

## Nutritional Requirements

When considering the **nutritional requirements** necessary to support a successful weight training program, envision a four-legged stool. Each leg of the stool represents a different **nutritional group** essential to a successful weight training diet. Without a balance between all four nutritional groups, the stool will wobble and fall. In this analogy, the four legs of the stool represent **protein, carbohydrates, fat and fluids**.

Appropriate nutrition is required in order for all individuals to live a healthy and disease-free life. As the saying "**you are what you eat**" implies, if you regularly consume a well-balanced, healthy, whole foods diet, you will be more likely to live a life that is filled with good health and wellness.

The nutrients derived from the foods we consume provide the human body with the necessary fuel to optimally perform all essential bodily functions. Without these nutrients, our bodies begin to deteriorate and become far less capable of **warding off diseases** including cancer, diabetes, heart attack and stroke, to name a few.



### Weight Training Requires Additional Nutrients

Individuals that regularly perform a weight training exercise routine or any other form of strenuous exercise place a **higher level of stress** on their entire body. Exercising aggressively requires that the human body utilize **additional nutrients** to support such a high level of effort. While regularly exercising is an excellent activity that promotes and supports good health and fitness, the additional energy required to do so comes with a price - **increased levels of nutritional intake to provide the additional energy required by the body**.

With this in mind, it only makes sense that individuals that regularly perform a weight training program need to focus not only on their actual workouts, but their nutritional intake as well. By coupling the two, you will ensure that you are supplying your body with all of the nutrients necessary to perform at an optimum level, and to successfully **increase your lean muscle mass and strength**.

There are countless **supplements** available that claim to promote large gains in lean muscle tissue and strength. While many nutritional supplements do promote the development of lean muscle tissue, increases in energy and strength and a reduction of excess body fat, the best place to begin is with an **all-natural, well-balanced, whole foods diet** that is rich in nutrition.

As previously mentioned, it is imperative that the body receive appropriate levels of protein, complex carbohydrates, healthy fats and fluids in order for it to operate at an optimum level. This is especially true for individuals that perform a **high intensity weight training program** with regularity.

### Protein

**Protein** is the primary catalyst for muscle growth and development. Protein is responsible for developing lean muscle mass and strength, and **repairing and regenerating muscle tissue** that has been damaged during a weight training session.



However, protein, by itself, is **not a reliable source of energy for the body**.

Although, if an individual is not consuming enough carbohydrates in their diet, the protein will be transformed into carbohydrates by the body and will no longer be available to build and repair muscle tissue.

This is why carbohydrates, not just protein, are essential for weight trainers.

The **primary food groups that contain high levels of protein** include eggs, dairy products and meat. Beans and grains contain reasonable levels of protein as well, and can act as secondary source of protein. Legumes (i.e. nuts and seeds) are also high in protein and are an excellent secondary source of protein as well.

Individuals that regularly perform a weight training exercise routine should consume approximately 1.5 to 1.8 grams of protein for each kilogram of body weight per day, or **0.7 to 0.8 grams of protein for each pound of body weight per day**. This level of protein intake will account for approximately 20% of your total daily caloric intake.

## Carbohydrates

Carbohydrates are the **primary source of energy for the body**. Carbohydrates are stored within the liver and muscle tissue as **glycogen**. The glycogen is then used to provide the body with energy.

Carbohydrates can be broken down into two groups: **simple and complex**. Simple carbohydrates are comprised of one or two sugar molecules and are consumed quickly by the body. An example of a simple carbohydrate is **fructose**, found in fruit.

Complex carbohydrates contain more than two molecules and are processed more slowly by the body. Foods that contain complex carbohydrates include **whole grains and rice**. Consuming ample complex carbohydrates is important to the serious weight trainer, since the body will turn to protein as an energy source if carbohydrate levels become depleted.

The best sources of carbohydrates are **whole grains, fruit and most vegetables**. Avoid consuming sugary foods (i.e. simple carbohydrates) as they are digested quickly and only create short-term energy. On the other hand, **complex carbohydrates are digested more slowly by the body and provide a more sustained energy level**. Most foods that are high in protein are not typically high in carbohydrates. For this reason, you will need to ensure that you diversify your daily food intake to ensure that you are receiving enough protein and complex carbohydrates.

