



The ANABOLIC Diet

Dr. Mauro
DiPasquale



OPTIMUM TRAINING SYSTEMS

THE ANABOLIC DIET

by Dr. Mauro Di Pasquale



©1995 OPTIMUM TRAINING SYSTEMS

TABLE OF CONTENTS

ABOUT THE AUTHOR	1
INTRODUCTION	
DIETARY FAT IS NOT THE ENEMY	3
The Myth	3
The Anabolic Diet	3
The Primitive Diet	4
The Establishment Won't Like The Anabolic Diet	4
The Modern Bodybuilder	5
Anabolic Steroids	5
CHAPTER 1	
BENEFITS OF THE ANABOLIC DIET	
— MORE MUSCLE, LESS BODYFAT, AND IT'S ALL NATURAL	9
Physical Benefits	9
The Metabolic Advantage	13
Protecting Protein	14
Fat Is Not The Enemy	15
The Psychological Edge	16
CHAPTER 2	
HISTORY OF BODYBUILDING DIETS	
— CARBOHYDRATES AND THE BODYBUILDER	19
The American Diet	20
Cancer And Diet	20
The Bloating Of America	21
The Popular Bodybuilding Diet	22
Problems With Bulking Up/Cutting Down On Other Diets	22
Would You Rather Burn Muscle Or Fat?	23
Strength Level And Motivation Decreases	23
Protein Levels Drop	24
Inconvenience	24
Reluctance to Cut	24
Extreme Swings in Bodyweight	25
Minimal Lean Weight Gains	25

CHAPTER 3

THE ANABOLIC DIET—HOW AND WHY IT WORKS	27
Controlling Catabolism (Muscle Breakdown)	28
Getting Started	29
The Diet	30
What To Eat	31
The Best Diet	32
When To Eat	33
When To Eat Carbs	34
Experiment	34
Endurance Effects	35
Diet Phases	36
The “Sweet Tooth” Society	37
Don’t Mix Diets	37
The First Week Is The Toughest	38
Controlling Bodyfat	40
Mass Phase Duration Can Vary	41
Weekly Weight Gains	41
Experiment With Foods	42
Panic Attacks	43
Messing Up A Good Thing	44
Fluid Retention	44
Don’t Overdo It	44
1–2 Weeks Out	45
Countdown To Contest	45
Prejudging	47

CHAPTER 4

SUPPLEMENTATION — A NO-NONSENSE GUIDE	
TO WHAT TO TAKE, WHEN TO TAKE IT AND WHY	49
Lifestyle	50
Training	50
Why Supplements	51
The Multi-Vitamin	52
Increased Antioxidant Use	54
Protein	55
Free Form Amino Acids	56

The Formulas	56
Other Beneficial Supplements	59
Buffer Drinks	60
Omega-3 Fatty Acids	61
Stay Away From These	63
CHAPTER 5	
SPECIAL MODIFICATIONS—DOING IT YOUR WAY	65
The Midweek Carb Spike	66
Short-Term Loading On Weekends	66
Long-Term Loading On Weekends	67
Varying Calories	67
Extreme Variance	69
Low Protein Weekends	70
Increasing Calories Before A Contest	70
Follow That Instinctive Voice	70
Aerobics	71
The Contest	71
The Anabolic Diet As A Control Diet	71
CHAPTER 6	
SOME COMMON QUESTIONS	73
SAMPLE STARTER DIETS	79
SAMPLE 3,000 CALORIE DIET MENUS	80–86
SAMPLE 1,500 CALORIE DIET MENUS	87–93
CALORIE/CARBOHYDRATE CHARTS	94–98
REFERENCES	99

ABOUT THE AUTHOR

Mauro Di Pasquale has been a respected member of the international sports community for the last 25 years as an athlete, administrator and physician. Today he is one of the most influential voices on drug use in sports as well as one of the top experts in sports nutrition in the world.

He was a world class athlete for over 20 years, winning the World Championships in Powerlifting in 1976 and the World Games in 1981. During his athletic career he was also Canadian champion 8 times, Pan American champion twice, and North American champion twice.

It was as an athlete that Dr. Di Pasquale began the search for an alternative to performance-enhancing drugs that led him to the Anabolic Diet. Later, during his 8-year tenure as Chairman of the International Powerlifting Federation's Medical Committee, and his two-year tenure as Medical Director and Drug Program Advisor for the now-disbanded World Bodybuilding Federation (WBF), he continued work on the diet while developing the two Federation's drug testing protocols and procedures.

Today he serves as Medical Director and Drug Program Advisor for the World Wrestling Federation (WWF), and Medical Review Officer for the National Association for Stock Car Auto Racing (NASCAR).

Dr. Di Pasquale has published several books focusing on drug use and athletic performance, including Drug Use and Detection in Amateur Sports, Beyond Anabolic Steroids, and Anabolic Steroid Side Effects, Fact, Fiction and Treatment. He's also provided hundreds of articles on drug use, nutrition, and sports medicine to a variety of international magazines and journals.

As editor-in-chief of a new quarterly newsletter entitled DRUGS IN SPORTS, he continues to bring his message to the international sports community. DRUGS IN SPORTS is now publishing editions in English, Spanish and Italian.

His research and work in the areas of athletic training, performance, and the treatment of sports-related injuries have also won him praise from athletes, trainers and other researchers. He is a licensed physician in Ontario, Canada, specializing in Sports Medicine, and is certified in North America as a Medical Review Officer and a Master of Fitness Sciences.

Dr. Di Pasquale holds an honors degree in biological science, majoring in molecular biochemistry, and a medical degree from the University of Toronto. As an assistant professor at the university, he lectures on athletic performance and drug use in sports. He's also actively involved in hormonal research at the University of Toronto and Medical Forces Research Base.

DIETARY FAT IS NOT THE ENEMY

THE MYTH

You've heard it all before. Everybody from the American Medical Association to the media trendsetters to that so-called "expert" at your neighborhood gym has been saying the same thing for the last three decades: Fat is bad. Carbohydrates are good. If you want to get the body you've been working so hard for, you've got to focus on those carbohydrates and keep fat to an absolute minimum.

So you dedicate yourself to living by the percentages the Lords of Lowfat give you. 55 percent carbs. No more than 15 percent fat. You load up on turkey and chicken. You separate the egg whites. You surgically remove all visible fat from any piece of meat. You always broil. Never fry.

But you've been living a lie.

Fact is, the high carbohydrate diet favored by so many bodybuilders can actually work against them. They bulk up on all those carbs and end up packing on a tremendous amount of bodyfat. Then, when it's time to cut, too much muscle ends up being left in the gym along with the bodyfat.

Strength levels and personal motivation drops. You can become irritable. Maybe even depressed. By the time that contest you've been working so hard for comes around, you often look no better than you did for the last contest. You may look worse.

And that diet. To say it's inconvenient and strict would be a drastic understatement. In a world where eating makes up a great part of our social life, the regimen of a high carb diet can quickly make you a social outcast.

Not that you can't make progress toward your goals with a high carb diet. You can. Some. But you can also find yourself plateauing or even losing lean body mass. As you count down toward contest time, panic can set in. You take drastic measures to compensate for the state you're in and end up losing weeks of training.

So, why are you torturing yourself? Especially when there is an alternative that can pack on muscle while keeping bodyfat at a minimum. It's called the **Anabolic Diet** and, while it flies in the face of what most bodybuilders have been led to believe, it could be the answer to your prayers.

THE ANABOLIC DIET

Unlike the high carb diet that can work against the body's system of growth producing hormones, the Anabolic Diet maximizes the production and utilization of the Big 3 growth producers — testosterone, growth hormone and insulin — and does it *naturally*. It also shifts the body's metabolism from that of a sugar burning, fat producing machine to that of a fat burning machine. With the body packing on extra muscle and simultaneously burning both dietary and stored body fat, the bodybuilder finds himself twice blessed.

The Anabolic Diet stresses a high fat/high protein/low carbohydrate approach to nutrition.

Many in the general public will dismiss it out of hand, citing the popular beliefs that fat is a prime component in heart disease, cancer and obesity. Likewise, many bodybuilders have come to assume that dietary fat smooths the bodybuilder out and blurs definition.

But they couldn't be more wrong. Dietary fat, when utilized properly as in the Anabolic Diet, can be the key to growth and success. And while some will see the Anabolic Diet as a new, revolutionary, even dangerous approach to nutrition, its basics actually originated with the dawning of mankind.

THE PRIMITIVE DIET

First let's clear up a widely held misconception that ancient man was a herbivore who turned his nose up at all meat in favor of the available plant life. Current vegetarians often claim that their diet is the most natural and ancient known to man, in an effort to gain converts, but it's simply not true.

In fact, archeological evidence shows that man's earliest tools were put to use, at least in part, in the dressing of meat¹. In many areas, the diet of primitive man was made up almost entirely of animal products. The continued affection for meat demonstrated by the monkeys and apes that are our primate cousins today is also testament to early man's dietary preference.

There's a good reason for all this. It's called survival. Meat is a far superior source of amino acids than plant life. It's also high in vitamins A, E and B complex. Fat, whose benefits we will discuss throughout this book, is also readily available in meat and not in plants. Along with many other uses, including the fact that it's tasty and adds to the palatability of food, fat is necessary for proper breakdown and use of vitamins A, D, E and K in the body.

Meat is, indeed, one of the most nutritious substances on earth, and it's been held in high esteem by civilizations throughout history. It's even played a big role in religious ceremony. In the early days of recorded history, meat was offered to the prevailing Gods through "burnt offerings", and the Bible reports on feasts held in conjunction with these animal sacrifices.

So when we're talking about "natural" or "primitive" diets, we're not talking about the eating habits of vegetarians. We're talking about meat eaters who came to understand early the importance of meat in the daily diet. Man's earliest diet probably consisted mainly of meat, supplemented by periodic feedings of carbohydrates. It was only with the development of agriculture a mere 10,000 years ago that any large change was seen.

In the nearly 50 million years of man's existence before that, man was largely carnivorous and lived off animal flesh. At its crudest, this meat diet bears a strong resemblance to the Anabolic Diet we'll be providing you with. All we've done is taken this primitive diet and brought it into the modern age, making use of modern science to adapt it and perfect it for maximum health, fitness and development.

THE ESTABLISHMENT WON'T LIKE THE ANABOLIC DIET

But don't expect the Anabolic Diet to be hailed widely by major food industries in our society. Go down the aisles of any supermarket today and you'll see little but fancy carbohydrates on

the shelves. Meat is simple. It involves little more than butchering a cow. It's also very difficult to package for big profits. It wouldn't be in their interest to support it.

A similar situation exists with the supplement industry. They won't be happy with this diet because it doesn't require protein supplementation. You're already getting plenty of protein from all the meat you'll be eating. Likewise, the general supplements they tout will be of little use here. Though we'll be prescribing supplements to give you the edge in maximizing the Anabolic Diet's benefits, they will be of a high tech variety, specially designed for the needs of the bodybuilder dialed into the anabolic lifestyle. They'll be well beyond anything the generalists are presently offering.

Those modern day gurus of nutrition, who think that the quality of a diet should be measured in the torture it extracts on its users, won't be pleased with this diet, either. It's not torture. You'll be eating meat during the weekdays, supplemented by a wide variety of other delicious foods. And when the weekend comes, virtually anything goes.

While you may have to give up that lasagna or ice cream during the week, you can have it during the "carb loading" portion of the diet that comes every weekend. Unlike the high carb diets and others of its ilk, you aren't forced to give up your favorite foods forever on the Anabolic Diet.

THE MODERN BODYBUILDER

Although my approach to the high fat/high protein/low carbohydrate is new, it's interesting to note that an early form of the diet was favored by many bodybuilders back in the 1960's. It wasn't well refined at the time. Nor did it feature the critical aspects of hormonal manipulation and stimulation I've added. But it concentrated on meat consumption with very few carbs, and bodybuilders were pleased to find themselves maintaining maximum muscle with very little bodyfat.

In fact, the diet produced some huge men back in the 60s. They didn't have all the components of the diet perfected and didn't get the "super-ripped" look bodybuilders work for today but, nonetheless, the diet produced some big, big men. Unfortunately, the trendy diets stressing high complex carbs, high protein and low fat swept through the bodybuilding community so completely that these earlier experiments in a high fat approach were wiped out.

As often happens, the blinders went on to alternatives to the high carb movement, and the high fat diet was ignored by most people. I was the exception. I began working with the diet as an active powerlifter in the 1970s and used an earlier version of what you'll find in this book on my way to winning the world championship in powerlifting in 1976 and the World Games in the sport in 1981.

ANABOLIC STEROIDS

Soon after, the world of professional sports began their campaign against anabolic steroids. Strict drug testing began in the world class bodybuilding community, and the cry went out for some natural alternative to steroids.

By that time steroids had assumed their place as a "wonder drug" among bodybuilders and other athletes. Physically, steroids had been shown to have a remarkable effect on muscle growth and

strength. Psychologically, they provided users with an aggressive, contentious mindset very useful in competition and training. The fact that they swept through the bodybuilding and other sport communities where getting a competitive edge was so important to winning was not surprising.

Unfortunately, steroids were found to have some severe side effects. Moodiness and an unhealthy aggression toward others that could extend to violence (known as “roid rage”) were widely reported in sporting journals. Links to heart disease, liver cancer, kidney disease and sterility were also discovered. With the evidence mounting, there was little choice but to shut down their use in the international sporting arena.

It was into this void that I stepped with the high fat, Anabolic Diet I’d been working on. It was not an easy task. The World Bodybuilding Federation wanted their athletes to get clean but maintain muscle mass and stay cut up and in competition shape. This was a tall order.

One of the major problems was to get the hormonal systems of the bodybuilders back on track, producing testosterone naturally. This was very difficult because steroids shut down the testosterone-producing system in the body. The hypothalamic, pituitary, testicular axis (HPTA) ceases to function, and you may need to go to extreme measures to get your testicles working again. It often takes a long time to recover and, in some cases, a user may never recover and be doomed to treatment with artificial steroids or testosterone for the rest of his life.

Steroids can also make the athlete lazy. He’ll get growth with marginal training methods but find the road much tougher when he gets off steroids and has to do all the work himself. Anabolic diet or not, it may take him awhile to get back up to speed with proper training methods.

Then there’s the diet itself. Like any diet, if you don’t follow it, you’re not going to get results. Some bodybuilders who’d been cruising on steroids for a long time found it difficult to replace the ease of steroids with a diet which required some commitment.

Finally, some people chose to believe that a natural program could replace steroids immediately and offer the exact same results. There is no way this can occur. Over a short time period, no diet is going to replace steroids. But over the long term, the Anabolic Diet has proven to be a very effective alternative to steroids, providing the same kind of results without the “Russian Roulette” nature of steroid usage.

By 1990, I’d come out with my book, [Beyond Anabolic Steroids](#), and begun to provide articles for a variety of fitness and bodybuilding publications on the subject. The response to the Anabolic Diet was remarkable. In a world where steroids are a real gamble, both in terms of competition and health, the Anabolic Diet gave the bodybuilders who used it that natural edge they were looking for.

But I’m no “Just Say No” crusader in this area. Hysteria is not my stock in trade. Anabolic steroids do have their place. In fact, I’ve recently been involved in research testing steroids for use in AIDS patients. They could play a role in maintaining body mass and strengthening the immune system in these patients, thus allowing them to better resist the opportunistic diseases that are so deadly to them.

I also fully realize that steroids and other artificial means for growth and performance are still used widely in the athletic community. They give the athlete the edge he's looking for and, for many, they'll gladly risk their health and the sanctions that can come from steroid use for the performance benefits they can bring.

It should be pointed out that the Anabolic Diet can even be used in concert with steroids. You will get results. Indeed, you can do most anything with steroids and achieve some gains. But, though the Anabolic Diet will help you to some degree, your use of steroids will keep you from maximizing the endogenous anabolic hormones the diet seeks to stimulate.

Bottom line, the Anabolic Diet is meant for the natural athlete who wants to be the best he can be naturally. And, while it's much easier and convenient to stay on than the high carb diet, it will still require some dedication and the will to properly execute it. The key to success in the diet is to make sure you take your body through a "metabolic shift" where you'll begin to use dietary fat and bodyfat instead of carbs and muscle protein as the main fuel for your body. To do this, you'll have to follow the diet very closely, especially at the beginning.

The battle the drug-free athlete engages in is not an easy one. He must face up to drug-using and abusing competition and drug-based competitive standards in every contest. What the Anabolic Diet does is to give him the same kind of benefits the drug user obtains.

By introducing anabolic drugs or agents into his body, the drug user increases the circulating amount of anabolic hormones and compounds, which in turn produces the desired anabolic effect of muscle growth. The Anabolic Diet does the same thing. Only instead of introducing the anabolic substances from an exogenous source outside the body, the diet stimulates the production of anabolic hormones **IN THE BODY**. It's **LEGAL** and it's **SAFE**.

And, best of all, it's a **SURE THING**. If you follow the diet, **IT WON'T FAIL**. It may sound bizarre. It may counter everything you've ever been led to believe about diets, fat and carbohydrates. **BUT IT WORKS**. It is a biochemical inevitability. **YOU WILL** get the combination of increased lean body mass with less bodyfat you're looking for if you follow the diet properly.

And you'll get it naturally. Without the dangers of steroids.

Given the trials and tribulations most bodybuilders have experienced with their "diets," what more can you ask for from a nutrition program?

BENEFITS OF THE ANABOLIC DIET — MORE MUSCLE, LESS BODYFAT, AND IT'S ALL NATURAL

For more than 20 years the American public has been told to watch its fat intake or suffer the consequences. The national “fat hysteria” got so bad that back in 1989 the National Academy of Sciences advised everybody, regardless of the presence or absence of risk for coronary heart disease, to go on a restricted diet low in fat. The Lords of Lowfat loved this, and the food industry proceeded to take advantage of the situation, as they always do, and come out with a whole new line of “lowfat” or “fat free” products, many of which were neither.

Why groups such as premenopausal women and children, who are largely immune to coronary heart disease, should go on such a restricted diet was not explained. Meanwhile, other complex, interlinking causes of coronary heart disease like lack of exercise, obesity, stress, genetics and caloric intake went largely ignored. Fat was the culprit. Any possibility that dietary fat could be utilized in the cause of good health and physical performance was conveniently dismissed.

As a result, people began eating those carbs. They began watching what they ate. Above all, they became aware of the fat they were eating and did their best to avoid it like a plague. And, guess what? As a society we got fatter than ever. We’re getting fatter all the time. The heart attack parade hasn’t stopped. What’s wrong with this picture?

Meanwhile, bodybuilders didn’t seem to be getting the kind of growth they were looking for from all those carbs. Sure, they got big. But they also got fat. By contest time, they were most often right about where they’d been before they started the whole diet cycle. The siren song of steroids became ever more inviting.

But now, you’ve got an alternative. A healthy and effective one. It’s called the Anabolic Diet and it’s been striking telling blows against the Lords of Lowfat and getting bodybuilders the growth they want without all that added bodyfat. In this chapter we’ll outline the many benefits to be gained from the Anabolic Diet and begin to look at the reasons why it works. By its end, I don’t think you’ll be too tempted to return to the old grind of that high carb diet.

PHYSICAL BENEFITS

Increasing Lean Body Mass WITHOUT Anabolic Steroids: This is one of the real big advantages of the Anabolic Diet. As described in the previous chapter, the diet does many of the same things hormonally that steroids do, only naturally inside the body and without the risks.

Decreasing Bodyfat Without Sacrificing Lean Mass: Unlike the high carb diet, when you gain weight on the Anabolic Diet much less of it is bodyfat and much more of it is muscle. We’ve found that, far from what you’ve been led to believe, eating fat doesn’t lead to getting

fat. In fact, high dietary fat is instrumental in increasing lipolysis or the breakdown of fat¹ and the resulting loss of bodyfat. We've also found that the bodybuilder will maintain more lean body mass during the cutting phase of a diet.

On the high carb diet, if you exercise correctly and do everything else right, you'll find that when you lose weight, about 60 percent of it is fat and 40 percent muscle. You may get ripped, but you're much smaller than you could be. On the high fat diet, we've found those percentages go way down to 90 percent fat and 10 percent muscle, and that's a real boon for the bodybuilder who wants to maintain muscle as he cuts down. With the high fat diet, you get down to the weight you want but find yourself maintaining a lot more lean body mass. You're bigger and stronger.

Take two athletes, one on the high carb diet and one on the Anabolic Diet, have them gain 10 pounds, and you'll find the one on the Anabolic Diet gaining the larger percentage of muscle. Likewise, when you lose weight, the athlete on the Anabolic Diet will lose far less muscle than the athlete sold on high carbs. Which diet would you rather be on?

Feeling Stronger While Losing Bodyfat: This stands to reason. Strength is proportional to muscle mass. When you're on the high carb diet, sacrificing lean mass to get cut, you're obviously going to feel weaker. Because the Anabolic Diet cycles in a carb loading phase every week to stimulate insulin production and trigger growth, you also don't find yourself getting into the psychological doldrums you get following one diet all the way through each week. There's a variety in your diet, and this will aid you in being more energetic and committed than you'd be on the high carb diet.

Maximizing The Effects of Endogenous Anabolic Hormones: This diet maximizes the serum levels of testosterone, growth hormone and insulin to promote growth. It basically conditions your hormonal system to create an endogenous (natural) anabolic (growth producing) environment. It maximizes the effect of these 3 anabolic hormones 24 hours a day because, contrary to popular belief, you don't only build muscle after a workout but during a workout as well.

This isn't easy. Many hormones are reactive to others. For instance, as insulin goes up, growth hormone may decrease. If insulin decreases, growth hormone will increase. The two substances generally don't work together, but they can. If you can increase both substances, you'll get a better anabolic effect than with an increase in one substance alone.

Later we'll provide some supplements that you can use with the Anabolic Diet that will help in increasing insulin, testosterone and growth hormone as needed. You'll find 2 of our formulas to be targeted for use before, during and immediately after your workouts. This is especially important because of the decrease in serum testosterone and growth hormone that can occur during and after a workout.

At the cellular level in the body, you need the anabolic hormones elevated so they'll drive amino acids into the cell for protein formation. That's how you get growth. The Anabolic Diet, the weekly cycling it incorporates, and supplements will work to do this before, during and after your workout.

Increase In Strength: People on the Anabolic Diet often find that, as they're losing weight and bodyfat, strength increases. Most bodybuilders find this amazing. They know that when they lose weight, they're also losing muscle and strength. But with the Anabolic Diet, they're losing

far less muscle and that, in combination with the fact that their body is working in an anabolic environment, makes them feel stronger. They can't believe it as they watch the fat melt away while their strength increases at the same time.

Decrease In Catabolic Activity In The Body: The Anabolic Diet results in lower levels of cortisol, a hormone secreted by the adrenal glands that breaks down muscle (catabolism) and uses it for energy. The supplements we'll be recommending for use with the diet will also decrease muscle breakdown during and after the workout, while increasing insulin and growth hormone levels at critical times to promote an anabolic effect. Put simply, you'll be breaking down less muscle while adding more.



PHYSICAL BENEFITS OF THE ANABOLIC DIET

- Increasing Lean Body Mass Without Steroids
- Decreasing Bodyfat Without Sacrificing Lean Mass
- Maximizing The Effects Of Endogenous Anabolic Hormones
- Increasing Strength While Losing Bodyfat
- Decreasing Catabolic Activity In The Body
- Avoiding The Health Problems Of The High Carbohydrate Diet
- Staying In Shape Year Round Instead Of Peaking Once Or Twice
- Improving Contest-to-Contest And Year-to-Year/No Plateaus
- Endurance Increases

Avoiding General Health Problems Associated With The High Carbohydrate Diet: Carbohydrates will increase insulin levels and thus produce an anabolic (muscle building) effect when used properly. In the Anabolic Diet, we use a carbohydrate loading phase on the weekends to do just that. But when insulin is chronically high or yo-yo's up and down due to a diet consistently high in carbs, it becomes a lipogenic (fat producing) hormone and begins to lay down fat on the body, and plenty of it. That's why it must be controlled. You'll note that on the Anabolic Diet, the individual will increase carbohydrate consumption on the weekend only to the point when they begin to lay down fat. Then it's back to the high fat diet before any damage is done.

This is why you tend to lay down so much more fat on a high carb diet. With insulin uncontrolled, you lay down fat indiscriminately. The chronic elevation of insulin also tends to deposit that fat in the thighs and other fat-plagued areas of the body, causing the cellulite buildup that drives women especially crazy.

The increase in plaque buildup in the arteries that leads to heart attacks also appears to be a symptom of the chronically high carb diet. If you stay away from the simple sugars and junk food, you can limit the damage, of course. It would be hard to severely criticize someone who eats a lot of vegetables, salads and potatoes.

Still, all those carbs will lead to fat buildup unless you regulate it as we do in this diet. Carbs are only increased to the point that they will have a beneficial effect on lean body mass. By spiking insulin production through carb loading on the weekends, we can speed the movement of nutrients through the bloodstream and into muscle. Amino acids are driven into muscle cells where they can form the building blocks for protein and ultimate muscle growth. But before the insulin levels have been elevated too long and fat begins to be laid down in bulk, the carbohydrates are cut off and insulin brought under control.

Staying In Shape Year Round Instead Of Peaking Once Or Twice A Year. The Anabolic Diet allows you to stay in shape year round. It's not a diet where you bulk up and then cut body fat, and the process becomes so painful and difficult that you can't maintain the diet. As such, it's not one of those low-fat diets where you struggle mentally and physically all through the year and can't help but go on and off it out of sheer exhaustion and frustration.

The Anabolic Diet is a lifestyle. One that you can keep up year round. It's very comfortable because it's natural. It punctuates high fat periods with regular carb sessions in much the same manner as our ancient ancestors' diet.

You also don't give up anything on this diet. You can have that meat and cheese on the weekdays, and on the weekends load up with your favorite carbs. It's not torture like most other bodybuilder diets. You want to party and have a beer on the weekends? Go ahead. All foods are available, albeit at the right time of the week, on this diet.

Meanwhile, if used properly, this diet will allow you to keep your fat somewhere around the 10 percent level consistently, and cut to a 4–5 percent level as needed while maintaining lean body mass. There won't be those marathon cutting phases, and you'll find yourself getting into competition shape very quickly.

And, if you responsibly follow the diet and stay with it, each time you go through the cycle or complete your pre-contest phase, you should come in heavier and at least as cut as you were at the end of your last cycle. Instead of plateauing as so many bodybuilders do, **you'll improve contest to contest and year to year.**

Endurance Increases: We've also found that for many athletes, endurance actually increases on the high fat diet. Again, this runs counter to popular belief that exercise endurance is related to the amount of carbohydrate stored in the muscle, and that a low carb diet decreases performance.

In the high carb/low fat diet, the athlete begins training, and the glucose in the blood is used almost immediately. At that point, the glycogen or carbohydrate stores in the muscle are used for energy. After 15 minutes or so, they're gone too. At that point your body has to revert to burning fat or muscle for fuel. Unfortunately, when you're on the high carb diet, your body isn't very efficient at burning fat, and you end up burning about 50 percent protein (muscle) and 50 percent fat for your energy needs.

