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# I. Nutritional Illusion, Delusion and Confusion

In looking back over my bodybuilding career, I am truly amazed that I've made it as far as I have considering the years I spent pursuing my goals in almost complete ignorance. From the very beginning, when I was only 12 years old, until quite recently -- and I still have a lot to learn -- I was deluded and confused. I became deluded from reading all the muscle magazines, especially their seductive advertisements which promised that we all could be Mr. America's almost overnight if we would only invest our money in a particular product.

A good example was one that promised a-pound-a-day muscle gains if we drank a certain drink every day. A very enthusiastic, but admittedly ignorant, young bodybuilder, I fell for that one hook, line and sinker, and went from 180 to 250 pounds (most of the weight gain being bodyfat) in seven months! Oh, how clever I thought I was. The only reason I didn't go up to 280 pounds, which was my goal, was because my mother couldn't afford my milk bill anymore, as I was up to almost two gallons of the liquid every day. On top of that, I was becoming rather concerned about the hideous stretch marks that began appearing all over my body, along with the fact that I had outgrown two or three wardrobes. It was at this point that my dad refused to buy me any more clothes and, in so doing, put a halt to my "bulking."

The next six months I spent trying to undo the damage. You see, it was in vogue in those days to "bulk up and then cut down," i.e., to gain as much weight as possible despite the content, then trim off the fat you gained and be left with just muscle. Well, by the time I was done cutting and trimming more than six months later, I ended up weighing a few pounds less than the 180 pounds I began with. The starvation and overtraining that led to such a weight loss caused me to lose muscle. I actually ended up with less muscle than I had when I started. So much for bulking up and cutting down!

Despite that and other mistakes, I never gave up hope of becoming an accomplished bodybuilder. All through the years I read the muscle magazines voraciously, never missing a trick. I knew every fad diet that came down the line and tried them all. Everybody trained differently and followed different diets. This was as it should be, we were told, because we are all different. The bottom line, so they said, was that because we are all unique and possess vastly different requirements in our training and nutrition, it is up to the individual to discover what is best for him. No wonder I and untold others were confused about training and dieting.

What a massive contradiction! These very people who were selling us "the science of bodybuilding" were now telling us that bodybuilding is anything but exact, that there are no universal principles or truths, that those who wanted big muscles had to become their own scientific agents and discover what built muscles for "them." Since science is an exact discipline, can it be we

have been wrong all these years about bodybuilding being a science? If you accept the premise that we all possess different training and nutritional requirements, then, yes, we have been wrong. Bodybuilding cannot operate as a science under those conditions.

## II. Demystifying Nutrition

As far as I've been able to ascertain, I am the only top bodybuilder who approaches his training and nutrition scientifically. How can I make such a bold statement? Well, since every top bodybuilder mentions at some point that we are all different and possess different requirements, I know automatically they are not scientific. Since I am the only top bodybuilder who operates from the opposite position, i.e., we are all essentially the same, with practically identical training and nutritional requirements, at least the possibility exists that I am a scientific bodybuilder.

No, I don't think we were all wrong in believing that bodybuilding is a science. The science of bodybuilding arises from the specific principles of exercise physiology and nutritional science which apply to everyone. Not just to Mike Mentzer, but to every human being who has ever lived on this planet. As I stated in my book, *Heavy Duty*, "If the laws of science were not immutable, if they were subject to arbitrary and unpredictable change, then science itself could not exist as a viable discipline . . . if the laws of physiology didn't apply to everyone, the science of medicine could not exist. The fact that the results of research on few individuals can be applied to the general human populace is what makes medical science possible."

