

Red meat nutrient 'damages the heart'

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8th April 2013 - We're already advised to limit the amount of red and processed meat we eat. Now US scientists may be closer to finding out why too much red meat may be bad for us.

Many had assumed the saturated fat content or [cholesterol](#) were the cause of concern about the risks of [heart disease](#) from eating a lot of red meat. Now researchers writing in the journal Nature Medicine online say the nutrient L-carnitine may be to blame. This is found in red meat and also used as a dietary supplement.

L-carnitine study

The study found L-carnitine is associated with cardiovascular disease in people. The findings follow a series of experiments on mice and humans.

The problems caused by L-carnitine seem to begin when changes take place as it is digested by bacteria in the gut. The cardiovascular risks appear to come from substances produced in the gut called TMA and TMAO or TMA-O.

This appears to promote atherosclerosis, a build-up of fatty material in coronary arteries. This in turn increases heart risks.

In one test for the production of TMAO, five meat eating human volunteers ate sirloin steaks and took L-carnitine [supplements](#) and were then tested for TMAO. They were tested again after taking [antibiotics](#) to suppress natural bacteria in the gut. From this, researchers found that TMAO production from dietary L-carnitine is dependent on natural intestinal bacteria.

As well as giving new insights into possible harm from red meat, the study team says the role of gut bacteria may play a role in future in helping to prevent cardiovascular disease.

Reaction

Commenting on the new research in a statement, Catherine Collins, principal dietitian at St George's Hospital NHS Trust in London says: "In a rather elegant series of tests, they proved that meat-eaters have different bacterial strains in their gut, and that these different bacteria appeared responsible for converting L-carnitine to TMA-O, a process that didn't occur if vegan or vegetarian subjects set their dietary objections aside and ate meat, or if meat eaters were given antibiotics to kill of specific bacterial groups."

The researchers say the safety of high doses of L-carnitine supplements should now be examined.

Catherine Collins says: "I would strongly recommend that unless you're a vegetarian or vegan, there is a potential risk from taking L-carnitine, lecithin, choline or betaine supplements in an attempt to ward off cognitive decline or improve fat metabolism. If the evidence is confirmed these supplements would do more to damage arteries than provide health benefits."

UK guidelines recommend eating no more than 70g of red or processed meat a day. That's around two slices of bacon. These guidelines were issued due to another health risk from red and processed meat: bowel cancer.

Also reacting to the research in a statement, Victoria Taylor, senior dietitian at the British Heart Foundation, says: "While the findings won't necessarily mean a change to existing recommendations, these scientists have served up a good reminder for us to think about alternative sources of protein if we regularly eat a lot of red or processed meats.

"Unless told otherwise by a doctor or qualified health professional, we should be able to get all the nutrients we need from a healthy, balanced diet without additional supplements."

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