Once you've shifted over on the high fat diet, though, your body is primed to use fat for energy. Once the glycogen is gone, it will go primarily to those fat stores. Fat becomes almost like sugar to the body, and it will favor utilizing fat stores over muscle stores for energy. In this

way, less fat is stored by the body and more of it is used. The body is much less likely to make fat and more likely to burn it off. A higher percentage of lean body mass is the result.

In one recent study, it was found that rats adapted to a high fat diet do not have a decrease in endurance capacity, even after recovery from a previous exhausting workout. The increased storage and utilization of intramuscular triglycerides (fatty acids) seems to be at the bottom of this condition².

THE METABOLIC ADVANTAGE

Adenosine Triphosphate (ATP) is the source of all metabolic activity in the human body. In order to get the energy the body needs for muscle contraction, breathing, brain cell function and virtually all other activities, ATP must be generated. People have gotten the idea that you must have the glycogen and glucose that comes from carbohydrates for the body to produce and replenish ATP and survive.

What people don't understand is that protein and fat have their own mechanism for providing energy to the body and replenishing ATP. It's a misconception that you need carbs to function.

When carbohydrates make up the bulk of your diet, you basically burn the glucose from the carbs as energy. Glucose enters the body, and insulin is secreted by the pancreas to utilize it for immediate energy, or store it as glycogen in the liver and muscles. The glucose not stored as glycogen is made into triglycerides (bodyfat). When needed for energy, the stored glycogen is converted back to glucose and used up directly by a cell or transported through the bloodstream to other cells for conversion and use as energy.

When fat makes up the bulk of your diet, you don't have those large amounts of glycogen or glucose available for energy anymore. Most of your energy will come from the breakdown of free fatty acids from your diet or from the fat stored on your body. Instead of burning the stored glycogen or glucose for energy, the body burns free fatty acids or triglycerides (the storage form of the free fatty acids).

Basically, a diet high in fat activates the lipolytic (fat burning) enzymes in your body and decreases the activity of the lipogenic (fat producing) enzymes. Dietary free fatty acids and triglycerides become the body's main energy source. The triglycerides are broken down to free fatty acids and then ketones, a source that can be used for energy by body cells. The free fatty acids take the place of glucose, and the triglycerides act like glycogen.

When carbs are the main form of energy to the body, the body produces insulin to process it and store it. This is all well and good but, as we discussed above, one of the problems with insulin is that it activates the lipogenic (fat producing) enzymes on the body and decreases the activity of the lipolytic (fat burning) enzymes. What this leads to is an increased storing of body fat and a decrease in the amount of stored fat that will be burned.

The exact opposite occurs on the high fat diet. After undergoing the "metabolic shift" from being a carb-burning machine to a fat-burner, lipogenesis (the production and laying down of fat on the body) decreases, and lipolysis (the burning of both dietary and bodyfat for energy) increases. You're burning fat as your primary fuel, and instead of using glycogen or breaking

down precious protein, you'll burn off the fat on your body for energy as needed.

This can have a big effect on overall bodyfat, and research has now begun to document this effect. In one study of ideal-weight human subjects, it was found that high fat diets were accompanied by a very strong lipolytic (fat-burning) effect³.

In another study focusing on obese subjects, it was found that, when offered high carb/relatively low fat diets or low carb/relatively high fat diets, the subjects on the lower carb lost significantly more fat⁴. Though prevailing wisdom would predict that the high fat diet would simply make people fatter, **THEY ACTUALLY LOST MORE WEIGHT ON THE HIGH FAT DIET.**

It may sound crazy, but that's the way the body works. Once you've adapted to a high fat diet, fat doesn't beget fat. Despite what you've been told, **A HIGH FAT DIET DOESN'T PUT FAT ON. IT TAKES FAT OFF.**

Studies with other animals have produced additional eye-popping results. One study of hamsters found that a high-fat diet added weight while decreasing lipogenesis (fat build up). The hamsters gained large amounts of weight, but this weight was more from an increase in lean body mass than fat⁵.

In another study it was found that hamsters fed a high fat diet had lower lipogenic (fat producing) enzyme activity and less body fat content than low-fat-fed hamsters under both sedentary and exercise conditions⁶.

PROTECTING PROTEIN

One important by-product of the "metabolic shift" that takes place when you move from a high carb diet to the Anabolic Diet is that fat becomes a protector for protein in the body. When you're utilizing carbs as your main source of energy, the body will take muscle protein, break it down and form glucose from it to burn for energy, once immediate energy stores are exhausted. This is where catabolic activity (muscle breakdown) takes place. You'll be sitting there, happily working, and you're actually making your muscle shrink away as you do it. You're basically burning muscle to fuel your workout.

You won't get nearly this amount of muscle breakdown on the Anabolic Diet. Some muscle will be burned, but available fat will serve as an alternative to muscle as an energy source to a large degree.

Anytime you're exercising and the body needs energy, it will break down what it needs, including muscle, to supply that energy. One of the ways bodybuilders fight this is to sip glucose drinks during a workout. The body won't need to break down muscle as much for energy because it has an outside source of energy constantly coming in. Fat works in the same way when you're on the Anabolic Diet. It protects the muscle by serving as an alternative, more available source of energy.

It must be remembered that, along with anabolism (the buildup of muscle tissue) the bodybuilder is also very concerned with catabolism (the breakdown of this tissue). Research shows that the Anabolic Diet could well also be called the "Anti-Catabolic Diet." Along with enabling the body's hormonal system to better burn fat and produce lean body mass, it also

aids in decreasing the amount of muscle that could be lost during a workout or over the course of a diet phase.

Research has shown that the ketone bodies burned for energy in the Anabolic Diet, D-beta-hydroxybutyrate and acetoacetate, actually decrease protein catabolism.⁷ A recent study with laboratory rats also showed that a combined treatment with insulin, testosterone and a high fat/high protein diet led to decreased loss of muscle protein and growth caused by the catabolic hormone corticosterone.⁸ Another showed higher protein gains and lower fat gains for rats on a high fat diet.⁹ The implications for similarly decreased catabolism in humans through adopting the high fat diet are obvious.



METABOLIC BENEFITS OF THE ANABOLIC DIET

- Burning Fat Instead Of Glucose Promotes Lipolysis (Fat Loss)
- Burning Fat Instead Of Glucose Decreases Lipogenesis (Fat Production)
- Without Dietary Fat, The Body Stores Fat In Excess
- Muscle Protein Is Protected
- Bodyfat Is More Mobile And Pleasingly Distributed

FAT IS NOT THE ENEMY

People have a bad attitude about dietary fat, and its most often based on total mistruth. They think that if you eat fat, you get fat. That's what everybody in the media, medical, and food industry is telling them. Why question it?

The fact is, sometimes you've got to question authority. The reality is that the less fat you eat, the more your body will want to store it and pack it on when given the opportunity. Much of this comes from the chronic levels of high insulin caused by high carb diets discussed earlier. These chronic levels will really pack the fat on when present. The more carbs you eat, the more insulin you'll produce and the more fat you'll pack. Though it may sound crazy, the truth is that **YOU'LL GAIN MORE FAT WITH THE HIGH CARB DIET THAN THE HIGH FAT, HIGH PROTEIN VARIETY WE'RE GIVING YOU HERE!**

If you have no dietary fat in the body, the body wants to produce it. It anticipates disaster and wants to store it up as a hedge against hard times. The body is a conservative instrument, especially in matters of survival. What happens when you're on the Anabolic Diet is that the body recognizes it's got fat in abundance, and biochemically recycles it. If the body doesn't have it, it's going to lay down plenty of fat from the precious amount its given.

And if you want to lose fat, the high carb diet can't compete with the Anabolic Diet in any way. The high fat diet radically activates the enzymes for fat breakdown in the body. You become, basically, a fat burning machine and you'll use up the fat you've just ingested—and that already on your body—much more readily.

Another important aspect of the Anabolic Diet we've found is that **BODYFAT IS MORE**

MOBILE. Some people have depot areas of bodyfat. They're cellulite deposits or pockets of fat. What we've found so far on the Anabolic Diet is that what fat there is gets redistributed much more evenly on the body frame. There are no pockets or depot areas of fat.

I recently had a patient who had always had problems with large fat deposits on her buttock, inner thigh and lower abdomen areas. On the Anabolic Diet, she found herself losing fat evenly throughout the body and was quite pleased to see corresponding portions coming off areas that had never before responded. We don't know yet if this works universally, but we've seen it enough in other subjects to know that the Anabolic Diet will work this way on at least a portion of the population.

THE PSYCHOLOGICAL EDGE

Along with its many physical and metabolic advantages, the Anabolic Diet will also give you a psychological edge over the high carb diet. Diets, by their nature, are psychologically tough. Just the word "diet" itself is enough to send people running to the refrigerator for a soothing, reassuring mouthful of whatever it is they're not supposed to eat.

"Diet" implies sacrifice, of doing something that will be unpleasant. They can be almost impossible to stay on and, if you weren't already depressed by the diet itself, the fact that you find yourself giving up and abandoning it can really send you into a tailspin.

The Anabolic Diet is a whole new animal. Its many motivational and psychological advantages include:

Increased Energy: The hundreds of bodybuilders we've monitored on this diet have expressed great pleasure with the increased energy they seem to have with it. Whether there is an actual biochemical mechanism causing this, we don't know. But it's certain the success of the diet and increased strength play a role here.

Many people suspect that they'll experience a loss of energy on the Anabolic Diet because the body isn't getting glucose from carbohydrates anymore but, again, this just isn't true. The free fatty acids, triglycerides and ketones your body burns provides more than enough energy to get through a workout. Red meat is also high in creatine, which is one of the compounds that increases high energy phosphates in the body and the availability of ATP. There's no lack of energy.

Where you'll have an energy problem is when you're overdosing on carbs and, as we'll discuss later, increasing serotonin levels in the brain. Likewise, if you go back and forth between diets like some people have tried to do, the constant transitioning between high fat and high carb metabolisms will also really take it out of you.

Though the Anabolic Diet contains a carb loading component, it isn't of the duration necessary to return the body to a glucose burning metabolism. Like insulin, carbohydrates are controlled and manipulated in the Anabolic Diet to maximize growth benefits and minimize their drawbacks.

Decreased Mood Swings: Bodybuilders on the Anabolic Diet have also found themselves not experiencing the wide and chronic mood swings they suffer on other diets. We think this may have something to do with eliminating the chronic insulin swings you get on a high carb diet. It's common on the high carb diet to eat a high carb meal and find yourself feeling down for

awhile. Then, all of a sudden, you'll find yourself picking up again. Your moods run in cycles, up and down, on a constant roller coaster.

On the high fat diet, you don't have this kind of swing. You can eat a steak and then feel like running a mile. Contrary to what others may say, a meat meal doesn't seem to "set on your stomach." It's when the carbs are mixed with meat, as in a steak and potatoes meal, that the debilitating feeling of heaviness sets in and you end up on your way to the couch.

Again, our bodies were designed and evolved to process meat and use it for energy. The body has a very efficient method of burning fat. Unless you mix it with carbs, the high fat meal will find you ready to go rather than being stuck in the doldrums, looking for siesta time.

Stabilized PMS: As with mood swings, we've seen evidence that the Anabolic Diet may also limit the effects of pre-menstrual syndrome. Women who have great difficulty with moodiness and energy in the period just before and during menstruation have reported greatly lessened or even total cessation of these symptoms after making the "metabolic shift" to the Anabolic Diet.

It's Easier: Timing is all important on this diet. You may be limited in what you can eat at different parts of the week, but you can always satisfy a craving for any food during the appropriate time of the 7-day cycle. You can eat virtually whatever you want on this diet. You just have to eat it at the proper time.

Unlike other diets, **YOU DON'T HAVE TO GIVE UP YOUR FAVORITE FOODS ON THIS DIET.** Psychologically, you don't end up feeling like you're some kind of constantly sacrificing diet martyr.



PSYCHOLOGICAL BENEFITS OF THE ANABOLIC DIET

- Increased Energy
- Decreased Mood Swings
- Stabilized PMS
- Easy To Stay On
- No Need To Banish Favorite Foods Forever
- Sociability
- Convenience
- No Hunger
- Weekend Relief
- Builds Confidence

It's Social: One of the major problems with most diets is that they're anti-social. You're so restricted in what you can eat that, when you go to a party or other social function, you can find yourself putting other people off because of your special nutritional needs. You can't eat

what they do and you end up alienating them or feeling like an outcast. On the weekends on this diet, when most social activities take place, you're eating anything anybody else can eat. If you want to have pizza and beer, that's OK.

The Anabolic Diet is also very convenient, even if it's a weekday and you're on the road. Any restaurant you go to serves some kind of meat. Just order a steak and push away the fries. You can even go to McDonald's if you want. Just order that double quarter pounder plain, throw the bun away, put on some mustard and dig in.

No Hunger: Most people on a diet find themselves constantly thinking about food. When's my next meal? What can I eat? What can't I eat? They're famished. That doesn't happen on this diet.

With the Anabolic Diet, your body requires more calories to maintain itself. Even when losing weight, you're probably not going to be starving yourself as you would be on the high carb diet. You won't have those cravings where you want to eat 10 chocolate bars. Even if you're in an intense pre-contest cycle and really trying to cut bodyfat, you may get some hunger, but nothing like you'll get on the high carb diet.

Fat is more satiating. It will delay the onset of hunger. You feel fuller after you eat. This is probably because it doesn't increase insulin to a great degree. When you're on the insulin roller coaster with the high carb diet and your body notices blood sugar falling, it puts in an emergency call to EAT! That won't happen on the Anabolic Diet. You'll find yourself losing bodyfat and perhaps, for the first time in your life as a bodybuilder, you won't be famished.

It's Simple To Apply: On weekends, of course, you won't have to worry about the food you eat. Anything's fair game. During the week, things get a little tougher, but not much. All you have to remember is to keep your carbohydrates low. Anything else—bacon, ham, eggs, steak, cheese—go for it. There are no long charts. No recipe books. If you just keep your dietary focus on meat and eggs, you can't go wrong.

Again, meat is an amazing food. It's one of the best, most nutritious foods we have available. It has beneficial compounds no other food possesses. For day to day functioning, it can't be beat.

Weekend Relief: You aren't on a crusade here. The weekends allow you to eat the foods you may have been craving although, after being on the diet for awhile, you'll find yourself losing much of that craving for carbohydrates. In fact, when the weekend comes and Saturday morning hits, you may find yourself not really interested in carbs.

Still, once you get that first carb in you and the insulin rush begins, you may find yourself in love with them again. The love affair will pass, though. By Sunday, you're generally tired of all those carbs and more than ready to get back on the high fat, low carb part of the diet and leave the doldrums behind.

Builds Confidence: After being on the diet for awhile, you'll see all that muscle buildup and lost bodyfat and realize that, hey, this really isn't that difficult. Results breed confidence and confidence breeds results. Pretty soon you're on a steamroller headed straight for the body you've been dreaming of.

HISTORY OF BODYBUILDING DIETS — CARBOHYDRATES AND THE BODYBUILDER

It's not surprising that students of anthropology and world history have had some serious questions to ask about the Great Fat Scare of the late 20th century. A look at the Eskimo tribes inhabiting the Northern latitudes of the Earth from Greenland across Canada to Asia show several strong examples of people who have existed on high fat diets with relatively little incidence of atherosclerosis and heart disease.

For instance, the Greenlandic Eskimos have lived off a high fat diet consisting primarily of butter, cheese, meat and fish for most of their history. In fact, rent on land in some places was paid with butter. Yet no one keeled over on their way to the landlord. Heart disease was largely unknown until dietary changes caused by advancing Western civilization impacted them in recent decades.

In Canada and Alaska, a similar situation is found. In fact, the high fat diet and relative good health of the North American Eskimos has been the source of research focusing on the possible health benefits of fish oil that we'll be discussing later in this book.

In Finland today, the Finnish people still eat a diet including high levels of beef, veal, pork and sausage. Smoked reindeer is a delicacy. Butter and milk are freely ingested. Like their Northern neighbors above, they also eat plenty of fish. Yet, despite all this fat, coronary heart disease is not near the force it is in our country¹.

Then there's the "French Paradox" that has been getting so much attention in recent years. The French take great pride in their gourmet cooking and butter, cheese, ham, bacon, sausage and other foods high in fat predominate in their rich diet. Yet, despite all this fat, the French have somehow also avoided the widespread cardiovascular problems experienced in the United States². Since this totally contradicts the prevailing bias against dietary fat held in this country, there has been a clamor to discover just what it is that protects the fat-eating French from heart disease.

Much focus has been given to reports that phenolic constituents in the red wine the French love are responsible for the so-called "paradox." I think it's more likely that the French's reduced carbohydrate intake is responsible. There are far less refined sugars in the French diet, while sugar is in virtually everything on this side of the Atlantic. In fact, the refined carbohydrate consumption of Americans is five times that of the French.

It is difficult to trace down all the factors involved in cultural health variations, but it's likely that differences in carb consumption play a much larger role than has been previously suspected. Still, you can be sure that the anti-fat lobby will continue to look for alternatives to the obvious in an attempt to justify their fat prejudices.

THE AMERICAN DIET

The American love affair with refined carbohydrates only began at the beginning of the 20th century. Cola drinks started the movement (we were big water drinkers before then) and the refined white flour and sugar products that now dominate our diet were only introduced in the early 1900s. Before then, sugar had been prohibitively expensive for most people. Interestingly, heart disease was virtually unheard of in sections of our society before this time.

Much has also been made of increases in life span during the century. Life expectancy in the early 1900s was only 50 years, but it's increased more than 20 years since then. Many have chalked this up to improvements in diet and lifestyle, but it's frequently forgotten that the incidence of death among citizens under the age of 16 has dropped dramatically during the century. A national program of vaccinations for disease, medical advances in pediatric and perinatal care have greatly decreased the death of children at birth and through adolescence. When you take these figures into account and factor them in with advances in adult medicine, the average lifespan increase is not so remarkable.

The fact is, we're out of shape as a society, and not nearly as healthy as many would have you believe. The birth of television, an increasingly sedentary lifestyle, advanced technology, service economy, lack of exercise and other changes in the way we live have combined to produce a society with a real fitness crisis.

I think our 20th century carbohydrate-loaded diets also play a major role here. As discussed above, the chronic insulin response we get from all those carbs greatly increases the laying down of fat in the body. Obesity results, and there's no doubt obesity can play a large role in heart disease. Chronically high carbohydrate consumption may also decrease motivation and general disposition, as we'll discuss later, and this could have an effect on overall exercise and lifestyle habits.

But instead of falling into the carbohydrate trap and letting them get the best of us, we use the carbs for our own purposes in the Anabolic Diet. By scheduling and manipulating their place in our diet, we time hormone bursts to obtain a positive effect on amino acids and muscle growth. Then, before those hormones can create a bodyfat problem, we cut them off. It's very simple. But it's also very effective.

CANCER AND DIET

As if it wasn't bad enough that the responsibility for coronary heart disease was laid at the doorstep of dietary fat, fat has also become a prime suspect in colon, breast and prostate cancer. There is even less validity to these claims than the fat/heart disease link.

In fact, a number of studies have cast doubt on any dietary fat/cancer association. Recent research on colon cancer found there to be no link between the consumption of red meat or total or saturated fat in either sex with the cancer.³ Another found the existing evidence linking fat and prostate cancer to be inconclusive.⁴ Likewise, several studies of breast cancer and fat intake have shown little support for a connection.^{5,6,7.}

Recent animal studies indicate that it may be total caloric intake, and not dietary fat, that is the cause of breast cancer.^{8,9} Tumor development seems to depend on a complex interaction

between energy intake (calories), energy expenditure (exercise), energy retained by the body (bodyfat vs. lean body mass) and body size. In fact, one study shows that dietary fat may actually reduce tumor growth.¹⁰

Other studies have pointed directly at bodyfat and overall weight, and not dietary fat, as prime contributors to prostate^{11,12,13} and breast cancer.^{14,15} With the high carb diet laying down so much more fat than the high fat diet, we might be wiser to begin some study of high carbohydrate diet links with cancer instead of blaming so much on dietary fat.

THE BLOATING OF AMERICA

Along with the chronic insulin response, the high carb diet also decreases the testosterone and growth hormone. That puts you in a position where the effects of the 3 critical hormonal contributors to growth—insulin, testosterone and growth hormone—are limited. You're just not going to get maximum growth with this situation.

Bodybuilders also often report becoming passive and less motivated toward training when they're loading up on carbs and, again, this is not something that's going to help you grow. Much of this passiveness can be linked directly to the biochemical effects of a carbohydrate laden diet.

High carbohydrate meals increase the level of the chemical, serotonin, in the brain. Serotonin increases make you more tired, relaxed and ready for sleep. It's serotonin levels that are affected by the antidepressant drug, Prozac. Likewise, the carbohydrate/serotonin link is one of the reasons why many people crave carbohydrates when they're upset. They're looking for the relaxation serotonin can bring.

But the serotonin increase caused by high carb diets can also leave you with a kind of "who cares?" attitude. Alertness can be affected¹⁶ and this can also have a negative effect in the gym. It's also been suggested that the kind of carb you eat can influence the serotonin effect. Meals high on the glycemic index, like sugars, may have a bigger effect on serotonin production than low glycemic foods.¹⁷

With the reduced level of carbs on the high fat diet, you don't get this kind of sleepy, weak or unmotivated response. This could be one of the reasons why people on the Anabolic Diet claim to feel more energetic.

They also claim to be more aggressive. This doesn't extend to the unhealthy, near "rage" level that has been reported with anabolic steroids. but a rise in assertiveness and commitment is clearly present. This is not surprising, given the Anabolic Diet's ability to stimulate testosterone and growth hormone and other anecdotal evidence. In many primitive, warring tribes, meat is saved for the hunters and warriors to increase their ability and aggressiveness. Similarly, many football and other sport coaches also claim that red meat tends to aid aggressiveness.

Because the high carb diet makes you retain more fluid, a feeling of bloatedness may persist after meals. This will also serve to slow you down and land you on the couch instead of in the gym where you belong.

THE POPULAR BODYBUILDING DIET

Most bodybuilders today follow a high carbohydrate, high protein, low fat diet when trying to gain mass. Then, when they get close to a contest, they'll cut back on carbs so that they're on a high protein, medium to low carb, low fat diet. As discussed above, neither of these diets has near the same positive anabolic effects as the high fat diet. The increase of testosterone and growth hormone and insulin management you find on the Anabolic Diet is not realized. In fact, these diets limit growth hormone secretion, thus limiting your gains before you've even started.

It's also interesting to note that the carbohydrate-based diet also negates the positive effects of caffeine on bodybuilding. Caffeine is naturally present in coffee, tea and cola drinks. It's also available in related plant products like the kola nut and guarana, and liquid, tablet and suppository forms you can find where you buy supplements.

Caffeine is believed to have a very positive effect on muscular contraction and fatigue, and many bodybuilders use it to increase endurance. Caffeine also aids in the breakdown of bodyfat and increases the use of free fatty acids, but only in the low carb/high fat diet.^{18,19} The moderate or high carb diet renders caffeine useless for the bodybuilder.²⁰

PROBLEMS WITH BULKING UP/CUTTING DOWN ON OTHER DIETS

Though still favored by most bodybuilders, there are a variety of problems connected with the high carb diet that you won't find with the Anabolic Diet. One of the major problems is the high proportion of fat-to-muscle gain experienced with the carb diet. The high carb diet actually puts you at a competitive disadvantage to a bodybuilder on the Anabolic Diet.

While you can make some progress with the high carb diet, you don't put on nearly as much muscle mass as you can with the Anabolic Diet. The typical bodybuilder bulks up and gets very fat without adding all that much muscle. Then, when it's time to cut the fat, the bodybuilder will tend to lose a great deal of lean body mass. This does not happen on the Anabolic Diet.

For example, let's take a pair of bodybuilders. One follows the high fat diet. The other, a high carb diet. They both bulk up to 260 pounds. The percent of bodyfat on the bodybuilder on the high carb diet will be higher, and he won't have increased muscle mass nearly as much as the bodybuilder on the Anabolic Diet.

Then, as they start losing weight, the high fat dieter will maintain more lean body mass while losing more fat. To be cut up to the same level, say 4 percent, the bodybuilder on the high carb diet may have to go down to 225 pounds, while the Anabolic Dieter will be equally as cut at 235–240 pounds. This will give him a big advantage in competition.

The bodybuilders on a high carb diet can lose an amazing amount of muscle tissue in the final 4–6 weeks of preparation before a contest. They'll keep the protein high and drop the carbs, and all this does is provide for a more catabolic situation where more muscle is broken down. At least carbs have some protein sparing effect.

As they drop weight, they find they still have too much bodyfat and must cut even more. They lose a lot of body mass in the process. I commonly observe bodybuilders at 260 go down to the

205-210 level in the last 4 weeks before a contest and look awful. They're cut to shreds but they're 15-20 pounds lighter than they'd have been if they followed the high fat, Anabolic Diet.

That's where the steroids come in. People on the high carb diet find it very hard to put on muscle size and still have that defined look. Steroids play the role of the big equalizer.

But long term steroids aren't the answer. In terms of training, it's too easy. You don't learn the proper way to train or take care of yourself using them. A lot of guys think they've become experts in training and nutrition, when all they've done is let the drug do it for them. Take them off steroids and they're in trouble.

You see bodybuilders in the gym all the time who look great for the half year they're on steroids. The rest of the time, they look horrible. They're small and thin, or heavy with no muscle tone. The steroids play havoc with their metabolism. Once you're off them, you lose all the benefits you've accumulated. At minimum, you get a big estrogen surge and testosterone drop, and you're almost back to Square One. The bodybuilder may want desperately to get that same look and hold on to it, but they can't without steroids.

WOULD YOU RATHER BURN MUSCLE OR FAT?

Because the diets most bodybuilders use for bulk and cutting are low in fat, you don't burn bodyfat off efficiently. You put a hold on your own internal, fat-burning capabilities. Lipase, the enzyme involved in breaking down bodyfat, becomes almost inactive. You get fat.

With free fatty acid utilization minimized because there's so little fat in your diet, glucose for energy has to come from your diet or available protein in the body. That decreases the amount of protein available for growth. You use it as a fuel instead of as something to build muscle. Instead of a fat-burning machine, you become a muscle-burning machine. That's not what a bodybuilder wants.

Fat is also a very dense energy force. It has $2\frac{1}{4}$ times the energy density of carbs or protein. For every gram of fat, you're getting 2.25 times the amount of energy. You've got 9 calories per gram of fat versus 4 for a gram of carbs or protein. The arithmetic is easy. The winner in the energy competition? Dietary fat.

STRENGTH LEVEL AND MOTIVATION DECREASES

With the added loss of lean body mass during the cutting phase of a bodybuilder's diet, he'll also begin to lose strength. At this point, you can become very discouraged. As you get closer to a contest, you'll see your size disappearing. You lose motivation. You can get so demoralized that you may even give up and opt out of the show.

