

Flavanols are linked to better memory and heart health—here's what foods you can eat to get these benefits

June 8 2023, by Gunter Kuhnle



Credit: AI-generated image ([disclaimer](#))

There are plenty of good reasons to make sure you're eating enough fruit and vegetables each day. Not only do fruit and vegetables contain many of the important vitamins and minerals our body needs to function at its best, they also keep our gut healthy and may even help maintain a

healthy weight.

But some [plant foods](#) may be more beneficial for health than others, thanks to a group of compounds called flavanols.

For instance, [a recent study](#) I helped conduct showed that people who eat a diet high in flavanol-rich foods may have better memory compared to those who have a low intake. A previous study also found that people with a low intake of flavanols were at [higher risk of heart disease](#). Overall, there's convincing evidence that [consuming enough flavanols](#) has health benefits.

But while research shows that flavanols have many health benefits, it's important for consumers to know that not all flavanol-rich foods contain the same amount of flavanols—meaning some may be more beneficial to health than others.

Plant compounds

Flavanols are a group of compounds that are found in many plants—including apples, berries, plums and even beverages such as tea.

There are [two main groups of flavanols](#), with many different subgroups. Each plant will contain different combinations of flavanols, as well. These compounds each have different structures and different effects on the body. That means that not all flavanols are created equal.

For example, a portion of blueberries and a cup of tea may contain the same amount of total flavanols—but they are made up of completely different types of flavanols, which may have completely different health effects.

So in order to investigate the health effects of flavanols, it's therefore

important to use a source which includes a wide range of different types. This is why flavanols extracted from cocoa are an ideal model, as they contain the [two main types of flavanols](#). It also allows researchers to calculate which other foods are likely to have benefits based on how similar the compounds they contain are to [cocoa flavanols](#).

Since foods such as cocoa, berries and tea contain a combination of many types of flavanols, it's currently not clear which individual compounds generate [health benefits](#). But some research has linked the specific flavanol epicatechin with [better vascular function](#). Cocoa and tea both contain epicatechin.

Foods	Serving	(g/serving)	Servings for 500 mg/d
Study intervention	Capsule		1
Fruits			
Apples (with skin)	large	223	4.2
Blueberries	cup	148	6.2
Raspberries	cup	123	14.7
Blackberries	cup	144	2.9
Cherries (sweet)	cup	154	9.9
Cranberries	cup	100	4.1
Nectarines (yellow)	large	156	14.1
Peaches	large	175	6.9
Pears	large	230	11.8
Plums	cup	165	3.2
Strawberries	cup	166	6.8
Beverages			
Green tea	cup	245	2.5
Black tea	cup	237	7.9
Vegetables			
Pinto beans	cup	193	1.5
Kidney beans	cup	184	1.8
Broadbeans (fava beans)	cup	109	2.6
Nuts			
Hazelnuts	cup, whole	135	3.8
Pecan nuts	cup, halves	99	3.1
Cereal grains			
Buckwheat flour	cup	120	11.6
Sorghum grain (Millet)	cup	192	0.8

Number of servings needed from different flavanol-containing foods to obtain 500 mg per day. Credit: Gunter Kuhnle, Author provided

Many different types

Another thing to know is that even if a food contains flavanols, it may contain lower amounts compared to others.

To better understand how flavanol intake affects health, a few years ago we developed a test that uses urine to measure flavanol intake. The test is based on the way the human body processes flavanols and tells us whether someone has eaten large amounts, small amounts or no flavanols at all.

Using this test, we were able to show that people with high flavanol intake [had lower blood pressure](#) and [better memory](#) than those with lower intake.

When we developed the urine test, we also investigated how it is affected by [different types of flavanols and foods](#). This allowed us to estimate what amount of different flavanol-rich foods a person needs to consume to achieve approximately 500mg of flavanols per day—similar to the amount used in studies, which has been shown to have clinical benefit.

According to our research, only two-and-a-half cups of green tea are needed daily to get the recommended 500mg of flavanols. Just under a cup of millet (sorghum grain) can also provide you with the recommended daily amount.

But if you were to try and get your flavanols from one type of fruit and vegetable, our research shows you'd need to consume large amounts of

each to achieve the recommended amount. For example, you'd need to consume nearly 15 cups of raspberries alone to get 500mg of flavanols.

As such, the best way to get enough flavanols daily is by consuming a combination of different fruits and vegetables. For example two apples, a portion of pecan nuts and a large portion of strawberries can achieve the 500mg target—or a salad made with millet and fava beans.

It's also important to note that while the flavanols used in many studies were extracted from cocoa, unfortunately chocolate (even dark chocolate) is a very [poor source of flavanols](#)—despite what [some headlines might claim](#). This is because these flavanols are [lost during processing](#).

Although there's still much we don't know about flavanols—such as why they have the effect they do on so many aspects of our health—it's clear from the research we do have that they are very likely beneficial to both memory and heart health.

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