

# Daily Dose of Almonds, Dark Chocolate May Improve Lipid Profile

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UNIVERSITY PARK, PA – Incorporating almonds, dark chocolate, and cocoa into a healthy diet may help reduce a risk factor for coronary heart disease (CHD)<sup>[1]</sup>.

In a controlled trial, researchers found that eating nearly one-third cup of almonds a day—either alone or combined with almost one-quarter cup of dark chocolate and a little more than 2 tablespoons of cocoa a day—improved lipid/lipoprotein profiles, when compared with the average American diet absent of almonds and chocolate.

Of note, say the researchers, the combined intake of almonds, dark chocolate, and cocoa led to a significant reduction in small dense LDL-cholesterol particles, a recognized risk factor for CHD.

"It's important to put this into context: The message is not that people should go out and eat a lot of chocolate and almonds to lower their LDL," lead researcher Dr Penny M Kris-Etherton (Penn State University, University Park, PA), said in a statement.

"People are allowed to have about 270 discretionary calories a day, and when foods like almonds, dark chocolate, and cocoa are consumed together as a discretionary food, they confer health benefits unlike other discretionary foods such as frosted doughnuts," she said.

"A take-home message is: choose your discretionary calories wisely. Eat foods that are going to benefit health vs those that have no value or even an adverse effect," Kris-Etherton told *theheart.org* | *Medscape Cardiology*.

"Dark chocolate and almonds cannot substitute for an overall healthy dietary pattern," registered dietitian Dr Linda Van Horn (Northwestern University, Chicago), who wasn't involved in the study, told *theheart.org* | *Medscape Cardiology*. "Yet choosing this approach toward that goal has benefits over a sugar-sweetened beverage or other option that offers only sugar and calories without the unsaturated fatty acids and flavanols that chocolate and almonds confer," she said.

The study, which was funded by the Hershey Company and the Almond Board of California, was published November 29, 2017 in the *Journal of the American Heart Association*.

Eating almonds or dark chocolate and cocoa regularly has been shown to have favorable effects on markers of CHD, but the combined effects have not been evaluated in a well-controlled feeding study, the researchers point out in their article.

They investigated the individual and combined effects of dark chocolate, cocoa, and almonds on lipid, lipoprotein, and apolipoprotein concentrations, vascular health, and oxidative stress in 31 adults (13 female; mean age 46.3 years) who were overweight or obese (mean BMI 29.6 kg/m<sup>2</sup>) with elevated total cholesterol (TC, 210.0 mg/dL) and LDL cholesterol (138.3 mg/dL) but who were otherwise healthy.

In this crossover study, participants consumed each of four isocaloric weight-maintenance diets:

- No "treatment" foods (average American diet).
- 42.5 g/day almonds (almond diet).
- 18 g/day cocoa powder and 43 g/day dark chocolate (chocolate diet).

- Almonds, cocoa powder, and dark chocolate (chocolate/almond diet).

The diets were similar, except for the presence or absence of these treatment foods, which accounted for the major differences in the nutrient profile. Each diet period lasted for 4 weeks, followed by a 2-week compliance break.

Compared with the average American diet, TC, non-HDL-C, and LDL-C after the almond diet were reduced by 4%, 5%, and 7%, respectively ( $P < 0.05$ ). The dual chocolate and almond diet reduced apolipoprotein B by 5% compared with the average American diet.

For LDL subclasses, relative to the average American diet, the almond diet yielded a greater reduction in large buoyant LDL particles (-5.7 vs. -0.3 mg/dL;  $P = 0.04$ ), whereas the chocolate and almond diet provided a greater decrease in small dense LDL particles (-12.0 vs -5.3 mg/dL;  $P = 0.04$ ). However, neither almonds nor dark chocolate and cocoa affected markers of vascular health and oxidative stress.

"Incorporating almonds, dark chocolate, and cocoa into a typical American diet without exceeding energy needs may reduce the risk of coronary heart disease," Kris-Etherton and colleagues conclude in their article.

The researchers emphasize that these findings are specific to the patient population studied—overweight and obese middle-aged adults with elevated TC and LDL-C.

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## Caveats, Cautionary Notes

"This was a very well-controlled study that demonstrated replacing saturated fat coming from dairy fat (butter and cheese) with unsaturated fat coming from nuts (almonds) had a positive effect on plasma lipid concentrations," Dr Alice Lichtenstein (Tufts University, Boston, MA), who wasn't involved in the study, said in a statement.

When it comes to fats, almonds are a much better choice than butter and cheese, added Kris-Etherton. "That's clearly an important message here. Almonds can be part of a healthy diet," she said.

In an interview, bariatric dietitian Melissa Rifkin (Montefiore Health System, New York) cautioned that "no firm conclusions" can be drawn from this study about the value of eating almonds and chocolate on lipid profiles, adding that she "didn't find anything outstanding in the findings."

She also was "surprised" that the diets were not particularly healthy, as they included croissants, pretzels, and white bread, "which are foods we would not recommend." The fact that the study was funded by the Hershey Company and the Almond Board of California also "raises concern of bias," said Rifkin, who was not involved in the study.

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For more from [theheart.org](http://theheart.org) | Medscape Cardiology, follow us on [Twitter](#) and [Facebook](#).

## References

1. Lee Y, Berryman CE, West SG, et al. Effects of dark chocolate and almonds on cardiovascular risk factors in overweight and obese individuals: A randomized controlled-feeding trial. *J Am Heart Assoc* 2017; DOI:10.1161/JAHA.116.005162. [Article](#)

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