As you see your progress slip away, you can also become very irritable. This can lead to social problems. Much of the bodybuilder's self worth and perception of himself comes from how he looks. In this way, they're not unlike actors or people in the media. They have to look good. If you find yourself getting close to a contest looking like a pencil neck, you're obviously not going to feel too good about yourself.

Your body also looks at any cutting phase during a diet as potential starvation. If you're really cutting calories, the body will work on you physically and psychologically to eat. On the one hand you'll find your body saying eat, and your mind will be telling you you've got to continue to sacrifice and starve because you're entering a contest. This can become a real struggle. The positive aspects of the Anabolic Diet, and its more satiating nature, do much to make your task far easier.

If you don't use anabolic steroids, serum testosterone will also decrease during a cutting phase of that carbohydrate diet. Your sexual appetite can be blunted. This, along with your growing irritability, can have a negative effect on any relationship. If there's already some problem between people, this added stress can make the problem even worse. Even if things are on an even keel in your life, you can become so stressed out and self-centered during a pre-contest period that you can invent problems where none existed before. That carb-based diet can play havoc with more than your physique.

PROTEIN LEVELS DROP

In the carb-based diet, it can be very difficult to maintain adequate levels of protein without protein supplements. The high fat diet, on the other hand, is by nature high in protein. You're eating mainly red meats and eggs, sources renowned for their plentiful protein. If you're in a cutting phase and cutting back on carbs and practicing a low fat regimen, you'll almost certainly have to go to supplements to get the protein necessary for continued muscle growth.

INCONVENIENCE

Suppose you're on the carb-based diet and end up going over to a friend's house when you're in the middle of a cutting phase. They want to be hospitable and ask you if you want something to eat. You end up saying something like, "I'll have 3 egg whites, some tuna packed in water, and a couple boiled chicken breasts." Chances are your host is not going to say, "Coming right up!"

This is inconvenient and could be seen as even rude. You'll run into the same problem at a restaurant. If you're in a restricted portion of your diet, there may be very little on the menu available to you. Wouldn't you much rather be in the position of saying, "I'll have a steak"? The anabolic, high fat diet could be what you're looking for if you want to rejoin the human race.

RELUCTANCE TO CUT

The difficulty the carb-based bodybuilder has when cutting can make him very reluctant to cut up with any frequency. You can even get a complex about it. It's so depleting and exhausting to go through a cycle, after awhile you just don't want to do it anymore. It takes too much out of you physically, socially and psychologically.

On the high fat diet, your goal is to keep muscle mass high while not going much over 10 percent bodyfat. By monitoring your bodyfat, you know when you're getting a little above 10 percent, and at that point you just cut back on calories. You don't have to cut back on the kinds of foods you eat, so it's not nearly as difficult. You've still got that 2-tiered diet week where you're allowed to eat what you want to. When you're back to where you want to be, you can go right back to your bulk up phase.

Unfortunately, when people bulk up using a high carbohydrate diet, they put on much more fat, so they've got even more of a cycle to go through. They end up going way above 10 percent bodyfat, and spend a long period trying to get back down again. This can be exhausting.

On the high fat diet, you can stay happy while being able to cut up 10–12 times a year for contests if you have to. You can even stay around 7–8 percent bodyfat with very little trouble. One bodybuilder I work with recently bulked up to 280 pounds while staying right around the 10 percent mark. Gradually, over the following weeks, he got down to the 245 pound level and was cut to shreds. You're not going to find this kind of success story and ease with the carb-based regimen.

EXTREME SWINGS IN BODYWEIGHT

Extreme swings in bodyweight are much more common on the high carb diet. You gain more fat, get bulkier and more puffed up. Then you've got to cut up, and Hell hath no fury like a bodybuilder cutting up and coming into a contest. With all that fat to take off, you've got enough problems without the irritability and mood swings that can come with the carb-based diet.

Endorphins and enkephalins are hormones in the body that are related to narcotics. They often come into play in pain reduction, and you might be aware of the endorphin rush and feeling of well being that can come to the athlete during extended endurance training and performance. Testosterone, growth hormone, and insulin all work to vary levels of endorphins and enkephalins in the body. In the carb-based diet, hormonal swings are so great, especially with insulin, that you'll find yourself on an endorphin and enkephalin roller coaster. Irritability and mood swings can be great. You'll find these swings far less dramatic and manageable on the Anabolic Diet.

MINIMAL LEAN WEIGHT GAINS

On the high carb diet, you'll often find yourself not gaining any lean weight from one attempt at cutting to another. You'll find bodybuilders who've been on the same diet for 5 years and they haven't gained 5 pounds. With the high fat diet, you'll make regular gains probably somewhere between 5–15 pounds of muscle a year. Meanwhile you'll be as defined, if not more so, than you were in previous years. One bodybuilder I worked with recently went from 217 to 242 pounds in the span of two years, with a marked increase in definition.

That's one of the big plusses of the high fat diet for the bodybuilder. You can increase muscle mass year after year. On the high carb diet, you tend to end up about as cut and weighing the same as the year before.

With the extreme swings in weight and the difficulty in maintaining lean body mass, far less progress in muscularity and definition is possible. Cycle to cycle, year to year, you look the same.

With all of the above working against the carb-based diet and in favor of the Anabolic Diet, which do you think you should choose?

As a bodybuilder, we think the choice should be clear. If you want growth and success, the Anabolic Diet is for you. If you want to spend the rest of your life running in place, go ahead with that high carb diet.

THE ANABOLIC DIET — HOW AND WHY IT WORKS

Before we get into the mechanics of the Anabolic Diet, let's take a few pages for some final words on just how and why it works, and clear up a few misconceptions about the diet some people may have. Some of this may seem a little technical but I urge you to hang on for the next few pages. By reading carefully, you'll get a good idea of exactly why the Anabolic Diet is the best diet for the bodybuilder.

First, let's make it perfectly clear that insulin is not some kind of enemy to muscle growth. We're not mounting a campaign against it like others have done. In fact, it plays a pivotal role in muscle growth. It's only a problem when it's chronically high or yo-yo's as it does on the carbohydrate-based diet.

What you want to do with insulin, and what this diet focuses on, is to increase it at the appropriate time and place so it stimulates muscle growth. In this way, you increase the drive of amino acids into the muscle cell, thus increasing the incorporation of aminos into muscle protein.

What we don't want is fat built up at the same time. That's why insulin secretion is controlled and limited before it begins working the other side of the street and laying on fat. Instead of the chronically elevated insulin levels of the carb diet, the Anabolic Diet carefully manages insulin increase during the bodybuilder's day and week, so you get an anabolic effect without packing on that unwanted fat.

Insulin then works hand in hand with testosterone and growth hormone in maximizing muscle growth. Growth hormone is very important here for its role in cell growth and maintenance. When insulin goes down, as it does during the weekdays when you'll be on the high fat/high protein/low carb portion of the diet, growth hormone secretions increase. Along with stimulating an anabolic environment, they also induce cells to use fat instead of sugar for energy, thus increasing lipolysis and fighting lipogenesis.

Growth hormone also acts almost like a "starvation" hormone. When your body's in trouble or when you're threatened or in "fight or flight syndrome," GH kicks in to mobilize stores of energy in the body to deal with stress and these increased needs. It will also increase under the stress of exercise.

Usually insulin works to decrease the secretion of growth hormone, but the body sees the great increase in carbs and insulin during the weekend as a stressful situation, much like exercise, and growth hormone actually increases with insulin. In this way, we get the positive effects of growth hormone stimulus both during the week and on weekends.

Testosterone, also critical to health and growth, responds well to the Anabolic Diet. Research studies, though still in early stages in this area, have found testosterone positively linked to dietary

fat. In one study, premenopausal women placed on low fat diets experienced decreased levels of both non-protein bound estradiol and testosterone (although postmenopausal women didn't experience the same deficiency).¹ In another promising study, animals fed diets high in cholesterol or fish oil experienced increased testosterone production than those fed a low cholesterol diet or linseed oil.²

CONTROLLING CATABOLISM (MUSCLE BREAKDOWN)

Obviously, along with promoting muscle growth, you also want to do what you can to keep it from being broken down by minimizing the production and effects of catabolic hormones, the most critical of which is cortisone. Much of this is done naturally through the Anabolic Diet. By increasing fat, you decrease cortisone. A recent animal study found a high fat, high protein diet in concert with insulin and testosterone treatment doing just that, by reducing the effects of corticosterone on muscle protein and growth.³

Along with the biochemical control of cortisone, you'll also find the Anabolic Diet providing for psychological control. The wide mood swings and irritability you can get on a carbohydrate-based diet can also increase cortisone. In fact, psychological stress can be a prime component in its production. As discussed in the last chapter, the Anabolic Diet can greatly reduce the stress normally associated with dieting and, thus, much of the psychological source of cortisone production.

Another misconception many people have is that catabolism, or muscle breakdown, is inevitable during exercise, and that this catabolic activity is necessary for muscle growth. It's an old gym legend: "Muscles break down while training and are built up while recovering." Indeed, some believe that the more you break down muscle as you exercise, the more you'll compensate for it by increasing fiber size when you rest.

Though widely held by bodybuilders, these beliefs are total hogwash. We've found that the muscle is actually trying to synthesize protein for growth as you exercise. The only problem is that, though the protein synthesis machinery consisting of ribosomes, ribonucleic acid, and the amino acid pool in the muscle are in place, they don't have the energy available necessary for synthesis. Basically, the muscle is synthesizing some protein during exercise, but the catabolic effect of exercise is overwhelming it.

What we do with the Anabolic Diet is to decrease muscle breakdown while increasing protein synthesis for muscle growth DURING EXERCISE. This way, by the time you're finished exercising, you've actually experienced very little breakdown of muscle tissue and actually PRODUCED MUSCLE TISSUE.

I know this runs against most of what you have heard or believed about exercise, but hypertrophy, or the enlargement of the cellular components of muscle, has little to do with catabolism. It is stress or load on the muscle during exercise (the volume and intensity of training) that is critical to growth.⁴ It's the kind of training, not how much protein you break down, that causes hypertrophy. Protein breakdown is merely a simple response to training load. And if we can limit that response, we should get more hypertrophy in the end.

Much of what we need to do involves increasing phosphocreatine in the cell. Phosphocreatine

regenerates ATP, the body's energy source for cellular activity, and also aids protein synthesis. The diet and the supplements we'll outline later maximize phosphocreatine in the cell, so there's more energy available for contraction and protein synthesis.

This is a major area of concentration for the supplements we'll recommend for the Anabolic Diet. They're technically complex and exact in the areas they target. We're looking to increase biochemical response in the body to better enable muscle growth. We're also looking to increase the recovery capabilities of the bodybuilder. Once you stop exercising, we want to make the body's environment receptive to protein and growth.

The Anabolic Diet plan works to increase anabolic hormones, the amino acid pool, and overall anabolic drive. **NOBODY HAS EVER ATTACKED THE PROBLEMS OF MUSCLE GROWTH IN THIS WAY BEFORE.**

It should finally be pointed out that when we use the term “anti-catabolic,” we don't mean just “anti-cortisone.” The ATP regeneration we're producing makes the energy available for both synthesis and contraction, so we're not breaking down protein and tissue to fuel the contraction. We also want to make sure that amino acids aren't used up for energy. That's why we maximize the amount of aminos in the cell through the diet and supplements, and make sure they're not used for energy.

The “metabolic shift” of changing the body over to a fat-burning machine instead of a carbohydrate-burning, fat-producing one—and the combined anabolic and anti-catabolic effect of the Anabolic Diet and supplements—ultimately gives the bodybuilder what he's looking for: more muscle and less fat.

And it all occurs without anabolic steroids and the starvation and insanity that comes with the carb-based diet.

GETTING STARTED

Before going on the Anabolic Diet, **A COMPLETE PHYSICAL FROM YOUR DOCTOR IS REQUIRED.** Far from what the Lords of Lowfat would predict, the high fat diet doesn't make cholesterol levels skyrocket. Because you're burning fat for energy, much of the cholesterol that could cause a problem is used up in the process. Studies have even shown that along with increasing the utilization of fat as an energy source and providing for weight loss, the Anabolic Diet can even reduce serum cholesterol.⁵

Nonetheless, a complete physical from your doctor is a necessity. If you do have a cholesterol problem, you need to know about it. Cholesterol levels are largely determined by individual metabolism and body chemistry, and genetics play a strong role. If you've had cholesterol problems in your family, there's a good chance you may have them, too. And if you have a chronic problem with cholesterol, you need to talk to your doctor about how this may be affected by the Anabolic Diet, and what you can do to limit any adverse affects.

There are adjustments you can make to the Anabolic Diet to help control cholesterol. As we'll discuss later, marine oils, supplementary flax seed, olive oil, and meat restriction will help. But, again, this is something you need to work with your physician on. If the Anabolic Diet

seems like the answer to you, you'll have to put your heads together to devise a plan where you can benefit from the anabolic advantages the diet provides while keeping cholesterol in check.

Along with getting bloodwork on cholesterol, LDL, HDL and triglyceride levels, you'll also want to check uric acid, fasting blood sugar, and thyroid stimulating hormones AT MINIMUM. If your doctor wants to advance beyond that, that's fine, but you NEED TO HAVE AT LEAST THE ABOVE BLOODWORK DONE before starting the diet. That complete physical is also an absolute necessity.

We also urge you to get a bodyfat analysis and weigh yourself before you begin the diet. You need to be able to track your progress closely as the diet continues. This shouldn't be much of a problem as most any bodybuilder already does this, but you need to know where you're at at any given time on the diet.

Initially, as some people begin building muscle, they may find themselves staying at the same body weight. There's really no problem with this. The muscle's going on and the fat is coming off, but you may get upset with your lack of weight gain. You need to know where you're at so you can keep your enthusiasm high, knowing that, while you're not putting on weight, you're adding muscle, keeping fat at a minimum and progressing.

It may also be advantageous to take measurements of biceps, triceps, waist, leg, calf and other areas just to, again, know where you're at and be able to track your progress.

THE ANABOLIC DIET

	<u>Carbs</u>	<u>% Fat</u>	<u>% Protein</u>	<u>% Carbs</u>
Weekdays maximum	30 grams	55-60	30-35	5-8
Weekends (36-48 Hour Carb Load)	No Limit	30-40	10-15	45-60

THE DIET

The basic Anabolic Diet is really quite simple. It calls for a dedicated high fat/high protein/low carb diet from Monday through Friday of the week. During that time, as a rule, you'll be limited to 30 grams of carbohydrates MAXIMUM per day. We suggest a diet at roughly 55-60 percent fat, 30-35 percent protein and no more than 30 grams of carbohydrates during this 5-day phase of the diet.

Then, come Saturday, you perform a big turnaround. You go through a 36-48 hour period very similar to CARBOHYDRATE LOADING. You hit the carbs heavily. You can be very sociable in the dietary sense. Pizza and beer are OK. So is most everything else. Guidelines for the carb loading period of the diet are: 30-40 percent fat, 10-15 percent protein and 45-60 percent carbs, though, as we'll see below, these levels should be adjusted to match and maximize individual body chemistry and needs.

Basically what we're doing here is limiting carbs during the week. Then, all of a sudden, the weekend hits and you're stuffing yourself with them. Insulin levels will rise dramatically. In fact, it's been shown that the high fat diet, in concert with the carbs, will make the insulin response even greater than it normally would be.^{6,7}

The first thing your body does in response to this exaggerated carb loading is stuff the muscles with glycogen (muscle glycogen also increases more than you'd find on a high carb diet). At the same time, amino acids are driven into the cell AND AN EVEN GREATER ANABOLIC EFFECT IS EXPERIENCED.

During the weekend you'll find yourself rather relaxed and blasé because carbs will be forcing a rise in serotonin.

Once you hit that gym on Monday, you're going to get one of the best pumps of your life, thanks to all that glycogen and water in the muscle cells. During Monday and Tuesday, your system will be working, burning both all that increased glycogen and free fatty acids, and you'll experience the expected rise in fat burning and muscle growth. Then, Wednesday-Friday, with glycogen limited again, you'll switch back to a near exclusive fat burning metabolism to maximize your gains.

Needless to say, your body goes through a big transition weekly with this diet. That's why it's important to know when to stop on the weekend. If you find that you have an unlimited appetite on the weekend, that's OK. You'll kick the insulin into gear that much faster. But you must be careful. You do not want to lay down tremendous amounts of bodyfat.

That's why you have to be aware of the point at which you begin to feel puffy and bloated. This point will vary greatly from person to person. Some people will feel hardly any response in appetite from the increased insulin. Others, however, will experience wide insulin swings and will find themselves hungry all the time. They can easily take in 10,000 calories a day.

Though we list 36–48 hours as the period during which you should carb load on the weekends, this could be cut back to as low as 24 hours for people like this. *The important thing is, experienced bodybuilders can tell when they've had enough. They feel puffy and bloated and can even sense the fat coming on. At that point it's time to stop and go back to restricting the carbohydrates.* This point will vary widely from person to person.

Also, keep in mind that the percentages we listed above for fat, protein and carb consumption are optimum numbers. If you've never done any real diet planning before, you may have a bit of trouble reaching them at first. If so, don't worry. By shooting for the 30 gram carbohydrate limitation and a 40% minimum fat level in the diet during the early weeks, you'll make the "metabolic shift" necessary to the diet.

WHAT TO EAT

During the weekdays, there are plenty of options for high fat/high protein/low carb foods available. Virtually any meat is OK, and you'll focus on steak, hamburger, pork and other red meats on the diet. But venison, fish (of great importance as we'll see later), lamb, shrimp, lobster, chicken, turkey, and any other white meat are also OK. So are canned sardines, tuna, shrimp, herring and anchovies.

Almost all kinds of cheeses are fair game as well. Use the full fat and non-skimmed varieties. Keep in mind that cheese spreads, cottage and ricotta cheese are higher in carbohydrates and thus less appealing. Brie, camembert, muenster, gruyere and monterey jack are very low in carbs and good for the diet.

Whole eggs are great. Deviled eggs can be a good snack food to keep in the refrigerator to use. Butter, margarine, and oils (focusing on poly and monounsaturated oils) are fine. Nuts and seeds like walnuts and sunflower seeds are also good. Condiments such as salt, vinegar, oil, and mayonnaise are good Anabolic Diet foods, although we urge you to use oil and vinegar dressing most of the time because most other commercial salad dressings are in the vicinity of 7 percent carbohydrates.

Sugar is going to be a problem for people with a sweet tooth. You can end up craving it, especially during the first 3 weeks of the diet. Look to appease any cravings along this line with low carb drinks and desserts with artificial sweeteners (no sorbitol, fructose, etc.). Diet soft drinks are fine.

You can also put sugar free jello to good use. Topping it with carb-free whipped cream may be just what you're looking for to gain control. You can eat a ton of it, it has no carbs, and bodybuilders have found it quite successful in ceasing any cravings.

Another big factor here is that, even with cravings, you're only putting off satisfying them until the weekend. You can eat basically anything then. We're just partitioning or separating foods here. We're not saying you can't have pizza or lasagna. You just have to wait for the weekend. That's a lot better than other diets where you're basically stranded on Low-Fat or even Low-Carb Island for the rest of your life.

This can also work for you psychologically. You're giving yourself a goal. Just get to the weekend and you can have that pizza. You're giving yourself something to look forward to. It can even be fun. It doesn't present the kind of depression and boredom you get eating the same thing over and over, week after week, month after month. You don't have to come up with an elaborate set of recipes to keep yourself sane.

And when you get to the weekend, do what you want! Get satiated on the foods you want. Satisfy those cravings. Some people will go overboard at the beginning of the diet and eat until they're nearly sick. Most will overdo to some degree, but this is fine. It gets easier as you go.

Once they've been on the diet awhile, they won't have that strong desire for ice cream or lasagna anymore. They'll eat it but they won't pig out and, as they start adjusting their diets and dialing them in for maximum muscle growth, they'll begin to see some real gains and acquire some real knowledge about the way their body works, and how adjustments can be made to achieve their goals.

THE BEST DIET

When on the high fat portion of the diet, we urge you to look for some variety in the foods you eat during the day. You'll be eating plenty of meat, but look for opportunities to supplement it with other foods. Later, in the supplement section of this book, we'll talk about the importance of fish in the diet as a hedge against any possible health problems. Look to add fish and other foods to your diet to obtain some balance and make the diet more interesting and effective.

You will find yourself favoring some foods over others, though, and this is all part of the learning experience you'll go through on this diet. Some bodybuilders have found themselves focusing on salami and bacon at the beginning of the diet, only to find their preference moving to steak later on. They found themselves feeling better as a result, and some chalk it up to the decrease in sodium involved in the change. Others have started with a lot of hamburger in the diet and also moved over to steak and found themselves feeling better.

This preference for steak seems common with many on this diet. They claim to feel better and experience improvements in training while focusing on steak as their primary meat but, again, this is up to the individual. You'll have to feel your way through the diet to see what's best for you. And, always, look for alternatives and variety where possible.



A GUIDE TO 'GETTING STARTED' ON THE ANABOLIC DIET

- Get a complete physical
- End carb loading the moment you begin smoothing out
- If dietary percentages are a problem, keeping carbs below 30 grams and fat above 40% on weekdays will insure "metabolic shift"
- Appease sugar cravings during the week with artificial sweeteners
- Add variety to the diet where possible
- Eat when hungry, not by the clock
- Don't make weekends "No-Fat"
- Experiment with foods to find what works for you
- To maximize energy, eat carbs at end of day

WHEN TO EAT

With the Anabolic Diet, when it's time to eat, it's time to eat. There are no set times. You eat when you're hungry. Some people on the diet will find themselves eating meals 3 times a day and supplementing this with snacks as needed. Others will sit down 5–6 times a day for a more formal meal. It's up to the individual, his schedule, and his appetite.

BUT YOU'VE GOT TO EAT WHEN YOU NEED TO. One of the biggest mistakes you can make with this diet early is skipping a meal. You'll miss one, get very hungry, blame it on the diet and jettison it. At the beginning of the diet, for the first 3–4 weeks, you've got to be regimented about eating. You've got to eat regularly as needed.

Have you ever noticed how children will eat at "odd" times? Unlike adults, who eat at 7 a.m., Noon and 6:00 p.m. every day whether they need to or not, children eat when they feel they need to. They may leave their plate full at lunch but be in the refrigerator 2 hours later.

That's the way many bodybuilders find this diet to work best. We all have an instinctive voice that will tell us when to eat, and this voice can become insistent during training. Listen to it and do what

it says. You should never go longer than 3 hours without putting some calories in your body.

Also, when it comes to training, you should try not to eat 45–60 minutes before you begin a workout. You want all your energy devoted to training, not digesting food. This also maximizes growth hormone release during your workout. Many people train in the morning before breakfast, and there's really no problem with this.

WHEN TO EAT CARBS

A real question that comes into play on the high fat portion of the Anabolic Diet is when to eat your carbs during the day. Some people spread them out. Others get most of them in one meal. Again, the answer has to do with personal preference. You can eat your carbs at any time of day and it won't matter, as long as you don't go above the 30 gram carb limit.

But many bodybuilders find eating their carbs throughout the day makes them hungrier and lazier. They'll feel sluggish. They get that "turkey dinner syndrome" where they finish and all they feel like doing is heading for the couch. This is not good, especially for the bodybuilder who may train during the day and find his motivation affected.

It also presents a real problem that goes beyond bodybuilding and training. Some people think that our eating patterns have become counterproductive in modern society. The average person eats a lot of carbs during the day, and the insulin and serotonin responses we talked about earlier can become very pronounced. At times of the day when we need to be productive and alert, in the early afternoon for instance, we'll be sleepy and lethargic from all those carbs.

Wouldn't it be better to save the carbs for the night? That's what many bodybuilders do on the Anabolic Diet. They'll keep the carbs minimum during the day and find their energy levels much increased as a result. Then they'll come home at night and have the bulk of their carbs with dinner. The carbs at dinner will find them unwinding in the evening hours, relaxing and sleeping like a baby at night.

It's interesting to note that one of the trends in business today is toward a more streamlined lunch. Those huge, 3 martini lunches and the like have become a rarity. Executives are eating and drinking more sensibly in the middle of the day, and finding productivity rising as a result. This comes not only from time saved at lunch but from the improved attitude that comes from getting rid of all those carbs at noon.

EXPERIMENT

Personal experience and individual body chemistry will have a great deal to do with how you structure the diet. Above, we stress that different people will have differing responses to the carb loading portion of the diet, and that the length of that carb-loading period may vary greatly as a result.

The 30 gram carbohydrate limit is also not written in granite. It serves as a good guide, but some people may find that they can increase carb intake to as high as 40 grams per day and still do fine. Others may find that anything over 20 will make them feel sluggish.

You have to experiment here. You may want to start the diet with as low a carb intake as 10

grams per day and slowly inch up every week to see where you feel best and where the optimum level of carb consumption is for you.

Fat levels may also be experimented with to some degree. Some may find optimum growth from going as low as 40 percent fat on the diet, but you must beware. You can't go too low.

One recent bodybuilder I counseled found himself getting fat while on a conventional low fat diet and went to an all protein diet. He began doing the egg whites thing and, while he ended up cutting his fat to nothing, he lost muscle mass like you wouldn't believe. He looked awful. Your body will burn fat as it's given to it, so don't worry. You can make some adjustment, but be careful. If you don't give the body enough fat, it will burn muscle, which is exactly what you don't want.

The same principle is involved during the carb loading phase of the diet. You still need fat. If you don't give it fat, protein will get eaten up as energy. You also have to remember that the body will try to transform any fat available to storage fat if you limit fat. It says basically, "I'm not going to get rid of this stuff because I may need it down the road." You limit fat in your diet, and your body wants to lay it on as a way of keeping it around. You end up cutting dietary fat but not bodyfat.

This may sound like nonsense, but it's not. Give the body fat and it will use that fat and burn off bodyfat. The more fat you give it, the freer it will be with enzymes for fat breakdown, and the more bodyfat you'll lose. You basically *lose fat by eating it*.⁸

But one of the good things about this diet is that you don't have to become paranoid to get that proper amount of fat in your diet. In fact, if you're diligent about eating your red meat and other animal food—bacon, ham, steak, burger, fish, etc.—you shouldn't have to worry about hitting that 40 percent fat and 20–26 percent protein ratio listed above. It will naturally happen.

Again, it's important to realize that individual experimentation will play a large role in aspects of the Anabolic Diet. The diet should be varied to provide the optimum level of performance and success *for the individual*. We're all different to some degree according to body chemistry and needs. No two human beings are alike. No two human beings will execute this diet entirely alike, either.

We'll cover some other important variations to help the individual fine tune the diet later in this book in the "Special Modifications" section.

ENDURANCE EFFECTS

Again, there's been a lot of criticism of high fat diets from people who claim that you can't exert as much energy per contraction on a high fat diet as a high carb diet. Others have said that endurance also greatly decreases on the high fat diet. This criticism does not apply to the Anabolic Diet.

