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July 3, 2007 -- The health benefits of dark chocolate may include lowering high blood pressure, German researchers report.

But overindulging in dark chocolate might blow your calorie budget, and packing on pounds could raise blood pressure. So portion control may help you have your dark chocolate and reap its health benefits, the new study suggests.

Small amounts of dark chocolate "efficiently reduced blood pressure," report the researchers, who included Dirk Taubert, MD, PhD, of Germany's University Hospital of Cologne.

How small is a small amount of dark chocolate? Participants in Taubert's study were limited to 30 calories per day of dark chocolate. That's roughly the number of calories in a Hershey's Kiss.

#### Dark Chocolate Benefit?

Taubert's study included 44 adults aged 56-73 in Duisburg, Germany.

The 24 women and 20 men had mild high blood pressure (hypertension) or borderline blood pressure that fell just short of hypertension. They were otherwise healthy and weren't taking blood pressure drugs or nutritional supplements.

Taubert's team split participants into two similar groups.

One group got 30-calorie daily doses of dark chocolate for 18 weeks. The researchers checked the amount of cocoa in the German chocolate bars.

For comparison, the other group got a similar daily dose of "white chocolate," which doesn't contain chocolate liquor or cocoa.

Both groups got the same instructions: Take your chocolate dose two hours after dinner, don't change your normal diet and fitness habits, and keep a diet and exercise diary.

#### Dark Chocolate and High Blood Pressure

Participants in the dark chocolate study got blood pressure tests and checkups at the study's start, midpoint, and end.

By the end of the study, those eating dark chocolate lowered their systolic blood pressure by nearly three points and their diastolic blood pressure by almost two points, on average.

Systolic blood pressure is the first, or top, number in a blood pressure reading. Diastolic blood pressure is the second, or bottom, number in a blood pressure reading.

Blood pressure didn't budge for better or worse in the white chocolate group.

### 'Modest' Benefit From Dark Chocolate

"Although the magnitude of the blood pressure reduction was small, the effects are clinically noteworthy," Taubert's team writes.

They note that larger studies are needed and that they're not sure whether the results apply to people with milder blood pressure or hypertension patients with other health problems.

The study doesn't show exactly how dark chocolate affects blood pressure. But the researchers note that compounds called flavanols in cocoa may play a role.

Other studies have also shown a link between dark chocolate or cocoa and better blood pressure. However, those studies typically involved bigger doses of chocolate or cocoa to get those benefits, Taubert's team notes.

Their study, published in *The Journal of the American Medical Association*, doesn't promise that dark chocolate is all that's needed to beat blood pressure. A healthy diet, exercise, and losing excess weight are important for lowering high blood pressure. But eating a small amount of dark chocolate daily is a dietary change that's "easy to adhere to," the researchers note. The study was funded by the University Hospital of Cologne. In the journal, none of the researchers report financial ties to any chocolate companies.

#### Selected References:

Vinson JA, Proch J, Bose P. et al. Chocolate is a powerful ex vivo and in vivo antioxidant, an antiatherosclerotic agent in an animal model, and a significant contributor to antioxidants in the European and American Diets. *J Agric Food Chem.* 2006;54(21):8071-8076

Hollenberg NK, Schmitz H, Macdonald I, Poulter N. Cocoa, flavanols and cardiovascular risk. *Br J Cardiol.* 2004;11(5):379-386 <http://www.bjcardio.co.uk/download/1961>.

Taubert D, Berkels R, Roesen R, Klaus W. Chocolate and blood pressure in elderly individuals with isolated systolic hypertension. *JAMA.* 2003;290(8):1029-1030

Grassi D, Lippi C, Necozione S, Desideri G, Ferri C. Short-term administration of dark chocolate is followed by a significant increase in insulin sensitivity and a decrease in blood pressure in healthy persons. *Am J Clin Nutr.* 2005;81(3):611-614

Grassi D, Necozione S, Lippi C. et al. Cocoa reduces blood pressure and insulin resistance and improves endothelium-dependent vasodilation in hypertensives. *Hypertension.* 2005;46(2):398-405

Fraga CG, Actis-Goretti L, Ottaviani JI. et al. Regular consumption of a flavanol-rich chocolate can improve oxidant stress in young soccer players. *Clin Dev Immunol.* 2005;12(1):11-17