Do you want to be bigger, stronger, faster, and have more endurance? If this is what you want and aspire to, then consuming more protein in your daily diet may be the ticket to accomplishing your goals.

Most athletes don’t eat nearly enough protein to help them recover from their training, much less grow bigger and stronger.
Why is protein so important for me as an athlete and bodybuilder?

Of the three macronutrients (proteins, carbohydrates, and fats) protein is the only one which contains nitrogen. Nitrogen is necessary to muscle growth. Consuming sufficient protein can help keep you in a “positive nitrogen balance” meaning that your body is retaining more nitrogen than it is excreting. Being in a positive nitrogen balance is indicative that you are in an anabolic (tissue building) state. That means you are in a position to build bigger, stronger muscles.

How much protein do I need?

The debate over how much protein you need as an athlete has spawned a hot bed of controversy. First of all, let me say this. No literature supports the idea that consuming too much protein is harmful!

It is true that when you are consuming a high protein diet, you require lots of water to keep ammonia (a by-product of protein metabolism) flushed out of your body. Ammonia is toxic to the nervous system and therefore it must be detoxified into a form that can be readily removed from the body. Ammonia is converted to urea, which is water-soluble and is readily excreted via the kidneys in urine. As long as you are healthy and drink enough water, it is highly unlikely that you will ever have a problem with a high protein intake. Shoot to consume about half of a gallon of water for every 100 grams of protein in your diet.

It is generally accepted that the average athlete will require only one gram of protein per pound of bodyweight. Therefore a 100 pound athlete needs 100 grams of protein/day, spaced out evenly over multiple meals.

However, heavy training athletes may require more than that amount. A hard training athlete can consume up to 30–60 grams of protein every 3–4 hours depending on bodyweight. Going past that amount will result in wasted protein and excess calories.

These guidelines are based on male athlete requirements, but similar guidelines have been followed by females with success. Sufficient protein is even more important for aging athletes.

The table below are provided for your reference.

<table>
<thead>
<tr>
<th>Who</th>
<th>How Much?</th>
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<tbody>
<tr>
<td>RDA for sedentary adult</td>
<td>0.8</td>
</tr>
<tr>
<td>Physically active adult</td>
<td>1.0</td>
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<tr>
<td>Endurance athlete</td>
<td>1.2 – 1.4</td>
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<tr>
<td>Strength athlete</td>
<td>1.4 – 1.8</td>
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<tr>
<td>Adolescent athlete</td>
<td>1.0 – 2.0</td>
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<tr>
<td>Maximum for adult athletes</td>
<td>up to 2.0</td>
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Side effects of eating too much protein?

1. Excess protein may result in excess calories becoming stored as fat. However, this is unlikely as protein must be broken down through many metabolic steps before it can be converted into a form which can then be stored as fat.

2. Intestinal irritation including constipation, diarrhea, gas, and bloating. Most of these symptoms can be controlled by using digestive enzymes and consuming sufficient fiber. Varying the protein source is also helpful.

3. Dehydration. Be sure to drink sufficient water — up to 1/2 gallon per each 100 grams of protein consumed.

4. Auto-immune reaction, resulting from using the same protein supplement repetitively for long periods. To prevent this, use different protein supplements periodically. Vary both your natural protein sources (meat, fish, chicken, turkey, etc.) and protein supplements (whey, multi-blends, soy, etc.)

5. Elevation of liver enzymes.
Side effects of not eating enough protein

1. Bloated stomach.
2. Loss of coordination.
3. Loss of sleep.
4. Loss of hair.
5. Dry skin.
7. Digestion problems.
8. Weakness.
9. Lack of weight gain and worse, weight loss due to loss of lean muscle tissue.
10. Chronic sinus trouble, allergies, anemia, pain, weak joints, bruising, difficulty breathing.

How is protein digested?

Protein is made up of long chains of amino acids. If you think of proteins as being a train, then amino acids are the boxcars which together make up the train. When you eat protein, proteolytic enzymes in your body break the proteins down into amino acids, which are then absorbed. Digestion of proteins is called deamination.

Once protein is ingested, the digestive process begins. It is a very short trip, since most of the protein is digested within the first few feet of the digestive tract. The stomach leads to the duodenum, which leads to the small intestine. Almost 100% of protein is digested and absorbed in the duodenum.

When should I consume protein?

The simple answer is, “at a time when you will not be engaging in strenuous physical activity.” When you work out, blood is transported to your muscles and away from your stomach and digestive anatomy. Training a large muscle group such as your legs can demand up to 65% of your blood supply! As your legs and stomach play “tug of war” over the blood supply, your digestion is stressed, causing nausea and reducing the absorption of protein.

