An apple or pear a day may keep strokes away

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Apples and pears may keep strokes away. That's the conclusion of a Dutch study published in *Stroke: Journal of the American Heart Association* in which researchers found that eating a lot of fruits and vegetables with white flesh may protect against stroke.

While previous studies have linked high consumption of fruits and vegetables with lower stroke risk, the researchers' prospective work is the first to examine associations of fruits and vegetable color groups with stroke.

The color of the edible portion of fruits and vegetables reflects the presence of beneficial phytochemicals such as carotenoids and flavonoids.

Researchers examined the link between fruits and vegetable color group consumption with 10-year stroke incidence in a population-based study of 20,069 adults, with an average age of 41. The participants were free of cardiovascular diseases at the start of the study and completed a 178-item food frequency questionnaire for the previous year.

Fruits and vegetables were classified in four color groups:

- Green, including dark leafy vegetables, cabbages and lettuces
- Orange/Yellow, which were mostly citrus fruits
- Red/Purple, which were mostly red vegetables

- White, of which 55 percent were apples and pears

During 10 years of follow-up, 233 strokes were documented. Green, orange/yellow and red/purple fruits and vegetables weren't related to stroke. However, the risk of stroke incidence was 52 percent lower for people with a high intake of white fruits and vegetables compared to people with a low intake.

Each 25 gram per day increase in white fruits and vegetable consumption was associated with a 9 percent lower risk of stroke. An average apple is 120 grams.

"To prevent stroke, it may be useful to consume considerable amounts of white fruits and vegetables," said Linda M. Oude Griep, M.Sc., lead author of the study and a postdoctoral fellow in human nutrition at Wageningen Uninversity in the Netherlands. "For example, eating one apple a day is an easy way to increase white fruits and vegetable intake.

"However, other fruits and vegetable color groups may protect against other chronic diseases. Therefore, it remains of importance to consume a lot of fruits and vegetables."

Apples and pears are high in dietary fiber and a flavonoid called quercetin. In the study, other foods in the white category were bananas, cauliflower, chicory and cucumber.

Potatoes were classified as a starch.

Previous research on the preventive health benefits of fruits and vegetables focused on the food's unique nutritional value and characteristics, such as the edible part of the plant, color, botanical family and its ability to provide antioxidants.

U.S. federal dietary guidelines include using color to assign nutritional value. The U.S. Preventive Health Services Taskforce recommends selecting each day vegetables from five subgroups: dark green, red/orange, legume, starchy and other vegetables.

Before the results are adopted into everyday practice, the findings should be confirmed through additional research, Oude Griep said. "It may be too early for physicians to advise patients to change their dietary habits based on these initial findings," she said.

An accompanying editorial notes that the finding should be interpreted with caution because food frequency questionnaires may not be reliable.

In addition, "the observed reduction in stroke risk might further be due to a generally healthier lifestyle of individuals consuming a diet rich in fruits and vegetables," writes Heike Wersching, M.D., M.Sc., of Institute of Epidemiology and Social Medicine at the University of Münster, in Germany.

Provided by American Heart Association