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The sight-saving diet

Even those who can name the major parts of the eye may not know that each eye has a macula, a small patch of specialized tissue in the back of the eyeball at the center of the retina. "Macula" is Latin for spot or stain, and there are maculas, or specialized spots, elsewhere in the body—in the inner ear, for example. For unknown reasons, the macula in the retina can deteriorate, particularly in people over 60, and this affects central vision, often leading to blindness or partial blindness. This condition is known as age-related macular degeneration (AMD). There is no cure for it.

But new evidence shows that at least part of the problem may stem from a lack of certain nutrients. The vitamins and minerals abundant in a healthy diet may reduce the risk of such eye disorders as AMD and cataracts. Also important are the carotenoids, a family of nutrients not classified as vitamins but similar to them. They are found in leafy greens, corn, kiwi, and many

other green, red, or yellow fruits and vegetables. The queen of the carotenoid clan is beta carotene (found most plentifully in carrots and sweet potatoes), but there are many others—including alpha carotene, the lycopenes (tomatoes are rich in these), lutein, and zeaxanthin.

Some of these carotenoids can be detected in high concentrations in eye tissues. They function as antioxidants—that is, they neutralize the damage to cells caused by free radicals (unattached oxygen molecules) created by such unavoidable factors as sunlight. People who eat lots of carotenoid-rich foods seem to have the healthiest eyes. Smokers have a high risk of AMD, possibly because smoking has a negative impact on carotenoids in the body, as well as on vitamin C. Carotenoids may act as filters, forming a pigment that protects eye tissue from blue light, a potentially destructive band of radiation in ordinary sunlight. We published a report on this research in 1995; since then the evidence has grown stronger. Of course, the carotenoids are not the only nutrients that make for healthy eyes. Vitamins C and E may help prevent cataracts; vitamin A (which the body can manufacture from beta carotene) is essential for night vision.

Earlier studies suggested that two specific carotenoids may be of particular value in preventing AMD—surprisingly, not beta carotene, but lutein and zeaxanthin. Recently a joint study from the University of Texas Medical Branch in Galveston and the University Medical School in Heidelberg, Germany, measured this pair of nutrients in 36 common foods. Here's how some fruits and vegetables stacked up, in descending order:

Highest in lutein: corn, kiwi, pumpkin, zucchini squash, spinach, yellow squash, red grapes, green peas, cucumber (a dark horse, since it's low in other nutrients), butternut squash, green bell pepper, and celery (another dark horse).

Highest in zeaxanthin: orange bell pepper, corn, orange juice, honeydew melon, mango, and orange.

Green note: Spinach and lettuce were the only dark greens on the list in this study, but collards, Swiss chard, beet greens, and other dark greens may also help prevent AMD.

What all this means

First, this is simply more evidence that consuming a wide variety of fruits and vegetables is the way to go. *It does not mean that the foods listed above are the only ones you should eat, or even that*

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Wellness facts

■ Americans eat more than twice as much cheese today as in 1972—28 pounds per person each year, not counting cottage cheese. Many people cutting back on fat **find cheese the most difficult food to trim from their diets.** Because of the national fondness for pizza, per capita mozzarella consumption has risen five-fold since 1972. Mozzarella is the second most popular cheese in the U.S., after Cheddar.

■ High-fiber foods are recommended on weight-loss diets because they're filling and nutritious, but here's another small way they are a boon if you're trying to lose weight. **Boosting your fiber intake reduces the number of calories your body absorbs from the foods you eat.** A USDA study found that women who double their daily fiber intake from 12 to 24 grams absorb about 90 fewer calories from fat and protein; men going from 18 to 36 grams of fiber, about 130 fewer calories a day. (Nutritionists recommend at least 20 to 30 grams of fiber daily.) This effect of fiber varies greatly from person to person. Large intakes of fiber also decrease the absorption of some minerals, but since high-fiber foods are generally quite nutritious, this is not a problem.

■ **Carbon monoxide poisoning causes about 2,100 unintentional deaths in the U.S. each year,** according to the CDC. At least half of these deaths occur in the winter months, and are caused by improperly maintained or defective heating equipment. Many of these deaths could be prevented by carbon monoxide detectors.

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they are the only produce that is good for your eyes. They are simply the foods that scored high in this study. Broccoli, apples, peaches, and others also offer some lutein and/or zeaxanthin.

Second, though you need foods rich in lutein and zeaxanthin, those are not the only beneficial carotenoids. Carrots, canteloupe, sweet potatoes, and dried apricots are all storehouses of beta carotene, another important nutrient. Tomatoes and tomato products, which have only a little lutein/zeaxanthin, are very high in lycopene, a carotenoid that may reduce the risk of prostate cancer.

What about eggs?

Surprisingly, the food that was richest of all in lutein and zeaxanthin (though only slightly richer than corn) was egg yolk. The authors of the study therefore suggested that eggs deserve reconsideration as part of a healthy diet. We certainly don't advise eating two or three eggs a day to stoke up on carotenoids. While eggs are very nutritious, one egg yolk contains nearly a whole day's allowance of cholesterol (215 milligrams out of a recommended daily maximum of 300 milligrams). It's fine to include an egg occasionally in place of meat and cheese. People with healthy blood cholesterol levels may eat as many as four eggs a week, according to the American Heart Association. Eggs in moderate amounts have their place in a healthy diet, depending on what else you eat. But it makes more sense to get your carotenoids from a wide variety of fruits and vegetables, which also provide fiber. And you don't have to count the milligrams of cholesterol in an ear of corn, because fruits and vegetables contain no cholesterol.

Eater's choice: *Pick the most colorful vegetables and fruits you can find—red, dark green, orange, or yellow. The evidence is strong that these foods play a key role in keeping your eyes healthy. We don't suggest getting carotenoids from supplements. Foods are definitely the best route, as well as the most delicious.*