

More evidence that spicing up broccoli boosts its cancer-fighting power

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Teaming fresh broccoli with a spicy food that contains the enzyme myrosinase significantly enhances each food's individual cancer-fighting power and ensures that absorption takes place in the upper part of the digestive system where you'll get the maximum health benefit, suggests a new University of Illinois study.

"To get this effect, spice up your broccoli with [broccoli sprouts](#), mustard, horseradish, or wasabi. The spicier, the better; that means it's being effective," said Elizabeth Jeffery, a U of I professor of nutrition.

In the study, when fresh broccoli sprouts were eaten with broccoli powder, the scientists were able to measure [bioactive compounds](#) in the blood 30 minutes later. When these peaked at three hours, they were much higher when the foods were eaten together than when either was eaten alone. [Urine samples](#) corroborated the blood results, said Jenna Cramer, lead author of the study.

It's no secret that many people cook the benefits right out of broccoli instead of steaming it lightly for two to four minutes to protect its healthful properties, she said.

"However, this study shows that even if broccoli is overcooked, you can still boost its benefits by pairing it with another [food](#) that contains myrosinase," she said.

Myrosinase is the enzyme necessary to form sulforaphane, the

vegetable's cancer-preventive component, co-author Margarita Teran-Garcia explained.

Note what happened with the fresh broccoli sprouts and broccoli powder eaten in this experiment. The powder doesn't contain myrosinase, but it does contain the precursor to the anti-cancer agent sulforaphane. Eaten together, the sprouts were able to lend their myrosinase to the powder. As predicted, both foods produced sulforaphane and provided greater anti-cancer benefit, Jeffery said.

Other foods that will boost broccoli's benefits if they are paired together include radishes, cabbage, arugula, watercress, and Brussels sprouts.

"Here's another benefit of protecting and enhancing the myrosinase in your foods," Jeffery said. "If myrosinase is present, sulforaphane is released in the ileum, the first part of your [digestive system](#). Absorption happens well and quickly there, which is why we saw bioactivity in 30 minutes."

An earlier Jeffery study showed that microbiota are capable of releasing sulforaphane in the lower gut, but absorption happens more slowly in the colon than in the upper intestine, she said.

Scientists say that as little as three to five servings of broccoli a week provide a cancer-protective benefit.

"But it pays to spice it up for added benefits and find ways to make it appealing so you don't mind eating it if you're not a broccoli fan. I add fresh [broccoli](#) sprouts to sandwiches and add them as one of my pizza toppings after the pie is out of the oven," Cramer said.

More information: The study is available pre-publication online in the *British Journal of Nutrition* at journals.cambridge.org/jeffery

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