0	20	0
Nectarine	1	67	1.3	16	0.6
Peach	1	37	0.6	9.7	0.1
Pear	1	98	0.7	25.1	0.7
Plum	1	36	0.5	8.6	0.4
Orange	1	65	1.4	16.3	0.1
Orange Juice	8 fl oz.	110	0.5	27	0
Raisins	1/4 cup	130	1.0	31	0.5
Raspberries	1 cup	62	1.2	14.2	0.6
Strawberries	1 cup	46	1.0	10.4	0.6
Watermelon (diced)	1 cup	50	1.0	3.6	0.2

Complex Carbs (Starchy)

Food Item	Qty	Calories	Protein	Carbs	Fat
Bagel, plain, whole wheat	1	150	6	33	1
Bread, whole wheat	1 slice	80	2.5	14	1
Bread, rye	1 slice	80	3	16	1
Potato, white	1 lg (8oz)	210	4.4	49	0.2
Potato, sweet	4 oz	136	2.1	31.6	0.4
Oatmeal, old-fashioned	1/3 c unckd	100	5	16	2
Cream of Rice	1/4 c unckd	170	3	38	0
Cream of Wheat	1 oz/1 pckt	100	3	21	1
Lentils	1/2 c ckd	115	9	20	0
Black eye peas	1/2 c boild	99	6.6	17.7	0.4
Pita, Whole wheat	1	170	6	35	2
Beans, Kidney	1/3 c ckd	75	5.1	13.5	0.3
Pasta, whole grain spelt	1 oz (dry)	95	4	20	0.7
Pasta, whole wheat	1 oz (dry)	105	4.5	20	1
Rice, Brown, "success"	1 c cooked	150	4	40	0
Rice, Wild	1 c cooked	166	6.5	35	0.6
Shredded Wheat	1 cup	144	3.6	33.4	1.4
Kashi cereal	3/4 cup	120	8	28	1
Yam	6 oz	180	4	41	0.2

Complex Carbs (Fibrous)

Food Item	Qty	Calories	Protein	Carbs	Fat
Asparagus	10 spears	40	4	6	0
Broccoli	1 cup	46	4.6	8.6	0.4
brussel sprouts, boiled	1 cup	60	4	11.6	0.4
Cauliflower	1 cup	60	4.8	13.6	0.8
Carrots	1	31	0.8	7.3	0.1
Collard Greens	2 cups	36	1.6	8	0.4
Corn	1/2 cup	89	2.7	20.6	1.1
Cucumber	1 cup	16	0.6	3	0.2
Green Pepper	1 cup	24	0	6	0
Green Beans	6 oz	50	2	12	0
Kale	2 cups	56	4	11.6	0.8
Lettuce	2 cups	20	0	6	0
Onion	1 cup	54	2	12	0
Mushrooms	1 cup ckd	42	3.4	8	0.8
Salsa	4 tbsp	16	0	4	0
Spinach	1 cup ckd	42	5.4	6.8	0.4
Peas	1/2 cup	57	4	10	0
Tomato	1 med	24	1	5	0

Dairy Products

Food Item	Qty	Calories	Protein	Carbs	Fat
Milk, skim	1 cup	90	8	12	1
milk, 1% lowfat	1 cup	100	8	11	2
cheese, American, nonfat	2 slices	80	12	6	0
cheese, American, lowfat	1.5 slices	105	9	3	6
cottage cheese, 1% lowfat	5 oz	100	17.5	5	1.3
cottage cheese, nonfat	5 oz	100	16.2	7.5	0
cream cheese, nonfat	3 oz	90	16	6	3
sour cream, non fat	2 tbsp	20	2.5	2.5	0
Yogurt, 1% lowfat	8 oz (1)	250	9	50	2
Yogurt, nonfat	8 ox (1)	100	8	17	0
Yogurt, frozen, nonfat	1 cup	160	8	38	0