First off, it's clear that fat has been vastly underrated for its endurance and muscle-contraction capabilities. One recent study showed that decreasing free fatty acids and glycerol (a compound resulting from the hydrolysis of fats and oils) in the blood can reduce fat availability for exercise, place increased demands on carbohydrates, and actually lessen endurance.⁹ On the other hand, an increase in the amount of fat metabolized by the body during exercise has a glycogen-sparing effect and improves endurance.¹⁰

This was highlighted in a recent study¹¹ that looked at the effect of a high fat diet on six trained runners. What they found was that the VO₂ max and endurance was significantly higher in those runners who were on the high fat diet as against those that were on the normal, or high carbohydrate diet.

You also have to keep in mind that the two main fuels for muscle growth are carbohydrate and fat. There is a very limited store of carbohydrate in the body. But fat is an entirely different proposition. The average man considered to be in shape on the street has about 15 percent bodyfat. The average woman about 25 percent. These are huge stores of energy in the body, and much more available over the course of a workout than carbohydrates.

The only problem that may crop up here revolves around the question of whether you've fully adapted to the high fat diet. If you haven't been on it long enough to go through the "metabolic shift" we talk about, you may find the diet affecting endurance. But if you've gone through the "shift," endurance won't be affected and will likely be enhanced.¹²

The other side of the Anabolic Diet is that's it's not an entirely restricted high fat, low carb regimen. With the carb loading on the weekends, we're allowing a huge amount of glycogen build-up that's utilized early the next week. We're getting the best of both the high fat and high carb worlds without their drawbacks. You're getting both glycogen build-up and fat burn-off, and that's where growth and definition are manufactured.

DIET PHASES

There are four phases of the diet where adjustments will be made, based on progress toward a competition. The mass, cutting, and pre-contest phases will be familiar to most bodybuilders. We also include a "starting" or "maintenance" phase in our diet plan.

The "Start-up" or "Maintenance" Phase

During most of the Anabolic Diet, you won't find yourself restricting calories much. In fact, some people may find they have a problem getting enough. Others may find that, with increased training and exercise, they can take in a huge amount without suffering any consequences.

At the beginning, though, we don't want you feeling bloated and suffering too much from the diarrhea that can come from switching metabolisms. That's why your **STARTING POINT FOR DAILY CALORIES ON THIS DIET SHOULD BE 18 TIMES YOUR BODY-WEIGHT**. If you're 200 pounds, this would call for 200×18 or 3,600 calories a day during the weekday portion of the diet. This makes for a "static" phase where you lose some body fat, gain some muscle mass, and maintain about the same weight. This is a phase where you'll be changing the ratio of internal masses to some degree, but most of what you're doing is allowing your body its easiest path toward adapting to the diet.

As you continue in this phase, you should experiment with the formula above as a way of finding precisely where your "maintenance" level for calories is. This will let you know from what point you need to add or subtract calories for gains or losses in other parts of the diet. It's also not a bad idea to keep a 2–3 day diary of what you're eating, and then have someone who has some expertise in diets look at it. That way you'll get numbers and foods you can best work

with, and figure what you need precisely for maintenance.

You'll need a *fiber supplement* when you first start the diet. One of the results of the high fat diet is that the bowels must readjust to all that meat. The fats can act as a stool softener, and you may experience some diarrhea. You'll need to firm them up with some fiber. The radical change in diet can also cause constipation.

Most of the problems we've found with people initiating the diet fall in this area, and their failure to take the fiber necessary to harden stools or push processed food through the eliminative tract. You may be able to get away with just eating bran, but there's a good chance you'll need a supplement to best get through this period.

Psyllium Seed Husk is excellent here, and Colon Cleanser an excellent format for it. It's raw psyllium husk. Just make sure not to get the tablets. There isn't enough fiber in them. It's best to get the kind you spoon out and add to water (soluapsyllium).

Metamucil can also be a good source for soluble fiber. It's non-addictive, not a drug, and all natural. **BUT WATCH OUT FOR HIDDEN CARBOHYDRATES IN YOUR SUPPLEMENTS.** Often, refined carbs are used to make them taste better, so check the carb count on the package before purchasing them.

You will probably have to take the fiber supplement for the first 3–6 months of the diet. By that time, your body will have fully adapted to it.

Still, in some cases, people may find it necessary to continue fiber supplements on a long-term or permanent basis. If so, you can continue with fiber supplements as needed.

Some bodybuilders have also found that taking a meal high in fiber, like a Caesar Salad, in the middle of the day will do the trick. This will provide about 7½ grams of carbs and, as long as you stick close to overall carb limits, shouldn't present any problem. Especially after you've been on the diet for awhile.

THE "SWEET TOOTH" SOCIETY

Remember also, that refined carbs are hidden in almost everything you'll find on those supermarket shelves. Seasoning, ketchup, mustard, salad dressings, nuts, BBQ sauce, breaded or processed meats, gourmet coffee, and sausages can all present a problem. These foods are renowned for hidden carbs, and you've got to check the label to make sure what you're getting on this diet.

Likewise, watch out in restaurants. They'll sometimes use a watery sugar on the vegetables that will wreak havoc. Our society has got a sweet tooth, and you're going to run into it at every turn during the weekdays. You'll have to be especially careful during this "start-up" phase as you get used to the diet and learn where the trouble spots may be.

DON'T MIX DIETS

Again, the temptation may be big to mix diets combining aspects of both the high carb and high fat diets and putting them together in your own personal Frankenstein stew. Don't.

Many people will go on the high fat diet but try to be true to their old high carb master. They'll eat meat but it's all fish, chicken and turkey. While these foods may be quite nutritious and beneficial, even when used in the high fat diet, they can't be used as a replacement for good, old fashioned red meat. They ain't fat.

What you end up doing by taking on the turkey/chicken/fish holy trinity is going on a high protein, low carb, MEDIUM FAT diet. Along with being even harder to stay on than the Anabolic Diet, this diet won't get you the advantages you're looking for from the high fat diet. You won't burn the fat like you should. You won't have the energy. You won't build the mass.

You need red meat. You need the fat it provides. Don't shortchange yourself by trying to avoid it in some misled effort to stay true to forces in society who have labelled meat some kind of monster. This is simply not true.



KEYS TO SUCCESS IN THE “START-UP” PHASE

- Find the “maintenance” level were calories maintain your body weight (18 X Your Present Body Weight: A Good Starting Point)
- Take a fiber supplement
- Watch for hidden carbs
- Don't mix diets
- The first week is the toughest—Stick It Out

THE FIRST WEEK IS THE TOUGHEST

In the first week of the diet you'll be going through the “metabolic shift” from being a carb and muscle-burning machine to being a fat burner, and it can be difficult. While some people will suffer few symptoms, others will be very affected. The bowel irregularities we discussed above will come into play. You'll also experience some fatigue and get foul or fruity smelling breath caused by an increase in the production of ketones, a compound utilized for fat metabolism.

Emotionally, you could feel irritable and mentally foggy in the first week. You may suffer some very mild disorientation. As a result, we urge you **NOT TO RUN HEAVY EQUIPMENT DURING THIS TIME.**

You can also experience pre-flu like symptoms where you feel like “something's coming on” or you're “fighting something off.” Energy can drop and you can feel frequently hungry. Don't be alarmed. Basically, your body is just going through a readjustment phase. It will soon pass.

Unfortunately, many people will experience these difficulties and give up on the diet. They try it for a couple days and don't feel good and conclude “it doesn't work for me.” They never break through the barrier to experience the “metabolic shift.”

That's why we urge you to **STICK WITH IT DURING THE FIRST WEEK.** Once you get through that first week, it's all downhill. You'll start to feel better and better, and the diet will be easier and easier. You'll get to the point where you'll feel so good, the Anabolic Diet will

seem like a revelation. You won't suffer those insulin ups and downs anymore. Energy will return. You'll feel strong and lean and, in most cases, you won't be tempted to go back to the old, inferior way of eating. **BUT YOU'VE GOT TO GET THROUGH THAT FIRST WEEK AND PAY SOME DUES TO EXPERIENCE THE BENEFITS.**

Generally you'll continue with the "start-up" phase of the diet until you've got all your energy back and have no other symptoms. This will usually take 3–4 weeks, and you'll know when it's time. You'll be feeling very, very good.

At this point you can move on to the next phase, the "mass phase" of the diet. But if you find you've got enough mass, you can stay at this phase for awhile and then move on to a "cutting" phase as needed. The "start up" phase, without all the introductory facets, can be returned to when needed as a transition between the "mass" and "cutting" phases of the diet. As such, it can also properly be called the "maintenance" phase of the Anabolic Diet.

The "Mass Phase"

This phase is similar to the "bulking up" phase most bodybuilders are familiar with. As usual, you'll be increasing your calorie intake. On the Anabolic Diet, your goal should be to **ALLOW YOUR BODY WEIGHT TO INCREASE TO 15 PERCENT ABOVE YOUR IDEAL WEIGHT.**

When we use the term "ideal weight" we're talking about what you consider to be your optimum contest weight, and you've got to be practical about it. If you've been competing at 200 pounds for 4–5 years and then say your ideal weight is 315, that's not practical. More reasonable would be to take that ideal weight up to 215 or so and increase your weight to 15 percent above this, or 250 pounds, in this phase.

Realize that if you go hog wild, eat like crazy, and end up going 30 percent above your "ideal weight," your body will end up being 15 percent bodyfat or more. That's not what we're looking for here. The Anabolic Diet is designed to get you more muscle and limit bodyfat. Even though you'll experience an increase in lean mass and put on less fat than you would on another diet, you've still got to exercise some discipline.

As far as the specifics of the diet itself, they're the same on this phase as on the others. You'll be sticking to the weekday high fat, weekend carb load plan. The only change will be in the amount of calories you eat. If you want to get to a level 15 percent above your ideal weight, you're obviously going to have to eat more.

To achieve this, the bodybuilder should consume between 20 to 25 **CALORIES PER POUND OF BODYWEIGHT DESIRED EVERY DAY.** In the example above, the bodybuilder wants to get to 250 pounds, so he'll be eating 5,000 to 6,250 calories a day. When you consider that he's probably been on a 3,600 calorie diet before that, you can see the tremendous increase in calories he's going to experience.

This can present a big problem for athletes who have trouble gaining weight. They're not used to eating and don't really have big appetites. They may think they're eating huge amounts, but they're not. They'll find themselves at 6,000 calories one day and down at 1,500 a few days later. You ask them what happened and all they'll say is, "I wasn't hungry."

You can't do that on this diet. You've got to be consistent. If you want, you can multiply that 6,250 calories times 7 and make your goal 43,750 for the week. That way you can vary some from day to day. For example, eat 7,500 calories one day and 5,000 the next, but by the end of the week you've got to be at the 43,750 calorie level. Keep a diary or some other record of calories eaten, and make sure that you're doing it.



KEYS TO SUCCESS IN THE MASS PHASE

- Increase bodyweight to 15 percent above your “ideal” contest weight
- Eat 20 to 25 calories per pound of “ideal” weight daily
- If you have trouble eating enough, make calories a weekly, rather than daily, goal
- Bodyfat shouldn't rise above the 10 percent level
- End the “Mass Phase” when you reach your “ideal” weight or rise to the 10 percent bodyfat level, whichever comes first
- Whether you've reached your “ideal” weight or not, the “Mass Phase” must cease 12 weeks before a contest
- A gain of 2 pounds per week is best

CONTROLLING BODYFAT

Of course, bodyfat is also of critical importance here. Some athletes will gain more bodyfat than others at similar calorie levels. We've found that most bodybuilders can maintain a 10 percent bodyfat level relatively easily if properly utilizing the Anabolic Diet. This is also a good level to stay at to keep fat in check in any preparation for competitive bodybuilding. That's why *we advise those on the Anabolic Diet to keep close track of their bodyfat level, and don't let it go above this 10 percent level.*

With this in mind, the goal in the “Mass Phase” is to continue eating and gaining weight until you either reach a level 15 percent above your “ideal weight” or hit 10 percent bodyfat, whichever comes first. Chances are, no matter what comes first, you'll get the mass you want on this anabolically supercharged diet. It's not like the old days with the high carb diet where you've got to gain so much weight and fat to get mass.

You have to use your head here, though. If you find yourself still gaining weight but haven't reached your “ideal,” and your contest is 12–16 weeks away, it's time to stop the “Mass Phase.” It's time to begin cutting to properly prepare yourself for the contest, regardless of weight. In this way, time before a contest joins bodyfat and weight as a determinant in how long you'll stay in this phase.

On the other hand, I know many bodybuilders who have come to believe they should gain mass quickly, but I don't agree with this. 2 pounds a week is good enough. If you can gain 2, you won't gain a lot of fat during the week on the Anabolic Diet. It'll be mostly muscle. Though

I'd vary this one pound plus or minus given individual differences, I think 2 pounds a week is the best benchmark for bulking up.

MASS PHASE DURATION CAN VARY

Not that the mass phase can't be hurried, but you always want to maintain right about 10 percent bodyfat. That way you can get in contest shape fast. I've seen people go through a 20-week cycle in which they've bulked up for 8 weeks (3 pounds a week) and then use 12 weeks for cutting (1–2 pounds a week). Though they bulked for only 8 weeks and cut for 12, their weight was still above what it was for the contest before. And they were as cut, if not more so.

The whole goal here is to come into a contest a little better than before you were on the diet. This may mean only 3–4 pounds. Or, in more long-term training, it could be 25. The big thing is, **EVERYBODY MAKES PROGRESS WITH THIS DIET**. To those people who've been the same for 15 years, I say here's a way to break out.

Some bodybuilders prefer to point for a big contest, like a Mr. Olympia, and take the whole year to do it. That can easily be done on this diet, too. You may want to mass for 30 weeks and cut for 20, gaining 60 pounds and losing 40 over the course of a year. You'll come in 20 pounds ahead of where you were last year and be looking great.

Keep in mind that you may also want to utilize the “start up” or “maintenance” phase described above as you go from mass to cutting phases. Let's say you've got a contest in 30 weeks. You've gained all the body mass you want in 10 weeks, but you don't want to go to the cutting phase. You can maintain your gains by staying on the “maintenance” phase for 6–8 weeks. Then, when you're ready, you can go into the cutting phase in preparation for the contest.

WEEKLY WEIGHT GAINS

You may see big fluctuations in weight, especially at the beginning of the diet, as a result of your weekly carb loads. All that extra sugar and water can make for a gain of from 5–10 pounds between Friday and Monday.

If this happens, don't stress out. It's natural. When you go back on the high fat diet on Monday, you'll immediately begin shedding those pounds, which are mostly water. Monday–Wednesday you'll be cleaning out much of what you put into your body on the weekend. By Wednesday, the water should be pretty well flushed out. Depending on what phase of the diet you're on, you can manipulate calories so you get either the weekly weight gain or loss you're looking for by Friday.

The “Cutting Phase”

Again, we don't change the mechanics of the Anabolic Diet in any phase. It's always 5 days high fat, followed by 36–48 hours of carb loading. The only thing we change is the amount of calories we eat.

In the “Cutting Phase” we'll be cutting calories as a way of trimming fat off the body. As a rule of thumb, you should cut 1,000 calories a day from your diet the first week. If you were at 6,000 during the “Mass Phase,” cut it to 5,000 per day during the first week of your cutting. The next

week you should drop another 500 from the daily diet. During this time you must measure bodyfat weekly. What you want to do is **LOSE 1.5–2 POUNDS OF BODYFAT EACH WEEK**. Losing 1.5–2 pounds a week will insure that you don't lose appreciable lean mass as you cut.

If you find at the end of the second week that you've lost less than 1.5 pounds during the week, you'll know you should cut another 500 calories the next week, and continue cutting calories in subsequent weeks until you're at the 1.5 level. Likewise, if you're losing more than 2 pounds of bodyfat during the week, you'll know you've cut too many calories and will need to adjust them upward.

The important thing to remember here is that it's not calories we're really after. It's bodyfat. Because of this, you've got to allow for individual variations in calorie count to get that optimum 1.5 to 2 pounds of fat loss. You'll be doing plenty of experimentation in this phase to find the right caloric intake for you. Though the 1,000 and 500 calorie drops we outlined above seem to be a good general starting point, you're going to have to find what works best for you.

For example, I've dropped some bodybuilders on the diet from a 5,000 calorie a day level to 3,000 in the cutting phase. In a few others, I've taken them as low as 1,500 to see what happens. If they're losing a fair amount of bodyfat (remember the 1.5–2 pound guideline), getting leaner and not losing lean body mass, I'll leave them at that level until they "lean out." At that point, I'll increase calories to the point that they'll maintain or possibly even lose bodyfat while increasing lean mass again.



KEYS TO SUCCESS IN THE CUTTING PHASE

- Measure bodyfat every 3 weeks until a few weeks before the show
- Lose 1.5 – 2 pounds each week
- Experiment with caloric intake. Cutting 1,000 per day the first week and 500 per day in subsequent weeks is a general guideline
- Refine your contest preparation
- Experiment with foods

EXPERIMENT WITH FOODS

Basically, the Anabolic Diet's "5-day, 2-day" week is almost like getting a person in shape for a contest every week. In the weekend carb loading part of the diet, you'll find out exactly how many hours you can load up on carbs before you begin to smooth out and lose your contest look.

When you get to your "pre-contest" phase, you really won't have to make many changes. You'll be doing the same thing you've been doing for the last several weeks in the "cutting" phase. You'll go off the high fat, high protein diet and carb up to dramatically increase the glycogen and water inside the muscle cell. You want them swollen and big, but you'll cut off the carbs before you begin to reservoir extra-cellular water or fat and smooth out.

During the cutting phase, you'll also want to be refining contest preparation. Play with the

kinds of foods you eat on the weekends to see what gives you maximum muscle size. You'll know on Tuesday or Wednesday morning if what you've been eating is right for you. If it is, you'll be looking good. Muscles will be huge and you'll be cut up with a nice, pronounced vascularity.

If you don't look good, you'll know you did something wrong. Go back and rework your diet the next weekend and see if you can get some improvement. That's the beauty of this diet. By the time a contest approaches, you've already perfected your contest diet by practicing it during the "cutting" phase.

On the old carb diet, you did this only once. On this diet, you do it every week during the "cutting" phase, and you become an expert in how to manipulate your body for a contest.

Experiment with high and low-sugar foods and percentages of fat intake on these weekends. See what they do for you. Treat each weekend as if your contest were imminent. That way you'll know what it takes to come into a contest looking your best. You'll also experience an increase in confidence because you'll know what to expect from your body and how to get it contest ready.

The "Pre-Contest" Phase

One of the many advantages of this diet is that, if you want to enter a lot of contests, you can manipulate your diet so you never get much above the 8 percent bodyfat level. You don't have those huge gains in bodyfat here. At 8 percent, you can drop to contest level in 2–3 weeks. It won't take a great deal of time.

Still, for most purposes, you'll want to go into the "pre-contest" phase of diet and training about 16 weeks before a major contest to get ready. Again, because you already know what you need to do from previous weekends on the diet, you will only be doing some fine tuning here by lowering and increasing calories a bit as needed. You shouldn't be doing anything much out of the ordinary.

By the final 6–8 weeks before the contest, you should look fairly close to how you want to be on stage. With this diet, you can control things so you know exactly where you're at each week. Following the weekend carb loading portion of your diet, you should be looking great on Tuesday or Wednesday, as the fine balance between glycogen loading to water depletion hits its optimal level.

PANIC ATTACKS

One of the things bodybuilders do to sabotage themselves before contests is to panic. They'll find themselves too fat and begin doing aerobics, thinking this will get the extra bodyfat off for them. At a maximum, doing about a half hour of aerobics consistently is not going to harm you. You'll burn up more free fatty acids than you would not doing enough work, and this will take off some bodyfat and get you closer to your goals.

But bodybuilders begin to panic and overdo it. They'll start doing 3–4 hours a day of aerobics to get that fat off, and all they do is exhaust energy stores so that the body starts using its own muscle tissue for energy. Obviously, this is not what you want to do so close to a contest.

Likewise, if you're really in trouble, you can start pigging out to build mass while thinking that aerobics will make up for the fat buildup. It's not going to work. Increasing calories and aerobics will most probably just increase catabolic activity in your body.

Aerobics, while burning fat, can also destroy muscle. Even if it doesn't do appreciable damage, it will still limit the amount of muscle you can put on to some degree. As a rule, the less calories you take in and the more time you allow yourself to lose the bodyfat, the less aerobics you'll need to do and the more lean body mass you'll retain. You need to allow yourself time to lose the bodyfat and gauge yourself effectively as you move toward a contest.

That's one of the things this diet does so well. With the weekend portion of the diet, you'll learn what foods to eat and how much to make yourself successful. You'll be better able to track your progress and know what you'll need to do for the contest beforehand. There'll be no need for those rash decisions that throw a curve ball at your metabolism.

MESSING UP A GOOD THING

Above all, you want to make a smooth landing into a contest. You shouldn't be doing anything out of the ordinary. You certainly don't want to experiment.

But some bodybuilders, in full control of their senses, will decide to try something new just before a contest. They're looking to get that final edge. They mess up. Their water table increases. They start with the sodium depletion or sodium loading trick. They'll let loose with all sorts of things they've never tried before, and all of a sudden they end up wondering how it was that they were looking so great and now look so bad.

Again, don't shock your system before a contest. Make a smooth landing into it. Don't throw everything away by trying to get the extra edge through some crazy stunt.

FLUID RETENTION

If you do tend to retain fluid, begin to restrict yourself to distilled water and low levels of sodium 24 hours before the competition. Also increase your potassium and calcium intake.

Actually, most people tend to retain some fluid, so these suggestions should be considered by all bodybuilders. You want as little extracellular fluid (i.e., water under the skin) as possible to avoid smoothing out. On the other hand, intracellular fluid (i.e., fluid inside the muscle) will increase cell size so you'll be bigger. It also aids vascularity.

Distilled water and low sodium will serve to lower the extracellular fluid. Potassium will increase the amount of fluid inside the cell. Higher potassium levels are also better for muscle contractions, though you want to be sure not to create potassium levels that are too high. Calcium is, of course, important in avoiding cramping.

DON'T OVERDO IT

As we discussed above, you can go through the "pre-contest" phase in preparation for a contest several times a year, as long as you keep your fat levels lower. In this way, it really doesn't take much time to get into contest shape.

That being said, I'd suggest that you only go through the "pre-contest" phase 4 times a year. That means a maximum of 4 contests a year. More than this is self-defeating, because I don't believe you'll have the time to go back into the mass phase and use it properly.

You've got to go back and build up lean body mass to some extent between contests. This also means you'll gain a bit of fat. You'll still be bulking up and cutting down, but it won't be like on the other diet where you bulk up so much that you gain so much bodyfat that by the time you lose it, you're no better off than when you started.

Again, the goal here is to make you bigger, stronger, and more cut from contest to contest and year to year. That's what the Anabolic Diet is all about.

1–2 WEEKS OUT

You should stop training 1–2 weeks out from the contest (you should always discontinue leg training two weeks out). That's pretty standard wherever you go. This will give your muscles maximum time to recuperate and achieve maximum growth. Don't worry about maintaining muscle mass and tone. The posing you'll be doing will take care of that, and also give you some aerobic activity. Posing should, of course, be continued throughout this entire period.

But though you'll shut down training right before a contest, this is the only time you should back off. Some people think that just because they're on the Anabolic Diet, they don't have to work as hard. That's simply not true. All you're going to do by cutting back in training is limit the effectiveness of the diet and your ultimate growth.

The two, diet and training, work hand in hand. Exercise actually complements the high fat diet. Hormonal changes caused by exercise result in an increase in the activity of the enzyme lipoprotein lipase (LPL) in the muscle.¹³ This in turn causes increased use of free fatty acids and decreases fat buildup.

We'll talk some more about what kind of exercise is best in concert with the Anabolic Diet later. For now, suffice it to say that both training and lifestyle work hand in hand with the Anabolic Diet in maximizing its benefits.

COUNTDOWN TO CONTEST

Above we talked about the importance of experimenting with carb loading duration and foods to learn when and how your body looks its best. That's basically the trick in perfecting that critical contest diet.

During the weekend carb loading part of the diet, you note how many hours into it that you look your very best. You refine that time by experimenting with the types of food you eat to precisely dial in that time when you're at your best, so you can use this information when the contest arrives.

What you'll eventually find is that there's a day in the week when you'll look your very best. All the water you've gained during your carb load will be drained out, and you'll have just the right balance between glycogen in the muscle and water to look your best. You'll feel great, too. Some people will look their best on Monday. Some on Tuesday. Some on Wednesday. Everybody's system works differently, and you'll find wide differences here. The goal is to find the right day FOR YOU, that day when you are at your best consistently, each week.

Most contests come on Saturday. Suppose you've found that you look your best on Wednesday of each week. Your goal then is to basically make the Saturday of your contest like a Wednesday. Because you look your best 3 days after your carb load, you want to complete a carb loading 3 days before the contest to make sure you look your best. Therefore, the Tuesday and Wednesday before the contest you carb up so that 3 days later, on Saturday, you'll look your best.

An important point here is that, the weekend before the contest, you won't carb up as usual. To carb up on the weekend and then carb up again two or three days later may well spill you back over to a carb-burning metabolism and smooth you out for that Saturday contest. Because of this, you skip your carb load the weekend before a contest. That way you'll be on the high fat diet for 8 straight days, from the Monday 2 weeks before the contest to the Tuesday before the contest. At that point you'll begin your pre-contest carb load so you'll hit the contest just right.

This is one area where the Anabolic diet has a big advantage over the competition. When you're on the high carb diet, your body is already saturated with carbohydrates so it's difficult to manipulate the diet so the body will respond well to your carb loading attempt before the contest.

What often happens is that you'll get off your high carb diet for 3 days at the beginning of the week before a competition and go low carb for 72 hours. Then you'll carb up to try and hit the contest right. The problem is, you really don't know how your body's going to react. Everything could work out well. Then again, you could experience a complete disaster. (This is the most common disaster.)



KEYS TO SUCCESS IN THE PRE-CONTEST PHASE

- Begin this phase 16 weeks before contest
- By 6–8 weeks out you should be close to your contest look
- Don't panic or make rash decisions
- Stick with the program
- Don't overdo aerobics
- Stop training 1–2 weeks out
- Skip your carb load the weekend before the contest
- Time your carb load so you'll look your best at prejudging
- Begin to drink distilled water, increase potassium and calcium, and reduce sodium 24 hours before contest
- Be careful with diet after prejudging

It's Russian Roulette. You've got maybe a 30 percent chance of hitting the mark. Here you've maybe had a year to prepare for the contest. You've been disciplined and dedicated. Yet you miss the mark when you hit the stage because of the uncertainty of the high carb diet.

With the Anabolic Diet, you'll know the exact hour when you look your best. Your body's going through the cycle every week. It's become predictable and consistent. You'll be dialed in

and know what to expect. You won't be doing anything different than you've done in the preceding months.

