



# FACTS ABOUT PROTEIN

Everything you need to  
know about protein

Protein provides the body with approximately 10 to 15% of its dietary energy and it is the second most abundant compound in the body, following water. A large proportion of this will be muscle (43% on average) with significant proportions being present in skin (15%) and blood (16%).

#### HEALTH BENEFITS OF PROTEIN

- Helps in sustaining bone health.
- Plays a vital role in building a strong immune system.
- Aids in the smooth functioning of the nervous system.
- Helps with muscle contraction and coordination.
- Beneficial in the renewal and restoration of cells and tissues.
- Influences osmosis therefore helping balance and maintain the body's fluid equilibrium.
- Helps maintain healthy hair, nails, and skin (keratin and collagen respectively).
- Aids in balancing out hormones (enzymes are protein catalysts).
- Aids transportation of nutrients around the body (e.g., haemoglobin and ferritin).

IT'S NOT ALL ABOUT THE MUSCLE!

HOW MUCH SHOULD I BE EATING?

According to the British Nutrition Foundation, the value

is set at 0.75g of protein per kg of body weight per day. So, for an adult weighing 85kg they should be intaking AT LEAST 63 grams of protein per day. However, the amount of protein we require changes throughout our lives, depending on our activity levels and goals.

To build muscle the figure can go up to 2 grams of protein per kg of body weight per day.

When it comes to fat loss and a better-looking body, protein is the king of nutrients. You don't need to restrict anything to benefit from a higher protein intake. ... Protein can reduce hunger and boost metabolism, but you won't lose weight if you don't eat fewer calories than you burn.

Proteins are comprised of long chains of amino acids and there are 20 different ones.

The name of these 20 common amino acids:

Alanine	Arginine	Asparagine
Aspartic Acid	Cysteine	Glutamic Acid
Glutamine	Glycine	<b>Histidine</b>
<b>Isoleucine</b>	<b>Leucine</b>	Lysine
<b>Methionine</b>	<b>Phenylalanine</b>	Proline
Serine	<b>Threonine</b>	<b>Tryptophan</b>
<b>Tyrosine</b>	<b>Valine</b>	

Out of these 20, there are 9 amino acids that are needed in your daily food intake, and are therefore classed as essential (**bold**).

#### WHAT ARE ESSENTIAL AMINO ACIDS?

Amino acids are organic compounds composed of nitrogen, carbon, hydrogen, and oxygen, along with a variable side chain group.

Unlike nonessential amino acids, essential amino acids can't be made by your body and must be obtained through your diet.

The best sources of essential amino acids are animal proteins like meat, eggs, and poultry.

When you eat protein, it's broken down into amino acids, which are then used to help your body with various processes such as building muscle and regulating immune function.



# ESSENTIAL AMINO ACIDS HEALTH BENEFITS

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## MAY HELP IMPROVE MOOD AND SLEEP

Tryptophan is needed to produce serotonin, a chemical that acts as a neurotransmitter in your body.

Serotonin is an essential regulator of mood, sleep, and behaviours. While low serotonin levels have been linked to depressed mood and sleep disturbances, several studies have shown that supplementing with tryptophan can reduce symptoms of depression, boost mood and improve sleep.

## CAN BOOST EXERCISE PERFORMANCE

The three branched-chain essential amino acids (valine, leucine, and isoleucine) are widely used to alleviate fatigue, improve athletic performance, and stimulate muscle recovery after exercise.

## CAN PREVENT MUSCLE LOSS

Muscle loss is a common side effect of prolonged illnesses and bed rest, especially in older adults.

Essential amino acids have been found to prevent muscle breakdown and preserve lean body mass.

## CAN YOU HAVE TOO MUCH?

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Consuming too much protein on a regular basis can cause intestinal discomfort and indigestion. Usually resulting in bad breath and gastric problems. In severe cases, consuming too much protein can also increase your risk of kidney damage due to excessive levels of nitrogen found in the amino acids that make up protein.

**COMPLETE PROTEIN** - Provides all the amino acids we need.

Sources - Meat, Poultry, Fish, Dairy, Eggs, Quinoa, Soy.

**INCOMPLETE PROTEIN** - Provides some but not all the amino acids our bodies need.

Sources - Grains, Legumes, Nuts, Seeds.

## SUPPLEMENTATION

Protein powders come in various forms. The most popular ones are whey, soy, and casein protein. The most used is whey, because it's a water-soluble milk protein and contains a very high range of protein and less fat. Furthermore, it's a complete protein, which means it contains all nine of the amino acids necessary for human dietary needs. People who are vegan may prefer soy or plant-based protein.

**HOWEVER**, you could get the same benefits from introducing high-protein foods to their diet as snacks or adding them to their normal meals to enhance the protein content.

## THINGS TO CONSIDER WITH TAKING A PROTEIN SUPPLEMENT

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- **CONVENIENCE**

Are you someone with a hectic schedule? Then a protein shake might be your best bet. They're an easy and convenient alternative and a good source of complete, high-quality protein. So, if you need a quick supply of protein or are unable to prepare a whole meal, a protein shake is of course a better option than going without.



- **SPEED**

One benefit of protein shakes is that it only takes around 30 minutes to reach the muscle after drinking. This means it's absorbed a lot quicker when consumed immediately after a workout. Solid food on the other hand takes more time to digest and the body requires longer to break down the protein and send it to the muscles. As you can see protein powder has an advantage when you take it directly after your workout, but during the day protein food is sufficient.