The rest of this book will be devoted to nutritional science and the bodybuilder. Because nutrition is an exact science, I can tell each and every one of you reading this book how to eat so you will gain muscle without fat. Not only that, but I can tell each of you exactly how many calories, and grams of protein, carbohydrates and fats, are required in the diet to build a certain amount of muscle. By learning how to juggle your calories and activity levels, you can learn how to predict weight gains and losses down to the exact day! Anyone can do these things if he possesses some rather simple facts and figures well known to nutritional scientists. A first step toward a better understanding of "the science of bodybuilding" is to develop a firm grasp of what I call nutritional reality

## III. Nutritional Reality

In order to develop a sense of nutritional reality, the bodybuilder must first acquire a realistic perspective of his goals, or what it is he might realistically achieve. Anyone with even a modicum of training experience knows that the development of muscle tissue beyond normal levels is a slow, arduous process. The rank beginner, however, imbued with a fiery enthusiasm, but little in the way of knowledge or practical experience, often expects to develop a Mr. America physique almost overnight. I know, because I was once an enthusiastic but ignorant young bodybuilder who sincerely believed he could gain a pound of muscle a day.

Again, some of these deluded goals stemmed from reading the ads in the muscle magazines. While it is easy for me to sit here now and say those ads were obviously ludicrous, I was once taken in by them, and for many in varying stages of development and ignorance, it is all too easy to succumb to such rousing blandishments. Never did it dawn on a young Mike Mentzer that if he were to gain a pound of muscle a day, he could gain 365 pounds of muscle in a year merely by drinking a crash formula! How was I supposed to know that growth first had to be stimulated by exercise before proper nutrition became a factor in allowing for such growth? Of course, had I thought about it, I would have realized that no one could gain 365 pounds of muscle in an entire lifetime, let alone one year.

We must always keep in mind that growth is a slow process for everyone. And while some may grow a little faster than others, it still remains relatively slow and no one ever gains fast enough.

How much can the average bodybuilder expect to gain in one year of regular, intense training? In their very first year of training, some will gain as much as 20 or 30 pounds, especially if they are underweight to begin with. Once such an individual's bodyweight stabilizes closer to a more normal standard for his height and age, growth will then slow down considerably despite heavy training.

For the individual of normal bodyweight who has been training a year, the addition of 10 pounds of lean muscle tissue is possible, but a considerable achievement nonetheless. And it's an achievement that's only possible if one is willing to train as hard as is required and eat properly. Of course, just about anyone can gain 10 pounds of bodyweight if that weight is fat or a combination of fat and muscle.

To many, 10 pounds a year may not sound like much. But look at it this way: in five years, the average adult male weighing 165 pounds, gaining at the rate of 10 pounds of muscle a year, will gain 50 pounds and end up weighing a muscular 215 pounds. Not bad at all considering that only two of the 15 competitors at the 1979 Mr. Olympia weighed more than 215 pounds. Looked at in this way, perhaps even a 10-pound gain of lean muscle a year is more than many might reasonably expect.

And make no mistake about it: for the serious bodybuilder, lean muscle

gains are the only gains he should be concerned with. Size for the sake of size is a mistake, a lesson I had to learn through bitter experience. Gaining all that weight years ago has altered my metabolism so much that it is now harder for me to get cut than most. And there are the stretch marks that come from growing too fast -- or should I say, from getting fat too fast! It is always to your disadvantage to put on fat, because someday you will be confronted with the unpleasant task of shedding it. And the more fat you have, the more unpleasant the task.

## IV. Nutrition for Building Lean Muscle

Let's say, hypothetically, for the convenience of this discussion, that everyone reading this is going to train hard enough in the course of the next year to stimulate 10 pounds worth of muscle growth. Just how many calories, and grams of protein, fat and carbohydrate, will be required to provide for such growth?

First, let's consider these facts and figures. If you were to measure the caloric content of a pound of human muscle tissue, using a scientific measuring device known as a calorimeter, you would find it contains 600 calories. By comparison, a pound of human bodyfat would contain 3500 calories. So fat contains almost six times as many calories as an equal amount of muscle. This points to the fact that it requires a lot less food to build muscle than it does fat. And, of course, the addition of fat requires absolutely no physical training.