The best times to consume your proteins are:

1. First thing in the morning upon awakening, to stop the catabolism (tissue breakdown) that results after several hours of sleeping, and jump start your body into an anabolic (tissue building) stage. The best protein for this meal is a complete protein such as scrambled egg whites or a protein shake containing a multi-blend of proteins, such as Lean Body® Whole Foods, or Lean Body® Ready-to-Drink (RTD) Shakes. Be sure to also consume some carbohydrates with your protein, such as oatmeal or whole grain cereal.

2. Every 3–4 hours thereafter as part of a complete meal. Giving your body protein every 3–4 hours promotes a positive nitrogen balance and will ensure that your muscles are supplied with the nutrients they need to grow. Remember to wait at least 1–1.5 hours after a meal to train. The best proteins to consume during your daily meals are lean chicken, fish, or turkey or a protein shake such as Lean Body® Meal Replacement Shakes and Ready-to-Drink Shakes. For higher protein intakes, Lean Pro8®, ProV60® or Lean Body® Mass 60® is recommended. These proteins are broken down and absorbed slowly over a period of hours, providing long lasting nourishment to your muscles.

3. Pre-exercise meal. Using proteins that are mostly isolates will digest the fastest. Take a high quality protein blend such as Lean Pro8® or ProV60® about 30–60 minutes prior to exercise to allow for proper digestion. Take in 30–60 grams, along with a piece of fruit such as a banana.

4. Directly after your training. Within 30 minutes of training you should consume 75–100 grams of carbohydrates in the form of potatoes, whole grain bread
with jam, bananas, rice, or whole grain cereal with skim milk. For best results use Labrada’s Power Carb™. You need this to raise blood sugar levels in your body. This sugar will be deposited in the cells of your muscles and liver. The insulin released by your body in response to the carbohydrates will promote the uptake of amino acids into muscles as well. For this meal, you should consume 40–60 grams of a high quality protein blend such as Lean Pro8® or ProV60®. Then, one hour later, have a complete whole food meal consisting of a protein such as chicken, turkey or fish, along with a complex carbohydrate such as sweet potatoes, rice and beans, or whole grain rice.

5. Right before bedtime. Using a protein with a high casein content will allow for absorption over an extended time period and help stabilize your insulin through out the night. This should allow you to sleep better through the night. A light protein shake made with ProV60® or a Lean Body® RTD will provide time-release amino acids that your body can use to repair and build muscle all night long. Take in between 30–60 grams, depending on your duration of sleep and ability to digest protein.

What are the advantages of using protein shakes?

1. You can tailor the type of protein you consume to meet your specific training needs. For example, you can choose a multi-protein blend protein powder fortified with carbohydrates, vitamins and minerals for your meals (Lean Body®); a protein blend to use right after training to enhance recovery and a low-calorie multi-protein blend at bedtime to promote nighttime muscle repair and growth (ProV60®). Tailoring your protein intake in this fashion is more difficult to achieve with prepared food.

2. Protein powders increase compliance with a high protein nutrition program. Protein shakes are usually easier to make and consume than an equivalent amount of steak, turkey, chicken or fish. Eating a chicken breast every three hours is possible, but cumbersome for most people. Because of their ease of preparation and their delicious taste, protein drinks make it easier for you to comply with your program.

3. Improved digestibility and absorption equals greater results. The protein particles found in protein powder have already been ground down into a fine powder during manufacturing. This powder provides a large surface area with which the proteolytic enzymes in your digestive tract can make contact. The result is higher digestibility and absorption of the protein. Even if you were to chew a piece of steak, chicken, fish, or turkey for many minutes, you could never grind it down to a particle size as fine as that found in protein powder.

4. Value. Ounce for ounce, high quality protein like that found in Labrada’s protein powders, meal replacements and ready-to-drink shakes provide a better value than chicken, turkey, fish or steak. This is especially true when you consider the cost and time of preparation at home or the cost of restaurant-bought food.

Protein supplements: what kinds of proteins are in my powder?

Milk Protein

Dairy based protein is the most common form of protein used in protein powders. (Soy is the other major protein source.) There are two main proteins that make up the protein found in milk: Whey and Casein.

Whey

Whey Protein makes up about 20% of the protein found in milk. It is available in two major forms known as whey protein concentrate (WPC) and whey protein isolate (WPI).

Whey Protein Concentrate (WPC) is exactly what the name implies; it is a concentrated form of whey protein.