Fats

Food Item	Qty	Calories	Protein	Carbs	Fat
Olive Oil	1 tbsp	120	0	0	13.6
Canola Oil	1 tbsp	120	0	0	14
Sunflower Oil	1 tbsp	120	0	0	14
Safflower Oil	1 tbsp	120	0	0	14
Flaxseed Oil	1 tbsp	130	0	0	14
Peanuts	1/2 cup	428	17.3	15.7	36.3
Peanut Butter, natural	1 tbsp	100	3.5	3.5	8
Cashews	1/2 cup	394	10.5	22.4	31.7
Udo's essential oil blend	1 tbsp	134	0	0	14.2
Salad Dress., Italian	1 tbsp	82	0	2	9
Salad Dress., Bals vingr	t bsp	75	0	0.5	8
Salad Dress., light Italian	3 tbsp	12	0	3	0

Number of Fat Grams Allowable Daily For 10%, 15%, & 20% Fat Diets at Selected Caloric Intakes

Calories	10% (very low fat)	15% (low fat)	20% (moderate fat)
1200	13.3	16.6	26.6
1300	14.4	21.6	28.8
1400	15.5	23.6	31.1
1500	16.6	25.0	33.3
1600	17.7	26.6	35.5
1700	18.8	28.3	37.7
1800	20.0	30.0	40.0
1900	21.1	31.6	42.2
2000	22.2	33.3	44.4
2100	23.3	35.0	46.6
2200	24.4	36.6	48.8
2300	25.5	38.3	51.1
2400	26.6	40.0	53.3
2500	27.7	41.6	55.5
2600	28.8	43.3	57.7
2700	30.0	45.0	60.0
2800	31.1	46.6	62.2
2900	32.2	48.3	64.4
3000	33.3	50.0	66.6
3100	34.4	51.6	68.8
3200	35.5	53.3	71.1
3300	36.6	55.0	73.3
3400	37.7	56.6	75.5
3500	38.8	58.3	77.7
3600	40.0	60.0	80.0
3700	41.1	61.6	82.2
3800	42.2	63.3	84.4
3900	43.3	65.0	86.6
4000	44.4	66.6	88.8
4100	45.5	68.3	91.1
4200	46.6	70.0	93.3
4300	47.7	71.6	95.5
4400	48.8	73.3	97.7
4500	50.0	75.0	100.0
4600	51.1	76.6	102.2
4700	52.2	78.3	104.4
4800	53.3	80.0	106.6
4900	54.4	81.6	108.8
5000	55.5	83.3	111.1

Grams of Protein Daily For 25% - 50% Protein Diets at Selected Caloric Intakes

Calories	25%	30%	35%	40%	45%	50%
1200	75	90	105	120	132	150
1300	81	97	114	130	146	162
1400	75	105	122	140	157	175
1500	87	112	131	150	169	187
1600	100	120	140	160	180	200
1700	106	127	149	170	191	212
1800	112	135	157	180	202	225
1900	119	142	166	190	214	237
2000	125	150	175	200	225	250
2100	131	157	183	210	236	262
2200	137	165	192	220	247	275
2300	143	172	201	230	259	287
2400	150	180	210	240	270	300
2500	156	187	221	250	281	312
2600	162	195	227	260	292	325
2700	169	202	236	270	304	337
2800	175	210	245	280	315	350
2900	181	217	254	290	326	362
3000	187	225	262	300	337	375
3100	194	232	271	310	349	387
3200	200	240	280	320	360	400
3300	206	247	289	330	371	412
3400	212	255	297	340	382	425
3500	219	262	306	350	394	437
3600	225	270	315	360	405	450
3700	231	277	324	370	416	462
3800	237	285	332	380	427	475
3900	243	292	341	390	439	487
4000	250	300	350	400	450	500
4100	256	307	359	410	461	512
4200	262	315	367	420	472	525
4300	269	322	376	430	484	537
4400	275	330	385	440	495	550
4500	281	337	394	450	506	562
4600	287	345	402	460	517	575
4700	294	352	411	470	529	587
4800	300	360	420	480	540	600
4900	306	367	429	490	551	612
5000	312	365	437	500	562	625