The disparity in caloric content of these tissue types can be accounted for by the fact that fat contains a lot more lipids, which are high in calories, than does muscle. Muscle, on the other hand, is comprised largely of water, which is devoid of calories. Look at the chart below:

	water	protein	lipids	inorganic material
muscle	70%	22%	6%	2%
fat	15%	12%	70%	3%

If we all gained 10 pounds of lean muscle this year, we would need to consume 600 (the number of calories in a pound of muscle) x10 (the number of pounds of muscle growth stimulated), or 6000 calories a year over and above the amount needed for maintenance. Now 6000 calories extra a day, a week or a month, but a year! To figure out how many calories a day above maintenance need that translates to, divide 6000 calories by 365 (the number of days in a year) and you come up with only 16 calories a day above maintenance needs.

Our daily maintenance needs for calories depends on our individual basal metabolic rate (BMR), which is a total of the amount needed to sustain all

organic activity at rest and that needed to fuel our voluntary physical activity. Surprisingly, our body usually burns more calories keeping our hearts beating and our other organs functioning than our skeletal muscles do playing sports, going to work, eating, studying, engaging in sex, and all the other physical and mental activities we perform during the course of a day.

One way of figuring out your "cruising speed," or BMR, is to apply this formula to your bodyweight:

*For women:* Add a zero to your weight in pounds; then add to the result your weight in pounds.

*For men:* Add a zero to your weight in pounds; then add to the result twice your weight in pounds.

I currently weigh 215 pounds, so I would figure my BMR: 215 plus a zero is 2150; 2150 plus twice my weight, 430, is 2580. So my body expends 2580 calories simply fueling my vital life processes. This formula leaves out the calories expended in daily voluntary activity.

Another, more practical, method for figuring out your total daily caloric needs is as follows: Every day for three days write down everything you eat and the quantity. *Everything!* At the end of each day, sit down with a calorie-counting book and tally up the day's total calories. Do that every day for three days, and at the end of the three-day period, total the three figures and divide by three. This will give you your daily average caloric intake. Do not alter your diet in any way during these three days as we are seeking an average or representative day of eating. If you haven't gained or lost weight during that three-day period, this daily average figure is also your daily maintenance caloric need.

If you discover that your daily average caloric maintenance need is 3000, you need to consume 3016 calories a day in order to gain 10 pounds of lean muscle a year. Again, those 16 extra calories a day will add up to the 6000 extra we need for the year. When you consider that you may have been force-feeding yourself thousands of extra calories a day, it is almost embarrassing to discover you only needed 16 extra a day to gain 10 pounds of muscle.

Incidentally, not all of those 16 extra calories need to be derived from protein sources. In order to gain 10 pounds of muscle in a year, you need only one extra gram of protein a day above your maintenance protein needs. Most bodybuilders are already getting much more protein than needed for maintenance and growth.

How do we calculate that figure of one gram? Since we need 16 extra calories a day, and since approximately 25 percent or one quarter of muscle is protein, then approximately four calories of that 16 should come from protein. It just so happens that there are four calories in one gram of protein.

## V. Balancing Your Muscle-Building Diet

The majority of bodybuilders I meet at my numerous exhibitions and seminars all over the country still seem to think that protein is needed in tremendous quantities to build muscle. The fact that muscle is only 22 percent protein suggests that our protein requirements are not nearly that high. And just because muscle is more than 70 percent water doesn't mean we should begin drinking gallons and gallons of water a day to hasten the muscle growth process either.

What would happen if we were to drink such large quantities of water? We would go to the bathroom a lot to eliminate the excess water. In the case of consuming excess protein, however, we aren't so lucky, since protein contains calories which turn to fat when consumed in excess. The point I am trying to make here is that our bodies possess specific needs for all the various nutrients each and every day. We don't force more utilization of nutrients by taking mega-doses. Nutrients consumed beyond need are excreted, in part, and the rest is turned to fat.

How should we divide our caloric consumption between the macronutrients (carbohydrates, proteins and fats) so that we gain just muscle without fat? Remember that our first dietary concern is total caloric intake. The caloric dimension represents a kind of dietary budget within which we must fill our nutritional needs. Figure your daily caloric needs based on the outline above. No matter what our average daily caloric intake happens to be, it is important that we fill our diet budgets wisely.

