Protein intake of young adults- review

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Abstract

The research was carried out by one of the Future Leaders Programme's groups from the academic career path within the project "Nutritional Myths and Science - Proteins in Black and White." The main goal of the research was to get an understanding of teens and young adult's protein consumption, and the diet trends that they are following. More than 20 scientific articles were read and compared on the topic. There was an agreement between the articles that the most consumed protein source is eggs. Also, more and more teens and young adults are consuming some protein supplements, to gain muscle or to drop weight. A tendency was shown among the articles, that male and female participants of various types of research showed different eating habits, with distinct goals. The review explains the different diets and habits, reflected on protein consumption. As a vision of the new eating habits, we can see that academic stress and lifestyles heavily affect the food choices of teens and young adults.

Keywords: protein, young adults, vegan, conscious, eating habits, high protein

Introduction

In the world of different trends and eating habits, young adults can easily lose themselves. The internet says that Gen Z is more conscious than the previous generations. Still, there are many misconceptions about what is healthy and what is harmful for us. Based on this, the main goal of this research was to reveal the myths and scientific background of these trends and eating habits. The internet and the influencer world are leading society to ignorance. Trends are created which can be threatening to a certain group of people. Proteins are important for the human organism because the amino acids from proteins are the building blocks of our cells. Building a muscle demands quite a lot of energy. The protein that the human body consumes has to be broken down into amino acids to rebuild them into the organism. This way, skeletal muscle is in a constant loop of synthesising and breaking down proteins. Besides muscles, intra- and extracellular enzymes, hormones and plasma proteins are built up from free amino acids from the downbroken muscle proteins (Carbone and Pasiakos, 2019).

This paper was based on different articles from across Europe and the USA. It was systematised by the most important topics and processed.

Discussion:

Vegan diet or omnivorous diet?

One of today's biggest eating trends is plant-based diets. These are vegan and vegetarian diets. The first misconception is that those two diets are the same. The vegan diet allows for the consumption of only plant-based food. No meat and animal-based products are allowed. While a vegetarian diet is more flexible. It can also contain eggs, dairy products, and some animal-based products. The widely accepted idea is that a vegan diet is healthier than an omnivorous diet. Based on the studies, it can not be said directly which is better. It is known that plant-based food does not contain the B12 vitamin. Seaweed or tempeh might give B12 vitamin, but it is still uncertain (Key et al., 2006). It is also a big question whether a vegan and vegetarian diet gives lower development in the human body than an omnivorous diet. The literature says that if it is a well-planned diet, there should be no problems in these terms ("Position of the American Dietetic Association and Dietitians of Canada," 2003). When it comes to choosing a diet, people are more tend to pick a healthy diet, which can also be plant-based, then based on marketing motivations (Kalnina et al., 2022.).

One of the most consumed options for proteins is eggs. There is a misconception that egg white has higher protein content than egg yolk. In studies, this theory was completely denied. The egg white contains 11% protein, while the egg yolk is made of 17.5% protein. The high-quality protein is present in both parts of the egg. It is a good source of essential amino acids like glutamine, leucine, and asparagine. The two most important proteins are ovalbumin, 54% of the egg white and conalbumin. Besides proteins, there are important antioxidants, which prevent the cells from oxidative stress, like lutein and zeaxanthin (Fernandez and Andersen, 2016). Studies say that high consumption of eggs can lead to healthier body composition than low egg consumption. Eggs can also be helpful to lose weight, because they reduce appetite, and increase satiety (Garrido-Miguel et al., 2022). This can indicate that those who are following diets which contain eggs might have a healthier body composition than those who do not consume them at all. Eggs are considered the most sustainable and lowest-cost animal source for protein. Also, they are the cheapest source for iron, vitamin A, vitamin B12, folate, choline, and riboflavin (Layman and Rodriguez, 2009).

On the other side, there are some plant-based proteins which also have their positive and negative sides. The most consumed is soy protein. Commonly, it is said that producing plant-based protein is more sustainable than animal-based protein. This theory is not accepted fully by science. Also, manufacturing plant-based protein is a costly process. The efficiency is 50% because the cellulose and hemicellulose are holding the protein molecules in a trap. The extraction mostly requires alkalization and acidification (Aimutis, 2022). Genetically modified plants could be the solution for the problem, even though it is not developed to high ends. There are still concerns about their impact on human health. It can increase the level of amino acids, but lysine is still problematic one. However, studies say that these crops could be more sustainable because they would be capable of adapting easily to climate change and be more resistant to diseases (Kumar et al., 2020). Soybean contains 48% of protein α-, β-, and γ-conclycinins, glycinin, and other globulins. It also contains some limiting amino acids, like lysine and L-methionine, but after processing the bean, it can lose its nutritional value (Friedman and Brandon, 2001).