Grams of Carbs Daily For 25% - 55% Carb Diets at Selected Caloric Intakes

Calories	25%	30%	35%	40%	45%	50%	55%
1200	75	90	105	120	132	150	165
1300	81	97	114	130	146	162	179
1400	75	105	122	140	157	175	192
1500	87	112	131	150	169	187	206
1600	100	120	140	160	180	200	220
1700	106	127	149	170	191	212	234
1800	112	135	157	180	202	225	247
1900	119	142	166	190	214	237	261
2000	125	150	175	200	225	250	275
2100	131	157	183	210	236	262	289
2200	137	165	192	220	247	275	302
2300	143	172	201	230	259	287	316
2400	150	180	210	240	270	300	330
2500	156	187	221	250	281	312	344
2600	162	195	227	260	292	325	357
2700	169	202	236	270	304	337	371
2800	175	210	245	280	315	350	385
2900	181	217	254	290	326	362	399
3000	187	225	262	300	337	375	412
3100	194	232	271	310	349	387	426
3200	200	240	280	320	360	400	440
3300	206	247	289	330	371	412	454
3400	212	255	297	340	382	425	467
3500	219	262	306	350	394	437	481
3600	225	270	315	360	405	450	495
3700	231	277	324	370	416	462	509
3800	237	285	332	380	427	475	522
3900	243	292	341	390	439	487	536
4000	250	300	350	400	450	500	550
4100	256	307	359	410	461	512	564
4200	262	315	367	420	472	525	577
4300	269	322	376	430	484	537	591
4400	275	330	385	440	495	550	605
4500	281	337	394	450	506	562	619
4600	287	345	402	460	517	575	632
4700	294	352	411	470	529	587	646
4800	300	360	420	480	540	600	660
4900	306	367	429	490	551	612	673
5000	312	365	437	500	562	625	687

Burn the Fat, Feed the Muscle
Carbohydrate Selection Chart

COMPLEX CARBS (polysaccharides)

FIBROUS

Natural

Best Choice

("Good Carbs")

Artichoke
Asparagus
Green Beans
Broccoli
Brussel Sprouts
Cauliflower
Spinach
Zucchini
Lettuce
Squash
Tomato
Green/red peppers
Mushrooms
Cucumbers
Celery
Carrots
Bamboo shoots
Alfalfa Sprouts
Cabbage
Eggplant
Collard Greens
Onions
Salad vegetables
Kale
Okra
Leeks

STARCHY

Natural

Best Choice

("Good Carbs")

Yams
Oatmeal
Barley
Cream of wheat
Cream of rye
Brown Rice
Corn
Sweet Potatoes
White Potatoes
Red potatoes
Rye
Lentils
Chick peas
Black eye peas
Green Peas
Millet
Legumes
Butter beans
Pinto beans
Kidney beans
Garbanzo beans
White beans
Lima beans

Refined

In moderation

("OK carbs")

Bread, whole grain
Bagels, whole grain
Pasta
Boxed whole grain cereals
White Rice
Muffins, whole grain, low fat
Whole grain pretzels
Low fat, low sugar breakfast bars
Low fat, sugar free cookies
Low fat potato chips
Low fat tortilla chips
Low fat crackers
Cream of rice
Grits

SIMPLE CARBS (monosaccharides & disaccharides)

Natural

In moderation

("OK carbs")

fruit (fructose)
dairy (lactose)

Refined

Worst Choice

("Bad carbs")

White sugar (sucrose)
corn syrup
high fruct. corn syrup
brown sugar
honey
molasses
Invert sugar
Maple syrup
Dextrose
Rice Syrup
Levulose
Turbinado Sugar
Beet sugar
Cane sugar
Confectioner's sugar
White bread & flour

BFFM

12-Week Personal Progress Chart

Week	Date	Bicep	Tricep	Illiac	Back	Sum SKF	Bodyfat	Weight Lbs.	Lbs fat	LBM	LBM chg	Fat chg	weekly wt. chg	total wt. chg
Start														
Week 1														
Week 2														
Week 3														
Week 4														
Week 5														
Week 6														
Week 7														
Week 8														
Week 9														
Week10														
Week 11														
Finish Week 12														

1600 calorie baseline (phase I) menu for women

Meal #1

Food Item	Quantity	Calories	Pro (g)	Carbs (g)	Fat (g)
shredded wheat cereal	1.5 cups	216	5.4	50.1	2.1
skim milk	1.5 cups	135	12	18	1.5
strawberries	1/2 cup	23	0.5	5.2	0.3
	Meal #1 Subtotals:	374	17.9	73.3	3.9

