

Flavanol-rich foods may help heart disease patients, study suggests

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(PhysOrg.com) -- Research by an international team of scientists, including a University of California, Davis, nutritionist, provides new evidence that cocoa and other foods rich in a class of nutrients known as flavanols may improve the health of people with coronary artery disease, the nation's leading cause of death.

Findings from the study, a collaborative effort by researchers at UC Davis; UC San Francisco; the Heinrich Heine University in Düsseldorf, Germany; and the candy company Mars Inc., appear in the July issue of the *Journal of the American College of Cardiology*.

Study results indicate that flavanols may increase a population of certain cells in the [blood](#) that scientists think help to repair the inner walls of blood vessels, improving blood flow and potentially lowering blood pressure.

This suggests that, in the future, isolated flavanols or flavanol-rich foods might be useful in preventing or possibly even treating coronary artery disease, in which the arteries narrow as plaque builds up on the endothelium lining the inner [artery walls](#), said study co-author Carl Keen. A UC Davis nutrition professor, Keen is an authority on the potential health benefits of this class of phytonutrients.

"We were pleased, but not surprised, to find that when study participants consumed the flavanol-rich cocoa beverage, rather than a matched control drink with low levels of flavanols, they experienced a significant improvement in the function of the endothelium or lining of the blood [vessel wall](#)," Keen said.

"The flavanol-rich cocoa was strikingly effective in mobilizing the participants' circulating angiogenic cells, which are thought to help repair the endothelium," Keen noted. "The effect was on par with medical treatments involving statins and estrogen — and similar to the effects of lifestyle

changes such as increasing exercise and stopping smoking, all of which are currently recommended for patients with [coronary artery disease](#)."

Earlier research in patients had shown that consuming flavanol-rich foods and beverages can be associated with an improvement in blood flow, and a decrease in blood pressure. However, the new study is the first to report that the nutrients might also affect the production of circulating angiogenic cells. Produced in the bone marrow, these initially undifferentiated cells make their way into the blood stream where they develop into endothelial cells that line arteries and vessels.

In the new study, participants consumed a cocoa beverage twice daily for a month. Sometimes the beverage was rich in flavanols; sometimes it had only low levels. Neither the participants nor the researchers knew which was which until the study's end.

Measurements of endothelium function, circulating angiogenic cell production, blood chemistry, heart rate and blood pressure were made before, after and during the study.

When tabulating these measurements, the researchers found that the function of the endothelium, as measured by dilation of the artery, improved by 47 percent more following consumption of the high-flavanol cocoa drink than it did following consumption of the beverage with only low levels of flavanols. And production of the angiogenic cells increased twice as much following consumption of the flavanol-rich drink compared to the low-flavanol drink.

The researchers also found that consumption of the high-flavanol beverage significantly decreased the participants' blood pressure.

Keen and colleagues suggest that future research should include long-term dietary intervention

studies that examine the effects of high-flavanol diets on cardiovascular health.

Provided by UC Davis

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