- **FAT CONTENT**

Another big difference besides the digestion is the fat content. Most protein powders and supplements have little to no fat content. So, you lose those synergistic affects you get from eating grass fed meats and fish.

- **PROTEIN QUANTITY AND QUALITY**

One 30g scoop of whey powder contains about 21g to 27g of protein. That's the same amount of protein as in a 4-ounce chicken breast, 250g of non-fat Greek yogurt or 1 ½ cups of black beans. Although the powder has a higher concentration of protein it has a lack of other nutrients that naturally accompany proteins found in meat, fish, dairy products, or whole grains. Protein food offer vitamins, minerals, carbohydrates, and healthy fats unavailable in protein powder.

- **TASTE AND SATISFACTION**

Chocolate, coconut, cookies, and cream: it's no surprise that protein powder usually gets its taste from added artificial sweeteners. The use of artificial sweeteners in commercial processed food products, even in health supplements is widespread. The advantages are reduced costs and low to zero calorie content. The disadvantage, is that this artificial taste doesn't come close to the natural goodness of fresh food. Plus, sipping on a protein shake is nowhere near as satisfying as a real meal.

## THE 9 ESSENTIAL AMINO ACIDS

AMINO ACID	FUNCTION	SOURCES	RDI*
<b>Leucine</b>	<ul style="list-style-type: none"><li>• Haemoglobin formation.</li><li>• Protein synthesis.</li><li>• Helps maintain glucose levels.</li><li>• Prevents breakdown of muscle proteins after trauma or severe stress.</li></ul>	Cheese, Soybeans, Beef, Chicken, Pork, Nuts/seeds, Fish/seafood, Beans.	42mg/kg of body weight per day
<b>Isoleucine</b>	<ul style="list-style-type: none"><li>• Primary function is to boost energy levels and to assist the body in recovering from strenuous physical exertion.</li><li>• Also, one of the three amino acids that make up Branched-chain Amino Acids (BCAA).</li></ul>	Soy products, Meats, Fish, Dairy products, Eggs, Legumes.	19mg/kg of body weight per day



AMINO ACID	FUNCTION	SOURCES	RDI*
<b>Valine</b>	<ul style="list-style-type: none"> <li>Promotes muscle growth.</li> <li>Tissue repair.</li> <li>Maintains a proper nitrogen balance in the body.</li> <li>One of the three amino acids that make up BCAAs.</li> </ul>	Cheese, Soybeans, Beef, Chicken, Pork, Nuts/seeds, Fish, Beans, Mushrooms, Wholegrains.	24mg/kg of body weight per day
<b>Threonine</b>	<ul style="list-style-type: none"> <li>Enhances production of antibodies.</li> <li>Important constituent of neurotransmitters.</li> <li>Necessary for glycine and serine formation.</li> </ul>	Lean beef, Soy, Pork, Chicken, Liver, Cheese, Shellfish, Nuts/Seeds, Beans, Lentils.	20mg/kg of bodyweight per day
<b>Methionine</b>	<ul style="list-style-type: none"> <li>Produces molecules critical for normal cell function.</li> <li>Involved in cysteine production and other sulphur-containing amino acids.</li> </ul>	Nuts, Beef, Lamb, Cheese, Turkey, Pork, Fish/shellfish, Soy, Eggs, Dairy products, Beans.	Methionine + cysteine = 19mg/kg of body weight per day
<b>Phenylalanine</b>	<ul style="list-style-type: none"> <li>Key role in biosynthesis of other amino acids.</li> <li>Important in the structure and functions of many proteins and enzymes.</li> <li>Converted into the amino acid tyrosine.</li> </ul>	Soybeans, Cheese, Nuts/seeds, Beef, Lamb, Chicken, Pork, Fish, Eggs, Dairy, Beans, Wholegrains.	Phenylalanine + tyrosine = 33mg/kg bodyweight per day
<b>Tryptophan</b>	<ul style="list-style-type: none"> <li>Helps to produce niacin, melatonin, and serotonin.</li> </ul>	Milk, Eggs, Pineapple, Tofu, Cheese, Nuts/seed, Turkey.	5mg/kg of body weight per day
<b>Lysine</b>	<ul style="list-style-type: none"> <li>One of the three amino acids that make mu BCAAs.</li> <li>Vital to life - provides glucose to the body through metabolism (metabolised into Acetyl-CoA to for ATP* - the body energy currency).</li> <li>Can be used to treat cold sores along with Vitamin C (additional tablets or in cream form - usually GP will prescribe).</li> <li>Important in supporting the immune system.</li> </ul>	Lean beef, Cheese, Turkey, Chicken, Pork, Soy, Fish/shellfish, Nuts/seeds, Eggs, Beans, Lentils.	38mg/kg of body weight per day
<b>Histidine</b>	<ul style="list-style-type: none"> <li>Histidine is used to produce histamine, a neurotransmitter that is vital to immune response, digestion, sexual function, and sleep-wake cycles.</li> <li>It's critical for maintaining the myelin sheath, a protective barrier that surrounds your nerve cells.</li> </ul>	Meat, fish, poultry, nuts, seeds, and whole grains.	14mg/kg of body weight per day