Many reputable nutritional scientists, along with the Senate Subcommittee on Nutrition, recommend our daily intake be comprised of 60 percent carbohydrate, 25 percent protein and 15 percent fat. While I have read of other scientists who suggest a little less carbohydrate or a bit more protein, I have not come across one who does not say that carbohydrates should make up the bulk of our caloric intake. I am aware there are faddists who recommend high-protein diets with low to zero carbohydrate. These are weight-loss diets, however, and since they are unbalanced, they're universally regarded as dangerous. The only other people who recommend ridiculously high protein intakes are those selling protein products.

During World War II, the U.S. Government assigned the Food and Nutrition Board of the National Research Council of the National Academy of Sciences, a non-governmental, scientific body, to define the nutritional requirements for Americans. The Board's research led to the publication of a report known as the "Recommended Dietary Allowances." The recommended allowances were not intended as definitive nutrient requirements, nor were they meant for any particular individual. The RDA's were intended as an informed guideline

for essentially normal, healthy individuals to formulate a sound diet meeting their nutritional needs. The RDA's have since been periodically reviewed and revised to keep up with advances in nutritional knowledge. The data acquired by the Board led quickly to the formation of a food plan known as the "Basic Seven Food Plan." But this turned out to be unnecessarily complex, so in 1956 the Department of Agriculture published "*The Essentials of an Adequate Diet*," which described a simplified Four Food Group Plan.

Since bodybuilders often weigh more than the average person, and are more active, they may need more calories, carbohydrates and thiamine (a B vitamin). Thiamine is abundant in carbohydrate foods, so don't worry about taking a supplementary B vitamin tablet. This food plan will ensure that, within your particular calorie budget, you'll be getting all the nutrients you need for the maintenance of health (the first requisite for building muscle) and for muscle growth itself.

The four food groups listed below are composed of common food items that make important nutritional contributions to our diets. They are as follows:

1. *Cereal and Grain Foods* -- Baked goods, cereals, bread and flour products are rich, but inexpensive, sources of carbohydrates, minerals and protein. They also contribute some vitamins and a small amount of fat.

You should have very little trouble getting the recommended four daily servings from this group. Bodybuilders cannot afford to skimp on cereals and grains because they provide plenty of carbohydrates, the primary source of fuel for high-intensity muscular contractions. My daily breakfast is comprised almost entirely of foods from this group -- I usually eat a couple of bran muffins and some whole grain toast.

2. *Fruits and vegetables* -- Fruits and vegetables, along with potatoes, are very nutritious, providing plenty of vitamins and minerals, along with bulk in the form of cellulose and energy from the carbohydrates. Four or more servings from this group should be included each day.

3. *The high-protein group* -- This group includes fish, meat, eggs, poultry, and even vegetable items such as dried beans, nuts and peas. Along with protein, these foods provide B vitamins and iron. Two or more servings from this group should be consumed each day. (A basic serving of meat is considered to be 3.5 ounces -- not much!)

4. *Milk and milk-group products* -- Milk and cheeses are important because they're a particularly rich source of protein, calcium and riboflavin (vitamin B2). However, milk is very high in calories and saturated animal fats. If you like milk, and drink more than two glasses a day, try to drink the skim or low-fat variety. Two servings a day from the milk group is enough.

The recommended servings from the Four Basic Food Groups will supply the bodybuilder with all the necessary nutrients -- no matter how big he is or how hard he trains.

## VI. The Essential Nutrients

In order to maintain health and provide for optimal growth, our bodies require more than 40 different nutrients. These various nutrients can be found in the six primary food components: water, protein, carbohydrates, fats, vitamins and minerals.

**WATER:** Whether or not you believe life began in the sea, the fact remains that life exists in an inner sea within our body, two-thirds of which is water. All of life's complex biochemical processes take place in a water medium, which accounts for the fluidity of our blood and lymph system. Water is our waste remover through urine and feces; it lubricates our joints, keeps our body temperature within a narrow range; and last but not of least importance to the bodybuilder, water is the primary constituent of muscle tissue.

