

# Red and white meats are equally bad for cholesterol

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Lab-cultured meat will need to be more economical if it can help meat producers meet demand, according to researchers. Credit: CC0 Public Domain

Contrary to popular belief, consuming red meat and white meat such as poultry, have equal effects on blood cholesterol levels, according to a

study published today in the *American Journal of Clinical Nutrition*.

The study, led by scientists at Children's Hospital Oakland Research Institute (CHORI)—the research arm of UCSF Benioff Children's Hospital Oakland—surprised the researchers with the discovery that consuming high levels of [red meat](#) or white poultry resulted in higher [blood cholesterol](#) levels than consuming a comparable amount of plant proteins. Moreover, this effect was observed whether or not the diet contained high levels of saturated fat, which increased blood cholesterol to the same extent with all three [protein](#) sources.

"When we planned this study, we expected red [meat](#) to have a more adverse effect on blood cholesterol levels than white meat, but we were surprised that this was not the case—their effects on cholesterol are identical when saturated fat levels are equivalent," said the study senior author Ronald Krauss, M.D., senior scientist and director of Atherosclerosis Research at CHORI.

Krauss, who is also a UCSF professor of medicine, noted that the meats studied did not include grass-fed beef or processed products such as bacon or sausage; nor did it include fish.

But the results were notable, as they indicated that restricting meat altogether, whether red or white, is more advisable for lowering [blood cholesterol levels](#) than previously thought. The study found that plant proteins are the healthiest for blood cholesterol.

This study, dubbed the APPROACH (Animal and Plant Protein and Cardiovascular Health) trial, also found that consuming high amounts of saturated fat increased concentrations of large cholesterol-enriched LDL particles, which have a weaker connection to [cardiovascular disease](#) than smaller LDL particles.

Similarly, red and white meat increased amounts of large LDL in comparison to nonmeat diets. Therefore, using standard LDL cholesterol levels as the measure of cardiovascular risk may lead to overestimating that risk for both higher meat and saturated fat intakes, as standard LDL cholesterol tests may primarily reflect levels of larger LDL particles.

Consumption of red meat has become unpopular during the last few decades over concerns about its association with increased heart disease. Government [dietary guidelines](#) have encouraged the consumption of poultry as a healthier alternative to red meat.

But there had been no comprehensive comparison of the effects of red meat, white meat and nonmeat proteins on blood cholesterol until now, Krauss said. Nonmeat proteins such as vegetables, dairy, and legumes, such as beans, show the best cholesterol benefit, he said.

"Our results indicate that current advice to restrict red meat and not white meat should not be based only on their effects on blood cholesterol," Krauss said. "Indeed, other effects of red meat consumption could contribute to heart disease, and these effects should be explored in more detail in an effort to improve health."

Provided by University of California, San Francisco

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