BASIC NUTRITION FOR MUSCLE BUILDING

To build muscle effectively, you need to give your body the right balance of essential nutrients. You also need to take in enough calories for energy. If you are working to build muscle, you need extra calories—around 40 to 50 calories/kg of body weight each day. If you weigh 90 kg (around 200 pounds), for example, you'll need between 3600 and 4500 calories daily while training.

Once you know how many calories you need, the next question is ***how much of which foods*** you should eat to get all the nutrients your body needs for optimal performance. Basic nutrients fall into two categories: macronutrients and micronutrients. Here's an overview of how to divide your calories to maximize the nutritional value of your diet.

MACRONUTRIENTS: PROTEIN, CARBOHYDRATES, AND FATS

Protein

Protein is especially important for muscle building because it's the nutrient used to build muscle. Bodybuilders have a slightly higher need for protein to repair muscle fibers that break down during training. You should consume 1.2 to 1.7 grams of protein per kilogram of body weight. For a 200 pound person, that is 108 – 153 grams of protein per day.

An important point to remember with protein is if you want to use it for tissue repair and muscle building rather than energy, you'll need to eat sufficient carbohydrate and fats as well. The carbs and fats will give you fuel, sparing protein for muscle building.

Carbohydrates

Your body uses carbs for short-term energy—the energy you need to get through intense bursts of physical activity like weightlifting. Carbohydrates are converted into glucose, which is stored in your muscles as glycogen. Glycogen is your body's fuel tank. In other words, when you work out, carbs provide the fuel. You need to have enough fuel in the tank to keep your body from breaking down muscle for energy.

To build muscle, about 55 – 75 percent of total calories should be from carbohydrates. The higher end of this range is for times when you're training intensely. The 200-pound athlete, then, needs 1980 – 3375 calories from carbs. Since one gram of carbohydrate contains 4 calories, the athlete's carbohydrate requirement is 495 – 843 grams per day.

Fat

Fat is necessary for healthy cell membranes. The body also needs fat to absorb certain vitamins (known as "fat soluble" vitamins). Of course, too much dietary fat is stored as body fat; you'll

want to avoid that. The good news is as you build muscle, your metabolism will increase and you'll burn fat more easily.

Keep your fat intake low, but not too low because your body needs some fat for proper balance. Aim for 20 – 35 percent of total calories from fat. A gram of fat contains 9 calories, so that's somewhere in the range of 90 – 150 grams of fat per day for a 200-pound man.

MICRONUTRIENTS: VITAMINS AND MINERALS

Your body needs vitamins and minerals for energy and to build and repair muscle tissue damaged during exercise. When you're working out to build muscle, you may have a greater need for vitamins and minerals than the average person.

Vitamins

Antioxidant vitamins—vitamins A, C, E and K—are probably the most important vitamins for muscle building workouts. These vitamins repair damage to cells and muscles caused by oxidation, which occurs normally in the body every day. Exercise increases oxidation, so antioxidants are very important for athletes. Fruits and vegetables are the best sources of vitamins A, C and K. Nuts, eggs, and wheat germ are good sources of vitamin E.

Another group of vitamins important for muscle building are the **B-complex vitamins**, which play an important role in chemical reactions that create energy. B vitamins are also involved in red blood cell creation and tissue repair. Your metabolism, which increases when you train, depends on B vitamins to function. B vitamins are found in whole grains, wheat germ, nuts, beans, milk, eggs, dark leafy greens, beef, and liver.

Minerals

Minerals are essential for the immune system, energy production, and the proper function of hormonal systems. They also play a role in producing blood and maintaining bone. The most important minerals for muscle building are calcium, iron, and zinc.

Calcium helps maintain bone and decrease the risk of stress fractures. You need at least 1000 mg of calcium in your diet each day. Three or four servings of low-fat dairy products or fortified cereals or juices will provide this amount.

Iron is involved in the formation of substances in the blood that carry oxygen. Without enough oxygen, you won't have enough energy for exercise and bodybuilding. Athletes often have low iron stores, which can negatively affect performance and energy levels and lead to iron deficiency anemia. To prevent this, be sure to include iron-rich foods such as lean red meats, fish, poultry, shellfish, eggs, beans, and dried fruits in your diet.

Zinc is another important mineral involved in building and repairing muscle and energy

production. A diet that contains meats, fish, poultry, whole grains, and vegetables should provide enough zinc for muscle building workouts.

SUMMING UP

A balanced healthy diet will generally supply all the nutrients you need for optimal athletic performance. This means choosing lean meats and dairy products, whole grains and plenty of fruits and vegetables. Avoid “trans” fats and saturated fats like those found in whole milk dairy products, animal products, and junk food. Instead, choose “good fats,” which come from fish, nuts and seeds. Also be sure to limit your intake of foods made with white flour and white sugar; these foods are stripped of most nutrients and are mostly “empty calories.”