

Can drinking cocoa protect your heart when you're stressed?

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Increased consumption of flavanols—a group of molecules occurring naturally in fruit and vegetables—could protect people from mental stress-induced cardiovascular events such as stroke, heart disease and thrombosis, according to new research.

Researchers have discovered that blood vessels were able to function better during [mental stress](#) when people were given a [cocoa drink](#) containing high levels of flavanols than when drinking a non-flavanol enriched drink.

A thin membrane of cells lining the heart and blood vessels, when functioning efficiently the endothelium helps to reduce the risk of peripheral vascular disease, stroke, [heart disease](#), diabetes, kidney failure, tumor growth, thrombosis, and severe viral infectious diseases. We know that mental stress can have a [negative effect](#) on blood vessel function.

A UK research team from the University of Birmingham examined the effects of cocoa flavanols on stress-induced changes on vascular

function—publishing their findings in *Nutrients*.

Lead author, Dr. Catarina Rendeiro, of the University of Birmingham's School of Sport, Exercise and Rehabilitation Sciences, explains: "We found that drinking flavanol-rich cocoa can be an effective dietary strategy to reduce temporary impairments in endothelial function following mental stress and also improve [blood flow](#) during stressful episodes".

"Flavanols are extremely common in a wide range of fruit and vegetables. By utilizing the known cardiovascular benefits of these compounds during periods of acute vascular vulnerability (such as stress) we can offer improved guidance to people about how to make the most of their dietary choices during stressful periods."

In a randomized study, conducted by postgraduate student Rosalind Baynham, a group of healthy men drank a high-flavanol cocoa beverage 90 minutes before completing an eight-minute mental stress task.

The researchers measured forearm blood flow and cardiovascular activity at rest and during stress and assessed functioning of the blood vessels up to 90 min post stress—discovering that blood vessel function was less impaired when the participants drank high-flavanol cocoa. The researchers also discovered that flavanols improve blood flow during stress.

Stress is highly prevalent in today's society and has been linked with both psychological and physical health. Mental stress induces immediate increases in heart rate and blood pressure (BP) in healthy adults and also results in temporary impairments in the function of arteries even after the episode of stress has ceased.

Single episodes of stress have been shown to increase the risk of acute cardiovascular events

and the impact of stress on the [blood](#) vessels has been suggested to contribute to these stress-induced [cardiovascular events](#). Indeed, previous research by Dr. Jet Veldhuijzen van Zanten, co-investigator on this study, has shown that people at risk for cardiovascular disease show poorer vascular responses to acute stress.

"Our findings are significant for everyday diet, given that the daily dosage administered could be achieved by consuming a variety of foods rich in flavanols—particularly apples, black grapes, blackberries, cherries, raspberries, pears, pulses, green tea and unprocessed cocoa. This has important implications for measures to protect the [blood vessels](#) of those individuals who are more vulnerable to the effects of mental [stress](#)," commented Dr. Rendeiro.

More information: Cocoa Flavanols Improve Vascular Responses to Acute Mental Stress in Young Healthy Adults, *Nutrients*, 2021.

Provided by University of Birmingham

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