PREJUDGING

You'll want that exact hour when you look your best to coincide with prejudging. This is where most decisions are made, and this is where you'll want to look your absolute best.

But the body is not a perfectly predictable instrument. That's why, to make sure you don't smooth out, you'll want to give yourself 4 hours of extra time as a kind of "fail-safe" mechanism for prejudging.

So, if you find you're at your best 48 hours after carb loading, and prejudging will take place at 2:00 on Saturday, count back 48 hours. This will put you at 2:00 Thursday. Give yourself the extra four hours mentioned above, and you'll find yourself completing carb loading at 6:00 P.M. on Thursday.

You'll also want to look good at the evening show, especially if judging is close and will be ultimately decided in the evening. Fortunately, you've usually got a window, of several hours, where you look good, and that will carry over to the evening session.

Still, you've got to be careful. Some competitors will look great for prejudging and then go out and eat thinking it's all over. They'll come in bloated and retaining water for the evening show and, in a close competition, lose out because of it. You've got to stay tight all day. Keep diet minimal and in the high fat mode. Even having food in your stomach will create a slight bulge. You want to keep everything nice and flat, so keep your regimen going through the evening contest.

The above is, of course, just an example. You'll have to work with the diet to find the best approach for you. We'll also give you some other pre-contest modifications you can perform in our "Special Modifications" chapter. But the big difference between this diet and whatever you've been on before is the precision with which you can plan your contest regimen. Not only does the Anabolic Diet build muscle and burn fat, it also gives you a weekly opportunity to practice and prepare for a contest so you can manipulate your diet to the very best effect.

No more uncertainty or panic. The Anabolic Diet lets you to know exactly what you need to do to look your best well before the actual competition takes place.

SUPPLEMENTATION — A NO-NONSENSE GUIDE TO WHAT TO TAKE, WHEN TO TAKE IT, AND WHY.

The goal of the Anabolic Diet is to get you maximum growth. Exercise and training are, of course, the keys to opening the door to bodybuilding success. What the diet does is maximize the production of lean body mass built through training, while minimizing muscle breakdown and burning bodyfat. This is done by manipulating key hormones in the body to stimulate maximum anabolic drive and minimize the catabolic effects of exercise. To do this fully and get the optimum results, you'll need nutritional supplements.

Many athletes realize that nutritional supplements can get them that extra edge they need over the competition. Unfortunately, they often have some very strange ideas about what works and what doesn't. In many cases, the only information available to them comes from the people who manufacture, distribute, and retail the supplements they buy and, guess what? They're going to do everything they can to get you to buy their product.

To do this, they'll tell some tall tales. False and misleading information and claims abound in the supplement industry. Sometimes you'll find these claims made without any substantiation or evidence at all. Other times they'll take otherwise legitimate studies that really have nothing to do with their product and use them to back up their claims.

For example, a study is used to trumpet the success of boron in increasing testosterone. The actual findings of the study were that boron raised the testosterone levels in POSTMENOPAUSAL WOMEN. There was no evidence in the study that boron raised the testosterone level in either female or male athletes. In fact there is evidence out there that it doesn't. But the study is used nonetheless and probably hooks more than a few bodybuilders on evidence that is total fiction. This goes on all the time.

Even articles found in sports magazines, especially bodybuilding magazines, falsely advertise the effectiveness of various supplements. You'd think there be a strong element of honesty here, but there often isn't. The authors may have a financial interest in the product. So may the editors. Because of that, the truth is stretched or even ignored.

The so-called "anabolic steroid substitutes" are especially noteworthy here. You'll see them advertised all over bodybuilding, powerlifting, and other sport magazines, and they'll tell you that these substances are even more effective than anabolic steroids, possess no side effects, and will change your life overnight. It's all a bunch of baloney.

In fact, nearly all the claims you see made in connection with nutritional, herbal, homeopathic, and glandular products are unsubstantiated by research. They may be safer than anabolic steroids but they are also relatively, if not entirely, ineffective.

Often, you'll see some results after beginning to use these supplements. The only problem is, the results don't come from the supplements. They come from the athlete himself.

He's enthusiastic again after a down period and finds himself with renewed dedication. He sets out to improve his nutrition, but at the same time kicks up his training and adjusts his lifestyle. He gets results thanks to changes in training, lifestyle, and attitude. But instead of taking the credit himself, he'll start singing the praises of some absolutely worthless supplement.

This brings to the forefront the #1 rule when dealing with any supplement: **Be critical**. Before announcing to the world how good a supplement is, take a long look at the benefits you think you've received from the supplement. Study your progress to see if you've really gone beyond what you would ordinarily expect from the diet and training you're on. Are you really getting stronger than you would normally expect? Gaining stamina? Are you increasing lean body mass as a result of the supplement, or increased training intensity and enthusiasm?

The supplement manufacturers make enough ungrounded claims all by themselves. There's no need for you to help them out. Be critical. Study your overall progress and training situation. Then, if it's proven to you that the supplements are giving you an edge, you'll know you've got something that really works.

It's also important to say up front that supplements don't work of and by themselves. They do not take the place of proper training, diet, and lifestyle. What they do is work together with training, diet, and lifestyle to maximize growth. They also must be targeted for specific diets and training conditions, and they must be taken at the right time and in the right dosages.

The supplements that I recommend be used with the Anabolic Diet are targeted specifically for use with this diet. Many would have little effect if they were to be used with the high carb diet. But here, when used correctly, they'll work synergistically with the Anabolic Diet, your training, and lifestyle to maximize anabolic drive, limit catabolism and burn fat.

LIFESTYLE

In order to manipulate the body's endogenous hormones to insure that maximum growth takes place, the bodybuilder has to first bring his lifestyle under control. Reducing stress is a big factor since it can result in decreased testosterone and increased cortisol levels. Stated most simply, **stress makes it more difficult to build mass and easier to break it down.**

You'll also need sleep. When training hard, you should allow for 9–10 hours a day. This can be done either straight through at night or with an 8 hour stretch at night and a 1–2 hour nap in the afternoon. Sleep deprivation adversely affects testicular function and this leads to lower levels of serum testosterone.¹ This isn't good for bodybuilding.

Recreational drug use must also be curtailed. Marijuana^{2,3} and cocaine^{4,5} have been shown to decrease serum testosterone. And though I allow for a beer or two during carb loading sessions of the diet, it's best not to overdo it. Alcohol also lowers testosterone^{6,7,8} and growth hormone.⁹

TRAINING

Exercise is the most powerful and potent anabolic agent available to the bodybuilder. It's also the most catabolic.

While testosterone and growth hormone increase as the intensity and duration of exercise continues, they will become severely depressed if you overtrain. At the same time, cortisol increases as does the cellular breakdown of protein and, ultimately, muscle. Because of this, it's important to train at the right intensity and pace to maximize hormonal response, while insuring that you don't overdo it.

A short, intense approach to workouts is probably the best for the bodybuilder, whether on the high fat diet or not. A rigorous workout limited to no more than 35–45 minutes seems wisest here, although some allowances for personal preference or training structure can be made.

All resistance programs will result in some increase in GH or testosterone, but what we've found so far is that, in general, using moderately heavy weights for 6–20 reps maximum with only limited rest between sets optimally increases both GH and testosterone. So if you're still doing those 2-hour marathon sessions at the gym, WAKE UP. You're sabotaging your growth.

The object is to limit cortisol production while increasing growth hormone and testosterone. If practical, measuring serum levels of testosterone, GH, and cortisol in the blood would be an excellent way of telling when an athlete is training to the maximum level, and when he's going into overtraining.

Without this, you can keep a careful eye out for the classic warning signs of overtraining. Irritability, depression, loss of motivation, increasing soreness, swelling of lymph nodes, loss of appetite, and bowel problems can all be indicative of overtraining syndrome. If you're overtraining, back off. Look for that level of work where you're right at the edge between maximum growth and doing too much.

As we've pointed out, it's necessary for all aspects of a person's life—including diet, training and lifestyle—to combine to create a synergistic effect on muscle growth. Along this line, exercise complements the high fat diet very well. Exercise increases the use of free fatty acids in muscle and decreases fat buildup, thus adding to the lipolytic effects of the high fat diet.¹⁰ The reduction of carbohydrates available on the high carb diet has also been shown to play a role in increasing the mobilization of triglycerides during exercise, thus enhancing the fat-burning process.

WHY SUPPLEMENTS

The main purpose behind taking supplements is to increase your serum testosterone and growth hormone levels to their optimum level, and manipulate insulin production so as to create the best anabolic environment for the body. But there are three other major reasons why supplements should be strongly considered by the bodybuilder.

The first is to help your body make up for any deficiencies it may already have. Because of the strict nutritional practices and the stress of training for bodybuilders, they may have an increased need for certain vitamins and minerals. Large quantities of potassium and zinc, for

instance, can be lost through sweat and urine. Magnesium, sodium and iron may also be severely affected in the athlete who trains for prolonged periods of time in hot weather.¹¹

Our environment can also contain pollutants or otherwise fail to provide for our needs. Poor agricultural practices, industrial waste dumping, and indiscriminate disposal of urban wastes can have a great effect on the quality of food you get in your diet. Soil erosion can also impact the nutrients received in the food you eat. In a high fat diet, where you're eating plenty of meat, the quality of grazing conditions for cattle can also influence the nutrients you'll receive.

By using vitamin and mineral compounds, we hope to clear up any deficiencies that may arise in this area. As such, they serve as a kind of nutritional insurance policy. If you do have deficiencies, supplements will clear these up. If you don't, the compounds you'll be supplementing won't hurt you, and they'll give you the security of knowing you'll have no nutritional problems that will affect growth and overall health.

Another area important in the decision to use supplements is that of preventive nutrition. Many of the compounds we'll talk about below are provided to minimize the kinds of serious illnesses that affect North Americans.

You'll also want to protect yourself from some of the nutritional pitfalls that can come from heavy training. Potassium is one of the essential dietary minerals, and it can be lost in sweat. This can be especially important to the bodybuilder, because even mild potassium deficiency can lead to fatigue and decreased performance.¹²

Similarly, chromium has also been shown to be essential in carbohydrate and fat metabolism. Since the need for chromium increases with exercise, and modern refined diets provide little chromium, there may be a big need for it in a number of cases. Whether chromium also provides for other anabolic effects has yet to be proven, but I prescribe it in the Anabolic Diet as a precaution against any possible deficiency.

THE MULTI-VITAMIN

You should start your supplement program with a daily multiple vitamin. We're not talking about the kind named after some cartoon character, either. We're looking for serious nutritional supplementation to maximize general health and bodybuilding capabilities. Some of these will be 10–15 times the U.S. Recommended Daily Allowance but, then, that should tell you something about the RDA's. They're simply not applicable to an increasingly diversified general public, and certainly not to bodybuilders and other athletes.

The vitamin should include:

- 20,000 international units beta-carotene
- 50 milligrams of vitamin B-1 (thiamine)
- 50 milligrams of vitamin B-2 (riboflavin)
- 50 milligrams of vitamin B-6 (pyridoxine)
- 50 milligrams of vitamin B-12 (cyanocobalamin)

- 50 milligrams of Niacinamide
- 50 milligrams of D-pantothenic Acid
- .5 milligrams of Folic Acid
- 500 milligrams of vitamin C
- 400 international units of vitamin D
- 400 international units of vitamin E
- 20 milligrams of iron
- 200 milligrams of calcium
- 100 milligrams of magnesium
- 50 milligrams of potassium
- 10 milligrams of zinc
- 25 micrograms selenium
- 25 micrograms chromium

You'll note there are no megadoses here. Though most go beyond the RDA's, these are still relatively small dosages and certainly not excessive. You should be able to find a vitamin or devise a program that will provide them quite easily.

You'll also note that I provide for the use of a number of "antioxidants." They include vitamins like E and C and selenium and beta-carotene. These antioxidants have been the focus of a number of studies over the last decade, and there's strong evidence that they can contribute mightily to overall health and longevity. In addition, and especially important to the bodybuilder, is the role antioxidants can play in reducing fatigue and the breakdown of muscle tissue during exercise and aiding recovery.

The enemy here, and the focus of antioxidant use, are substances in the body known as "free radicals." Free radicals consist of highly reactive molecules that possess unpaired electrons. These radicals play a big role in the normal metabolism of food and the use of energy resources during exercise.

But it's also strongly suspected that they react with the components of body cells in a way that leads to molecular damage and the death of vital cells and, eventually, to aging and death itself. Chemical reactions involving free radicals in the body have been implicated in causing or contributing to cancer, atherosclerosis (hardening of the arteries), hypertension, Alzheimer's disease, immune deficiency, arthritis, diabetes, Parkinson's disease, and various other diseases linked with the aging process. Studies, to this date, strongly show that antioxidants can protect the body from the high free radical concentrations that may lead to these diseases.¹³

In fact, data from recent studies has strongly supported the role antioxidants play as protective agents in the creation of cancer,^{14,15,16} heart disease^{17,18,19} and limiting the effects of aging.²⁰ Administration of antioxidants like vitamins C, E and A has also been found useful for preventing post-surgery complications in hospital patients.²¹

Antioxidants have also been linked with improved function in transplanted organs^{22,23,24} and been shown to be helpful in the prevention of cataracts.^{25,26,27,28} Low levels of antioxidants in the body have been identified as a possible risk factor in rheumatoid arthritis²⁹ and myocardial infarction.³⁰

There is also a growing amount of data of critical importance to the bodybuilder suggesting that exercise can adversely affect muscle tissue by increasing the formation of free radicals. In one study, muscular contraction was found to produce reactive oxygen that contributed to muscle fatigue.³¹ It's also been found that exercise can decrease the supply of antioxidants. The important antioxidant Vitamin E can be severely decreased with training, thus depleting the muscle of its major antioxidant.³²

Most researchers feel the issue here is stress. It's now felt that stress, either emotional and mental or physical, increases the amount of free radicals produced in the body. While the body generally has the antioxidant capacities to handle free radicals, stress overwhelms the body's ability to neutralize them and they increase, largely unchecked. This, in turn, causes advanced aging and breakdown of the body.

Many bodybuilders have chosen to ignore the possible benefits of antioxidants, but this is not a wise thing to do. The anaerobic exercise performed by the bodybuilder in training puts a great deal of physical stress on the body, and this leads to the increased formation of free radicals. To fight the catabolic influences of these free radicals, YOU MUST MAKE A PLACE FOR ANTIOXIDANTS IN YOUR DIET.

Antioxidants aren't good only for the granola crunchers. When you add the increased mental and emotional stress caused by modern living with the intense physical stress placed on the body by the bodybuilder, antioxidant use becomes a necessity to control the damage that can be done by free radicals.

It would seem logical from the extensive research done on the topic to this point to conclude that antioxidants lessen tissue damage, speed recovery, and increase performance over the long term. They would also seem to provide long-term general health advantages. I target them in my supplement plan for that dual purpose—TO GET THE BODYBUILDER MAXIMUM GROWTH WHILE INSURING FOR LONG-TERM HEALTH.

INCREASED ANTIOXIDANT USE

With the above in mind, it's clear that, when used correctly, antioxidants can give the bodybuilder an added edge. As such, you may want to go beyond the minimum amounts provided by the multivitamins to maximize the advantages antioxidants can bring. If so, I'd suggest something along the line of the antioxidant program below:

- 800 international units of Vitamin E
- 1 gram of Vitamin C
- 50 milligrams zinc
- 25,000 units beta-carotene
- 100 micrograms selenium

The above should be taken only on days that you train and used in addition to your daily multi-vitamin. On the days you train, you will be taking this along with your multi-vitamin.

PROTEIN

Over the years, high protein has become a big part of most athlete's diets. One reason for this is the increased amount of calories consumed by athletes. They'll get them without really thinking about them.

But many athletes will also make it a point to deliberately increase protein in their diets through eating protein-rich foods and adding protein supplements to their daily routine to enhance strength and performance. Most medical and scientific sources in the past have tried to discredit this view. They claim that high protein diets are unnecessary and that the Recommended Daily Allowance for protein supplies more than enough for the athlete.

In recent years, though, studies involving both strength and endurance in athletes have found that exercise actually **DOES INCREASE** protein needs.^{33,34,35,36} While those RDA levels may be acceptable for couch potato types, they won't cut it for the athlete. The intense muscular stimulation the bodybuilder goes through in a workout increases both protein catabolism and its use as an energy source. A high protein diet protects the protein to be turned into muscle by, among other things, providing another energy source for use during exercise. The body will burn this protein instead of the protein inside the muscle cells.

One animal study found that dietary protein appeared to directly stimulate muscle growth by limiting protein breakdown and increasing anabolic compounds.³⁷ Similar effects have been found in man. It's well known that high protein diets are necessary for success in muscle growth using anabolic steroids.³⁸ It's also been shown that protein drinks taken after training may increase insulin and growth hormone, and thus have a strong anabolic effect.³⁹ It also stands to reason that when intensity of effort is high and the body is stimulated to adapt by adding muscle, protein is going to have to increase to provide for the increased lean muscle mass.

My belief is that once you've exercised past a certain level of intensity, dietary protein becomes more important in adding to the anabolic effects of the exercise itself. If you're under that level, you may not need the protein. But if you're over, you will.

And what's the easiest source of dietary protein for those who need it? Eggs, meat, and some dairy products. Exactly those things that the high fat diet has you eating a truckload of. In this way, the high fat diet works doubly well in giving the bodybuilder just what he needs for growth.

Protein supplements can also help here. Several studies involving Refit (a milk powder containing around 90% protein and 5% mineral salts) have shown improved sports performance among athletes who use it.^{40,41}

It should be pointed out that, despite what some have claimed, protein supplements don't seem to have any anabolic advantage over high-quality protein food. Still, they can be a real ally for those who want to minimize calories or can't eat food in the volume necessary to get enough protein.

Though most shouldn't need protein supplements on the Anabolic Diet, they can be used if you have such problems with appetite or caloric limitations.

FREE FORM AMINO ACIDS

Free form amino acids are the building blocks on which proteins are made and muscle developed. They will play a big role in the supplements I recommend for use with the Anabolic Diet.

Often the free form aminos are used as an alternative to food or protein in the diet, but they are capable of much more. They can be used as energy sources, anti-catabolic agents, performance enhancers and, most critical to the bodybuilder, a way to maximize the anabolic effects of hormones in the body and increase lean body mass.

One of the main reasons bodybuilders and other athletes first jumped on the amino bandwagon was the belief that they can increase the release of growth hormone. It turns out that these beliefs were well founded. It's been shown that a number of aminos may increase growth hormone secretion.⁴² It's also been shown that they may release pancreatic glucagon and insulin.⁴³

The branched chain amino acids like leucine (so-called because they chemically branch off another chain of atoms instead of forming in a line) have also been studied for anti-catabolic and anabolic effects and been found to stimulate the synthesis of protein and inhibit its breakdown.^{44,45}

THE FORMULAS

I'm not in the business of manufacturing nutritional supplements, but I would like to outline a series of formulas that could be produced to maximize anabolic effects, minimize catabolism, and give you the final piece in the puzzle in transforming training, lifestyle, diet, and supplements to maximum muscle growth. I am currently working with Optimum Training Systems about the possibility of creating various nutritional supplement formulas for use with the Anabolic Diet.

Basically, the goal of these formulas is to increase muscle mass and strength by increasing protein synthesis and decreasing protein catabolism. This is done by increasing the available amino acid pool and high energy phosphates, and providing alternate forms of energy so protein isn't eaten away as training continues.

Dosages are applied at an increased, pharmacological level to provide for the maximum anabolic environment and optimum muscle growth. The formulas are also streamlined and simplified, and there's a good reason for this.

Complex amino acid mixtures can contain ingredients that compete with one another for transport within the body, and lessen the amount of each available. The trick is to devise a mixture of aminos that's comprehensive in nature to maximize anabolism, while selective enough to insure proper serum levels in the blood.

This calls for some precision, but I think we've achieved our goals in each of the four formulas. Each is specifically targeted for a specific function in the body. We'll discuss these functions along with ingredients as we take a brief look at each formula.

One important point: **ALL THESE FORMULAS ARE TO BE TAKEN ON AN EMPTY**

STOMACH. If taken with food, the amino acids gained from the food will compete with the supplement aminos and limit their effectiveness.

Formula 1: The “Anticatabolic-Anabolic” Compound

Formula 1 is designed for use both before and during your workout. It includes glutamine, leucine, KIC (ketoisocaproate) and OKG (ornithine alpha-ketoglutarate).

Glutamine is the most abundant amino acid in the body, and very important. Increasing protein synthesis for muscle building, and decreasing protein degradation and resulting muscle breakdown, are both dependent on the size of the glutamine pool in a cell.^{46,47,48,49} If it's high, other amino acids won't be forced into glutamine production, so they'll be available for protein synthesis. Skeletal muscle that might also be used to replace glutamine is also spared. Glutamine is also important because it acts to keep an existing amino acid balance in the body, thus enabling the body to synthesize more protein.

Leucine, the branched chain amino listed above, stimulates protein synthesis and inhibits its breakdown, as do both KIC and OKG. Leucine,⁵⁰ OKG,⁵¹ and KIC^{52,53} all stimulate insulin secretion as well. This increases the flow of amino acids between muscle cells and has all the anabolic and anti-catabolic effects mentioned in earlier chapters. Anabolic hormones are increased, protein synthesis enhanced, and the body isn't forced into using up its own tissue to provide energy, as occurs when the body is reliant on carbohydrate-based energy stores.

Basically, Formula 1 does three things. The first is to increase protein synthesis by the anabolic action of the components in the formula. The second is to make available a free amino acid pool that's not going to be used up as a source of energy. The third is to decrease the breakdown of muscle tissue in the cell by making sure it isn't called on for energy or to feed other tissues in the body.

Formula 1 is taken just prior to training. Then, during your workout, you can also sip the formula in water continuously or put a bit of the powder under your tongue as you go. Allowing the powder to be held in the mouth before swallowing allows some of the aminos to be introduced more directly into circulation, thus bypassing the liver. This can result in a higher level of aminos in the system and may be something you want to try as you train with the formula.

Formula 2: The “Alternate Energy/Antioxidant/Cholesterol Fighter” Compound

Formula 2 combines L-carnitine, acetyl-L-carnitine, taurine, methionone, choline, inositol, and betaine.

On the high fat diet, muscle uses fat for energy during rest and exercise. L-carnitine is necessary for the transference of fatty acids in muscle cells, where they're used as an energy alternative to other, more destructive sources. While generally useless in the general diet, L-carnitine is one of those substances that, when targeted properly in the high fat diet, can be very effective.

Acetyl-L-carnitine or acylcarnitine is linked to L-carnitine. When L-carnitine is introduced in the body, acetylcarnitine levels rise, but it's been found that acetylcarnitine has beneficial properties of its own. Acylcarnitine has been shown as a boon to testosterone levels.^{54,55} It's also become a compound of great interest because of its positive effect on aspects of aging and the

lowering of cholesterol levels that can be associated with aging.⁵⁶ Inositol is also included as a cholesterol fighter.

Methionine leads to a natural increase of glutathione, one of the most effective antioxidants in the body. Methionine, choline, betaine, and inositol are also very useful in the anabolic diet for their fat burning potential. Taurine is another antioxidant of value which lowers blood cholesterol and increases the burning of fat as an energy source.

The combination of these substances should provide an advantage in four key areas:

1. Providing and encouraging alternate energy sources.
2. Cutting back on breakdown of muscle tissue.
3. Decreasing serum cholesterol.
4. Providing antioxidant protection from free radical buildup caused by increased stress of workouts.

This formula should be taken twice a day, in morning and evening.

Formula 3: The “Insulin Anabolizer” Compound

Formula 3 consists of KIC, OKG, arginine, glutamine, leucine, taurine, alanine, chromium, and potassium.

As discussed in an earlier chapter, insulin is one of the keys to the muscle producing, fat burning goals of the Anabolic Diet. As outlined above in Formula 1, KIC, OKG, and leucine all stimulate insulin secretion and maximize its anabolic effect when used properly. Taurine also increases the secretion of insulin. Supplemental glutamine leads to decreased muscle breakdown and increased levels of muscle protein, thus insuring the body doesn't waste the insulin response.

Arginine, taurine, and alanine also stimulate and maximize the anabolic effects of both insulin and growth hormone. And while chromium has yet to show any marked anabolic effects in studies, we use it here as a preventative. As discussed above, the need for chromium increases with exercise, and chromium deficiency can really play havoc with insulin and any resulting anabolic effects. We use it here just to make sure that no chromium deficiency will arise (as a result of the bodybuilder's rigorous workout) to sabotage growth.

Similarly, much potassium is lost in sweat. This is especially a problem for women who, because of menstrual flow and the extreme retention and loss of fluids by the body, may experience pronounced potassium problems. Many women are borderline potassium-deficient, and women athletes can have a real problem with the combination of menstruation, fluid flow, and the sweat that comes from training.

The problem can also be severe for males. Even a mild potassium deficiency can lead to fatigue and decreased performance. A big potassium deficiency can also lead to cardiac problems.

Because so much potassium is lost in sweat and other bodily functions, we add it here just to insure there won't be a deficiency.

The basic goal of Formula 3 is to increase and maximize the anabolic, muscle building effects of insulin and growth hormone after the workout and during rest.

Formula 3 should be taken immediately after the workout and just before bedtime.

Formula 4: The “Intracellular Phosphate” Compound

Formula 4 is aimed at increasing energy stores to their highest level by increasing intracellular high-energy phosphates. It consists of creatine monohydrate, adenosine triphosphate (ATP), creatine phosphate, histidine, arginine, glycine, and methionine.

Creatine monohydrate is formed in the liver from the amino acids arginine, glycine, and methionine. Creatine is then taken up by skeletal muscle where it forms phosphocreatine, the high-energy phosphate compound that replenishes ATP in the phosphocreatine energy shuttle. Creatine supplementation has also been shown to increase muscle torque during maximal voluntary exercise⁵⁸ and muscle hypertrophy.⁵⁹

Histidine facilitates the use of ATP and can serve as an effective buffer for lactic acid production in the muscle, thus decreasing acidosis and decreasing fatigue. Synthetic ATP has been used for some time by athletes believing in its ability to positively effect endurance and strength. In combination with creatine phosphate, creatine monohydrate, and the essential amino acids, this formula is targeted at increasing phosphocreatine to replenish ATP in the muscle cell as a way of combating fatigue and providing added benefits in strength and growth.

The main goal of Formula 4 is to actually create more precious ATP for energy in the muscle cell by using a biochemical process known as the “phosphocreatine energy shuttle” to replenish it. Phosphocreatine allows for the continual recycling of ATP in the cell, and by maximizing it, we can provide the muscle with expanded ATP sources and increase protein synthesis while minimizing catabolism.

This formula should be taken 4 times daily.

