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What is protein?

Protein is an essential macronutrient that is essential to allow our body to function. Protein molecules are organic compounds that are made up of amino acids. These amino acids can be divided into two categories: essential and non-essential.

Essential amino acids cannot be manufactured by the body and therefore it is necessary for us to consume them in our diet. Amino acids in this category include:

- Isoleucine
- Leucine
- Lysine
- Phenylalanine

Non-essential amino acids can be made by the body and therefore it is not necessary for us to consume these. Amino acids in this category include:

- Alanine
- Asparagine
- Glutamic acid
- Serine

There are however a few amino acids that fall into a third category – Conditionally essential amino acids. These are amino acids that our bodies can not always make enough of – often when we are stressed or unwell. These include:

- Arginine
- Cysteine
- Glutamine
- Tyrosine

During digestion, the body breaks down the protein we eat into individual amino acids. These contribute to the plasma pool of amino acids and this pool is a storage reserve of amino acids that circulate in the blood. The amino acid pool in the bloodstream readily trades with the amino acids and proteins in our cells, provides a supply of amino acids as needed, and is continuously replenished.

Without adequate protein, our bodies can not function well. Proteins are required to produce important molecules, such as:

- Antibodies (currently quite an important function fighting COVID-19)
- Enzymes
- Hormones
- Neurotransmitters

Protein helps replace worn out cells, transports various substances throughout the body, and aids in growth and repair. Consuming protein can also increase levels of the hormone glucagon. When our blood sugar level drops, Glucagon is released. This causes the liver to break down stored glycogen into glucose for the body (ultimately aiding fat loss).

Protein requirements?

The amount of protein required by your body is determined by your level of activity. The basic recommendation for protein intake is 0.8 grams per kilogram of body mass in untrained, generally healthy adults. However, this amount is only to prevent protein deficiency. For people doing high intensity training, protein needs might go up to about 1.4-2.0 g/kg of body mass.

These suggested protein intakes are what is necessary for basic protein synthesis. We need to consume protein regularly throughout the day to allow other functions to occur, including good immune function, metabolism, satiety, weight management and performance as we can only store a certain amount of protein at one time. The body needs its protein stores to be continually replenished, which means that you should consume moderate amounts of protein at regular intervals.

Overeating protein will result in the extra protein being converted into sugar or fat in the body. However, protein isn't as easily or quickly converted as carbohydrates or fat, because the thermic effect (the amount of energy required to digest, absorb, transport and store protein) is a lot higher than that of carbohydrates and fat. While 30% of the protein's energy goes toward digestion, absorption, and assimilation, only 8% of carbohydrate's energy and 3% of fat's energy do the same.

So no matter what source your protein comes from, make sure you get enough of it throughout the day EVERY day.

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