

Six common 'heart-health' supplements ineffective at lowering cholesterol compared to statins

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Six widely used dietary supplements promoted for improving heart health did not effectively lower LDL or "bad" cholesterol in comparison to a common low-dose statin medication or placebo, according to late

breaking science results presented today at the American Heart Association's Scientific Sessions 2022. The meeting, held in person in Chicago and virtually, Nov. 5–7, 2022, is a global exchange of the latest scientific advancements, research and evidence-based clinical practice updates in cardiovascular science.

"According to a 2020 market research analysis, Americans spend an estimated \$50 billion on dietary supplements annually, and many are marketed for 'heart protection' or '[cholesterol](#) management.' Yet there is minimal-to-no research demonstrating these benefits," said study author Luke J. Laffin, M.D., co-director of the Center for Blood Pressure Disorders at the Cleveland Clinic in Cleveland, Ohio. "Some people also believe supplements are as effective or more effective than cholesterol-lowering statin medications."

This study compared the effectiveness of a low-dose statin to that of six common dietary supplements in lowering [low-density lipoprotein](#) (LDL) cholesterol—known as bad cholesterol—as well as their effects on other cholesterol levels and markers of inflammation.

There are two types of cholesterol. High-density lipoprotein (HDL) cholesterol is called the "good" cholesterol because it protects the heart. In contrast, high levels of low-density lipoprotein (LDL), the "bad" cholesterol, suggest higher risk for heart disease and stroke because it forms deposits that can narrow and stiffen arteries. Elevated [bad cholesterol](#) is a growing problem worldwide. Globally in 2020, there were 4.51 million deaths attributable to high LDL cholesterol, which was up 19% from 2010, according to [American Heart Association 2022 statistics](#).

In this study, called Supplements, Placebo or Rosuvastatin Study, or SPORT, researchers analyzed health data for 199 adults between ages 40–75 years who had no personal history of cardiovascular disease. Participants had LDL cholesterol measures between 70 mg/dL and 189

mg/dL, and a 5% to 20% risk of developing atherosclerotic cardiovascular disease within 10 years.

Researchers randomly assigned participants to one of eight groups to track any changes in LDL cholesterol and other markers of heart disease from day one to day 28 of the study. The groups included those taking: a [placebo](#), or sham pill; 5 mg of the low-dose statin medication rosuvastatin (a standard medication); or one of six dietary supplements (Nature Made fish oil 2,400 mg; Nutriflair brand cinnamon 2,400 mg; Garlique brand garlic with 5,000 mcg of allicin; BioSchwartz brand turmeric curcumin with bioperine 4,500 mg; Nature Made CholestOff Plus with 1,600 mg of plant sterols; or Arazo Nutrition brand of red yeast rice 2,400 mg).

Researchers found:

- Average LDL cholesterol reduction after 28 days was 37.9% among participants who took the statin, while changes in LDL cholesterol levels among those who took any of the dietary supplements was comparable to those in the [placebo group](#).
- The people in the statin group had an average 24% decrease in total cholesterol, which was a more substantial decrease than among the placebo group or any dietary supplement. However, compared to placebo, there was no difference in total cholesterol measures for participants taking any of the dietary supplements.
- Rosuvastatin resulted in a 19% decrease in blood triglycerides. Compared to placebo, there was no difference in triglycerides for any of the dietary supplements.
- There was no significant change in HDL cholesterol with rosuvastatin.
- Compared to placebo, the plant sterols dietary [supplement](#) notably lowered HDL cholesterol.
- Compared to placebo, the garlic [dietary supplement](#) notably increased LDL cholesterol.

- None of the study interventions notably impacted inflammatory markers in the blood that suggest a higher risk for heart disease during the 28 days of the study.

"Although there are prior studies demonstrating that red yeast rice and plant sterol supplements may reduce LDL cholesterol, the findings of our study underscore that the contents of these dietary supplements may vary. Therefore, they do not produce consistent reductions in cholesterol," Laffin said.

"This study sends an important public health message that dietary supplements commonly taken for 'cholesterol health' or '[heart health](#)' are unlikely to offer meaningful impact on cholesterol levels. The results also indicate that a low-dose statin offers important beneficial effects on one's cholesterol profile. Future research should study other types of [dietary supplements](#) and their potential impact on [cholesterol levels](#)."

The American Heart Association in its [2018 Cholesterol Guidelines](#) emphasizes a heart-healthy lifestyle throughout life. In addition, the association suggests people not rely on supplements and recommends that healthy people get adequate nutrients by eating a variety of foods in moderation. Moreover, the [association recommends physical activity](#) is the optimal first treatment choice for adults with mild to moderately elevated blood pressure and blood cholesterol who otherwise have low [heart disease](#) risk

A limitation of the study is that its duration was only 28 days, which was long enough to demonstrate a reduction in LDL cholesterol with the statin medication. "However, it is unknown if some of the supplements may require a longer time to have any effect on cholesterol," said Laffin.

Related research has also been published in the *Journal of the American College of Cardiology*.

More information: Luke J. Laffin et al, Comparative Effects of Low-Dose Rosuvastatin, Placebo and Dietary Supplements on Lipids and Inflammatory Biomarkers, *Journal of the American College of Cardiology* (2022). [DOI: 10.1016/j.jacc.2022.10.013](https://doi.org/10.1016/j.jacc.2022.10.013)

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