OTHER BENEFICIAL SUPPLEMENTS

Zinc appears in both the multi-vitamin and antioxidant formulas above, and there is good reason for this. It plays a significant role in the function of the testicles. In many cases, especially where a deficiency may be present, it’s been demonstrated to increase the secretion of growth hormone and testosterone⁶⁰ and to raise plasma testosterone and sperm count.^{61,62} Low zinc can lead to a decrease in testosterone production, so it’s necessary as a supplement. In the formula above, I have it at the 50 milligram per day level, but if a deficiency is present or if there are concerns about zinc levels, another 50 milligram dosage can be added during the day.

Caffeine is also of great use in the high fat diet. It has lipolytic, fat-burning properties that result in an increase in free fatty acid concentration in the blood, BUT ONLY ON THE ANABOLIC DIET. In fact, as described earlier in this book, a high carb diet seems to negate the effect of caffeine. A good, strong cup of coffee 20 minutes or so before a workout is a nice, natural way to get caffeine and make full use of its benefits.

Borage seed oil or evening primrose oil (Efamol) provides protection for the liver and is recommended for people who may use anabolic steroids. Both of these oils are rich in linolenic acid, vitamin E and gamma-linoleic acid (GLA). GLA is a precursor for dihommogammalinolenic acid, a compound depleted by steroids, alcohol and other drugs. It’s also important for several

prostaglandins used to fight inflammation and muscle soreness in the body and, thus, is of great use to the bodybuilder in training. Take 2 of the 500 milligram capsules 3 times a day.

Calcium is needed to prevent muscle cramping when exercising. Some anecdotal evidence also indicates that it may well delay the onset of fatigue in muscle. It's suspected that calcium may also increase growth hormone secretion during exercise. Take 500–1,000 milligrams of calcium prior to working out and 500–1,000 during the workout. Calcium can be taken in the form of Roloids.

Ephedrine is a double-edged sword when it comes to supplements. On the one hand, it seems to work well as a stimulant, giving the user a central nervous system effect somewhere between adrenaline and amphetamines. Many athletes have found it useful in providing more drive and better performance during workouts.

On the other hand, ephedrine is a drug. At higher dosages it can result in heart palpitations, cardiac arrhythmia, hypertension, tremor and, occasionally, death. When used with proper restraint, no more than 90 milligrams should be taken during the day, with dosages of 20–30 milligrams at a time. Ephedrine is also found in the Chinese herb, Ma Huang, in widely ranging dosages. It's often coupled with caffeine and aspirin in a thermogenic cocktail.

Bottom line, I can't really endorse ephedrine. It's available now over the counter, but many states are now thinking about making it a prescription item. It has some serious health drawbacks, and I urge you to consult your doctor before beginning to use it.

Coenzyme-Q10 is a promising antioxidant that can give you the antioxidant effects listed earlier in this chapter and may possess other properties useful in increasing exercise performance. It may also influence cell growth and serve some protective effect for muscular injury. 60 milligrams of Coenzyme-Q10 every day could provide a real bonus in general health and growth.

BUFFER DRINKS

Intense exercise always causes significant reduction in ATP, a buildup of lactic acid, and increase in acidity of the body tissues. Although normally the body can handle the extra acidity, under the high stress of exercise, the buildup is too fast for the body to cope with. With the increasing acidity comes decreased contractibility of the muscle fiber and premature muscle fatigue.

There are two ways to approach fatigue in athletes. One way could come from increasing ATP in the tissues, either by administering ATP or increasing energy-rich compounds like creatine phosphate (for example by using creatine monohydrate) in the muscle.

The other comes from trying to reduce the effect intracellular acid has on the muscle by buffering the buildup of lactic acid and hydrogen ions (H⁺) with certain alkaline compounds.

Ideally, combining both of these approaches would provide optimal results. While I haven't decided on the final formula, it will include sodium bicarbonate, ATP, carnosine (a histidine dipeptide), creatine phosphate, lactate, and aspartame, and will provide a maximum buffering effect. Other possible components will be one or more ketones including butyrate, creatine monohydrate, and various potassium and citrate compounds.

Sodium bicarbonate has long been a mainstay in delaying the onset of fatigue in the gym, and its properties for buffering lactic acid and hydrogen ion buildup are well documented.^{63,64,65} Recent tests with wrestlers and other athletes have also found lactate to not only be an ideal buffer but a very efficient energy source. The other ingredients in the formula are also useful for increasing ATP in the muscle tissue. Carnosine, creatine phosphate, and butyrate have all demonstrated strong properties for added energy production.

The above formulas should have zero or limited carbohydrates.

OMEGA-3 FATTY ACIDS

Earlier in this book I told you about the importance of supplementing the meat in your diet with monounsaturated or polyunsaturated fats (usually liquid in form) where possible. Of primary concern for us here are the polyunsaturated fats available in the omega-3 fatty acids. They're found to a high degree in fish oils, and have been hailed as a great factor in lowering serum cholesterol levels and a key in preventing coronary heart disease.^{66,67}

Key to our concern are the effects these marine oils have been found to have on Eskimo tribes renowned for diets high in fat. Though their high fat diet would seem to make them prime candidates for heart disease and atherosclerosis, they've been found to be relatively immune to cardiac problems, at least until adopting a more Western lifestyle in recent years. Studies have centered on the omega-3 oils and their cardioprotective abilities as being central to this phenomenon.^{68,69}

For the bodybuilder on the Anabolic Diet, where fat and protein are found at high levels, the omega-3's provide an excellent edge of additional protection against any possible cholesterol problems. Eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) are found in abundance here, and they serve as starter material for hormone-like compounds in the body that can positively affect blood pressure, clotting, immune response, and triglyceride levels. Even in cases where dietary cholesterol is increased, they may lower serum cholesterol.^{70,71} Important to the bodybuilder, it also appears that aerobic exercise can improve the effects of fish oil on cholesterol.

It's also been found that the omega-3's can enhance lipolysis or the combined breakdown of stored fat, and decrease the production of new bodyfat.^{72,73,74} You're actually making less fat and breaking down more when you use these oils.

There's also some anecdotal evidence that omega-3's may increase cardiovascular and overall strength levels and performance. In short, there are many uses for them and certainly no harm can come from their use. While useful as a general supplement for anyone, they're especially effective as a targeted supplement for the Anabolic Diet.

Using EPA as the reference fatty acid here, I recommend 2,000 milligrams of EPA a day. Fish oil usually contains around 20 percent EPA and 10 percent DHA, so 10 capsules a day of 1,000 milligrams of fish oil should give you the recommended amount.

It is preferable, however, that you get as much of this substance as possible through a fish source. Just eating fish will give you a fair amount of omega-3 fatty acids, and you can cut back

or even cut out the supplements if you think you're getting enough through your diet. For example, 100 grams (three and a half ounces) of Atlantic salmon has about 1400 milligrams of omega-3 fatty acids, so half a pound of Atlantic salmon would give you as much or more than 10 capsules of fish oil. (This does not eliminate the need for red meat in your diet.)

Any fish — be it shell, freshwater, ocean, or whatever — is good. There is some evidence, though, that ocean fish may be a better source than freshwater fish (except for lake trout), and that fish from the North Atlantic may be superior to that caught nearer the Equator.

AND KEEP IN MIND THE POSSIBILITY OF SUBSTITUTING MONO AND POLYUNSATURATES WHERE POSSIBLE IN YOUR DIETARY CHOICES. In terms of daily food intake, try to mix it up. Don't stick entirely with the red meat and animal fats. Not only fish oils, but flax seed, canola, corn, and olive oils will enable you to naturally blunt any tendency toward overdoing those saturated fats. They should play a daily role in the Anabolic Diet.

THE SUPPLEMENT SCOREBOARD

	Rating	Recommended Daily Dosage
Alcohol	Thumb down	
Bee pollen/Royal jelly	Thumb down	
Borage Seed Oil/Evening Primrose Oil	Thumb up	1,000 mg.
Caffeine	Thumb up	Strong cup pre-workout
Calcium	Thumb up	500–1,000 milligrams both before and during workout
Cocaine	Thumb down	
Coenzyme-Q10	Thumb up	60 mg.
Ephedrine	?	
Ginseng	Thumb down	
Herbal/Plant Anabolic Steroid Substitutes	Thumb down	
Marijuana	Thumb down	
Medium Chain Triglycerides	Thumb down	
Nicotine	Thumb down	
Omega-3 Fatty Acids	Thumb up	2,000 mg. EPA
Zinc	Thumb up	50–100 mg.

STAY AWAY FROM THESE

Many bodybuilders have looked on ginseng, first identified as useful in Chinese medicine, as a mild tonic that increases workout intensity and recovery ability, but I've found it largely useless to the bodybuilder. It also seems to adversely affect testosterone levels in the body and may thus set the athlete back in training to some degree.

Likewise, bee pollen and royal jelly have not been proven to present any anabolic or growth advantages. Though they may eventually provide some medicinal benefits, they're of little use with training or the Anabolic Diet.

It's also important to note that Medium Chain Triglycerides (MCT's) get a big thumbs down for use in the Anabolic Diet. Very few foods actually contain MCT's, but you'll find many people are very big on MCT supplements, most of which are derived from coconut oil. They'll say, "It's fat, why can't we use it?" but it basically bypasses the whole energy pathway we're trying to establish with the Anabolic Diet and can be very counterproductive.

MCT's can be of great use on a diet high in complex carbs because of its protein sparing effects. But on the Anabolic Diet, the body, instead of using the long chain fatty acids that make up most body fat, uses the MCT's. The body ends up bypassing the very metabolic processes that the Anabolic Diet sets up: to burn its own fat and use the long chain fatties as a primary energy source.

The long chain triglycerides utilized in the Anabolic Diet also have several advantages over the MCT's. They have an even greater protein-sparing effect than the MCT's. And along with decreasing the formation of bodyfat, which the MCT's also do, they increase the amount of existing bodyfat broken down and greatly decrease bodyfat levels.

A lot of people will be tempted to run down to the health food store and buy some MCT's to be used on this diet, but don't bite. They'll actually work against the diet in terms of muscle production and fat breakdown.

I also wouldn't put any trust in those manufacturers of herbal and plant products who advertise that their products contain natural testosterone or have the ability to increase natural testosterone production and thus serve as a substitute for anabolic steroids. The fact is that no plant or herb, with the possible exception of truffles (which contain Androst-16-en-3-ol), contains testosterone or even any derivatives that the body can transform into useful hormones for growth. The steroids contained in these products are plant sterols, not the anabolic type humans can use.

It's also important to note that some of the compounds advertised may also end up having a negative effect on muscularity and performance. Beta-sitosterol, one of the most plentiful phytoestrogens found in alcoholic beverages, can actually work against the male athlete.

Nicotine is also used by some athletes in the belief it will increase performance. It can enter the body through smoking, chewing tobacco or snuff, nicotine gum, or by nicotine patches.

Smoking is the most common and least desirable way to take nicotine. When combined with the over 2000 other chemical substances in a cigarette, nicotine acts as an irritant and cancer-causing agent. It can also decrease the lungs' ability to clean themselves. Lung disease and cancer

can result. Cigarettes also increase risks to cardiac health. Early research also shows a strong chance of lessened serum testosterone in men. The addictive nature of nicotine is well documented.

While less is known about chewing tobacco and snuff, it is still certain that it's just as addictive and can greatly increase oral cancer risk. As for the nicotine gum and patches developed to help the addicted smoker kick the habit, they have far fewer adverse effects and are, of course, very preferable to smoking or other orally taken sources.

There may, indeed, be some kind of up-side to nicotine. Both animal and human studies have shown nicotine can reduce caloric intake and aid weight loss. Ceasing smoking may also lead to weight gain.

But there seems little evidence that it possesses any advantage for the athlete. Smoking is especially harmful and generally has a negative effect on athletic performance.⁷⁵ Any bodybuilder who smokes would be wise to give it up. If impossible to break, other oral forms of the drug will be preferable to smoking. But with the dramatic increase in chances for oral cancer and other possibly harmful chemical compounds contained in smokeless tobacco products, you'd be better to get off the stuff altogether.

Ditto on recreational drug use. As mentioned above, alcohol, marijuana, and cocaine have adverse effects on serum testosterone and growth hormone. While a beer or two on the weekend is not going to hurt you, you'll still want to approach this area with caution to ensure the best results from the Anabolic Diet program.

SPECIAL MODIFICATIONS — DOING IT YOUR WAY

Too often people think the solution to a problem has to be complex. They measure the attractiveness of a program by how difficult it is to follow. The bigger and more difficult to follow, the better. If they're counting every calorie like it's their last, memorizing point value charts and poring over recipe books, they figure they've really got something. And if they get confused or the diet doesn't work, they'll blame themselves.

"Simplicity is to be avoided at all cost." Many people will look at the Anabolic Diet, see it doesn't contain endless charts and a 50-page recipe section, and figure it's just too easy to work.

They're wrong.

The true measure of a diet is WHETHER IT WORKS, and the Anabolic Diet will work if given the chance.

Sure, it's simple. After all, it's basically the diet mankind grew up on before the 20th century carbohydrate revolt that made the food packaging industry rich. There are some new wrinkles based on what science has recently taught us about how to best insure health and muscle growth. But, overall, all we've done is fine tune the diet we were made to live on and bring it up to the highest nutritional and performance standards.

Though the scientific principles behind its success may be a bit involved for the layman, the actual diet itself is quite easy to carry out. Bottom line, there's not a whole lot to it. You've got the basic high fat weekday/high carb weekend guidelines and, after that, it's basically business as usual for the bodybuilder.

And, as if the diet wasn't simple enough, there's also a great deal of flexibility built into it. It's made to order for THE INDIVIDUAL. We know that each person is different, both physically and psychologically. You can't give everyone the same exact diet and expect them to all respond in the same manner to it.

That's why we've urged you to experiment with the diet in earlier chapters. If used properly, it will get you into contest shape better than any diet you've tried before. What I've done is give you the basic principles of the diet. It's up to you to mold and shape the fine points of its operation to your own unique physique and mind.

In fact, any part of this diet can be modified to fit the needs of the individual, as long as you stay in the fat burning mode. *What I suggest is that you stick to the diet as spelled out in the book very rigidly for the first 2 months.* You'll need that long to learn about the diet and how your body responds to it. You may want to adjust your caloric intake at times during those 2 months, but you should stick to the basics for 60 days.

At that point you'll have gone through the "metabolic shift" to a fat-burning chemistry and become comfortable with the diet. Then your personal modifications of the diet can begin. You'll be experimenting to see just how your body responds to different adjustments in the diet. You'll also find yourself having fun. As you progress and accurately track your progress through monitoring bodyfat percentages, weight, appearance, and calorie ratios between fat, protein, and carbs, you'll be able to refine the diet to best achieve your individual goals.

Below I've provided a few of the special modifications to the diet bodybuilders have found successful to this point. You may find some others, but this chapter will give you a start in ways you can personally work with the diet to maximize growth.

THE MIDWEEK CARB SPIKE

After your weekend carb loading, you'll really be ready to work on Monday and Tuesday. What happens during these days is that you experience a "biphasic" response to the diet. You're still burning fat, but you're also using all that glycogen you received during the weekend. You look big, vascular, and find yourself motivated and working hard. You're basically in both modes, using both fat- and carb-burning metabolisms at once.

After a few months on this diet, you may want to try a one-hour carb load, or "carb spike," based on high glycemic foods. The "carb spike" should be done on Wednesday morning and it will give you an extra "kick." You can take in as many as 1,000 calories in the hour. You'll want to go right back to the high fat/high protein/low carb diet after this, but a little jolt of carbs can be very productive as needed. It will drive amino acids into the cell and increase anabolic drive and, as long as you go back to the Anabolic Diet, you'll avoid laying on fat.

SHORT-TERM LOADING ON WEEKENDS

Some people may complete one day of carb loading on the weekend and find themselves feeling poorly. They're tired, sleepy, and feel like they're retaining fluid and smoothing out quickly. If this is so, go back on the high fat diet on Sunday. This will make the diet a 6-day high fat, 1-day high carb experience, but if this works for you then it's the way to go.

Again, the length of carb loading depends on the individual. The important thing is to experiment with the length of your weekend carb load and learn what's best for you.

Eating foods very high in glycemic value with less fat will generally lead to a shorter, more intense carb load. You'll almost certainly start to smooth out and retain water sooner, usually before the 24 hour mark. By using lower glycemic foods and more fat, you'll take longer to load. You may want to experiment with both of these approaches to see what works best for you. (See Chart on Page 68)

Keep in mind that *it's important to document aspects of the diet and its effects on your body*. It may be inconvenient or even painful, but if you're interested in getting the most out of your training, you've got to chart your progress and responses to changes in the diet. Make notes to yourself on when you began to smooth out during the weekend, what you were eating, how many calories, and any other essential information. Leave a trail for yourself.

Most athletes in most sports keep detailed books on what works for them and what doesn't. Keeping your own book will give you a record of what you've done, and give you added confidence with the moves you make in training and diet. You won't be playing hit and miss. You may back off on the documentation after being on the diet for some time and becoming familiar with it, but you'll still want to make at least weekly notes on your findings as you proceed.

LONG-TERM LOADING ON WEEKENDS

Some people will cheat in the other direction on this diet, and they'll pay for it. They get to Thursday and then decide they're going to start their carb load on Friday. They continue it on through Saturday and Sunday and, guess what? Their body shifts back to carbohydrate metabolism. 3 DAYS IS TOO MUCH. At that point, you're running a real risk of losing the fat burning advantage this diet gives you.

But the high fat diet is forgiving to a large degree. If you're at a birthday party in the middle of the week and don't want to be anti-social, you can have that piece of cake. Likewise, business or social conditions may warrant a high carb meal during the week, on occasion. Don't worry about it. As long as you get right back on the high fat diet, you won't find your body shifting back. After you've been on the diet for awhile, it will usually take 3 days of continuous carbs for the metabolism to shift back.

In fact, the longer you're on the Anabolic Diet, the more time it seems to take to go back to a carbohydrate metabolism. It will eventually become as difficult to make the switch back to burning glucose for energy as it was to go through the metabolic shift to become a fat-burner. It may be tough to make the metabolic shift originally, but it's also tough to shift back.

The Anabolic Diet suppresses the glycolytic pathway used when carbs are the primary energy source. At the same time, the lipolytic (fat burning) pathway is activated. The longer you're on the diet, the more carbohydrate loading it seems to require to kick in fully again. Even if you go out on the road and you're forced to change diets for a week, you can generally return to the diet without going through the difficulties of the original metabolic shift if you've become an Anabolic Diet veteran.

One bodybuilder who's been on the diet for nearly 3 years began limiting most of his carbohydrate consumption to a bowl of ice cream at the end of the day after being on the diet for several months. Several months later he took a closer look at the package his favorite ice cream came in, and found he was actually eating double the carbs he thought he was. Yet he never spilled back over to the glucose metabolism. It seems that, through the suppression of the glycolytic enzyme, his body had set a new level of tolerance for carbohydrates.

Not that we suggest you double your carb intake during the weekdays. This is just to say that the Anabolic Diet doesn't make you pay dearly for any mistake. After shifting over on the diet, it will generally take 3 days of carbs to do serious metabolic damage to your cause.

VARYING CALORIES

Bodybuilders have found that if they do the same workout every day, their body will eventually

Glycemic Index by Food Category

Food Category	Glycemic Index (%)	Sugars	
		Fructose	20
		Glucose	100
		Maltose	105
		Sucrose	59
Grain, Cereal Products		Miscellaneous	
Bread (white)	69	Fish fingers	38
Bread (wholemeal)	72	Honey	87
Buckwheat	51	Lucozade	95
Millet	71	Mars bar	68
Pastry	59	Peanuts	13
Rice (brown)	66	Potato crisps	51
Rice (white)	72	Sausages	28
Spaghetti (wholemeal)	42	Tomato soup	38
Spaghetti (white)	50	Fresh Legumes	
Sponge cake	46	Broad beans	79
Sweetcorn	59	Frozen peas	51
Breakfast Cereals		Root Vegetables	
All-bran	51	Beetroot	64
Cornflakes	80	Carrots	92
Muesli	66	Parsnips	97
Porridge Oats	49	Potato (instant)	80
Shredded Wheat	67	Potato (new)	70
Weetabix	75	Swede	72
Biscuits		Yam	51
Digestive	59	Dried and Tinned Legumes	
Oatmeal	54	Beans (tinned, baked)	40
Rich Tea	55	Beans (butter)	36
Ryvita	69		
Water	63		
		Beans (haricot)	31
		Beans (kidney)	29
		Beans (soya)	15
		Beans (tinned soya)	14
		Peas (blackeye)	33
		Peas (chick)	36
		Peas (marrowfat)	47
		Lentils	29
		Fruit	
		Apples (Golden Del.)	39
		Bananas	62
		Oranges	40
		Orange juice	46
		Raisins	64
		Dairy Products	
		Ice cream	36
		Milk (skimmed)	32
		Milk (whole)	34
		Yogurt	36

Note: Only 25 gm carbohydrate portion given. **Source:** Jenkins, *et al*, *American Journal of Clinical Nutrition* 1981. **Note:** Foods like ice cream have a low glyceic index, but they also have a high fat content. Therefore their caloric value has to be considered in addition to their possible effect on insulin response.

habituate to it and no longer respond. Growth will cease. They'll plateau. It's the same with the Anabolic Diet. If you eat the same exact amount of calories every day, you'll eventually start to lose the effect of the diet.

That's why you should try to do some varying of calories on a day-to-day basis. Stairstep them. If 3,000 calories a day is your goal, try taking 2,000 calories one day, 3,000 the next and 4,000 the day after that, then back down to 3,000, then 2,000, etc. Count your calories on a weekly basis instead of daily. You should be, to some extent, unpredictable. Don't let your body get used to the same caloric intake daily.

You can also vary those calories on the weekend. A good rule of thumb at the beginning is to increase calories no more than 25 percent over your weekday allotment but, once experienced with the diet, you're on your own. Some people in the "Mass Phase" may eat upwards of 10,000 calories a day. They feel like their body's telling them they need to temporarily force calories, so

Glycemic Index by Percentage Groups

	110%	62	Bananas	36	Chick peas
105	Maltose		60%	36	Butter beans
100	Glucose	59	Sweet corn	34	Pears
	100%	59	Sucrose	34	Milk (whole)
97	Parsnips	59	Digestive biscuits	33	Peas (dried blackeye)
92	Carrots	55	Rich Tea biscuits	32	Milk (skim)
	90%	54	Oatmeal biscuits	31	Haricot beans
87	Honey	51	Yams		30%
80	Potatoes (inst. mashed)	51	Potato chips	29	Peaches (fresh)
80	Corn flakes	51	Peas (frozen)	29	Lentils
	80%	51	Buckwheat	29	Kidney beans
79	Broad beans (fresh)	51	All-bran	26	Grapefruit
75	Wheetabix	50	Spaghetti (white)	23	Cherries
72	Swede		50%	20	Fructose
72	Rice (white)	49	Porridge oats		20%
72	Bread (wholemeal)	48	Potato (sweet)	14	Soya beans (canned)
71	Millet	48	Potato (baked russet)	13	Peanuts
70	Potato (new, white)	46	Orange juice		10%
	70%	45	Grapes		
69	Ryvita	42	Spaghetti (wholemeal)		
69	Bread (white)	40	Oranges		
68	Mars bar	40	Beans (canned navy)		
67	Shredded wheat		40%		
66	Rice (brown)	39	Apples (golden del.)		
66	Muesli	38	Tomato soup		
64	Raisins	36	Yogurt		
64	Beetroot	36	Lima beans		
63	Water biscuits	36	Ice cream		

Note: Only 25 gm carbohydrate portion given. Source: Jenkins *et al*, *Am J CUn Nutr* 1981. Note: Foods like ice cream have a low glycemic index, but they also have a high fat content. Therefore their caloric value has to be considered in addition to their possible effect on insulin response.

they do so and experience a concurrent rise in their metabolism.

You do have to be careful here, though. The body can only put out so much protein for growth, regardless of how effective an anabolic environment you create for it. If you take in a lot of calories, especially of the high glycemic variety, you may find yourself laying down fat very quickly.

EXTREME VARIANCE

Some bodybuilders on the Anabolic Diet have tried extreme increases in calories during the weekend, and experienced success. They get to Saturday and intuitively sense that it's time to shake their metabolism loose. They'll take in 12,000 calories on Saturday, maybe cut it in half on Sunday, and experience a huge insulin spike. They'll get a big anabolic effect but, because they go right back on the high fat diet on Monday, insulin will be decreased before it begins to encourage much laying down of fat.

The bodybuilder may end up gaining 10 pounds or so from the extra sugar and water, but the high fat/low carb diet will find him dropping the water weight quickly as the week progresses. By Friday, he'll have increased weight to a strategic degree but won't have overdone it, and the increase will be maximum muscle and minimum fat.

That's one of the real pluses of this diet. You can gain the weight, but you'll find yourself staying around the 10 percent bodyfat level if you're comprehensively following the diet. In the old days, you'd find guys bulking up to 300 pounds, only to find themselves packing 17–20 percent bodyfat. They'd feel great, but by the time they'd cut all that fat, they'd be back at 200 pounds for a contest. On the Anabolic Diet, you can stay around 10 percent bodyfat while still making the gains.

You don't want to do these huge weekend calorie increases very often, but it's something that has worked for a handful of bodybuilders, and certainly a modification you may want to experiment with yourself.

LOW PROTEIN WEEKENDS

After being on the diet for awhile, you may want to begin to look at the weekends as a high carb/high fat experience while paying less attention to protein. Some bodybuilders who have been on the diet for an extended period have found that a weekend diet of around 40–45 percent fat, 50–55 percent carbs, and only 7–10 percent protein can produce excellent results.

The added fat aids in slowing the release of glucose in the blood, thus avoiding sugar rushes or crashes that can leave you feeling spent and irritable. By using lower glycemic foods with increased dietary fat, you'll also be able to extend the length of your carb load and not smooth out as quickly, if this is what you desire. As for the protein, you're getting enough during the week that a sufficient store is available to get through the weekend with no problems.

INCREASING CALORIES BEFORE A CONTEST

If you're not sure where exactly you are in your preparation for a contest and haven't had a lot of experience getting down to a particular weight in time, it won't hurt you to make sure you're at a 5–6 percent bodyfat level 3–4 weeks before the contest. That way you can increase your calories. You'll find you won't gain any appreciable fat but, keeping on the diet, you'll gain muscle. You can continue to fine tune then. If you gain too much, you can lose a bit and play around with your weight in a 4–5 pound swing.

FOLLOW THAT INSTINCTIVE VOICE

Bodybuilders may find themselves cutting calories drastically if they're coming into a contest with a lot of weight to drop. 12 weeks out you should aim to be within 15–20 pounds of your show weight. Unfortunately, there may come times in a bodybuilder's career where he finds himself 30 pounds or more overweight at this time. He's going to have to cut calories to make his weight.

If that's so, it is doubly important that the bodybuilder pay attention to what his body is telling him about eating. On a minimal calorie diet, you've got to listen to that instinctive voice in your body and do what it tells you to do. If it says eat, EAT. As minimal as your caloric intake may be, you're trying to manage it, not starve yourself.