Meal #2

Food Item	Quantity	Calories	Pro (g)	Carbs (g)	Fat (g)
oatmeal, quaker oats	2/3 cup	200	10	36	4
egg whites (scrambled)	4	68	14	1.8	0
egg, whole (scrambled)	1	75	6.3	0.6	5
grapefruit	1/2 large	46	0.6	11.9	0.1
	Meal #2 subtotals:	389	30.9	50.3	9.1

Meal #3

Food Item	Quantity	Calories	Pro (g)	Carbs (g)	Fat (g)
brown rice	3/4 cup	154	3	30	0
chicken breast	3 oz	143	26.5	0	3.8
green beans	6 oz	50	2	12	0
	meal #3 subtotals:	347	31.5	42	3.8

Meal #4

Food Item	Quantity	Calories	Pro (g)	Carbs (g)	Fat (g)
salmon	4 oz	206	28.8	0	5.8
broccoli	1 cup	46	4.6	8.6	0.4
yams	4 oz	120	2.6	27.3	0.2
	meal #4 subtotals:	372	36	35.9	6.4

Meal #5

Food Item	Quantity	Calories	Pro (g)	Carbs (g)	Fat (g)
chicken breast	3 oz	143	26.5	0	3.8
light italian dressing	3 tbsp	12	0	3	0
Large mixed green salad	2.0 cups	40	0	10	0
	meal #5 subtotals:	195	26.5	13	3.8

Per Meal Averages:

Calories
335.4

Protein (g)
28.6

Carbs (g)
42.9

Fat (g)
5.4

Grand Totals:

Calories	Pro (g)	Carbs (g)	Fat (g)
1677	142.8	214.5	27
	Pro (cal)	Carbs (cal)	Fat (cal)
	571.2	858	243
	Pro (% cal)	Carb (%cal))	Fat (%cal)
	34.1%	51.2%	14.5%

This menu is only an example - it is not intended as a rigid prescription.

1600 calorie moderate carb (phase II) menu for women

Meal #1

Food Item	Quantity	Calories	Pro (g)	Carbs (g)	Fat (g)
oatmeal, quaker oats	2/3 cup	200	10	36	4
Whey protein powder	1.5 scoops	135	26.2	3	2.5
orange	1 med	60	0	15	0
	Meal #1 Subtotals:	395	36.2	54	6.5

Meal #2

Food Item	Quantity	Calories	Pro (g)	Carbs (g)	Fat (g)
oatmeal, quaker oats	2/3 cup	200	10	36	4
egg whites (scrambled)	4	68	14	1.8	0
egg, whole	1	75	6.3	0.6	5
	Meal #2 subtotals:	343	30.3	38.4	9

Meal #3

Food Item	Quantity	Calories	Pro (g)	Carbs (g)	Fat (g)
brown rice	3/4 cup	154	3	30	0
chicken breast	3 oz	143	26.5	0	3.8
green beans	6 oz	50	2	12	0
	meal #3 subtotals:	347	31.5	42	3.8

Meal #4

Food Item	Quantity	Calories	Pro (g)	Carbs (g)	Fat (g)
salmon	4 oz	206	28.8	0	5.8
broccoli	1 cup	46	4.6	8.6	0.4
	meal #4 subtotals:	252	33.4	8.6	6.2

Meal #5

Food Item	Quantity	Calories	Pro (g)	Carbs (g)	Fat (g)
chicken breast	3 oz	143	26.5	0	3.8
light italian dressing	3 tbsp	12	0	3	0
Large mixed green salad	2.0 cups	40	0	10	0
flaxseed oil (supplement)	1/2 tbsp	65	0	0	7
	meal #5 subtotals:	260	26.5	13	10.8

Per Meal Averages:

Calories
319.4

Protein (g)
31.6

Carbs (g)
31.2

Fat (g)
7.3

Grand Totals:

Calories	Pro (g)	Carbs (g)	Fat (g)
1597	157.9	156	36.3
	Pro (cal)	Carbs (cal)	Fat (cal)
	631.6	624	326.7
	Pro (% cal)	Carbs (%cal))	Fat (%cal)
	40.0%	40.0%	20.0%

