

Eating meat: links to chronic disease might be related to amino acids – new findings

17 February 2020, by Laura Brown



Meat contains higher levels of sulphur amino acids than plant proteins. Credit: Natalia Lisovskaya

Plant-based diets have been popular in the media recently, but research shows that going vegetarian or vegan isn't only good for the environment, but [for our health](#), too. Meat-rich diets are linked to a range of health problems, from [heart disease and strokes](#) to [type two diabetes](#) and some [cancers](#). People who eat diets high in meat have also been found to [live shorter lives](#).

A [recent US study](#) has again shown that adults that eat diets high in [animal protein](#) are at increased risk of developing a wide range of chronic diseases. The authors recommend a plant-based [protein diet](#) to reduce these risks.

Importantly, the study is the first to investigate what affect diets high in sulphur amino acids have on our [health](#). These are found in many foods, but are typically found in high amounts in eggs, fish, red meat and chicken. When consumed at recommended levels, sulphur amino acids [play a crucial role](#) in our body. They help our metabolism, protect cells from damage, build proteins, regulate hormones and neurotransmitters, and also help

keep our livers healthy.

But eating too many foods high in sulphur amino acids can have many negative health effects. They are [linked to a higher risk of heart disease](#), stroke, diabetes and non-alcohol fatty liver disease. And you're at an even greater risk if you eat high levels of two particular types of sulphur amino acids, [cysteine](#) and [methionine](#), both of which are found in high-protein foods. They are considered the most toxic amino acids, even though our body needs both of them.

Protein and heart health

In general, it is recommended that adults only consume [15mg of sulphur amino acids per kilogram of bodyweight](#) a day. But evidence shows that most [older adults](#) have diets that [exceed these recommendations](#).

The researchers in [the US study](#) looked at a large sample size of 11,576 adults over a period of six years. To get the best picture of the effect of sulphur amino acids, the authors excluded anyone who consumed them in low levels, and those who might have reduced their intake of meat or eggs because of health complications. Researchers measured participants' diets, as well as cholesterol, insulin and [blood glucose levels](#).

It's worth noting that participants were recruited from 1988 to 1994. Dietary patterns and habits have likely changed since then. But the reason researchers looked specifically at this period of time is because the [nutrition surveys](#) they took their data from stopped collecting information on sulphur amino [acid](#) intake after 1994.

The researchers found that the average participant consumed 2.5 times the recommended levels of sulphur amino acids. After controlling for as many variables as they could, such as body weight, race and gender, they found that eating a [diet](#) high in

these amino acids, especially cysteine and methionine, was associated with high cholesterol, insulin resistance and high blood glucose—all of which cause [cardiometabolic diseases](#) such as heart attacks, strokes, diabetes and non-alcohol fatty liver disease.

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Interestingly, this is true regardless of a person's overall protein intake. This suggests that the health risks might not be solely about protein consumption, but also the amount and proportion of sulphur amino acids a person eats. Because [animal products](#) typically contain higher levels of these, the researchers suggest a diet of plant-based proteins may be the best way of keeping sulphur amino acid consumption closer to recommended levels.

The study also showed that participants who consumed the lowest levels of sulphur amino acids (15kg-24kg a day) had significantly lower levels of cholesterol, glucose and insulin—and lower overall risk of cardiometabolic diseases.

These findings highlight the importance that sulphur amino acids have in developing major chronic diseases. It also supports the theory that for good long-term health, sulphur amino acid intake should be close to the minimum requirements—and well below the levels currently consumed by most adults in this study.

This suggests that reducing intake of these amino acids may, in part, explain some of the [observed health benefits](#) of plant-based diets. So swapping animal-based [protein](#) sources for plant-based ones could be a good health move.

Research shows that nutrition is a major component of reducing our risks of [chronic disease and premature death](#). Sulphur amino acids are naturally more prevalent in meat than vegetables, so switching to [plant-based protein sources](#) like wholegrains, beans, lentils, nuts and seeds, and eating recommended daily intakes of [sulphur amino acids](#), could make it less likely that you will develop heart disease or diabetes in future.

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