Whey Protein Isolate (WPI) is a less common form of whey protein which is about 90% pure protein. Isolate protein is considered a purer form of whey protein because it contains less fat and milk sugars (lactose) than whey protein concentrate (WPC.) WPI is absorbed more quickly by the body than WPC.
WPC contains an abundance of essential and non-essential amino acids and is an excellent source of all the essential amino acids. Essential amino acids are those that your body cannot produce on its own and therefore, must be obtained from the daily diet. Whey protein is also extremely rich in the branched chain amino acids (BCAAs), leucine, isoleucine, and valine.

BCAAs are unique because they are metabolized in the muscles and not in the liver like other amino acids. Branched chain amino acids make up one-third of muscle protein and are important to bodybuilders because training increases the body’s demand for them. An adequate supply of BCAAs in the blood is insurance against loss of muscle size and strength.

In addition, whey is high in glutamine, which accounts for approximately 60% of all free amino acids in the body.

Glutamine is vitally important to muscle growth. Glutamine has a super-unique role: it can be utilized by the body as a fuel, used for a new body protein, and to make other important compounds and amino acids. There are especially high concentrations of glutamine in muscle cells. If you do not eat enough glutamine-rich foods (like whey protein) your body tears down muscle tissue to supply the rest of the body with glutamine! The good news is that recent studies show that supplemental glutamine prevents muscle breakdown. Using as little as a few scoops of Labrada’s proteins per day will maintain muscle stores of glutamine and prevent muscle breakdown.

Advantages of Whey protein include:
• Enhances muscle recovery after workouts and helps prevent muscle breakdown.
• Excellent source of BCAAs and glutamine.

Casein
Casein protein is the major protein component found in milk protein (about 80%) and it exists as micelles (globules.) Casein has a strong advantage in that it is digested slowly. This makes it valuable as an overnight supplement. When you are sleeping 8–9 hours per night, your body isn’t receiving meals every three hours. Casein, with its natural time-released properties, fills that gap and provides the slow digestion and release of muscle nourishing amino acids.
Advantages of egg protein include:

• Highest amount of BCAA.
• Mixes well with foods to increase overall protein content.
• Egg protein is easily absorbed.
• Fat free.

Labrada Proteins

Labrada is a top-notch company that provides you with the most effective protein supplements that are the “cutting edge” of the fitness and nutrition industry.

Lean Pro8® Super Premium Protein Powder is the best tasting protein powder ever made. That’s why it’s the main ingredient in Labrada’s award-winning Lean Body® meal replacements, RTD shakes, and bars. Use it any time of day to give you the extra protein you want. Each serving of Lean Pro8® contains 25g of fast, medium, and slow release proteins for faster muscle growth and strength increases. Lean Pro8® also contains 8 grams of EFA Plex™ containing natural-source omega-3 and -6 fatty acids, medium-chain triglycerides, flaxseed oil, and borage oil to increase energy and fuel growth, plus 8 grams of Fiber Plex™ dietary fiber per 100 grams, providing 28% of the RDA for fiber and over 4,700mg of BCAAs ( Branched Chain Amino Acids) per serving and 3,500 mg of Glutammine & Glutamic Acid. Lean Pro8® contains No Maltodextrin, No Aspartame, and No Trans Fat!

Lean Body® Hi-Protein Meal Replacement Powder comes in individual serving size packets or NEW value-packed jugs. Lean Body® is known for its award-winning taste – just like a delicious, creamy milkshake! Lean Body® won the American Culinary Institute’s Gold Taste Award – 5 years in a row! Every serving of Lean Body® contains the LeanPro® blend of muscle building, fast-and-slow release proteins; plus 6000mg of BCAAs and 7000mg of glutamine; 50/30/20 ratio of proteins, carbs and fat consisting of highly bio-available, time-release proteins, high-fiber complex carbs, and essential fatty acids; Plus 7 grams of FiberPlex™ dietary fiber and 7 grams of EFA Plex™ essential fatty acids.
Use Lean Body® anytime that you want a complete, hi-protein MEAL.

**Lean Body® Hi Protein Ready-to-Drink Shakes** come in 14 and 17 ounce sizes, and provide a convenient way for you to get all of the daily protein you need – just open and drink. Lean Body® Hi Protein Ready-to-Drink Shakes are lower in carbs than Lean Body® powders, and contain ZERO Sugar, making them ideal if you are a dieter, or just want protein without a lot of anything else. Perfect throughout the day, and as a zero-sugar treat at night.

