

Portfolio diet lowers many risk factors for heart disease

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University of Toronto researchers have found that the portfolio diet, a plant-based way of eating previously shown to lower cholesterol levels, reduces other risk factors for cardiovascular disease including blood

pressure, triglycerides and inflammation.

In addition to reducing LDL (or 'bad') cholesterol by about 30 per cent when combined with a low-saturated fat [diet](#)—a level comparable to medications—the researchers found the diet limited other factors for an estimated 13 per cent reduction in the overall risk for coronary heart disease, which includes angina and heart attack.

"We've known the portfolio diet lowers LDL cholesterol, but we didn't have a clear picture of what else it could do," says John Sievenpiper, an associate professor in the Department of Nutritional Sciences at U of T and a staff physician and scientist at St. Michael's Hospital. "This study allows for greater clarity and certainty about the effects of the diet and its health potential."

The researchers conducted a meta-analysis that combined results from seven controlled trials involving more than 400 patients, and found that specific risk factors varied from about a 2 per cent reduction (for [blood pressure](#)) to a 32 per cent reduction (for inflammation). The journal *Progress in Cardiovascular Diseases* published the results today.

"When you look at individual trials alone, data on these other risk factors can appear random," says David Jenkins, a professor in the Departments of Nutritional Sciences and Medicine at U of T who holds a Canada Research Chair in Nutrition and Metabolism, and who developed the portfolio diet in the early 2000s. "But when you pool the results of several trials, the risk reductions become clear and together they provide a really strong case for the cardiovascular benefits of the dietary portfolio."

The portfolio diet has four main components. Based on a 2,000 calorie diet, it includes 45 grams of nuts, or about a handful; 50 grams of plant protein such as soy, or pulses like beans and peas; 20 grams of viscous

soluble fibre from oats, eggplant, apples, etc.; and 2 grams of plant sterols—natural compounds that inhibit absorption of cholesterol and are often included in enriched products like margarine.

Dietary and lifestyle modifications can enable patients to manage high cholesterol and cardiovascular risk, and the current study provides further rationale for that approach. "We're starting to say to patients, 'This diet will help you meet your cholesterol goals, but it will also improve your blood lipids and blood pressure, and lower inflammation,'" says Sievenpiper. "The same is not true for drugs, and they often produce other effects you don't want."

Adherence to the diet can be challenging for some patients, but many find that incorporating just a few more plant-based foods offers noticeable benefits. "One nice thing about the diet is that the effects are additive, so adopting one or more components is better than none. It's not an all or nothing proposition, which is why we also call it a dietary portfolio," says Sievenpiper.

The study's findings on inflammation are particularly exciting, Jenkins says. Growing evidence suggests inflammation plays a role in [cardiovascular disease](#), but recent studies have linked it to a host of other diseases, including cancer. "Especially with chronic lymphocytic leukemia, prostate cancer, and other watch-and-wait diseases, reducing inflammation may greatly extend a patient's lifetime," says Jenkins.

Some patients also choose the portfolio diet for ethical and environmental reasons—plant-based diets generally have a smaller eco-footprint than standard Western diets—or in the case of children, to head-off future health problems. "Cardiovascular and other health [risk factors](#) can be elevated in children, and we're learning that early intervention is really important for them," says Sievenpiper, who is also a scientist in the Joannah & Brian Lawson Centre for Child Nutrition.

"There are many reasons to consider this diet, from its planetary significance to health across the lifespan."

More information: Laura Chiavaroli et al, Portfolio Dietary Pattern and Cardiovascular Disease: A Systematic Review and Meta-Analysis of Controlled Trials, *Progress in Cardiovascular Diseases* (2018). [DOI: 10.1016/j.pcad.2018.05.004](https://doi.org/10.1016/j.pcad.2018.05.004)

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