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Beyond apples: A serving a day of dark chocolate might keep the doctor away

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Chocolate, considered by some to be the "food of the gods," has been part of the human diet for at least 4,000 years; its origin thought to be in the region surrounding the Amazon basin. Introduced to the Western world by Christopher Columbus after his fourth voyage to the New World in 1502, chocolate is now enjoyed worldwide. Researchers estimate that the typical American consumes over 10 pounds of chocolate annually, with those living on the west coast eating the most. Wouldn't it be great if only chocolate were considered healthy?

In fact, chocolate is a great source of myriad substances that scientists think might impart important health benefits. For instance, it contains compounds called "flavanols" that appear to play a variety of bodily roles including those related to their potent antioxidant and anti-inflammatory actions. Many large-scale human studies have documented a statistical correlation between flavanol intake and risk for cardiovascular disease. And animal studies suggest that this relationship may be due to the physiologic effects that flavanols have on chronic inflammation, blood vessel health, and circulating lipid levels. However, few controlled human intervention studies have been conducted to test the direct effect of chocolate consumption on these variables.

To help fill this knowledge gap, researchers at San Diego State University tested their hypothesis that chocolate, in particular dark chocolate which contains higher levels of flavanols than milk chocolate, may protect against the risk of cardiovascular disease by lowering blood pressure, blood flow, and improving blood lipid levels.

In this prospective, controlled human intervention study, 31 fortunate subjects were assigned randomly to consume either a daily serving (50 grams) of either regular dark chocolate (70% cocoa), dark chocolate (70% cocoa) that had been overheated or "bloomed," or white chocolate (0% cocoa). The subjects were asked to consume the chocolate for 15 days. Blood pressure, forearm skin blood flow, circulating lipid profiles, and blood glucose levels were recorded at the beginning and end of the study.

When compared to participants assigned to the white chocolate group, those consuming either form of dark chocolate had lower blood glucose and low-density lipoprotein cholesterol (LDL, the "bad" form) levels coupled with higher high-density lipoprotein cholesterol (HDL, the "good" form).

The researchers concluded that dark chocolate may reduce the risk of cardiovascular disease by improving glucose levels and lipid profiles. However, they cautioned that—although habitual dark chocolate consumption may benefit one's health by reducing the risk of cardiovascular disease—it must be eaten in moderation because it can easily increase daily amounts of saturated fat and calories. Indeed, the authors commented, "We had great compliance with our study subjects because everybody wanted to eat chocolate. We actually had to tell them not to eat more than 50 grams a day."

The group reports that it is planning follow-up studies involving more subjects and a longer duration of chocolate consumption.

Results from this study will be presented April 24, 2012 at the Experimental Biology 2012 meeting in San Diego, CA.

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