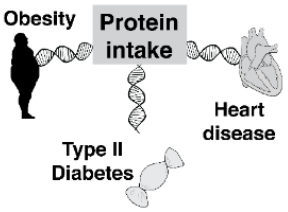
5/2020

Protein consumption (Meddens, 2020)

S. Fleur W. Meddens, et al.
Molecular Psychiatry

Diet

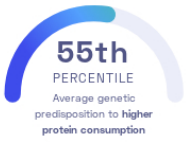


This study found a genetic correlation between higher protein intake and various diseases.

STUDY SUMMARY

Identification of 7 genetic variants associated with protein consumption.

YOUR RESULT



STUDY DESCRIPTION

Proteins are essential *macronutrients* and building blocks of the body. More specifically, proteins are molecular machines that fulfill many functions inside and outside of cells. Proteins are made from 20 building blocks known as amino acids. While our bodies can make 11 of 20 amino acids, the remaining 9 must be consumed through the food we eat. On average, individuals consume approximately 7 grams of protein per 20 pounds of body weight per day. While protein is essential, excess protein consumption can result in metabolic disorders, such as obesity and diabetes. To identify genetic variants that may affect the amount of protein an individual consumes, this genome-wide association study examined the genomes of over 260,000 individuals of European ancestry. The study identified 7 genetic variants associated with protein consumption. The genetic predisposition to higher protein consumption was found to be correlated with obesity, type 2 diabetes, heart disease, and body mass index (BMI). The authors hypothesize that animal protein consumption, as opposed to plant protein consumption, is likely driving the positive correlation with poor health.

DID YOU KNOW?

While there is conflicting research surrounding whether or not the consumption of red meat is harmful, most of the evidence supports high red meat consumption contributing to various health risks. Therefore, it is recommended to consume a maximum of two to three servings per week and supplement with other sources of protein, such as fish, eggs, nuts, and legumes.

YOUR DETAILED RESULTS

To calculate your genetic predisposition to higher protein consumption we summed up the effects of genetic variants that were linked to higher protein consumption in the study that this report is based on. These variants can be found in the table below. The variants highlighted in green have **positive effect sizes** and increase your genetic predisposition to higher protein consumption. The variants highlighted in blue have **negative effects sizes** and decrease your genetic predisposition to higher protein consumption. Variants that are not highlighted are not found in your genome and do not affect your genetic predisposition to higher protein consumption. By adding up the effect sizes of the highlighted variants **we calculated your polygenic score for higher protein consumption to be 0.03**. To determine whether your score is high or low, we compared it to the scores of 5,000 other Nebula Genomics users. We found that your polygenic score for higher protein consumption is in the **55th percentile**. This means that it is higher than the polygenic scores 55% of people. We consider this to be an **average genetic predisposition to higher protein consumption**. However, please note that genetic predispositions do not account for important non-genetic factors like lifestyle. Furthermore, the genetics of most traits has not been fully understood yet and many associations between traits and genetic variants remain unknown. For additional explanations, click on the column titles in the table below and visit our Nebula Library tutorial.

VARIANT	YOUR GENOTYPE	EFFECT SIZE	VARIANT FREQUENCY	SIGNIFICANCE
rs838133_A NEW	A / G	-0.03 (↓)	35%	4.52×10^{-26}
rs13146907_A NEW	A / A	-0.02 (↓)	69%	1.24×10^{-14}
rs1461729_A NEW	A / G	0.03 (↑)	12%	4.09×10^{-12}
rs1603978_A NEW	A / A	0.02 (↑)	71%	1.35×10^{-10}
rs55872725_T NEW	C / T	0.02 (↑)	31%	2.09×10^{-10}
rs780094_T NEW	T / C	0.02 (↑)	67%	5.58×10^{-10}
rs445551_A NEW	G / G	0.02 (–)	35%	1.49×10^{-8}