

Chocolate Science: Cardiovascular Health

Differentiating Plant Phenols

An analysis of previously published research revealed that consuming cocoa-rich foods appears to reduce blood pressure, but drinking tea does not. Cocoa and tea both contain polyphenols, compounds thought to have beneficial effects on blood pressure and cardiovascular risk. Although cocoa and tea account for the majority of polyphenol intake in Western countries, according to researchers, they are not typically recommended for anti-hypertensive diets.

For the analysis, published in *Archives of Internal Medicine* (2007;167:626-634), researchers from University Hospital of Cologne, Germany, reviewed 10 previously published trials, five on cocoa's effects on blood pressure, and five involving tea. The five cocoa studies involved 173 participants, including 87 assigned to consume cocoa, and 86 controls; 34% had high blood pressure. Subjects were followed for a median duration of two weeks. Four of the five trials reported a reduction in both systolic (the top number, when the heart contracts) and diastolic (the bottom number, when the heart relaxes) blood pressure for those consuming cocoa. The results are comparable to those achieved with blood pressure-lowering medications, the researchers note.

Of the 343 individuals in the five tea studies, 171 drank tea and 172 served as controls for a median duration of four weeks. Drinking tea was not associated with a reduction in blood pressure in any of the trials.

Tea and cocoa are both rich in polyphenols. Black and green tea contain more compounds known as flavan-3-ols, while cocoa contains more of another type of polyphenol: procyanids. "This suggests that the different plant phenols must be differentiated with respect to their blood pressure-lowering potential and thus cardiovascular disease prevention, supposing that the tea phenols are less active than cocoa phenols," the authors write.

The findings do not indicate a widespread recommendation for higher cocoa intake to decrease blood pressure, but it appears reasonable to substitute phenol-rich cocoa products such as dark chocolate for other high-calorie or high-fat desserts or dairy products, researchers say. "We believe that any dietary advice must account for the high sugar, fat and calorie intake with most cocoa products," the authors conclude. "Rationally applied, cocoa products might be considered part of dietary approaches to lower hypertension risk."

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