Strength trainers should design their dietary intake to include approximately **2.1 to 3.0 grams of complex carbohydrates for each pound of body weight per day**. Under this scenario, a 200-pound individual would consume between 1,680 and 2,400 calories from carbohydrate sources each day.

## Fat

While consuming excessive quantities of empty calories (i.e. calories lacking in nutrition) that are filled with fat is unhealthy and can lead several disease types over time, **fat is an essential nutrient** that plays an important role within



the human body. Fat has the ability to act as a **secondary energy source** in the event that the body's carbohydrate stores are depleted.

In fact, consuming a healthy diet that contains no more than **30% fat** can protect your protein reserves from being converted to energy, and allows the protein to support, repair and develop lean muscle tissue.

The best sources of fat are from **healthy oils like olive, canola and peanut**. Lean cuts of meat that also contain protein will provide adequate levels of fat as well. Additional healthy sources of fat include most seeds and nuts, as well as avocados. All of these foods provide healthy fats to the body and promote good health and wellness, so long as they're **consumed in moderation**.

The majority of your fat intake should come from **unsaturated** sources. Unsaturated fats generally take on a liquid state at room temperature, while saturated fats remain in a solid state at room temperature.

## Fluids

Muscle tissue is comprised of approximately 75% water, and the entire body is comprised of approximately 60% to 65% water. As such, **fluids are not only vital to the growth of new muscle tissue, but to the repair of existing muscle tissue as well.**

Water is absolutely essential for transporting nutrients throughout the entire body, and to **provide oxygen to the various muscles** and other soft tissues.

In fact, water is so vital to the human body that it can only survive without water for 3 to no longer than 5 days. On the other hand, the human body can survive for as long as 8 weeks without food.

Fluid consumption should primarily come from healthy beverages and the purest form of liquid: **water**. Soda and other carbonated beverages should be kept to a minimum since they generally contain large amounts of simple carbs in the form of sugar.

**Caffeinated drinks such as tea and coffee contain water, but should generally be avoided** because they may do more to dehydrate the body rather than hydrate it.

The average human being should consume at least **eight glasses of eight ounces of water per day**.

However, individuals that regularly perform strenuous exercise routines should consume an even greater amount of water per day. In addition, it is important for individuals that aggressively exercise to **consume water at regular intervals instead of relying on their thirst** to tell them when they are dehydrated. As a general rule, **consume at least 8 ounces of water for every 20 minutes of exercise.**

## Tips for Constructing a Healthy Nutritional Diet

Below are a few tips for constructing a healthy and nutritious diet that will support the demands placed on the human body through weight training:

- **Never skip meals.** Eat three large meals every day (morning, afternoon, evening), and supplement in between with foods that are high in complex carbohydrates and protein.
- Satisfy your fat intake requirements when you consume your three primary meals and **avoid snacks that are filled with empty calories** and a high level of fat.
- **The meal you consume after your weight training routine is vital** to replenishing the carbohydrates and protein that were depleted during your workout. The nutrients that you consume after your weight



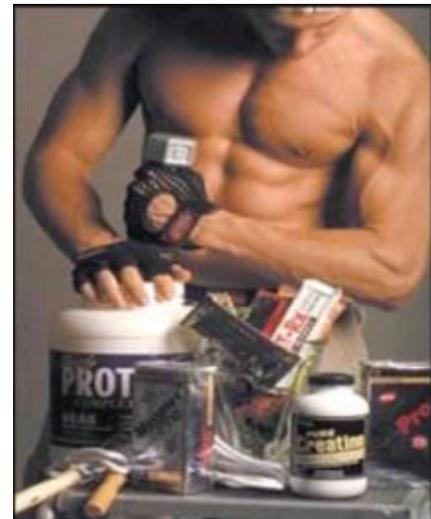
training workout will not only replace the depleted nutrients, but aid in the repair and recovery of muscle tissue as well.