Viewed in this way, water might rightly be said to be the most important nutrient for survival as well as growth. While we can survive for long periods without food, a lack of water can result in death in a matter of days.

Although it's true that our muscles are more than 70 percent water, it doesn't follow that we should drink gallons of water a day to hasten the muscle growth process. Remember that excess beyond need is merely passed through the body. It is also true that *all* of the various nutrients work together, and when one is lacking or deficient, the others are limited in their roles as well. There exists, for example, a vital association between water and the electrolytes potassium and sodium. These electrolytes must be present inside and outside our cells for water to remain in proper proportions in our bodies. So while water may be of great importance, it is not the only nutrient of importance. Use common sense and let thirst dictate intake.

**PROTEIN:** A certain mystique has arisen around protein in the last decade. Protein-enriched formulas are found in everything from shampoos to skin creams to the food we eat. In his informative book, *The Realities of Nutrition*, Ronald Deutsch states, "Protein has become the dietary lure to which the consumer consistently rises, like a hungry trout on a quiet morning."

This preference for protein-rich foods, especially meats, dates back many centuries and spans a great diversity of cultures. Though ancient Egypt is noted for its grain, food historians point out that from the time of Egypt's Old Kingdom, there was grain feeding of cattle and the force-feeding of birds to make for bigger feasts. Only in time of famine, or in areas where animal husbandry was not known, was this preference for protein absent.

In part, this preference for meat and protein has to do with tradition and status. But protein is also vital to the maintenance of health as a repair and growth substance. The word "protein" derives from the Greek, and it means "of first importance." But I must emphasize to the bodybuilder obsessed with consuming enormous quantities, protein does not mean "of only importance."

At the risk of repetition, let me state again that muscle tissue is comprised mostly of water (more than 70 percent) and only a small portion is protein (some 22 percent). And while I pointed out that water drunk to excess will

only be passed through the body, protein consumed in excess can be turned to fat just as readily as excess calories derived from fat and carbohydrate sources. One gram of protein contains four calories, just as one gram of carbohydrate does, and it is an excess of calories that leads to bodyfat, no matter what the source.

While some controversy exists regarding how much protein we need in our daily diets, most reputable sources recommend about one-half gram per kilo (2.2 pounds) of bodyweight. To be on the safe side, the RDA Committee (providing for disease, stress and other possible problems) recommends .80 grams per kilo of bodyweight. For a 220-pound bodybuilder, daily protein requirements would be 80 grams.

But the needs of bodybuilders are different because they train heavy and are growing muscle, you say? The fact is that protein requirements are dependent solely on the individual's bodyweight, not physical activity. Under normal circumstances, protein is not a fuel source, so our need for it is not contingent on activity levels.

And just how much protein do you think is required for miniscule daily muscle gains? If we go back to our example and assume we are to gain 10 pounds of muscle in a year, how much do we gain on a daily basis? Divide 10 pounds of muscle by 365 and we find our daily average gain to be .027 pounds, or only 12 grams, which is less than half an ounce! And more than 70 percent of that 12 grams is water! So how much extra protein do we need to gain 12 grams of muscle a day, most of which is water anyway? Very little, obviously. In another section of this book, we calculated it to be about one extra gram of protein a day for 10 pounds of muscle growth a year. How many bodybuilders gained even 10 pounds of muscle this past year? And how many are guilty of consuming excessive quantities of protein well beyond any and all possible need merely because the purveyors of the stuff said they needed it?

**CARBOHYDRATES:** If, in fact, protein has been the most over-emphasized nutrient, then carbohydrates have been the most maligned. The anti-carbohydrate litany began in Britain in the early 1950s, and reached its apex in the U.S., when diet books by so-called "experts" blamed carbohydrates for everything from obesity to schizophrenial Talk about being estranged from reality. Now let's debunk the theories of those who rail against carbohydrates.

