

# White fruits and vegetables may reduce stroke risk

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**Apples** of course have a reputation for keeping the doctor away and now new research finds that both apples and pears may keep strokes away.

How does it work? The Dutch study published in ***Stroke: Journal of the American Heart Association*** found that the white flesh of the fruit may protect against stroke. Previous studies had linked high consumption of fruits and vegetables with lower stroke risk, but this is the first to look at the association of the color of fruits and vegetables with stroke.

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.

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. No association was found between strokes and Green, orange/yellow and red/purple fruits and vegetables. 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 University** 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 not included.

Most research on fruits and vegetables has 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, rather than color.

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.