

What's up with carrots? Let's root out the truth

April 5 2023, by Michael Merschel



Credit: CC0 Public Domain

If you think of carrots as stodgy old tubers, something more fit for rabbits than healthy humans, you're in for a bunch of surprises.

Carrots can be a significant source of crucial nutrients, said Sherry Tanumihardjo, professor of nutritional sciences at the University of Wisconsin-Madison. These days, they're popping up in a whole palette of colors. They're also convenient and versatile.

"You can just take them out of the ground, wash them and eat them, just like that, or you can peel them and cut them up," she said. "You can slice them and dice them into all kinds of foods."

Carrots have been around a long time, probably originating in central Asia, possibly Afghanistan. Researchers say that by the Middle Ages, purple and white varieties were domesticated as far west as England, but the orange [carrot](#) didn't become common until the 15th century in Europe.

Tanumihardjo has quite a carrot history herself, having studied them since the start of this century and collaborated on work that's helped make a rainbow of varieties widely available.

Although [carrots](#) carry a range of nutrients, including B vitamins, vitamin K and potassium, much of her carrot enthusiasm comes from her work in vitamin A, which supports the immune system, heart, lungs and perhaps most famously, eye health.

"Vitamin A is essential for vision, especially at night," she said, meaning that what your grandmother told you about eating carrots to help you see in the dark has some truth to it. (The idea that carrots can improve eyesight is rooted in British World War II propaganda, but vitamin A deficiency causes hundreds of thousands of cases of night blindness worldwide each year.)

Vitamin A comes in two forms. Preformed vitamin A can be found in animal products, such as dairy products and organ meats. Taken in excess, as in supplements, preformed vitamin A can become toxic.

The other form, provitamin A, is derived from plant-based chemicals called, conveniently enough, carotenoids. Not all carotenoids can be converted to vitamin A, but orange carrots are full of some that do, such

as alpha and beta carotene.

"It's a safer way to get vitamin A because your body regulates it," Tanumihardjo said. That is, your body can make more or less, depending on what it needs at the moment.

As [calculated by the U.S. Department of Agriculture](#), one regular raw carrot, weighing about 2 ounces (or 60 grams), comes with about 25 calories and would provide nearly 72% of the [vitamin](#) A an adult woman's needs, and about 56% of an adult man's daily needs.

In the carrot world, colors are trending, and as colors vary, so do nutrients. Purple carrots get their hue from anthocyanins, which have been linked to healthy gut biomes, [improved cognition](#) and better heart health. Yellow carrots provide lutein, which helps vision and brain health. And red carrots contain lycopene, which also is found in red tomatoes and watermelon, and which has been linked to [lower stroke risk](#).

More varieties may be on the way, Tanumihardjo said. "Right now, we are working on a purple carrot with a red center."

Carrots also have heart-healthy fiber. According to the USDA, one regular raw carrot provides 1.7 grams. Federal dietary guidelines say an adult needs 22 to 34 grams a day, depending on age and sex.

Tanumihardjo said the nutrients in carrots are available fresh or frozen, raw or cooked. Cooking, she said, breaks down the cell walls releasing compounds that help sweeten carrots a bit. Some studies have shown that cooking actually increases levels of available carotenoids.

She did have one carrot caveat, however: If you eat raw carrots without a fat source, you won't see benefits from those carotenoids.

"It will just pass right on through the body," she said. "If you eat carrots in a salad and you have salad dressing, then you will absorb more. If you eat carrots in a stew, and you don't overcook them too much, and there's fat in the stew, you will absorb even more." Eating them with a little bit of cheese also would work, she said.

The same goes for carrot juice. Juicing breaks cell membranes and helps make carotenoids more accessible, "but you do have to make sure you have a little bit of fat within the same time you're drinking the juice in order to absorb the most nutrients."

Although peeling them will remove a little fiber, when it comes to serving carrots, there really isn't a bad way, she said.

(Unless, perhaps, you are a rabbit. According to Britain's Royal Society for the Prevention of Cruelty to Animals, wild rabbits don't eat carrots, and they should only be an occasional treat for pets. The whole connection between bunnies and carrots can be traced to the debut of Bugs Bunny in 1940. His carrot crunching was intended as a parody of Clark Gable in the 1934 comedy, "It Happened One Night.")

"I do like carrots," Tanumihardjo said. Sometimes she snacks on baby carrots, a peeled and cut version with similar nutritional values. Mostly, she said, she buys longer ones and puts them in soup. "I make a lot of soup."

Provided by American Heart Association

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