One of the first things we learn in elementary biology is that life on the planet earth is dependent on the sun. We also learn that all of our food energy begins with plants. When we eat beef, for instance, we derive nutrients that the animal stored by eating grass.

Plants get their energy in a process involving the sun called photosynthesis, which means "putting together with light." What the sun is putting together are two of the most common chemicals on earth and in its atmosphere -- carbon dioxide and water. Plants use oxygen to combine with carbon dioxide and water to form a hydrated carbon, or carbohydrate, as we commonly refer to it.

Carbohydrates are the primary fuel source of our muscles. And for high-intensity training of the Heavy Duty variety or any other type, carbohydrate

in the form of the simple sugar, glucose, is the *only* fuel. When we don't take in enough sugar through our diet to fuel muscular contractions, our bodies transform the amino acid alanine, derived from ingested protein or our own muscle tissue, into glucose. So carbohydrates also have a "protein-sparing effect," which should cause any bodybuilder on a low-carb diet to reconsider such folly. Both our muscles and our central nervous system derive almost 100 percent of their nutrition from sugar.

In addition to supplying energy, carbohydrates supply important building blocks of life. The ribose found in RNA and DNA is made from the carbohydrates we consume. In light of all these facts, how can carbohydrates be poisonous toxins as asserted by the anti-carbohydrate people?

The fact is that carbohydrates can be dangerous, but only when consumed in excess. The body has a certain capacity for dealing with excess beyond need. But this capacity is not infinite, and can be overwhelmed. The same is true, however, with proteins and fats. Proof exists now that excess protein may be the most harmful of all, having been implicated in intestinal cancer, kidney disorders and a host of other degenerative diseases.

Carbohydrates, therefore, are a vital nutrient in the bodybuilder's diet. In addition to providing the energy necessary for intense workouts, carbohydrates (in the form of glycogen) are stored in muscles, where each gram of glycogen "holds" three grams of water. This is the reason you often feel lousy, and gain an inordinate amount of weight, the day after going on a carbohydrate binge. And living on low-carb diets *inevitably* results in periodic binges. No matter how hard you try to abstain, the wisdom of the body wins out eventually, and will attempt to "over-compensate" for the prolonged shortage of vital carbohydrates by making you eat everything in sight. This sets up a pattern of failure and frustration for many who equate such binges with moral weakness and personal shortcomings. These binges are the natural result of trying to live on a very low carbohydrate diet, as Dr. L. M. Vincent points out in his book on dancers, *Competing With The Syph*. Why not avoid all that by following a well-balanced diet which has up to 60 percent carbohydrates?

**FATS:** Fats are important fuel sources which provide energy at rest and late in endurance activities, when the body's limited glycogen reserves have been depleted. Certain vitamins are soluble only in fat, so obviously fats play a crucial role in a well-balanced diet.

Fats are divided into saturated and unsaturated fats. Saturated fats are found in animal products and can lead to heart problems when consumed in excess. Unsaturated fats are found mostly in plants and are now thought to be a contributing factor to heart disease as well. We would all do well, therefore, to limit our fat intake to the recommended 15 percent of the daily calorie budget.

**VITAMINS and MINERALS:** All the various vitamins and minerals are referred to as micronutrients since they are needed in such small quantities on a daily basis. Recommended daily allowances of the micronutrients are measured in milligrams, as opposed to the grams used to measure the

macronutrients. Vitamins and minerals combine in the body to form the enzymes that serve as catalysts in countless important physiological processes.

If you are consuming a reasonably well-balanced diet, you are getting all the vitamins and minerals you need. If, however, there is any doubt as to whether or not your diet is balanced, by all means take a general multi-mineral vitamin supplement. Our daily needs for the micronutrients are quite small, so don't take vitamins and minerals by the handful thinking your body will use them. Most will merely be passed off, while some, like vitamins A and D, actually are toxic in large doses.

