



[From My Forthcoming Book: Can You Get Too Many Plant Polyphenols?](#)

In my forthcoming book on supplements, *Best Supplements for Men*, I give some consideration to the dosage of polyphenols, the beneficial plant chemicals that are associated with much lower death rates. Can you get too many plant polyphenols? Are all plant polyphenols created equal? Read on for my thoughts on that topic. The book is in progress.

Polyphenols: The Right Dose

Several of the supplements in this section [of the book], including resveratrol, green tea, curcumin, quercetin, and berberine, are polyphenols, a class of chemicals found in plants. In addition, coffee, black tea, chocolate, and red wine contain relatively large amounts of these phytochemicals. If you consume these foods/beverages and also supplement, is it possible to get too many polyphenols?

Consumption of polyphenols is robustly associated with better health and 37% lower death rates, as well as a 46% reduction in cardiovascular disease risk. However, these studies were based on the polyphenol content of foods, such as coffee, fruits and vegetables, etc., as well as a spot urine test for polyphenols, not supplement use. The highest intakes of polyphenols, that is, those associated with the lowest death rates, averaged about 1235 mg a day.

Polyphenols in food

To get a handle on this, it helps to know the polyphenol content of some common food items, notably those high in them as we've discussed. I've listed

the total polyphenol content, by serving, in the following, calculated from the amount in 100 grams or in 100 ml from "Identification of the 100 richest dietary sources of polyphenols: an application of the Phenol-Explorer database".

- Dark chocolate: ~500 mg
- Coffee: ~300 mg
- Black tea: ~150 mg
- Green tea: ~120 mg
- Red wine: ~150 mg

Someone who drinks two regular-size (6-ounce) cups of coffee daily, eats a serving of dark chocolate, and drinks two glasses of red wine (for example), will have a polyphenol intake of around 1400 mg. (Rough calculation.) That's about the level seen in the highest category of polyphenol consumption and the category with the lowest death rates. Using some different assumptions, it would appear to be relatively easy to get total daily polyphenol uptake into the several-thousand-milligram daily range. In fact, a 20-ounce coffee of the kind sold in chain coffee shops may alone have 1200 mg of polyphenols.

For comparison, some of the doses of supplements we've discussed, such as berberine and curcumin, are 500 mg. Resveratrol suggested doses are lower, at 100 mg or less.

Could you get too many plant polyphenols? Or is there even such a thing as too many?

Hormesis and polyphenols

Unfortunately, the answer is not known. It may or may not follow that, because those who consumed 1250 mg of polyphenols a day had the lowest death rates, those who consumed 2500 mg a day have even lower death rates. Maybe they do, maybe they don't.

A point of diminishing returns likely exists somewhere. Furthermore, not all polyphenols are the same and some have greater effects than others and/or use different mechanisms of action, so adding them into all one basket for purposes of calculating total intake may be of limited value.

Stilbenes and lignans

The study that found 37% lower death rates also reported, "Among the polyphenol subclasses, stilbenes and lignans were significantly associated with reduced all-cause mortality [HR 0.48 and 0.60, respectively], with no significant associations apparent in the rest (flavonoids or phenolic acids)."

If polyphenols cause lower death rates (not mere association), then only certain classes of them count for much.

The two classes of polyphenols that mattered were stilbenes, which include resveratrol, pterostilbene, and other compounds in grapes, wine, and cocoa; and lignans, the richest source of which is flaxseed.

Since polyphenols most likely work through hormesis, the process by which low doses of toxins or stressors produce beneficial health effects, it follows that at some dosage, polyphenols may become overtly toxic, and damage health.

The point I wish to make is to be aware of what you're taking and not to overdo it. Don't indiscriminately take large amounts of different polyphenol supplements in the quest for ever better health, especially if you already drink coffee, tea, and wine, and eat chocolate. Not to mention berries (another source of large amounts of polyphenols) or if you cover your food with cloves (just kidding, but that's the number one food for polyphenols).

Although we don't know at what, if any, level that polyphenols become a problem, and overt toxicity in animals seems to occur only at very high doses, if you tally up your polyphenol intake and find it at, say, over a couple thousand milligrams daily, you might consider cutting back. These considerations may not apply to those with special health needs, such as someone taking berberine several times a day for blood sugar control, but such people should have cleared their use of supplements with their doctor first.

PS: [Check out my Supplements Buying Guide for Men.](#)

Notes

Tresserra-Rimbau, Anna, et al. "Polyphenol intake and mortality risk: a re-analysis of the PREDIMED trial." *BMC medicine* 12.1 (2014): 77.

Tresserra-Rimbau, Anna, et al. "Inverse association between habitual polyphenol intake and incidence of cardiovascular events in the PREDIMED study." *Nutrition, Metabolism and Cardiovascular Diseases* 24.6 (2014): 639-647.

Pérez-Jiménez, J., et al. "Identification of the 100 richest dietary sources of polyphenols: an application of the Phenol-Explorer database." *European journal of clinical nutrition* 64 (2010): S112-S120.