

# Chocolate and Calcium - Can You Have Your Cake and Eat It Too?

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I must say that when I first read the paper "Calcium Supplementation of Chocolate: Effect on Cocoa Butter, Digestibility and Blood Lipids in Humans,"<sup>1</sup> I was surprised that the media had not made it a headline story.

## The Study

Ten men were divided into two groups of five and fed a strict controlled diet. The food was prepared in one kitchen by the same people, using the same ingredients, and was frozen and divided. For two weeks, each group consumed the prepared diet. Afterward, there was a two-week "washout," and the process was repeated. The diet contained: 3,100 calories per day; 14 percent from protein; 43 percent from carbohydrates; 39 percent from fat, and 35 percent from alcohol. Cholesterol was 330 mg per day and calcium totaled 950 mg per day, which included approximately 500 calories from two 1.75-ounce servings of dark chocolate given 2 1/2 hours after breakfast and 2 1/2 hours after lunch. Although taste-testers could not tell the difference, one batch of chocolate had 1.25 grams of calcium carbonate (450 mg elemental calcium) mixed in place of an equal amount of the sugar. The only significant nutritional difference when the groups consumed the chocolate with calcium vs. chocolate alone was their total daily calcium intake, which increased to 1,850 mg (450 per each serving).

## The Results

When the men had the chocolate with calcium added, their blood tests showed a 15-percent reduction in LDL cholesterol, with no change in HDL cholesterol. Fecal analysis showed a 13 percent reduction in the absorption of cocoa butter (a vegetable fat high in saturated fatty acids, which was 30 percent of the dark chocolate bars by weight).

Nutrition analysis calculated that calcium reduced the energy from the fat from 9 to 7.8 calories per gram. Apparently the calcium combined with the saturated fat to form a nondigestible soap. So, until calcium is added to chocolate bars, the next time you indulge, chew a 500-mg calcium carbonate wafer along with your treat.

As one reviewer said: "Hey, parents! Calcium reduces calorie absorption from chocolate. Finally - an argument for taking calcium supplements that teenage girls can understand!"<sup>2</sup>

## References

1. Shahkhalili Y, Merest C, et al. Calcium supplementation of chocolate: effect on cocoa butter, digestibility and blood lipids in humans. *American Journal of Clinical Nutrition*, 2001;73, pg 246-252.
2. Fugh-Berman A. Clinical abstract commentary. American Health Consultants, Atlanta, GA.

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