## VII. Gaining and Losing Weight

When we talk about gaining weight, it is important that we specify what kind of weight. Is it *lean* muscle you want, muscle with a little fat, or just plain fat -- for some weird reason. While lean muscle gains will obviously be the slowest, they should be the type you're most concerned with, and I've already detailed the necessary process earlier. After stimulating muscle growth (the first requisite), we must provide adequate nutrition along with just enough calories to supply our daily maintenance needs and a tiny bit extra to allow for muscle growth.

For those who might be grossly underweight, adding a little bodyfat along with muscle may not be a bad thing. In such cases, train hard to stimulate muscle growth, and follow an adequate, well-balanced diet with a lot of extra calories above maintenance needs.

This may be difficult for those who have never consumed a large quantity of calories. In order to avoid bloating and gastric disturbances, increase your caloric intake gradually. One week, add an extra glass of milk to one of your daily meals, and the next, a couple pieces of bread. Also be sure to eat calorie-dense foods such as nuts, beef, peanut butter and whole milk. Calorie-dense foods allow you to increase your caloric intake while keeping the volume as low as possible. You can imagine what would happen if you tried to take in several thousand calories a day by eating only salads and vegetables! Don't get carried away, however. As you gain weight and mature physically, your metabolism will slow down. If you're not careful, you'll soon be putting on more fat than muscle.

Overweight bodybuilders who want to build muscle and lose fat should: 1) Train with maximum intensity to stimulate growth, and 2) Follow a well-balanced, reduced-calorie diet. Dieting bodybuilders should try to consume the same well-balanced diet (60% carbohydrates, 25% protein and 15% fats) as a bodybuilder training to simply build muscle. A balanced diet will keep you healthy and provide all the nutrients needed for growth. By reducing your calories to below maintenance levels, you are *not* providing your body with



sufficient energy. In so doing, you are forcing the body to get its energy from a source other than ingested food, namely your bodyfat, which is stored calories of energy. If your maintenance caloric need is 3000 a day, by dropping back to 2500 a day, you are forcing your body to use 500 calories of stored fat. In the course of a week, such a diet will enable you to lose one pound of fat, since  $500 \times 7$  equals 3500, or the number of calories stored in one pound of fat. If you want to lose two pounds of fat a week, reduce your calories 1000 a day below maintenance. It is not suggested, however, you go below 1200 calories a day total intake, as it is impossible to eat a well-balanced diet on so little.

If your metabolism is such that even on 1200 calories a day you can't lose much, compensate by burning more calories through exercise. Don't attempt to do this with weight training, however, as any attempt to increase the duration of your workouts will unavoidably result in a decrease in training intensity. Keep your weight workouts intense and brief. Increase your activity through aerobics, such as running, cycling, etc. Running one mile will burn more than 100 calories, and cycling at a rate of 8-13 miles per hour will burn about 600 calories an hour. Before the 1979 Mr. Olympia, I was cycling up to 40 miles in the morning and running five miles at night. These activities alone, not counting my BMR and other voluntary activities, burned almost 2000 calories a day.

One last word about low-carbohydrate diets. They do work, that is certain. But any diet where you drastically reduce consumption of one of the macronutrients will result in weight loss. You can achieve weight loss more safely, and just as effectively, by reducing consumption of all three macronutrients *slightly*. And if you're on a well-balanced diet and have a caloric deficit in your daily budget, it will not hurt your weight loss efforts to eat refined carbohydrates such as ice cream or candy bars. Actually, the terms "refined" and "unrefined" don't refer to the carbohydrates, as the chemical formula for most carbs we consume is the same, but the food in which the carbs are contained. If all we consumed was predominately "refined" foods, we would end up with an imbalanced diet, since most refined foods contain few minerals and vitamins. But if we're on a well-balanced diet, it doesn't really matter where we get our carbohydrates, since they all end up as glucose by the time they get to our bloodstream anyway. The last two weeks before the 1979 Mr. Olympia, I was consuming more than 200 grams of carbs a day -- I had pancakes three times a week and ice cream almost every day. I didn't do this sort of thing recklessly, however; I kept my daily caloric intake below 2000 and was very active. The result? Even though I placed second, I was generally considered to be the most defined competitor in the contest. So much for low-carbohydrate diets!

