



Remote
Health

Course Materials

Proteins

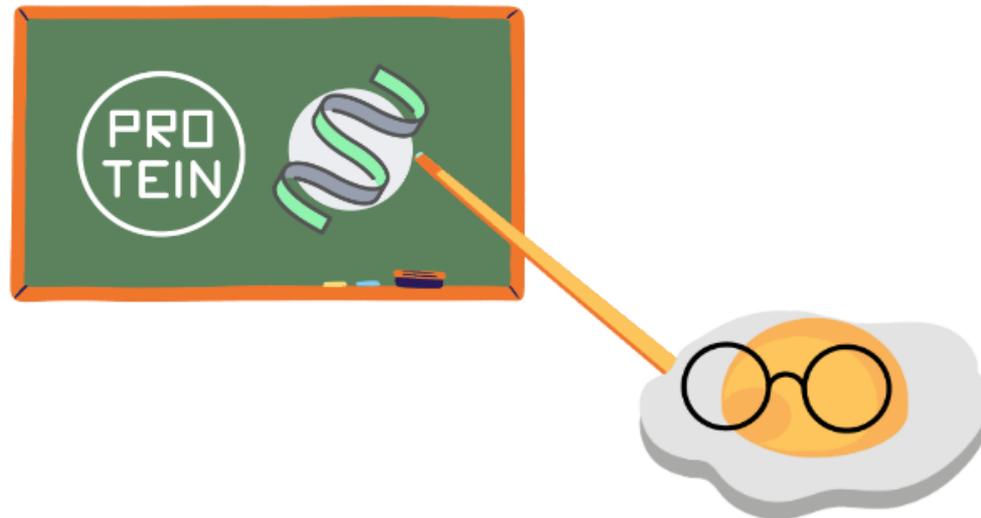
The body's central building blocks

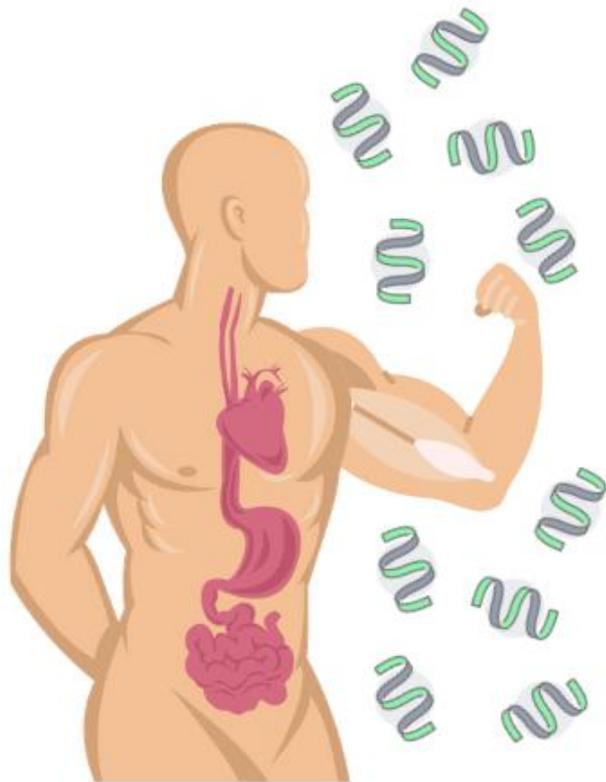


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Introduction (1,2)





Proteins are central building blocks of the body and are important for building and maintaining body cells, for example in muscles and organs.

The body needs a total of 20 **amino acids** to produce all proteins, 9 of which are **essential**.

Protein sources should therefore consist of the 9 essential amino acids, of which human protein is also composed, so the body can metabolise them more easily (**high bioavailability**)

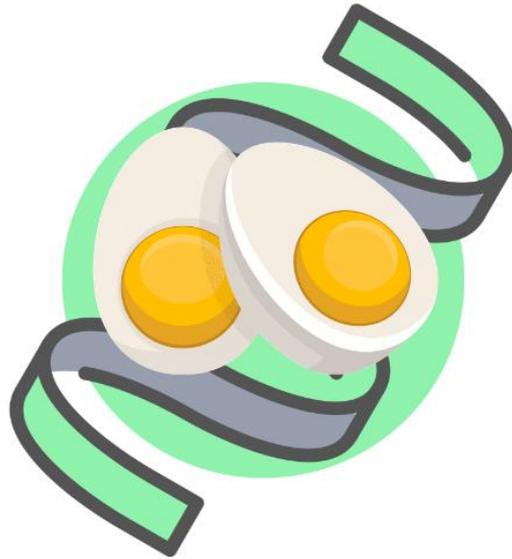


Proteins are important for the immune system and hormone balance and act as a secondary source of energy.



This means that when the body's carbohydrate store is empty, it resorts to proteins and breaks down muscles to generate energy.