1400 calorie low carb (phase III/contest) menu for women

Meal #1

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
oatmeal, quaker oats	2/3 cup	200	10	36	4
Whey protein powder	2 scoops	180	35	4	3
grapefruit	1/2 large	46	0.6	11.9	0.1
	Meal #1 Subtotals:	426	45.6	51.9	7.1

Meal #2

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
oatmeal, quaker oats	2/3 cup	200	10	36	4
egg whites (scrambled)	4	68	14	1.8	0
	Meal #2 subtotals:	268	24	37.8	4

Meal #3

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
chicken breast	4 oz	198	35.1	0	5.1
green beans	6 oz	50	2	12	0
	meal #3 subtotals:	248	37.1	12	5.1

Meal #4

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
fish, rainbow trout	4 oz	170	26	0	6.6
asparagus	10 spears	40	4	6	0
flaxseed oil (supplement)	1/2 tbsp	65	0	0	7
	meal #4 subtotals:	275	30	6	13.6

Meal #5

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
chicken breast	3 oz	143	26.5	0	3.8
spinach	1 cup	42	5.4	6.8	0.4
flaxseed oil (supplement)	1/2 tbsp	65	0	0	7
	meal #5 subtotals:	250	31.9	6.8	11.2

Per Meal Averages:

Calories
293.4
Protein (g)
33.7
Carbs (g)
22.9
Fat (g)
8.2

Grand Totals:

Calories	Pro (g)	Carbs (g)	Fat (g)
1467	168.6	114.5	41
	Pro (cal)	Carbs (cal)	Fat (cal)
	674.4	458	369
	Pro (% cal)	Carbs (%cal)	Fat (%cal)
	45.0%	31.0%	24.0%

This menu is only an example - it is not intended as a rigid prescription

2500 calorie baseline (phase I) menu for men

Meal #1

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
shredded wheat cereal	1.5 cups	216	5.4	50.1	2.1
Fat free ("super skim") milk	2 cups	200	20	28	0
grapefruit	1/2 large	46	0.6	11.9	0.1
	Meal #1 Subtotals:	462	26	90	2.2

Meal #2

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
oatmeal, quaker oats	2/3 cup	200	10	36	4
egg whites (scrambled)	4	68	14	1.8	0
egg, whole (scrambled)	1	75	6.3	0.6	5
banana	1 medium	105	1.2	26.7	0.6
	Meal #2 subtotals:	448	31.5	65.1	9.6

Meal #3

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
brown rice	1 cup	154	4	35	0
chicken breast	4 oz	196	35.1	0	5.1
broccoli	1 cup	46	4.6	8.6	0.4
	meal #3 subtotals:	396	43.7	43.6	5.5

Meal #4

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
salmon	4 oz	206	28.8	0	5.8
green beans	6 oz	50	2	12	0
Baked potato	6 oz	157	3.3	36.7	0.2
	meal #4 subtotals:	413	34.1	48.7	6

Meal #5

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
beef, extra lean sirloin	5 oz	286	43	0	11.3
asparagus	10 spears	40	4	6	0
yams	4 oz	120	2.6	27.3	0.2
	meal #5 subtotals:	446	49.6	33.3	11.5

Meal #6

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
tuna, water packed	4 oz	120	26	0	1
light italian dressing	3 tbsp	12	0	3	0
Large mixed green salad	2.0 cups	40	0	10	0
pita, whole wheat	1 pita	170	6	35	2
	meal #6 subtotals:	342	32	48	3

Per Meal Averages:

Calories
417.8

Protein (g)
36.2

Carbs (g)
54.8

Fat (g)
6.3

Grand Totals:

Calories	Pro (g)	Carbs (g)	Fat (g)
2507	216.9	328.7	37.8
	Pro (cal)	Carbs (cal)	Fat (cal)
	867.6	1314.8	340.2
	Pro (% cal)	Carbs (%cal))	Fat (%cal)
	34.6%	52.4%	13.6%

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This menu is only an example - it is not intended as a rigid prescription.