This is another area where the high fat diet has an advantage over the competition. On the high carb diet, and in a negative calorie intake situation where your body requires more calories for maintenance than you're putting in, you'll use up the carbs you're eating for energy very quickly. After that, the primary source for energy will be protein. On the high carb diet, many bodybuilders find themselves losing tremendous amounts of muscle a short time before a competition because of the body raiding protein for energy.

If you're on a high carb diet with limited calories, there's a good chance you'll come into the competition a hanger. Not so with the Anabolic Diet, where there's fat available to burn instead of protein. One competitor found himself forced down to 1,000 calories a day before a competition recently but, on the high fat diet, emerged in the best shape of his career. He attributed his success to the high fat diet and its protein-saving properties.

You've also got less chance of falling apart after a competition on the high fat diet. Often you'll look nearly as good weeks after a show as you looked at the show. You won't experience the big ups and downs the high carb diet brings, and will be less likely to adopt drastic measures as a competition approaches.

AEROBICS

Many people have a tendency to hit aerobics hard in the days before a contest. They'll be doing up to 4 hours a day in an effort to cut fat and make up for any extra weight. The trouble is, they're BURNING BOTH FAT AND MUSCLE. The fat may go, but a good deal of muscle mass goes with it.

25–30 minutes of aerobics should give you enough work to burn some fat without compromising muscle mass. Do your 30 minutes every other day up to 2 months before the contest. Then begin to do 25–30 every day. Stop aerobics a week out from the contest.

It may also be advantageous to stop training legs 2 weeks before a contest. The legs begin to retain water, and lines are brought out to the point the legs are ripped by contest time. You should cut all training of any type completely 3 days before the contest to minimize catabolic and maximize anabolic conditions.

THE CONTEST

Again, we urge you not to try anything out of the ordinary just before a contest. Begin to drink distilled water and reduce sodium 24 hours before prejudging to get rid of intercellular water. Push the potassium for intracellular water and calcium to avoid cramping. Watch your food intake during the day.

Even though your body can change in a few hours, there are things you can do to offset any changes. Natural diuretics can rid the body of excess water. Sitting in a jacuzzi for 15–20 minutes can also increase vascularity and pull water out of the body if you're retaining it.

THE ANABOLIC DIET AS A CONTROL DIET

Though the Anabolic Diet should be considered more a lifestyle than a "diet" and be followed

closely to insure maximum health and growth benefits, it has also been used as a kind of “maintenance” diet by some people. It’s not incorporated into their daily lifestyle and is used strictly as a way to get fat in check when needed.

If they find themselves gaining 5–6 pounds on their regular diet, they’ll switch to the Anabolic Diet and stay on it for 6–8 weeks. Once their weight is under control again, they’ll go back to their regular diet, only to return to the Anabolic Diet when weight increases significantly again.

If your mate or other friends who aren’t bodybuilders lack the discipline or motivation to stay on a diet but are looking for a program to bring weight in check as needed, you might suggest the Anabolic Diet to them. Some spouses of bodybuilders who resist any dietary regimentation have found it very useful when used this way.

There will also be times when you’ll go out on the road and, try as you may, business and social life conspire against you. Life will be so hectic, you can’t even stay within the flexible parameters the Anabolic Diet offers. Those who have found themselves in this situation have reported little, if any, weight gain when going off the diet. As reported above, the Anabolic Diet is naturally forgiving in many ways.

SOME COMMON QUESTIONS

The Anabolic Diet is bound to be the cause of plenty of controversy in the bodybuilding community. It runs counter to a lot of what we've been told about the wonders of carbohydrates and dangers of dietary fat.

It's also new, and though founded on nutritional principle, research, and the hard work of a select group of ground-breaking bodybuilders, it's understandable that people may have concerns and doubts. In this final chapter I'll provide a "question and answer" forum to put those fears to rest, give you a better idea how the diet works, and summarize some of the major points I've made earlier.

1. Does this diet work with Anabolic Steroids?

Yes, it will. And you should get better results than if you were just using the steroids. Still, we're not going to recommend it. Most bodybuilders will see the Anabolic Diet as an alternative to drug use, and they'll use it to naturally produce the same effects they've seen with steroids. This is the reason the diet was first designed.

2. Doesn't the body need glucose for energy and endurance?

The answer here is "yes," but only if you're in the usual "glycogen/glucose/pyruvic acid" cycle activated by a diet that relies on carbohydrates. Once you've made the "metabolic shift" to the Anabolic Diet and you're burning dietary and body fat for energy, you don't need the glucose from the carbohydrates.

Even if on a high carb diet, fat is still an important source of energy and actually a more efficient fuel than either carbs or protein. It shouldn't be too surprising to find that energy levels and endurance aren't hindered once you switch over to burning free fatty acids as your main energy supply.

3. Doesn't the brain need carbohydrates to function?

It's commonly believed that the brain needs glucose to function but, as above, this is a myth. As a matter of fact, the brain will gladly use ketones to function, and ketones are produced in more than sufficient amounts during free fatty acid oxidation on the Anabolic Diet.

On the other hand, if you're worried about alertness, performance, and other visible aspects of brain function, you have to be concerned with the high serotonin levels linked with a high carb diet.

4. Doesn't eating fat mean I'll get fatter?

That's the current party line but, again, it's not even remotely true. The high fat/high protein/low carb diet will actually make you thinner. It increases fat breakdown and decreases fat buildup. While in the fat burning mode, you use your own bodyfat for energy.

Insulin is the real culprit here, and it's insulin that plays such a large role in the high carb diet. After a high carb meal, glucose floods the bloodstream. The pancreas releases insulin, and plenty of it, to process the glucose. As much of the extra glucose as possible is stored as muscle and liver glycogen to be converted back to glucose when the body needs it for energy. What can't be stored or used in the liver and muscle is converted to triglyceride or bodyfat. If you're eating a lot of carbs, you're going to have a lot of that glucose being stored on your body.

If you're looking for something to blame those bulges and rolls on, you might be wiser to look at your carb intake than putting the responsibility on society's whipping boy, fat.

5. What about carcinogens?

Carcinogens are agents that attack normal body cells and, through prolonged contact, cause them to become cancerous. It's believed that one source for carcinogens are chemicals that may occur naturally in foods. If consumed in large quantities, they may lead to cancer growth.

High fat diets have traditionally been a focus of cancer research. It's believed fat may be implicated in colon, breast, and prostate cancer. But research in this area remains largely unclear at this time. In fact, many studies have minimized the importance of fat as a cancer-causing source especially in the breast cancer area.

In reality, many factors have been linked to cancer. Diet, obesity, physical activity, and heredity all seem to play a large role. Total caloric intake and lack of available antioxidants have also been implicated here.

Though totally unconvinced of any link between fat and cancer, anti-cancer agents like antioxidants have been built into our program, and will allow for protection against any possible cancer link.

6. What about high cholesterol and heart disease?

We pointed out in Chapter 2 that many societies, both present and past, had low levels of cardiovascular disease, despite having a high fat diet. It's also certain that other factors like smoking, lack of exercise, obesity, and stress are of equal if not greater importance to cholesterol than diet.

Nonetheless, we've stressed the importance of cholesterol-friendly mono and polyunsaturated fats in the diet. We've also provided for cholesterol-lowering supplements and fish oils to be included with the diet, just to make sure.

Generally, we haven't found any major problem with cholesterol buildup on the diet,

despite the saturated fats inherent in the quantity of red meat eaten. In fact, many people have found their cholesterol levels lowering dramatically during the cutting phase of the diet, without use of supplements.

There are, of course, people who will have a problem with cholesterol regardless of the diet they're on. Again, a visit to your doctor for a thorough checkup as detailed in Chapter 3 is a necessity before practicing the Anabolic Diet. Monitoring cholesterol levels and making necessary changes as needed will also be important to those with a genetic problem with cholesterol.

7. If this diet is so good, why hasn't someone thought of it before?

Actually, Dr. Robert Atkins has been touting a limited form of this diet for some time, although the Anabolic Diet is quite different in structure and based on more recent research. It's only been in the last decade that much of the work focusing on the "metabolic shift" and supplement research has been done, and much of this research goes ignored by Atkins and others on the low-carb track. We've put all this research together for the first time in designing the Anabolic Diet.

You also have to remember that dietary fat has been the favorite villain of the medical and food industry for many years. There's been a very strong prejudice, if not hysteria, connected with it, and many people are very resistant to presenting the kind of information you'll find in "The Anabolic Diet" to the public.

8. Are there certain fats I should be trying to get in the diet?

Marine lipids, or fats associated with fish, are very important. You should get some of your fats every day, or every other day, from fish products. Use salmon oil capsules if you don't like fish. Opt for saltwater fish over freshwater where possible, and don't be afraid of lobster or shrimp. Unless you have a chronic problem, they shouldn't present any real cholesterol problem.

Also, try to balance out the consumption of saturated fats from meat with some mono and polyunsaturated fats where possible.

9. Are there certain fats I should be avoiding?

As long as you include marine oils and some polyunsaturates to control cholesterol, you shouldn't have to be too restrictive. You shouldn't be eating a pound of beef tallow every day but, on the other hand, steak and burger and the like will be encouraged. If you find that you can only take in 4–5,000 calories a day when bulking up and you need extra oils, you may want to use vegetable oils. Take a half an ounce a couple times a day. Salmon oil caps will also increase calories.

10. Margarine or butter?

I take no sides here. Recent studies have been very critical of the possible health effects of margarine. Butter is a wonderful source of fat, but it's saturated fat. Both have their up

and down side, and I don't think the choice is as critical as others make it out to be. It's up to you.

11. If this is a “primitive diet,” why do we need to take supplements?

While it's true that this diet is based on the principles of the primitive diet man grew up with, it's also on the scientific cutting edge. It's high tech in nature. We're manipulating the body's natural hormonal environment to stimulate growth and maximizing natural anabolic effects. We're going beyond the primitive diet, using the most recent research to provide a supplement program that will drag that primitive diet into the 21st century.

12. What about dietary fiber?

Fiber will be very useful during the first few months of the diet. Elimination could be either loose or irregular as the body fully transitions into the high fat diet. Later, this shouldn't be a problem for most people. For those who continue to have a problem, stay on the natural fiber or opt for a mid-day salad when having difficulty.

13. Diuretics?

Fluid retention shouldn't be much of a problem during the weekdays when you're on the high fat/low carb part of the diet. You may have a problem on the weekend when you're taking in more carbohydrates. If it's a problem, you can decrease calories or shorten up your carb load to correct it. If you've had a chronic problem with fluid retention and are already on diuretics, you should probably continue them. Otherwise, I wouldn't recommend them because of the modifications you can make to the diet to ensure less fluid retention.

14. Will the Anabolic Diet affect my complexion adversely?

We've found there may be some effect here in the initial stage of the diet. Hormone levels are being affected, and we're trying to maximize testosterone production, so you may find your complexion being affected for a short time, but it will return to normal once you get used to the diet.

If you already have skin problems, you'll probably still have them on the Anabolic Diet, although in cases of older bodybuilders, you may find the higher fat content of the diet helpful in attacking the dry look that can come from the aging process.

15. Do you need to exercise to be on the diet?

This won't be an issue to the bodybuilder in training, but if you're passing along the diet to a spouse or friend, you should point out that exercise should be a part of this, or any, diet. We're looking to get all aspects of a person's diet and lifestyle to work together synergistically. One of the advantages of this diet is that it will aid the dieter in retaining muscle mass as the fat departs. Exercise only enhances this effect.

Exercise also increases the use of free fatty acids and decreases fat buildup. You'll lose weight faster and look better if you exercise with the diet. When you add in the positive effects

on the cardiovascular system, and general health and psychological well-being which exercise can bring, it's clear that exercise should play a role in the Anabolic Diet.

16. Can my children be on this diet?

I wouldn't recommend it in most cases. It's difficult for children to take supplements and be as regimented as an adult needs to be on a diet. Also, I'm not happy with manipulating the hormonal levels of children. They're involved in very complex growth processes. Complex interactions between thyroid, insulin, growth hormone, testosterone, and other sex hormones occur within children as they mature. Research on the effects of diet on children is slim, and there certainly isn't enough to justify prescribing the Anabolic Diet here.

I take the same stance with pregnant women. We're not sure what the hormonal manipulation would do to a fetus or the mother. It would be best to be very cautious in this situation.

17. Should I avoid alcohol?

The occasional drink is not a problem here. It's the bingeing that can have an adverse effect. Alcohol use will cause the body to bypass those metabolic pathways for burning fat we're trying to utilize. Chronic alcohol use also decreases serum testosterone and growth hormone levels.

18. Heroine, Cocaine, Marijuana?

If you're serious about bodybuilding, you'd be best advised to stay away from recreational drug use. Heroine, cocaine and marijuana all adversely affect the hypothalamic-pituitary-gonadal axis, thus decreasing endogenous testosterone and anabolic drive.

19. What happens when you reach your target weight and decide to return to normal eating?

The title of this book should probably be "The Anabolic Lifestyle" instead of "The Anabolic Diet." Though non-athletes have used the diet as a maintenance tool in fighting fat, it is meant to be a way of life. By going back to his previous diet, at any time, the bodybuilder will only be jeopardizing the gains he's already made.

The diet is simple and not nearly as restrictive and painful as most others. Unlike the Atkins diet, for instance, you won't be forever banished from eating certain favorite foods, and you'll be able to do pretty much what you want every weekend. By modifying the diet and finding what works best, the bodybuilder can also set himself up for continued growth and progress over the years. You'll also reach your target weight and be able to stay there by sticking with the diet.

Every bodybuilder goes through periods where they're fed up with everything, of course. Even using the most synergistic combination of diet, training, and lifestyle, you'll still fall short of your goals from time to time and be tempted to go back to "the old way."

If you can avoid this, do. That way you'll be avoiding all that time and work it will take to get back on track with the diet again. The fact is that the Anabolic Diet is the very best

way to nutritionally stimulate muscle growth and fat loss for the bodybuilder available today. You can try the other diets and take up those old habits again but, eventually, you'll return to the Anabolic Diet.

That's where the *real* growth is.

SAMPLE STARTER DIETS

Here are two “starter” menu weeks to give you an idea how the Anabolic Diet works. They are more strictly structured than the regular diet. The first, a 3,000 calorie per day diet, features a 33.9% protein/66.2% fat/1.3% carbohydrate ratio during the week, and a 19.6% protein/61% carb/20% fat ratio during weekend carb loading. They are more pronounced in terms of fat and carb percentages as a way of speeding up the “metabolic shift” you’ll be going through on your way to setting up a “fat-burning” metabolism.

The second menu allows for 1,500 calories a day and would be utilized, by most people, as a way to increase the benefits of the diet and more efficiently eliminate weight during the “Cutting Phase” of your preparation for a contest. It features ratios similar to those above.

By using the information provided on these charts, you can customize your own diets at various caloric levels. Just ensure that you limit your intake of carbohydrates to no more than 30 grams during the week.

A few reminders:

- Remember to watch for hidden carbohydrates like ketchup, nuts, BBQ sauce, dressings, etc. in the foods you eat. Read those labels!
- When eggs are mentioned, use the whole egg-yolks and whites.
- Weigh food. Ounces are important in the caloric breakdown of the diet.
- Remember that breaded meats, like fried chicken and fish sticks, are loaded with carbs. Make sure to allow for this when you eat them.
- Try to drink only coffee, tea, sugar-free soft drinks, and water during the weekdays.
- Check labels to get breads that are the lowest in carbs.
- These diets are stricter than the diets you’ll generally be on as a way of aiding the “metabolic shift” and lipolytic properties of the diet. Usual diet operating parameters are:

Weekdays: 55–60% FAT, 30–35% PROTEIN, 5–8% CARBOHYDRATES

Weekend Carb Loading: 30–40% FAT, 10–15% PROTEIN, 45–60% CARBOHYDRATES

- Be careful to always check carb grams, as the total carb intake for the day during the week should generally not be more than 30 grams.

SAMPLE 3,000 CALORIE DIET MENU

MONDAY

CALORIES

Breakfast

4	Fried Eggs in 2 Tbsp. Butter	508
4 slices	Bacon	140

Snack

2 oz.	Pepperoni	280
3 oz.	String Cheese	240

Lunch

8 oz.	Ground Beef	704
2 oz.	American Cheese	220
1 Tbsp	Mustard	8

Snack

5	Saltine Crackers	60
1 oz.	Cheese Spread with Bacon	80

Dinner

8 oz.	Pot Roast	510
1 oz.	Jack Cheese	110
2 Pieces	Melba Toast	32

Snack

1 oz.	Pistachio Nuts	<u>164</u>
-------	----------------	------------

TOTAL CALORIES:

3,056

TUESDAY**CALORIES*****Breakfast***

5 Hard-boiled Eggs 385

6 oz. Ham 374

Snack $\frac{1}{2}$ cup Cottage Cheese 120***Lunch***

8 oz. Corned Beef 320

2 oz. Cream Cheese 200

1 Breadstick 41

Snack

6 oz. Jack Cheese 660

Dinner

8 oz. Chicken 538

2 Tbsp. Salsa 16

1 Corn Tortilla 45

Snack

1 oz. Pistachio Nuts 164

2 slices American Cheese 220**TOTAL CALORIES****3,083**

WEDNESDAY**CALORIES*****Breakfast***

5	Poached Eggs	370
4 oz.	Spam	498

Snack

3 slices	American Cheese	330
2 oz.	Salami	160

Lunch

6 oz.	Canned Chicken	340
2 oz.	Provolone Cheese	220
2 pieces	Melba Toast	32

Snack

1 oz.	Fresh Coconut	100
-------	---------------	-----

Dinner

8 oz.	Ground Beef	704
1 slice	Bread w/ 1 Tbsp. Butter	170

Snack

1 cup	Sugar Free Jello with 1 Tbsp. Cool Whip	<u>16</u>
-------	---	-----------

TOTAL CALORIES**2,940**

THURSDAY**CALORIES*****Breakfast***

6	Eggs Scrambled	462
4 links	Sausage	280
2 oz.	Colby Cheese	220

Snack

1 oz.	Summer Sausage	100
2 oz.	Jack Cheese	220

Lunch

4 oz.	Pepperoni	560
2 oz.	String Cheese	160

Snack

1	Rice Cake	50
2 oz.	Bologna	96

Dinner

6 oz.	Pork Chop-Fried	420
1 slice	Bread with 1 Tbsp. Butter	170
2 oz.	Jack Cheese	220

Snack

1 cup	Sugar Free Jello with 1 Tbsp. Cool Whip	16
-------	---	----

TOTAL CALORIES**2,974**

FRIDAY**CALORIES***Breakfast*

1 Omelet (4 eggs, 2 oz. cheese, 2 Beef Franks Sliced) 892

Snack

3 oz. Mozzarella Cheese 270

1 piece Melba Toast 16

Lunch

4 oz. Vegetarian Chili 219

8 oz. Ground Beef 704

Snack

½ cup Cottage Cheese 120

Dinner

8 oz. Ham 498

1 Hard-boiled Egg 77

1 piece Toast with 1 Tbsp. Butter 170

Snack

1 cup Sugar Free Jello with 1 Tbsp. Cool Whip 16

TOTAL CALORIES**2,982**

SATURDAY**CALORIES*****Breakfast***

2	English Muffins with 2 Tbsp. Jelly	362
1 Bowl	Cereal with Nonfat Milk	190

Snack

8 oz.	Applesauce	180
1	Bagel (no butter)	190

Lunch

1	Chef Salad (no egg or cheese) with Lowfat Dressing	300
2	Dinner Rolls	100
1 Cup	Canned Fruit Salad	180

Snack

1	Banana	105
2	Graham Crackers	160

Dinner

3 cups	Pasta with Marinara Sauce	891
1 cup	Green Beans	40
1	Dinner Salad with Lowfat Dressing	100

Snack

1	Angel Food Cake w/1 cup (Fresh or Frozen) Strawberries and 1 Tbsp. Cool Whip	<u>188</u>
---	--	------------

TOTAL CALORIES**2,986**

SUNDAY		<u>CALORIES</u>
<i>Breakfast</i>		
3	Pancakes with no butter and Lite Syrup	314
1	Banana	105
<i>Snack</i>		
6	Graham Crackers	480
1 cup	Fruit Juice	100
<i>Lunch</i>		
1½ cup	Rice-Steamed	246
10 oz.	Hormel Chili Beans	260
2 Pieces	Bread with Butter	140
<i>Snack</i>		
1	Bagel with Jelly (no butter)	221
<i>Dinner</i>		
1	Turkey Sandwich (2 slices Wheat Bread 1 oz. Turkey, 1 Tbsp. Lite Mayo, Mustard, Lettuce)	200
2 cups	Yams in Lite Syrup	440
1 cup	Canned Corn	160
<i>Snack</i>		
1	Angel Food Cake-Large Slice	260
1 cup	Strawberries with 1 Tbsp. Cool Whip	<u>66</u>
<u>TOTAL CALORIES</u>		2,992

SAMPLE 1,500 CALORIE DIET MENU

MONDAY

CALORIES

Breakfast

2	Eggs Fried in 1 Tbsp. Butter	254
2 slices	Bacon	70

Snack

½ cup	Cottage Cheese	120
-------	----------------	-----

Lunch

2 oz.	Summer Sausage	200
1	Rice Cake	50

Snack

2	Hard Boiled Eggs	154
---	------------------	-----

Dinner

4 oz.	Ground Beef	352
2 oz	American Cheese	220
1 Tbsp.	Mustard	8
1 Slice	Bread	70

Snack

1 cup	Sugar Free Jello	8
-------	------------------	---

TOTAL CALORIES

1,506

TUESDAY**CALORIES***Breakfast*

3	Hard Boiled Eggs	231
1 slice	Toast with 1 Tbsp. Butter	155

Snack

2 oz.	Cheddar Cheese	220
-------	----------------	-----

Lunch

8 oz	Pastrami	248
1	Breadstick	41

Snack

1 cup	Sugar Free Jello	8
-------	------------------	---

Dinner

8 oz.	Roast Beef	510
1 Tbsp.	Mustard	8
1 slice	Bread	70

Snack

1 cup	Sugar Free Jello	8
-------	------------------	---

TOTAL CALORIES**1,499**

WEDNESDAY**CALORIES***Breakfast*

4 Scrambled Eggs with 2 Beef Franks 672

Snack

1 oz. Pistachio Nuts 164

Lunch

1 oz. Cream Cheese 100

2 Pieces Melba Toast 32

3 oz. Canned Chicken 170

Snack

1 oz. Mozzarella Cheese 90

Dinner

2 oz. Ground Beef 176

1 slice Bread 70

Snack

1 cup Sugar Free Jello 8

TOTAL CALORIES**1,482**

THURSDAY**CALORIES***Breakfast*

4	Poached Eggs	296
1 slice	Bread with 1 Tbsp. Butter	170

Snack

2 oz.	String Cheese	160
-------	---------------	-----

Lunch

8 oz.	Chicken	538
2 Tbsp.	Salsa	12
1	Corn Tortilla	45

Snack

1 cup	Sugar Free Jello	8
-------	------------------	---

Dinner

4 oz.	Vegetarian Chili	269
-------	------------------	-----

Snack

1 cup	Sugar Free Jello	<u>8</u>
-------	------------------	----------

TOTAL CALORIES**1,496**

FRIDAY**CALORIES***Breakfast*

2	Fried Eggs	354
2	Links Sausage	140

Snack

1 oz.	Fresh Coconut	100
-------	---------------	-----

Lunch

2 oz.	Polish Sausage	190
2 oz.	Colby Cheese	220

Snack

1 oz.	Pistachio Nuts	164
-------	----------------	-----

Dinner

2 oz.	Spam	170
1 Tbsp.	Mayo	100
1 slice	Bread	70

Snack

1 cup	Sugar Free Jello with 1 Tbsp. Cool Whip	<u>16</u>
-------	---	-----------

TOTAL CALORIES**1,524**

SATURDAY**CALORIES***Breakfast*

3 Pancakes (no butter) with Lite Syrup 314

Snack

6 Carrots or Celery 62

Lunch

2 cups Pasta with Marinara Sauce 594

2 Dinner Rolls 100

Snack

3 cups Popcorn 50

Dinner

1 cup Hormel Chili Beans 130

10 Saltine Crackers 120

Snack

1 Banana 105

TOTAL CALORIES**1,475**

SUNDAY**CALORIES*****Breakfast***

1 Bowl Cereal (Such as Mueslix) with 1 cup
Nonfat Milk-1 slice Bread (no butter) 260

Snack

2 Rice Cakes 100

Lunch

1 Turkey Sandwich (2 slices Wheat Bread,
1 oz. Turkey, 1 Tbsp. Lite Mayo, Mustard,
Lettuce) 273

1 cup Yams in Lite Syrup 220

Snack

½ cup Canned Fruit 90

Dinner

1 Chef Salad with no egg or cheese,
lowfat dressing 242

2 Dinner Rolls 100

Snack

2 pieces Fruit (seasonal) 200

TOTAL CALORIES**1,485**

CALORIE/CARBOHYDRATE CHARTS

Below are charts of high fat and high carbohydrate foods you will find of great use during the weekday and carb loading portions of the Anabolic Diet. This is not an exhaustive list but is provided to get you an idea of the value of foods many bodybuilders have found useful on the diet.

The only limits you'll face are those involved with carb limitations, guideline percentages, and your own personal taste. As always, no matter what you eat, we urge you to READ THE LABELS to get correct nutritional information.