Animal protein (1,2)

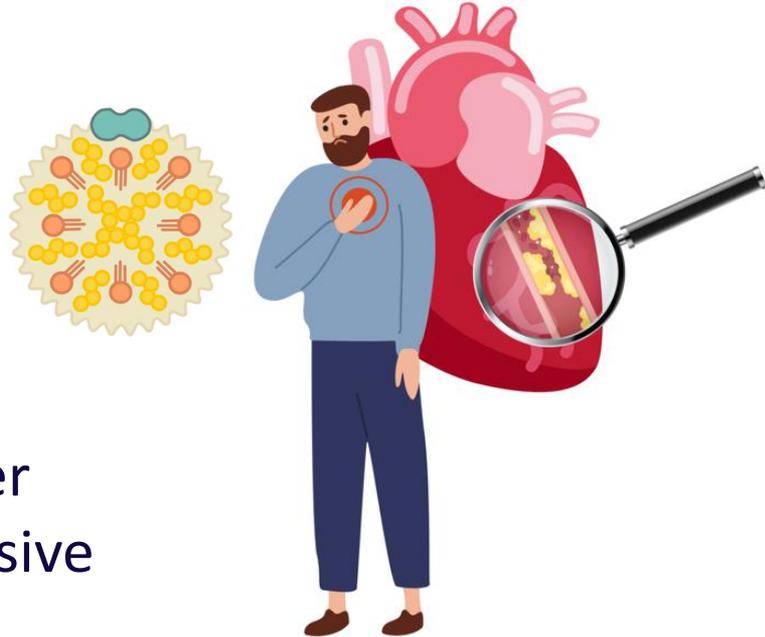


Animal protein closely resembles the protein structure of humans → making it easier for the body to process.



Examples include lean, white meat, fish, eggs and dairy products such as yoghurt.

Animal protein contains more saturated (unhealthy) fats and cholesterol → If consumed in excess, it can raise cholesterol levels and increase the risk of cardiovascular disease.



There is also a debate as to whether the risk of cancer also increases with excessive consumption.

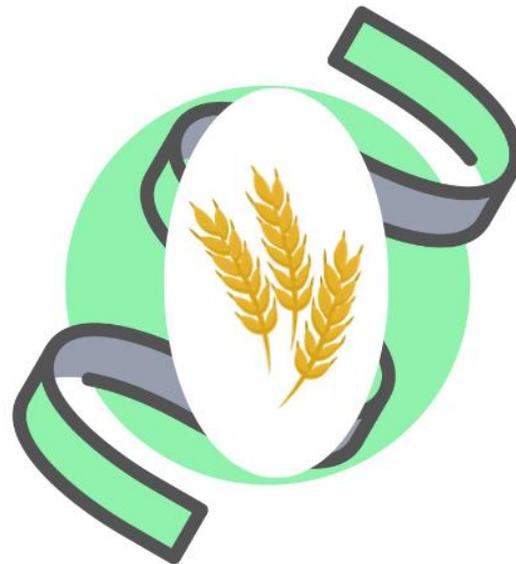
In addition, animal protein is less environmentally friendly due to its high water and energy consumption.



The advantage, however, is its high bioavailability.

Plant-based protein^(1,2)

and plant-based alternatives as protein sources
(vegetarians and vegans)



Plant-based protein is less similar to the protein structure of humans, but there are some protein sources that come rather close, such as chia seeds and legumes including lentils, nuts, oatmeal, and hemp.

These are consumed best in combination with other plant-based foods.





Plant-based protein often contains more fibre, phytochemicals and vitamins.

However, the **lack of vitamin B12** is a disadvantage.



Plant-based alternatives as protein sources ⁽²⁾

There are some proteins from vegan protein sources that are more suitable for a healthy diet than others because they can be metabolized particularly well. These include:

Grains and pseudocereals such as rice, amaranth, spelt, quinoa, oats and millet are rich in vegan proteins. This also applies to processed products such as bread.



Plant-based alternatives as protein sources ⁽²⁾

Legumes such as soy, beans, lentils and peas are also a very good source of plant-based protein.



Soy is also processed into various products, such as soy milk or tofu, which can be used as a good substitute for animal products in everyday life.

Plant-based alternatives as protein sources (2)

Rapeseed is now being discussed as a suitable substitute for soy.

It has been found that test consumers felt full and satisfied longer after a meal with rapeseed proteins. Advantages of rapeseed protein are still being investigated in more detail.



