

# Chocolate powder may slash blood pressure: Study

By Stephen Daniells, 22-Jul-2009

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## **Consumption of a commercially available cocoa powder, enriched in flavonoids, may decrease blood pressure and boost heart health, suggests a new study with rats.**

Rodents fed 300 milligrams per kilogram of body weight experienced a reduction in blood pressure similar to a 50 mg/kg dose of Captopril, a well-known pharmaceutical anti-hypertensive, according to findings published in the *Journal of Agricultural and Food Chemistry*.

*"This is important because this drug is known to be a very effective antihypertensive treatment in clinical practice and spontaneously hypertensive rats represent nowadays the best experimental model for essential hypertension in humans,"* wrote the researchers, led by Amaya Aleixandre from the Faculty of Medicine at the Universidad Complutense in Madrid.

The study used Natraceutical's CoccoanOX and was funded by the company. The cocoa powder is a rich source of flavonoids, with a reported 139 milligrams of polyphenols per gram of cocoa powder, 129 milligrams of which are procyanidins, according to the new report.

The health benefits of antioxidant-rich chocolate have received much recognition in recent years, with positive findings from a number of studies impacting on consumer awareness. Chocolate manufacturers are using high cocoa content (over 70 per cent) as a means of differentiation, and cocoa has also received attention for its potential in functional food applications.

*"We have demonstrated the antihypertensive properties of the industrially processed natural flavonoid-enriched cocoa powder named CoccoanOX,"* wrote the researchers.

*"The results obtained suggest that this product could be used as a functional food ingredient with potential therapeutic benefit in the prevention and treatment of hypertension."*

High blood pressure (hypertension), defined as having a systolic and diastolic blood pressure (BP) greater than 140 and 90 mmHg, is a major risk factor for cardiovascular disease (CVD) - a disease that causes almost 50 per cent of deaths in Europe, and reported to cost the EU economy an estimated €169bn (\$202bn) per year.

### **Study details**

The Spain-based researchers tested the effect of a single dose of the cocoa powder, including 50, 100, 300, and 600 mg/kg, on the blood pressure of spontaneously hypertensive rats (SHR) and normotensive rats.

While no effect was observed in the animals with normal blood pressure, the SHR experienced significant reductions following consumption of the cocoa powder. The maximum effect on systolic blood pressure was observed with a dose of 300 mg/kg, with pressure reductions after four hours of 60 mmHg. This result was very similar to the decrease observed following administration of 50 mg/kg Captopril.

The maximum effect on diastolic blood pressure was caused by 100 mg/kg CoccoanOX, with a reduction of around 50 mmHg, although the 300 mg/kg-associated reductions were similar.

While the researchers note that the theobromine content of the chocolate may explain the reductions, a lower effect at the highest dose (600 mg/kg) would appear to rule out a role for this compound.

*"[...] the blood pressure lowering effect of [theobromine] is in principle dose dependent,"* said the researchers. *"Different data of this study support therefore that the blood pressure lowering effect exhibited by CoccoanOX would be mainly due to the presence of procyanidins."*

*"These results suggest that CoccoanOX could be used as a functional ingredient with antihypertensive effect, although it would be also necessary to carry out bioavailability and clinical studies to demonstrate its long-term antihypertensive efficiency in humans,"* they concluded.

Source: *Journal of Agricultural and Food Chemistry*

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*"Antihypertensive Effect of a Polyphenol-Rich Cocoa Powder Industrially Processed To Preserve the Original Flavonoids of the Cocoa Beans"*

Authors: E. Cienfuegos-Jovellanos, M. del Mar Quinones, B. Muguerza, L. Moulay, M. Miguel, A. Aleixandre

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