## VIII. High-Calorie Diet: 6000 Calories

Many young men take up weight training because they are underweight. Individuals who have been underweight most of their lives usually have high metabolic rates, i.e., they burn calories at a rapid rate, making it difficult to add mass to their frames. Having such high BMR's, these individuals are especially prone to overtraining. In such cases, the individual should train very hard with moderately heavy weights for a few sets per bodypart, and no more than three days a week. An underweight bodybuilder who wants to gain muscle and isn't worried about adding a little fat must increase his caloric intake by as much as 500 calories a day above his daily maintenance needs. If he were to discover (using the method previously described) that his daily maintenance need is 5500 calories, he should up his daily intake by 500, making a total of 6000 calories a day.

The following diet plan is merely a sample since we all possess different maintenance needs. Make the necessary individual modifications to suit your case.

### Breakfast:

½ cup orange juice  
1 cup oatmeal  
1 cup low-fat milk  
1 slice toast  
1 tabl. butter  
Total Calories: 675

### Lunch:

4 pieces fried chicken, French fries or baked potato w/butter, green salad w/bleu cheese dress.  
1 scoop ice cream or a cup of sherbert  
2 granola cookies  
1 cup low-fat milk  
Total Calories: 1500

### Dinner:

1 cup cream of mushroom soup  
1 beef, sirloin (6 oz.)  
1 dinner roll and butter  
1 cup mixed vegetables  
1 slice of pie with beverage  
Total Calories: 1650

### Snack:

1 peanut butter sandwich  
1 banana  
1 cup grape juice  
Total Calories: 485

### Snack:

1 cup dried fruit  
1½ cups milk  
Total Calories: 600

### Snack:

1 cup mixed nuts without salt  
1 cup cocoa  
Total Calories: 1050

Daily Total Calories: Approximately 6000

## IX. CONCLUSION

The material presented in this book is not new. I cannot take credit for discovering any of it. All I did was take some well-known facts regarding nutrition and apply them to the needs of the bodybuilder. It is, of course, up to the individual bodybuilder to make the practical application to his own diet and needs.

Yes, we all have unique needs! This does not contradict my earlier assertion that we are all essentially the same. We are all unique in that each of us occupies a different space in time. Regarding nutrition, we all metabolize food at various rates, i.e., we all possess different metabolic rates. Because we have different metabolic rates, we will all get fat, lose weight and grow muscle at varying rates of speed. While it is obviously true, therefore, that we all have different metabolic rates, what is less obvious, but equally important, is that the physiology underlying metabolism is universal. In other words, it's the same for all human beings. The chemical processes governing our utilization of food for energy, maintenance, repair and growth have been clearly mapped out and circumscribed by physiologists long ago. Pick up any textbook on exercise physiology or nutritional science, and you'll be reading about what goes on inside yourself . . . and your neighbor . . . and your training partner . . . and everyone!

So while we are all unique personalities, we aren't all that different inside. We all need protein, we all require sleep, we all burn carbohydrates at the rate of four calories per gram, we all require intense effort to stimulate growth, we all possess limited recovery abilities, and as bodybuilders we all grow extra muscle too slowly!

And, let's face it, we have all been duped by the manufacturers of food supplements to one degree or another. I am the first to admit that I once fell for the line of the protein hucksters. But when I did come across the commonsense facts regarding growth and nutrition, I threw all the rest out the window and began a sincere quest for the truth.

Considering what you now know -- as a result of reading this book -- regarding the realities of muscular growth and protein needs, for example, are you going to let some hulk guide you in the wrong direction merely because he has a 19-inch arm? Are you going to allow your subsequent actions and dietary practices to be continually dominated by the bootleg logic "more is better?" He who acts contrary to what his perceptions and rational thoughts tell him is the truth is akin to Dostoevsky's Underground Man who cries: "What do I care for the laws of nature and arithmetic, when, for some reason, I don't like them, or the fact that two plus two equals four." It's up to you . . .