Plant-based alternatives as protein sources ⁽²⁾

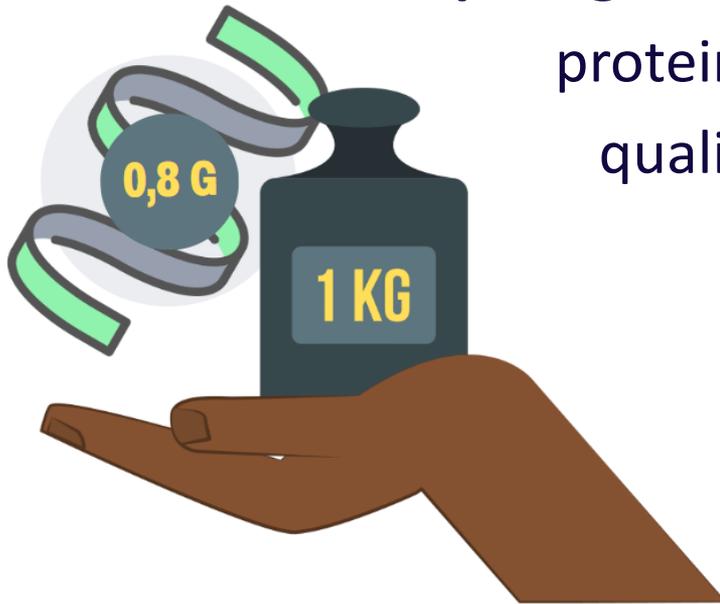
Nuts, such as peanuts, almonds, hazelnuts and walnuts, also provide a lot of protein.



Consumption recommendation (1,2)



Proteins cannot be produced by the body itself, which is why regular intake is important. The recommended amount for an average adult is **0.8g of protein per kg of body weight**. Meanwhile, these protein sources should be of high quality.



This amount is approximately 9-11% of the total energy value with normal weight assumed. For example, if a person is obese (overweight), the first step is to determine what the normal weight would be for their height and gender.

Only then can an accurate result for protein intake be determined.

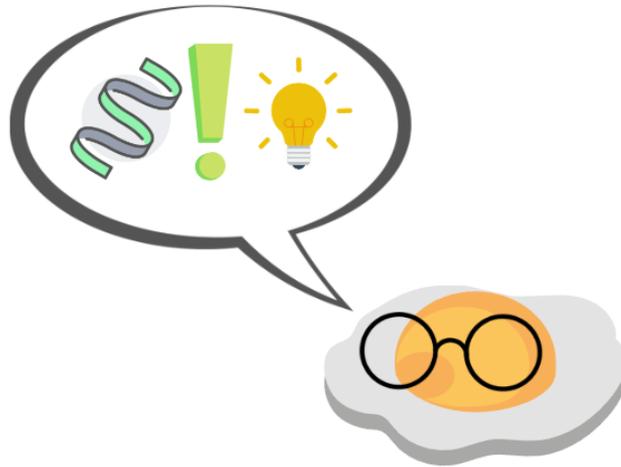


A person who weighs **70kg** would therefore need **56g** per day.

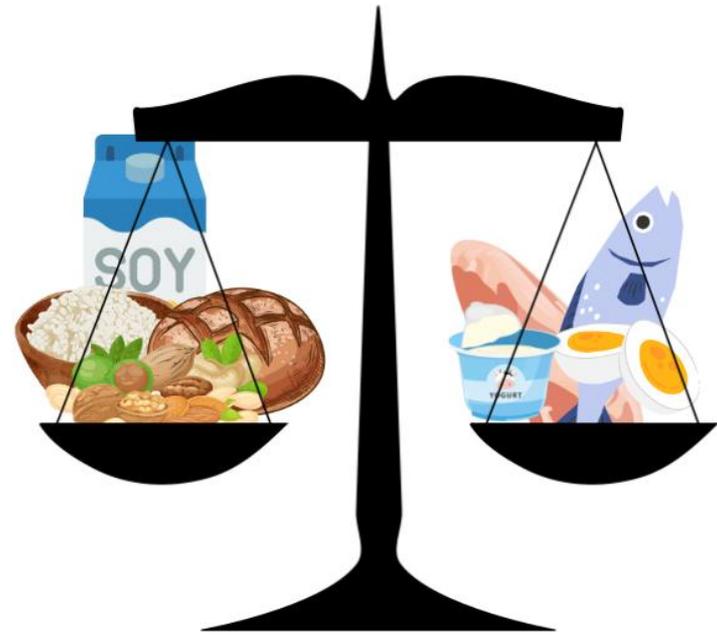


If you want to strengthen your **muscles**, you can increase the intake to **1.5g per kg of body weight!**

Conclusion (1,2)



If possible, there should be a healthy balance between plant-based and animal proteins, as both have their advantages and disadvantages.



Sources:

1. Was für ein Leben - Das Gesundheitsmagazin AOK Hessen [Internet]. Pflanzliches oder tierisches Protein? Das ist der Unterschied; [cited on 14. August 2022]. Available from: <https://aok-erleben.de/artikel/pflanzliches-oder-tierisches-protein-das-ist-der-unterschied>
2. AOK Redaktion. aok.de | AOK. Die Gesundheitskasse. | AOK [Internet]. Die besten pflanzlichen Proteinquellen; 25. Oktober 2021 [cited on 14. August 2022]. Available from: <https://www.aok.de/pk/magazin/ernaehrung/gesunde-ernaehrung/die-besten-pflanzlichen-proteinquellen/>.



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