**ProV60® Protein Blend** is a multi-blend of five proteins, and since it is high in casein protein, is the best for use at bedtime when you want slow extended digestion and absorption of protein. Because it is a blend of quickly absorbed and slowly absorbed proteins, you get the “time-release” effect that is so important to keeping your body in a positive nitrogen retention throughout the night. ProV60® is light and won’t weigh you down because it’s Labrada’s lowest in carbohydrate protein. ProV60® can also be used as a drink with your meals to increase the total protein content of your meals. It’s delicious, mixes instantly and is easy to use.

**Muscle Mass Gainer** is a high-calorie bodybuilding shake fortified with muscle building protein, carbohydrates, creatine monohydrate and essential nutrients. Muscle Mass Gainer makes it easy for you to get lots of calories along with the highest quality muscle-building protein, so you can gain weight fast. This delicious shake contains a highly-concentrated 1900 calories and 82 grams of protein when mixed with 32oz of whole milk! Muscle Mass Gainer contains 17g of muscle-building branched chain amino acids (BCAAs) to help you quickly recover from your workouts and get bigger, faster. Muscle Mass Gainer contains no dextrose, sucrose, or corn syrup solids. It’s perfect for hard-gainers.

**ISO LeanPro®** is made with 100% Pure Whey Protein Isolate. It’s low in calories and contains zero carbs or sugar, so it’s perfect for dieting. ISO LeanPro® contains no lactose or gluten, so there’s no bloating, gas, or indigestion associated with cheap proteins.

ISO LeanPro® 100% Whey Protein Isolate is an excellent source of all the essential amino acids and is extremely rich in the branched chain amino acids (BCAAs), leucine, isoleucine, and valine. Branched chain amino acids make up one-third of muscle protein and are important to athletes because training increases the body’s demand for them. An adequate supply of BCAAs in the blood is insurance against loss of muscle size and strength. ISO LeanPro® is also high in glutamine, which accounts for approximately 60% of all free amino acids in the body.

**Lean Body® Mass 60** is the king of weight gainer. It is lower in sugar than the typical cheap weight gainer, so you don’t gain the fat, but contains lots of calories and there are six proteins that contain casein, whey concentrate and isolate proteins to allow for a complete spectrum of proteins. This is the protein you need if you are young or thin and are having trouble gaining weight. It contains 5 grams of CreaLean™ creatine to help you pack on more muscle volume and strength. Use of this product will make you gain weight and Lee guarantees it, right there on the package in black and white. You can use this protein right before bed or first thing in the morning to allow for sustained release of nutrition throughout the next six hours.
Eating right, supplementing right, training hard, and getting enough sleep are the things you must do to get bigger, stronger and faster. At Labrada, we are dedicated to helping you achieve your goals. If you want to become a better athlete and make greater gains, let us help you.

For more information, please visit Labrada on the web at www.labrada.com, or contact us at 1-800-832-9948.

**PROTEIN GLOSSARY**

**AMINO ACIDS:** These are the nutrients that make up proteins. They are typically classified as either ESSENTIAL or NON-ESSENTIAL amino acids.

**ESSENTIAL AMINO ACIDS:** are not manufactured by the body, these are produced by bacteria or yeast then passed to a plant or another animal that we eat.

**NON-ESSENTIAL AMINO ACIDS:** are actually developed from the other essential amino acids and therefore are not considered as important to have in the diet. These are usually produced in our bodies, but the processes that produce them can be disrupted due to stress or illness.

**PROTEINS:** are usually twenty or more amino acids linked together.

**BRANCHED CHAIN AMINO ACIDS:** these are special amino acid chains that help produce other amino acids like Glutamine. You want a protein supplement that is high in BCAAs. Using this type of protein may reduce your need for additional supplementation of Arginine and Glutamine.

**HYPERTROPHY** – In muscle terms, this is where your muscle cells actually get bigger.

**HYPERPLASIA** – In muscle terms, this is where your muscle cells actually replicate.

*Science has long since debated which actually occurs in the muscle, hypertrophy or hyperplasia. According to most experts, both occur, depending on what muscle and your genetic make-up.*

**POSITIVE NITROGEN BALANCE** – This is a state where you are taking in more protein than your body is using.

**NEGATIVE NITROGEN BALANCE** – This is a state where you are taking in less protein than you are using.

**ANABOLISM** – tissue building

**CATABOLISM** – tissue destruction

**DEAMINATION** – process of removing the amino (nitrogen) from the amino acid, thus producing urea

**REFERENCES**