- **After your weight training workout, consume a carbohydrate snack** (energy bar or fruit) to immediately restore the energy that was depleted from the workout. Try to consume one of your three primary meals within one hour.
- **Consume approximately 1.5 to 1.8 grams of protein** for each kilogram of body weight per day, or 0.8 to 1.2 grams of protein for each pound of body weight per day to ensure muscle repair and development.
- **Consume 3 to 5 servings of vegetables each day** to replace most of the minerals and vitamins that were depleted through your weight training workout.
- **Consume dairy products** that are filled with protein as well as other nutrients and minerals (i.e. calcium and phosphorous).

### Weight Training Supplements

The health supplement market is filled with products that claim to have miraculous effects on muscle and strength development. As a general rule, any product that promises unrealistic gains in lean muscle mass development and strength should be viewed with skepticism. Supplements work by providing additional nutrients and energy to the body. In essence, **nutritional supplements are no more than additional food sources.**

In some instances, nutritional supplements are consumed by individuals that have a special circumstance that requires additional supplementation. For instance, a **vegetarian that regularly weight trains** may find it difficult to meet their daily protein requirements. In this case, the individual may supplement their dietary intake with a whey protein product to ensure that they are receiving enough protein to support muscle development and growth.



It is highly recommended that individuals that intend on adding supplements to the daily food intake routine **research each supplement type and ask themselves each of the following questions:**

1. **Does the supplement actually do what it says it will do?** Research the product in medical journals and on the internet to determine if studies and/or trials have been conducted to prove that the product's claims are true. Studies paid for or conducted by the manufacturer should be viewed with skepticism.
2. **Is the supplement GMP-certified?** Many supplement manufacturers produce their supplements in facilities that are GMP-certified (i.e. Good Manufacturing Practices) and provide a certificate of analysis for each ingredient that is contained within the supplement. Companies that meet these standards and requirements tend to use higher quality ingredients, produce higher quality supplements, and have less batch-to-batch variation.
3. **Is the supplement harmful? Does it produce any adverse side effects?** Virtually all items (i.e. water, food, supplements) that are consumed can have adverse side effects when consumed in large quantities. This includes supplements that contain herbal and/or all natural products as well. Both natural and artificial supplements can have other side effects depending on their ingredients and manufacturing process.
4. **Is the recommended dose reasonable?** Some supplement companies have had success with their products when consumed in large doses. In some instances, supplement companies will conduct tests on their supplements in which large doses are consumed in order to publish a successful study. Thereafter,

the company will package their supplement in small pills that have little or no chance of producing the results that were seen in the study.

5. **Have you ever heard of the company before?** It's always a good idea to perform research on the manufacturer of the supplement to evaluate the manufacturing process they utilize, the ingredients chosen for their supplement and the source of those ingredients, and the preservatives and additives that the manufacturer adds to the supplement. View message boards and blogs to see what other current and past users of the supplements are saying about the products and the company.
6. **Do you really need to take the supplement?** Supplementing with reasonable doses of vitamin C and E typically only produces positive effects. Some individuals may need to supplement their dietary intake with whey protein or creatine to satisfy a protein deficiency. However, always ask yourself if you can receive the same level of nutrients through your dietary intake, since consuming your nutrients through "real food" is the preferred approach.

As with any strenuous exercise routine, **nutrition plays a vital role in your level of performance** and the results that you achieve through regular participation. Weight training is no different. It places a high level of stress on the entire body, from the muscle tissue to the joints to the skeletal frame. As such, **weight training consumes several nutrients** and requires a reasonable level of energy and focus to perform. This is especially true for individuals that perform their routine with a high level of intensity and effort.

Ensuring that you are consuming the correct nutrients in the correct quantities is imperative to successfully performing your weight training routine and achieving your weight training goals within the timeframe you have specified. This being said, there are **two primary requirements for obtaining your weight training goals**.

First, you must perform your weight training routine with a high level of intensity and with a regimented frequency. Second, you must feed your body with the nutrients required to allow your muscles to repair themselves after a strenuous workout, and thereafter develop additional muscle tissue and strength.