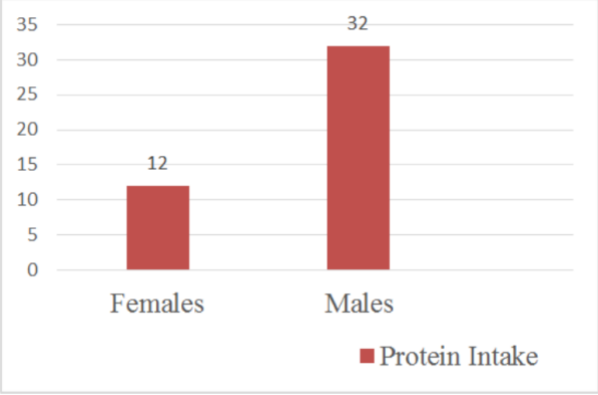
Whether they are animal- or plant-based diets there is a big risk of proteins which can cause allergies, so when we are choosing a diet, we should always consider this side of our health.

Numerous studies have proven that vegan diets can reduce blood pressure, LDL levels and the risk of heart disease. This is all possible because it contains low saturated fats and has a high fibre

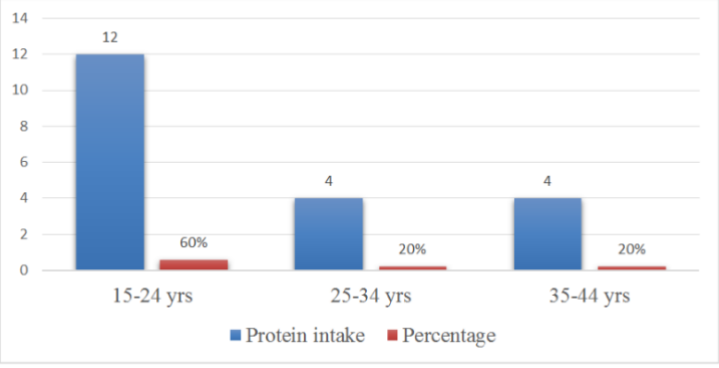
content. This way, the gut microbiota is more supported than with an omnivorous diet (Koutentakis et al., 2023). It was also found that higher dietary intake and higher animal protein intake can indicate a possibility of general body adiposity and higher fat mass. There is also a connection between animal protein intake and abdominal obesity (Segovia-Siapco et al., 2019).

Are supplements and high protein products good for us? What's up with drooping wheigth and gaining muscle with them?

The fit body. Even though bodyshaming is less and less present in young adults' lives, the main goal is still to have a well-built, slim, strong body. Numerous diets and trends are beeing used to achieve the goal. Protein supplements and high-protein products are also here to replace full-fledged meals. Dietitians have highlighted that these supplements are essential for professional athletes, but for normal people training a couple of times a week, it is unnecessary. They say, if we are following a well-built diet, we can have the necessary protein intake. However, it became a trend to consume these kinds of products. A survey has shown that young adults are attending the gym mostly to achieve the perfect body composition. It was also shown that males are consuming more protein supplements than women. Interestingly, this study claims that more people think that supplements and high-protein products are unhealthy. 85% of the people who participated in the survey have claimed that they do not even know what supplements are (Singh, 2017). While another survey says that parents are very confident about consuming this kind of supplement, they are giving it to their children. This survey also claims that girls are most likely to consume high-protein products to lose weight and to replace a meal. While boys are using them to build muscle (Clark et al., 2024).



Protein intake based on gender, source: Singh, 2017



Protein intake according to age groups, source: Singh, 2017

Does high protein eating habits have an impact on academic stress and depression?

The academic stress has a great impact on young adults' lives. It is constantly there, and it gets more serious when the exam period is on. Fear of failing and not having enough time to study is a serious problem. In this period, young adults are more tend to eat junk food, or just starve themselves. Also, food can be a mood lifter. However, not many studies focus on the connection between food, more precisely protein intake and mood changes. The efficacy of high-protein diets in preserving muscle and entire-body protein homeostasis diminishes. Under such conditions, a bigger percentage of ingested amino acids is diverted toward oxidative metabolism to fulfil energy needs, thereby decreasing their availability for anabolic strategies and compromising net protein balance (Carbone and Pasiakos, 2019). A study has asked females between the ages of 18-30 how their mood has changed after dietary intervention. The symptoms of depression weren't questioned. They used the Profile of Mood States. This method couldn't find any significant differences between the control group and the group whose diet was changed (Francis et al., 2019). Besides this survey meta-analysis found a significant difference between dietary interventions and their impact on depression. Studies say that unhealthy and junk food-rich diets can negatively affect the mood and performance of students (O'Neil et al., 2014). Mediterranean, Tuscan and vegetarian diets were associated with reducing the symptoms of depression (Molendijk et al., 2018). Most of the time, the main reason for not having a healthy diet is the lack of motivation and time for preparing a main dish. Also, in today's world, healthy food is expensive. The other significant influence on their life can be the role model they see. These models can be parents, influencers, or other people around us. The study says that those children who see their parents consuming healthy food and having an active lifestyle are more tend to follow these habits. Students living in certain circumstances also have a leading role in their eating habits. For example, on-campus life and life at home are significantly different (Sogari et al., 2018).

Conclusion

This review aimed to collect a general summary without claiming full completeness, about young adults' protein intake and dietary habits. In general, the studies agreed that the cheapest and best protein source for young adults is egg. Plant-based protein can also be very healthy and complete. The B12 vitamin can only be replaced from animal-based proteins. Studies have also shown that young adults are more likely to consume high-protein products and supplements than the elderly. Also, dietary interventions can reduce symptoms of depression. Lifestyle and living circumstances have a high impact on students' eating habits.

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