

You don't have to go cold turkey on red meat to see health benefits

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A new study has found that halving the amount red and processed (RPM) meat in the diet can have a significant impact on health, reducing the amount of LDL 'bad' cholesterol in the blood which cuts the risk of developing heart disease.

Red and processed [meat](#) (RPM) include fresh pork, beef, lamb and veal and meats that have been smoked, cured or preserved (other than freezing) in some way. These meats are typically high in saturated [fatty acids](#) which cause an increase in LDL cholesterol. This is the "bad" cholesterol that collects in the walls of blood vessels, where it can cause blockages and raise the chance of a heart attack.

Increasing awareness of the risks associated with eating red and processed meat has led to a growing number of people adopting vegetarian and vegan diets, which cut out meat completely. Researchers at the University of Nottingham wanted to find out if reducing the amount of red meat eaten, rather than cutting it out completely, would have a positive effect on the health of the subjects taking part.

Reducing cholesterol

The results, published today in the journal *Food & Function* showed that the most significant change was a drop in the amount of LDL cholesterol in the blood, and those with the highest levels in the beginning had the biggest drop. Overall there was an average drop in LDL cholesterol of approximately 10% with men (who tended to have the highest starting values) seeing the biggest change.

For this intervention trial, 46 people agreed to reduce their [red meat intake](#) over a period of 12 weeks by substituting it for white meat, fish or a meat substitutes, or by reducing the portion size of their red meat. They kept a food diary during the study and were given blood tests at the beginning and intervals throughout.

Professor Andrew Salter, from the University of Nottingham's School of Biosciences led the study and says: "With a high saturated fatty acid, content red and processed meat has been linked to heart disease, and other chronic diseases, particularly [colon cancer](#). Studies have shown that in people who eat the most meat, there is a 40% increased risk of them dying due to heart disease. The results of the present study showed that, even in relatively young and healthy individuals, making relatively small changes to RPM intake induced significant changes in LDL cholesterol which, if maintained over a period of time could potentially reduce the risk of developing heart disease."

As well as reducing levels of LDL cholesterol, researchers were surprised to also see a drop in white and red cells in the blood.

Dr. Liz Simpson from the University of Nottingham's School of Life Sciences is co-author on the study, she explains: "Meat is a rich source of the micronutrients (vitamins and minerals) required for the manufacture of blood cells, and although it is

possible to obtain these nutrients in plant-based diets, our results suggest that those reducing their meat intake need to ensure that their new diet contains a wide variety of fruit, vegetables, pulses and whole grains to provide these nutrients.

Professor Salter is also part of the Future Food Beacon at the University of Nottingham which is undertaking research to find more sustainable ways to feed a growing population in a changing climate. He explains: "As well as improving people's health, reducing the amount of red meat we eat is also important from a food security and sustainability perspective, as livestock production utilizes a large proportion of our natural resources and is a major contributor to greenhouse gas production. Part of our research is centred on finding more sustainable, alternative sources of food that provide us with the protein and other nutrients supplied by meat, but without the negative health and environmental effects "

More information: Elizabeth J. Simpson et al. The impact of reduced red and processed meat consumption on cardiovascular risk factors; an intervention trial in healthy volunteers, *Food & Function* (2019). [DOI: 10.1039/C9FO00758J](https://doi.org/10.1039/C9FO00758J)

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