

WELL

# Finding the Best Way to Cook All Those Vegetables

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By now, most people know they should be eating more vegetables. But are there ways to get more from the vegetables you already eat?

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Stuart Bradford

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A growing body of research shows that when it comes to vegetables, it's not only how much we eat, but how we prepare them, that influences the amount of phytochemicals, [vitamins](#) and other nutrients that enter our body.

The benefits are significant. Numerous studies show that people who consume lots of vegetables have lower rates of heart disease, [hypertension](#), [diabetes](#), eye problems and even [cancer](#). The latest dietary guidelines call for 5 to 13 servings — that is two and a half to six and a half cups a day. For a person who maintains her weight on a 2,000-calorie-a-day [diet](#), this translates into nine servings, or four and a half cups a day, according to the Harvard School of Public Health. But how should they be served?

Surprisingly, raw and plain vegetables are not always best. In The British Journal of Nutrition next month, researchers will report a study involving 198 Germans who strictly adhered to a raw food diet, meaning that 95 percent of their total food intake came from raw food. They had normal levels of vitamin A and relatively high levels of [beta carotene](#).

But they fell short when it came to lycopene, a carotenoid found in tomatoes and other red-pigmented vegetables that is one of the most potent antioxidants. Nearly 80 percent of them had plasma lycopene levels below average.

“There is a misperception that raw foods are always going to be better,” says Steven K. Clinton, a nutrition researcher and professor of internal medicine in the medical oncology division at [Ohio State University](#). “For fruits and vegetables, a lot of times a little bit of cooking and a little bit of processing actually can be helpful.”

The amount and type of nutrients that eventually end up in the vegetables are affected by a number of factors before they reach the plate, including where and how they were grown, processed and stored before being bought. Then, it's up to you. No single cooking or preparation method is best. Water-soluble nutrients like vitamins C and B and a group of nutrients called polyphenolics are often lost in processing. For instance, studies show that after six months, frozen cherries have lost as much as 50 percent of

anthocyanins, the healthful compounds found in the pigment of red and blue fruits and vegetables. Fresh spinach loses 64 percent of its [vitamin C](#) after cooking. Canned peas and carrots lose 85 percent to 95 percent of their vitamin C, according to data compiled by the University of California, Davis.

Fat-soluble compounds like vitamins A, D, E and K and the antioxidant compounds called [carotenoids](#) are less likely to leach out in water. Cooking also breaks down the thick cell walls of plants, releasing the contents for the body to use. That is why processed tomato products have higher lycopene content than fresh tomatoes.

In January, a report in The Journal of Agriculture and Food Chemistry concluded that over all, boiling was better for carrots, zucchini and broccoli than steaming, frying or serving them raw. Frying was by far the worst..

Still, there were tradeoffs. Boiling carrots, for instance, significantly increased measurable carotenoid levels, but resulted in the complete loss of polyphenols compared with raw carrots.

That report did not look at the effects of microwaving, but a March 2007 study in The Journal of Food Science looked at the effects of boiling, steaming, microwaving and pressure cooking on the nutrients in broccoli. Steaming and boiling caused a 22 percent to 34 percent loss of vitamin C. Microwaved and pressure-cooked vegetables retained 90 percent of their vitamin C.

What accompanies the vegetables can also be important. Studies at Ohio State measured blood levels of subjects who ate servings of salsa and salads. When the salsa or salad was served with fat-rich avocados or full-fat salad dressing, the diners absorbed as much as 4 times more lycopene, 7 times more lutein and 18 times the beta carotene than those who had their vegetables plain or with low-fat dressing.

Fat can also improve the taste of vegetables, meaning that people will eat more of them. This month, The American Journal of Preventive Medicine reported on 1,500 teenagers interviewed in high school and about four

years later on their eating habits. In the teenage years, many factors influenced the intake of fruits and vegetables. By the time the study subjects were 20, the sole factor that influenced fruit and vegetable consumption was taste. Young adults were not eating vegetables simply because they didn't like the taste.

“Putting on things that make it taste better — spices, a little salt — can enhance your eating experience and make the food taste better, so you're more likely to eat vegetables more often,” Dr. Clinton said.

Because nutrient content and taste can vary so widely depending on the cooking method and how a vegetable is prepared, the main lesson is to eat a variety of vegetables prepared in a variety of ways.

As Susan B. Roberts, director of the energy metabolism laboratory at the [Tufts University](#) Friedman School of Nutrition, put it, “Eating a variety of veggies is especially important so you like them enough to eat more.”

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