

Low-carb vegan diet shows similar health benefits to vegetarian diet, study shows

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A low-carb vegan diet has the same health effects as a vegetarian diet, but at a much lower cost to the environment, according to new research from St. Michael's Hospital.

The study, published in *The American Journal of Clinical Nutrition*, found that a low-carbohydrate vegan diet had a significantly lower potential carbon emission value than its high-carbohydrate vegetarian counterpart. Furthermore, the researchers found that the lower the potential carbon emission value of the diet, the larger the reduction in blood cholesterol.

At a time when people across the world are feeling the varying effects of climate change, the study shows the role of diet in both lowering carbon emissions and improving health outcomes.

"We showed that you actually reduce greenhouse gas emissions, with a diet, that is effective, and that the reduction in [greenhouse gas emissions](#) is related to the fall in LDL cholesterol—often called the 'bad' cholesterol," says principal author Dr. David Jenkins, director of the Clinical Nutrition and Risk Factor Modification Center, and a scientist in the Li Ka Shing Knowledge Institute of St. Michael's Hospital and a professor of Nutritional Sciences at the University of Toronto. "So as you reduce the impact of your diet on the environment, you also benefit by lowering your cholesterol."

The researchers put people on two different types of plant-based diets: one was a low-carbohydrate vegan diet with no meat, dairy or eggs, supplemented with canola-oil enriched bread and high-protein vegan meat alternatives. This diet tried to reproduce the popular low carb diets that are traditionally high in meat and animal fats—but using plant ingredients.

The second diet was a vegetarian version of the clinical standard diet for lowering [blood pressure](#), known as the Dietary Approaches to Stopping Hypertension diet or "DASH" diet, which included egg whites and low-fat dairy, but no meat. The diet is prescribed for the treatment of high blood pressure, diabetes, and other cardiovascular diseases. The diet

participants of this study followed differed from the one that is normally prescribed as it cut out cholesterol sources.

The researchers then compared the effects of the diets on their subjects' health as well as the carbon emission potential of each [diet](#). They did so by using multiple different greenhouse gas emission databases, obtaining mean values for each food.

At the end of the three-month study period, they found that the two diets were similar in their effects on weight loss, reducing blood pressure, and blood cholesterol. Study participants on the [vegan diet](#) lost 5.9 kilos and those on the [vegetarian diet](#) lost 5.2 kilos.

Both groups also saw a reduction in hemoglobin A1c, a marker of glycemic control.

Jenkins says the study participants reduced their hemoglobin A1c by about one percent, which is the type of reduction most drugs will produce. This means that the diets had a drug-like effect.

While the study was only over a three-month period, previous studies featuring participants with high [cholesterol](#) have shown that the participants have been able to maintain their [weight loss](#) after three months. This means that three months is a sufficient amount of time for metabolism to adapt to what the body is consuming.

Study participants were already healthy when the study began, which would have meant that further reductions in risk factors like [blood cholesterol](#) and blood pressure would be difficult. However, the study's participants did see reductions in the risk factors on both the vegan and vegetarian diets.

"We have got to start changing the way we're doing things in life," says

Dr. Jenkins. "This is just a small example that you can do it, it can be healthy. It is palatable. And you can reduce at least one risk factor, too."

More information: David J A Jenkins et al, Low-carbohydrate vegan diets in diabetes for weight loss and sustainability: a randomized controlled trial, *The American Journal of Clinical Nutrition* (2022). [DOI: 10.1093/ajcn/nqac203](https://doi.org/10.1093/ajcn/nqac203)

Provided by St. Michael's Hospital

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