2300 calorie moderate carb (phase II) menu for men

Meal #1

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
barley flakes hot cereal	2/3 cup	220	8	51	2
egg whites (scrambled)	6	102	21	1.8	0
egg, whole (scrambled)	1	75	6.3	0.6	5
grapefruit	1/2 large	46	0.6	11.9	0.1
	Meal #1 Subtotals:	443	35.9	65.3	7.1

Meal #2

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
oatmeal, quaker oats	1cup	300	15	48	6
egg whites (scrambled)	4	68	14	1.8	0
egg, whole (scrambled)	1	75	6.3	0.6	5
	Meal #2 subtotals:	443	35.3	50.4	11

Meal #3

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
brown rice	1 cup	154	4	35	0
chicken breast	4 oz	196	35.1	0	5.1
broccoli	1 cup	46	4.6	8.6	0.4
	meal #3 subtotals:	396	43.7	43.6	5.5

Meal #4

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
beef, extra lean sirloin	5 oz	286	43	0	11.3
asparagus	10 spears	40	4	6	0
yams	4 oz	120	2.6	27.3	0.2
	meal #4 subtotals:	446	49.6	33.3	11.5

Meal #5

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
salmon	4 oz	206	28.8	0	9.2
green beans	6 oz	50	2	12	0
Baked potato	4 oz	105	2.2	24.5	0.1
	meal #5 subtotals:	361	33	36.5	9.3

Meal #6

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
tuna, water packed	6 oz	180	39	0	1.5
light italian dressing	3 tbsp	12	0	3	0
Large mixed green salad	2.0 cups	40	0	10	0
	meal #6 subtotals:	**232**	**39**	**13**	**1.5**

Per Meal Averages:

Calories
386.8

Protein (g)
39.4

Carbs (g)
40.4

Fat (g)
7.7

Grand Totals:

Calories	Pro (g)	Carbs (g)	Fat (g)
2321	236.5	242.1	45.9
	Pro (cal)	Carbs (cal)	Fat (cal)
	946	968.4	413.1
	Pro (% cal)	Carbs (%cal))	Fat (%cal)
	40.8%	41.7%	17.8%

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This menu is only an example - it is not intended as a rigid prescription.

2200 calorie low carb (phase III) menu for men

Meal #1

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
oatmeal, quaker oats	3/4 cup	225	11.3	36	4.5
egg whites (scrambled)	6	102	21	1.8	0
egg, whole (scrambled)	1	75	6.3	0.6	5
grapefruit	1/2 large	46	0.6	11.9	0.1
	Meal #1 Subtotals:	448	39.2	50.3	9.6

Meal #2

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
oatmeal, quaker oats	3/4 cup	225	11.3	36	4.5
egg whites (scrambled)	6	102	21	1.8	0
egg, whole (scrambled)	1	75	6.3	0.6	5
	Meal #2 subtotals:	402	38.6	38.4	9.5

Meal #3

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
yams	5 oz	150	3.2	34	0.2
chicken breast	4 oz	196	35.1	0	5.1
broccoli	1 cup	46	4.6	8.6	0.4
	meal #3 subtotals:	392	42.9	42.6	5.7

Meal #4

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
beef, extra lean sirloin	5 oz	286	43	0	11.3
asparagus	10 spears	40	4	6	0
	meal #4 subtotals:	326	47	6	11.3

Meal #5

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
salmon	5 oz	257	34.5	0	11.5
green beans	6 oz	50	2	12	0
flaxseed oil (supplement)	1/2 tbsp	65	0	0	7
	meal #5 subtotals:	372	36.5	12	18.5

Meal #6

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
tuna, water packed	6 oz	180	39	0	1.5
light italian dressing	3 tbsp	12	0	3	0
Large mixed green salad	2.0 cups	40	0	10	0
flaxseed oil (supplement)	1/2 tbsp	65	0	0	7
	meal #6 subtotals:	297	39	13	8.5

Per Meal Averages:

Calories
372.8

Protein (g)
40.5

Carbs (g)
27.1

Fat (g)
10.5

Grand Totals:

Calories	Pro (g)	Carbs (g)	Fat (g)
2237	243.2	162.3	63.1
	Pro (cal)	Carbs (cal)	Fat (cal)
	972.8	649.2	567.9
	Pro (% cal)	Carbs (%cal))	Fat (%cal)
	46.0%	32.0%	22.0%

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