HIGH FAT FOODS (HEAVY WEEKDAY USE)

<u>Eggs</u>	<u>Calories</u>	<u>Carbohydrate Grams</u>
Fried in 1 Tbsp. Butter (1)	177	.6
Hard Boiled (1)	77	.6
Omelet (1)	504	2.2
Poached (1)	74	.6
Scrambled (1)	77	.6
 <u>Meats</u>		
Bacon-2 slices	70	.1
1 oz. Bologna	48	.6
3 oz. Canned Chicken	170	0
4 oz. Chicken	269	0
4 oz. Corned Beef	160	0
3 oz. Filet Mignon	174	0
4 oz. Ground Beef	352	0
4 oz. Ham	249	0
Beef Hot Dog	182	1.4
Turkey Hot Dog	102	.7
3 oz. London Broil	193	0
4 oz. Pastrami	124	.2
1 oz. Pepperoni	140	1
3 oz. Pork Butt	239	0
3 oz. Pork Chop	210	0
4 oz. Pot Roast	255	0
1 oz. Salami	80	.5
Italian Sausage (1)	217	1
Link Sausage (2)	140	0
2 oz. Polish Sausage	190	2
Smokie Link (1)	127	.8
1 oz. Summer Sausage	100	0

3 oz. Sirloin Steak	180	0
2 oz. Spam	170	0
2 oz. Tuna (in oil)	110	0
4 oz. Turkey	193	0

Cheeses (Full Fat)

1 slice American Cheese	110	1
1 oz. Cheddar Cheese	110	1
1 oz. Cheese Spread with Bacon	80	1
1 oz. Colby Cheese	110	1
½ cup Cottage Cheese	120	4
1 oz. Cream Cheese	100	1
1 oz. Monterey Jack	110	0
1 oz. Mozzarella	90	1
1 oz. Provolone	100	1
1 oz. String Cheese	80	1

Fish

3 oz. Fried Halibut	153	6
3 oz. Broiled Salmon	157	0

Entrees/Side Dishes

Chicken Salad (½ cup)	354	2
4 oz. Vegetarian Chili	219	7
Sloppy Joe (½ cup)	232	8.2
Tuna Salad (1/2 cup)	192	9.6

<u>Butter</u> (1 Tbsp.)	100	0
-------------------------	-----	---

<u>Margarine</u> (1 Tbsp. Nucoa)	100	0
----------------------------------	-----	---

<u>Bread</u> (1 slice Wheat)	70	10
------------------------------	----	----

Condiments

1 Tbsp. Mayonnaise	100	0
--------------------	-----	---

1 Tbsp. Lite Vinaigrette Dressing	16	.8
-----------------------------------	----	----

Snacks/Other

1 oz. Almonds	164	6.8
---------------	-----	-----

1 oz. Beef Jerky	100	4
------------------	-----	---

Breadstick (1)	41	6.1
----------------	----	-----

1 Tbsp. Cool Whip	8	1
1 Corn Tortilla	45	9
1 cup Sugar Free Jello	8	0
Melba Toast (1 piece)	16	3
1 oz. Peanuts	162	5.2
Diet Pepsi (1 can)	0	0
4 Dill Pickle Spears	16	2
1 oz. Pistachio Nuts	164	7
Rice Cake (1)	50	8
1 Tbsp. Salsa (Old El Paso)	6	1
¾ cup Sunflower Seeds (with shell)	160	5

HIGH CARBOHYDRATE FOODS (HEAVY WEEKEND USE)

<u>Breakfast Foods</u>		<u>Calories</u>
Apple		81
4 oz. Applesauce		90
Banana		105
Lenders Blueberry Bagel		190
Egg Whites or Egg Beaters (2)		50
English Muffin		150
½ cup Seedless Green Grapes		57
1 cup Microwaved Hash Brown		150
Honeydew Melon		110
Oatmeal with ½ cup Non-Fat Milk		117
Orange		69
3 Pancakes with 1 oz. Lite Syrup (no butter)		314
Peach		37
1 oz. Kellogg's Raisin Bran		120
½ cup Strawberries		23
1 slice Toast (Lite Wheat, no butter)		40
 <u>Lunch & Dinner</u>		
1 cup Baked Beans		200
½ cup Green Beans		20
1 cup Beef Stew		218
4 oz. Chicken Breast		215
1 cup Chicken Chow Mein		255

5 oz. Hormel Chili Beans	130
1 cup Chili with Beans	254
½ cup Canned Corn	80
4 Saltine Crackers	60
3 oz. Fried Liver	184
1 Meatball (1½" diameter)	359
1 cup Pasta with Marinara Sauce (no meat)	297
½ cup Peas	70
⅓ Pizza (Red Baron)	360
Baked Potato with Nonfat Sour Cream and Flavored Butter Buds	165
½ cup Rice (steamed)	82
½ cup Rice Pilaf	136
Roman Meal Dinner Roll	50
Soups (no cream base)	140
1 cup Yams (canned in lite syrup)	220

Sandwiches

Peanut Butter and Banana	536
Roast Beef (2 slices Lite Wheat Bread, Mustard only, Lettuce)	204
Tuna (2 slices Lite Wheat Bread, Lettuce, 1 Tbsp. Kraft Free Mayo)	140
Turkey (2 slices Light Wheat Bread, Mustard Only, Lettuce)	173
Double Whopper (Burger King)	844

Salads

Dinner Salad (Kraft Free Salad Dressing, Lettuce, Red Cabbage)	97
Chef Salad (Nonfat Dressing, Remove Egg and Cheese)	242
Caesar Salad	195

Milk Products

½ cup Non-Fat Cottage Cheese	90
------------------------------	----

Condiments

1 Tbsp. Italian Dressing	69
1 Tbsp. Jam or Jelly	31
1 Tbsp. Ketchup	16
1 Tbsp. Brown Mustard	14
1 Tbsp. Yellow Mustard	11
1 Fluid oz. Soy Sauce	23

Snacks/Desserts

1 small slice Angel Food Cake	130
6 Carrots or Celery Sticks	62
1 Fat Free Fig Newton	70
½ cup Canned Fruit Salad	90
2 Graham Crackers	160
½ cup Chocolate Ice Cream	140
3 cups Popcorn (Orville Redenbacher Lite)	50
1 cup Lowfat Fruit Yogurt	225

REFERENCES

Introduction

1. Harris M. *Our Kind* (New York: Harper & Row, 1989).

Chapter 1

1. DiPasquale MG. *The high fat, high protein, low carbohydrate diet-Part 1, Drugs In Sports.* 1(4) 1992, pp. 8-9.
2. Conlee RK, Hammer RL, Winder WW, et al. *Glycogen depletion and exercise in rats adapted to a high fat diet.* *Metabolism* 1990; 39(3):289-94.
3. Kather H, Wieland E, Scheurer A, et al. *Influences of variation in total energy intake and dietary composition on regulation of fat cell lipolysis in ideal weight subjects.* *J Clin Invest* 1987; 80(2):566-72.
4. Rabast U, Kasper H, Schonborn J. *Comparative studies in obese subjects fed carbohydrate-restricted and high carbohydrate 1,000-calorie formula diets.* *Nutr Metab* 1978; 22(5): 269-77.
5. Sandretto AM, Tsai AC. *Effects of fat intake on body composition and hepatic lipogenic enzyme activities of hamsters shortly after exercise cessation.* *Amer J Clin Nutr* 1988; 47(2):175-9.
6. Tsai AC, Gong TW. *Modulation of the exercise and retirement effects by dietary fat intake in hamsters.* *J Nutr* 1987; 117(6):1149-53.
7. Gorski J. *Muscle triglyceride metabolism during exercise [Review].* *Can J Phys Pharm* 1992; 70(1):123-31.
8. Ohtsuka A, Hayashi K, Noda T, Tomita Y. *Reduction of corticosterone-induced muscle proteolysis and growth retardation by a combined treatment with insulin, testosterone and high protein-high fat diet in rats.* *J Nutr Sci Vitaminol* 1992; 38(1):83-92.
9. McCarger LJ, Baracos VE, and Clandinin MT. *Influence of dietary carbohydrate-to-fat ratio on whole body nitrogen retention and body composition in adult rats.* *J Nutr* 1989; 119(9): 1240-5.

Chapter 2

1. Artaud-Wild SM, Connor SL, Sexton G, Connor WE. *Differences in coronary mortality can be explained by differences in cholesterol and saturated fat intakes in 40 countries but not in France and Finland. A paradox.* *Circulation* 1993 88(6) Dec, pp. 2771-9.
2. Ibid.
3. Thun MJ, Calle EE, Namboodiri MM, et al. *Risk factors for fatal colon cancer in a large prospective study.* *J Natl Canc Inst* 19928; 4/19:1491-1500.
4. Rose DP, Connolly JM. *Dietary fat, fatty acids and prostate cancer.* *Lipids* 1992; 27(10): 798-803.

5. Willett WC, Hunter DJ, Stampfer MJ, et al. *Dietary fat and fiber in relation to risk of breast cancer: An 8-year follow up.* JAMA 1992; 268(15):2037-2044.
6. Willett WC, Stampfer MJ, Colditz GA, et al. *Dietary fat and the risk of breast cancer.* New Eng J Med 1987; 316:22.
7. Kolata G. *Dietary fat-breast cancer link questioned.* Science 1987; 235:436.
8. Knekt P, Albanes D, Seppanen R, et al. *Dietary fat and the risk of breast cancer.* Am J Clin Nutr 1990; 52(5):903-8.
9. Lissner L, Helgesson O, Bengtsson C, et al. *Energy and macronutrient intake in relation to cancer incidence among Swedish women.* Eur J Clin Nutr 1992; 46(7):501-7.
10. Buzby GP, Mullen JL, Stein TP, et al. *Host tumour interaction and nutrient supply.* Cancer 1980; 45:1246-52.
11. Snowdon DA, Phillips RL, Choi W. *Diet, obesity and risk of fatal prostate cancer.* Am J Epidemiol 1984; 120:244-50.
12. Talamini R, La Vecchia C, Decarli A, Negri E, Franceschi S. *Nutrition, social factors and prostatic cancer in a northern Italian population.* Br J Cancer 1986; 53:817-21.
13. Garfinkel L. *Overweight and mortality.* Cancer 1986; 58:1826-9.
14. Klurfeld DM, Welch CB, Lloyd LM, Kritchevsky D. *Inhibition of DMBA-induced mammary tumorigenesis by caloric restriction in rats fed high-fat diets.* Int J Cancer 1989; 43(5):922-5.
15. La Vecchia C. *Nutritional factors and cancers of the breast, endometrium and ovary.* Eur J Cancer Clin Oncol 1989; 25(12):1945-51.
16. Spring B. *Recent research on the behavioral effects of tryptophan and carbohydrate.* [Review] Nutrition & Health 1984; 3(1-2):55-67.
17. Lyons PM, Truswell AS. *Serotonin precursor influenced by type of carbohydrate meal in healthy adults.* Am J Clin Nutr 1988; 47(3):433-39.
18. Ivy JL, Costill DL, Fink WJ, et al. *Influence of caffeine and carbohydrate feedings on endurance performance.* Med Sci Sports Exerc 1979; 11(6):6-10.
19. McNaughton L. *Two levels of caffeine ingestion on blood lactate and free fatty acid responses during incremental exercise.* Res Quart Exer Sport 1987; 58(3):255-59.
20. Weir J, Noakes TD, Myburgh K, et al. *A high carbohydrate diet negates the metabolic effects of caffeine during exercise.* Med Sci Sports Exerc 1987; 19:100-106.

Chapter 3

1. Ingram DM, Bennett FC, Willcox D, de Klerk N. *Effect of low-fat diet on female sex hormone levels.* J Nat Cancer Inst 1987; 79(6): 1225-9.

2. Sebokova E, Garg ML, Wierzbicki A, Thomson AB, Clandinin MT. *Alteration of the lipid composition of rat testicular plasma membranes by dietary (n-3) fatty acids changes the responsiveness of Leydig cells and testosterone synthesis.* J Nutr 1990; 120(6):610-18.
3. Ohtsuka A, Hayashi K, Noda T, Tomita Y. *Reduction of corticosterone-induced muscle proteolysis and growth retardation by a combined treatment with insulin, testosterone and high protein-high fat diet in rats.* J Nutr Sci Vitaminol 1992; 38(1):83-92.
4. Goldberg AL, Etlinger JD, Goldspink DF, Jablecki C. *Mechanism of work-induced hypertrophy of skeletal muscle.* Med Sci Sports 1975; 7(3):185-98.
5. Schurch PM, Reinke A, Hollmann W. *Carbohydrate-reduced diet and metabolism: about the influence of a 4-week isocaloric fat-rich, carbohydrate-reduced diet on body weight and metabolism (author's translation).* [Review] [German] Medizinische Klinik-Munich 1979; 74(36):1279-85.
6. Sidery MB, Gallen IW, Macdonald IA. *The initial physiological responses to glucose ingestion in normal subjects are modified w2 a 3 d high-fat diet.* Br J Nutr 1990; 64(3):705-13.
7. Bhathena SJ, Berlin E, Judd JT, et al. *Dietary fat and menstrual-cycle effects on the erythrocyte ghost insulin receptor in premenopausal women.* Am J Clin Nutr 1989; 50(3):460-4.
8. Kather H, Wieland E, Scheurer A, et al. *Influences of variation in total energy intake and dietary composition on regulation of fat cell lipolysis in ideal-weight subjects.* J Clin Inv 1987; 80(2):566-72.
9. Head A, Jakeman PM, Kendall MJ, Cramb R, Maxwell S. *The impact of a short course of three lipid lowering drugs on fat oxidation during exercise in healthy volunteers.* S Postgrad Med J 1993; 69(809):197-203.
10. Bjorntorp P. *Importance of fat as a support nutrient for energy: metabolism of athletes.* J Sports Sciences 1991; 9:71-6.
11. Muoio DM, Leddy JJ, Horvath PJ, Awad AB, Pendergast DR. *Effect of dietary fat on metabolic adjustments to maximal VO₂ and endurance in runners.* Med Sci Spor Exer 1994; 26(1):81-8.
12. Conlee RK, Hammer RL, Winder WW, et al. *Glycogen repletion and exercise endurance in rats adapted to a high fat diet.* Metabolism 1990; 39(3):289-94.
13. Guezennec CY. *Role of lipids on endurance capacity in man.* Int J Sports Med 1992; 13(1):S114-S118.

Chapter 4

1. Opstad PK, Asskvaag A. *The effect of sleep deprivation on the plasma levels of hormones during prolonged physical strain and calorie deficiency.* Eur J Appl Phys Occup Phys 1983; 51(1): 97-107.
2. Diamond F, Ringenberg L, MacDonald D, et al. *Effects of drug and alcohol abuse upon pituitary-testicular function in adolescent males.* Adolescent Health Care 1986; 7(1):28-33.

3. Barnett G, Chiang CW, Licko VJ. *Effects of marijuana on testosterone in male subjects.* Theor Biol 1983; 104(4):685-92.
4. Mendelson JH, Mello NK, Teoh SK, Ellingboe J, Cochin J. *Cocaine effects on pulsatile secretion of anterior pituitary, gonadal and adrenal hormones.* J Clin Endocrinol Metab 1989; 69(6):1256-60.
5. Berul CI, Harclerode JE. *Effects of cocaine hydrochloride on the male reproductive system.* Life Sci 45(1) 1989, pp. 91-95.
6. Noth RH, Walter RM. *The effects of alcohol on the endocrine system.* Med Clin North Am 1984; 68(1):133-46.
7. Babichev VN, Peryshkova TA, Aivazashvili NI, Shishkin IV. *[Effect of alcohol on the content of sex steroid receptors in the hypothalamus and hypophysis of male rats].* Biull Eksp Biol Med 1989; 107(2):204-7.
8. Chung KW. *Effect of ethanol on androgen receptors in the anterior pituitary, hypothalamus and brain cortex in rats.* Life Sci 1989; 44(4):2273-80.
9. Soszynski PA, Frohman LA. *Inhibitory effects of ethanol on the growth hormone (GH)-releasing hormone-GH-insulin-like growth factor-I axis in the rat.* Endocrinology 1992; 131(6): 2603-2608.
10. Guezennec CY. *Role of lipids on endurance capacity in man.* Int J Sports Med 1992;13(1): S114-S118.
11. Haralmbie G. *Electrolytes, trace elements and vitamins in exercise.* First International Course on Physiological Chemistry of Exercise and Training 1979 (Fiuggi, Italy).
12. McKenna MJ. *The roles of ionic processes in muscular fatigue during intense exercise.* [Review] Sports Medicine 1992; 13(2):134-45.
13. Packer L, Landvik SI. *Vitamin E: introduction to biochemistry and health benefits.* Ann NY Acad Sci 1989; 570:1-6.
14. Stahelin HB, Gey F, Brubacher G. *Preventive potential of antioxidative vitamins and carotenoids on cancer.* Int J Vitam Nutr Res Suppl 1989; 30:232-41.
15. Longnecker D. *Experimental pancreatic cancer: role of species, sex and diet.* Bull Cancer 1990; 77(1):27-37.
16. Newberne PM, Rogers AE. *The role of nutrients in cancer causation.* Int Symp Princess Takamatsu Cancer Res Fund 1985; 16:205-22.
17. Kuzuya F. *[Relationship between atherosclerosis and aging process].* Rinsho-Byori 1989; 37(9):968-74.
18. Babiy AV, Gebicki JM, Sullivan DR. *Vitamin E content and low density lipoprotein oxidizability induced by free radicals.* Atherosclerosis 1990; 81(3):175-82.
19. Davidson MH. *Implications for the present and direction for the future.* Am J Card 1993; 71(6):32B-36B.

20. Tappel AL, Fletcher B, Deamer D. *Effect of antioxidants and nutrients on lipid peroxidation fluorescent products and aging parameters in the mouse.* J Gerontology 1973; 28:415-24.
21. Sukolinskii VN, Morozkina TS. *[Prevention of postoperative complications in patients with stomach cancer using an antioxidant complex].* Vopr-Onkol 1989; 35(10):1242-5.
22. Rabl H, Khoschsurur G, Colombo T, et al. *A multivitamin infusion prevents lipid peroxidation and improves transplantation performance.* Kidney Int 1993; 43(4):912-917.
23. Goode HF, Webster NR, Howdle PD, et al. *Reperfusion injury, antioxidants and hemodynamics during orthotopic liver transplantation.* Hepatology 1994; 19(2):354-9.
24. Ek B, Hallberg C, Sjogren KG, et al. *Reoxygenation-induced cell damage of isolated neonatal rat ventricular myocytes can be reduced by chain-breaking antioxidants.* Free Radical Biol Med 1994; 16(1):117-21.
25. Robertson JM, Donner AP, Trevithick JR. *Vitamin E intake and risk of cataracts in humans.* Ann NY Acad Sci 1989; 570:372-82.
26. Gerster H. *Antioxidant vitamins in cataract prevention.* Z Ernahrungswiss 1989; 28(1): 56-75.
27. Stone WL, Henderson RA, Howard GH, et al. *The role of antioxidant nutrients in preventing hyperbaric oxygen damage to the retina.* Free Radical Biol Med 1989; 6(5): 505-12.
28. Taylor A. *Cataract: Relationships between nutrition and oxidation.* J Am Coll Nutr 1993; 12(2):138-46.
29. Heliovaara M, Knekt P, Aho K, et al. *Serum antioxidants and risk of rheumatoid arthritis.* Ann Rheum Dis 1994; 53(1):51-53.
30. Paolisso G, Gambardella A, Galzerano D, et al. *Antioxidants in adipose tissue and risk of myocardial infarction [letter].* Lancet 1994; 343(8897):596.
31. Reid MB, Haack KE, Franchek KM, et al. *Reactive oxygen in skeletal muscle. I. Intracellular oxidant kinetics and fatigue in vitro.* J Appl Physiol 1992; 73(5):1797-1804.
32. Gohil K, Rothfuss L, Lang J, Packer L. *Effect of exercise training on tissue vitamin E and ubiquinone content.* J Appl Physiol 1987; 63(4):1638-41.
33. Dohm GL. *Protein nutrition for the athlete.* Clinics In Sports Medicine 1984; 3(3): 595-604.
34. Lemon PW. *Maximizing performance with nutrition: protein and exercise: update 1987.* Med Sci Sports Exer 1987; 19(5):S179-S190.
35. Burke LM, Read RS. *Sports nutrition. Approaching the nineties.* Sports Med 1989; 8(2):80-100.
36. Lemon PW, Proctor DN. *Protein intake and athletic performance.* Sports Med 1991; 12(5):313-325.

37. Jepson MM, Bates PC, Millward DJ. *The role of insulin and thyroid hormones in the regulation of muscle growth and protein turnover in response to dietary protein in the rat.* Br J Nutr 1988; 59(3):397-415.
38. Freed DLJ, Banks AJ, Longson D, Burley DM. *Anabolic steroids in athletics: crossover double-blind trial on weightlifters.* Br Med J 1975; 2(5969):471-473.
39. Chandler RM, Byrne HK, Patterson JG, Ivy JL. *Dietary supplements affect the anabolic hormones after weight-training exercise.* J Appl Physiol 1994; 76(2):839-45.
40. Dragan GI, Wagner W, Ploesteanu E. *Studies concerning the ergogenic value of protein supply and L-carnitine in elite junior cyclists.* Physiologie 1988; 25(3):129-32.
41. Dragan GI, Vasiliu A, and Georgescu E. *Research concerning the effects of 'Refit' on elite weightlifters.* J Sports Med Physical Fitness 1985; 25(4):246-50.
42. Bucci L, Hickson JF Jr, Pivarnik JM, et al. *Ornithine ingestion and growth hormone release in bodybuilders.* Nutr Res 1990; 10(3):239-45.
43. Iwasaki K, Mano K, Ishihara M, et al. *Effects of ornithine or arginine administration on serum amino acid levels.* Biochem Int 1987; 14(5):971-76.
44. May ME, Buse MG. *Effects of branched-chain amino acids on protein turnover.* Diabetes Metab Rev 1989; 5(3):227-245.
45. Nair KS, Schwartz RG, and Welle S. *Leucine as a regulator of whole body and skeletal muscle protein metabolism in humans.* Am J Physiol 1992; 263(5 Pt 1):E928-34.
46. MacLennan PA, Brown RA, and Rennie MJ. *A positive relationship between protein synthetic rate and intracellular glutamine concentration in perfused rat skeletal muscle.* FEBS Lett 1987; 215:187-91.
47. Darmaun D. *[In vivo exploration of glutamine metabolism in man] L'exploration du métabolisme de la glutamine in vivo chez l'homme.* Diabete Metab 1992; 18(1 Pt 2):117-121.
48. Jepson MM, Bates PC, Broadbent P, et al. *Relationship between glutamine concentration and protein synthesis in rat skeletal muscle.* A J Physiol 1988; 255(2 Pt 1):E166-E172.
49. Rennie MJ, MacLennan PA, Hundal HS, et al. *Skeletal muscle glutamine transport, intramuscular glutamine concentration and muscle-protein turnover.* Metabolism 1989; 38(8 Suppl 1):47-51.
50. Brouwer AE, Carroll PB, and Atwater IJ. *Effects of leucine on insulin secretion and beta cell membrane potential in mouse islets of Langerhans.* Pancreas 1991; 6(2):221-8.
51. Cynober L. *Ornithine alpha-ketoglutarate in nutritional support.* Nutrition 1991; 7(5):313-322.
52. Flakoll PJ, VandeHaar MJ, Kuhlman G, Nissen S. *Influence of alpha-ketoisocaproate on lamb growth, feed conversion and carcass composition.* J Animal Sci 1991; 69(4):1461-7.
53. Riedel E, Hampl H, Nundel M, Farshidfar G. *Essential branched-chain amino acids and alpha-ketoanalogues in haemodialysis patients.* Nephrology, Dialysis, Transplantation 1992; 7(2):117-20.

54. Bidzinska B, Petraglia F, Angioni S, et al. *Effect of different chronic intermittent stressors and acetyl-L-carnitine on hypothalamic beta-endorphin and GnRH and on plasma testosterone levels in male rats.* Neuroendocrinology 1993; 57(6):985-90.
55. Palmero S, Leone M, Prati M, et al. *The effect of L-acetylcarnitine on some reproductive functions in the oligoasthenospermic rat.* Horm Met Res 1990; 22(12):622-6.
56. Ruggiero FM, Cafagna F, Gadaleta MN, Quagliariello E. *Effect of aging and acetyl-L-carnitine on the lipid composition of rat plasma and erythrocytes.* Bioch Biophys Res Comm 1990; 170(2):621-6.
57. Chandler RM, Byrne HK, Patterson JG, and Ivy JL. *Dietary supplements affect the anabolic hormones after weight-training exercise.* J App Physiol 1994; 76(2):839-45.
58. Greenhaff PL, Casey A, Short AH, et al. *Influence of oral creatine supplementation on muscle torque during repeated bouts of maximal voluntary exercise in man.* Clin Sci 1993; 84(5): 565-71.
59. Balsom PD, Harridge SD, Soderlund K, Ljodin B, Ekblom B. *Creatine supplementation per se does not enhance endurance exercise performance.* Acta Phys Scand 1993; 149(4):521-3.
60. Ghavami-Maibodi SZ, Collipp PJ, Castro-Magana M, Stewart C and Chen SY. *Effect of oral zinc supplements on growth, hormonal levels and zinc in healthy short children.* Ann Nutr Metab 1983; 273:214-219.
61. Hartoma TR, Nahoul K, Netter A. *Zinc, plasma androgens and male sterility.* Lancet 1977; 2:1125-1126.
62. Hunt CD, Johnson PE, Herbel J, Mullen LK. *Effects of dietary zinc depletion on seminal volume of zinc loss, serum testosterone concentrations and sperm morphology in young men.* Am J Clin Nutr 1992; 56(1):148-157.
63. Goldfinch J, McNaughton L, and Davies P. *Induced metabolic alkalosis and its effects on 400-m racing time.* Eur J Appl Physiol Occup Physiol 1988; 57(1):45-48.
64. Rupp JC, Bartels RL, Zuelzer W, Fox EL, Clark RN. *Effect of sodium bicarbonate ingestion on blood and muscle pH and exercise performance.* Med Sci Sports Exer 1983; 15:115.
65. Gordon SE, Kraemer WJ, Pedro JG. *Increased acid-base buffering capacity via dietary supplementation: Anaerobic exercise implications.* J Appl Nutr 1991; 43(1):40-48.
66. Hodgson JM, Wahlqvist ML, Boxall JA, Balazs ND. *Can linoleic acid contribute to coronary artery disease?* Am J Clin Nutr 1993; 58(2):228-34.
67. Davidson MH. *Implications for the present and direction for the future.* Am J Card 1993; 71(6):32B-36B.
68. Parkinson AJ, Cruz AL, Heyward WL, et al. *Elevated concentrations of plasma omega-3 polyunsaturated fatty acids among Alaskan Eskimos.* Am J Clin Nutr 1994; 59(2):384-88.
69. Brenner D, Marti B, Gutzwiller F. *[Omega-3-fatty acids: their value in nutrition and prevention]. [Review]* Therapeutische Umschau 1990; 47(9):724-32.

70. Garg ML, Wierzbicki A, Keelan M, Thomson AB, Clandinin MT. *Fish oil prevents change in arachidonic acid and cholesterol content in rat caused by dietary cholesterol.* *Lipids* 1989; 24(4):266-70.
71. Schurch PM, Reinke A, Hollmann W. *Carbohydrate-reduced diet and metabolism: about the influence of a 4-weeks isocaloric fat-rich, carbohydrate-reduced diet on body weight and metabolism.* [Review] *Medizinische Klinik-Munich* 1979; 74(36):1279-85.
72. Parrish CC, Pathy DA, Angel A. *Dietary fish oils limit adipose tissue hypertrophy in rats.* *Metabolism: Clin Exp* 1990; 39(3):217-19.
73. Belzung F, Raclot T, Groscolas R. *Fish oil n-3 fatty acids selectively limit the hypertrophy of abdominal fat depots in growing rats fed high fat diets.* *Am J Physiol* 1993; 264(6 Pt 2):R1111-8.
74. Parrish CC, Pathy DA, Parkes JG, Angel A. *Dietary fish oils modify adipocyte structure and function.* *J Cell Phys* 1991; 148(3):493-502.
75. Lombardo JA. *Stimulants and athletic performance (Part 2): cocaine and nicotine.* *Physician Sportsmed* 1986; 14(12):85-91.