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Fruit and vegetable consumption reduce risk of death

At a Glance

- Eating more fruits and vegetables, at least five servings per day, was associated with reduced mortality.
- The results support current dietary guidelines for fruit and vegetable consumption.

It's well-established that U.S. adults don't eat enough fruits and vegetables, and that this contributes to poor health outcomes. But data on how fruit and vegetable consumption affects mortality are limited and inconsistent. It isn't clear exactly how much produce we should be eating daily to sustain long-term health.

The study examined how fruit and vegetable consumption affects mortality. *Tomwang112 / iStock / Getty Images Plus*

A team led by Dr. Dong D. Wang at Brigham and Women's Hospital and Harvard Medical School examined the relationship between fruit and vegetable intake and mortality. The researchers gathered data from one study of more than 66,000 women from 1984-2014 and another of more than 42,000 men from 1986-2014. They included participants who were free of diabetes, cardiovascular disease, and cancer when the studies began. Participants answered questions about their diets every two to four years.

The team also conducted a meta-analysis, combining their data with published results from 24 other studies. The work was funded by NIH's National Cancer Institute (NCI), National Heart, Lung, and Blood Institute (NHLBI), and National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). Results appeared in *Circulation* on March 1, 2021.

As expected, mortality decreased as fruit and vegetable intake increased. Eating an average of five servings per day was associated with a 13% lower risk of death than eating only two servings per day. Beyond five servings per day, eating more fruits and vegetables wasn't associated with further reduction in mortality risk.

Fruit consumption and vegetable consumption showed similar relationships to mortality. The lowest risk of mortality was reached at approximately two servings per day for fruit and three servings per day for vegetables. For comparison, U.S. adults average one serving of fruit and 1.5 servings of vegetables per day.

The meta-analysis of 26 studies, which involved a total of more than 1.8 million participants, yielded similar results to that of the two studies.

When the researchers examined individual causes of death, they found that eating more fruit and vegetables was associated with reduced mortality from cardiovascular and respiratory disease. Eating more fruit, but not vegetables, was associated with reduced cancer mortality. In contrast, mortality from neurodegenerative diseases was not associated with fruit and vegetable consumption.

While these results held for most types of fruits and vegetables, there were certain exceptions. Consumption of starchy vegetables, such as peas and corn, was not associated with reduced mortality. Nor was consumption of potatoes or fruit juices.

This study was observational. The researchers examined associations between diet and mortality. Although they accounted for other factors related to health, such as age and physical activity, they did not control people's diets. Thus, the results can't prove that eating more fruits and vegetables reduces the risk of death. However, they add evidence to support current recommendations for fruit and vegetable consumption.

"This amount likely offers the most benefit in terms of prevention of major chronic disease and is a relatively achievable intake for the general public," Wang notes.

—by Brian Doctrow, Ph.D.

Related Links

- Prescribing Healthy Foods Could Bring Cost-Effective Benefits
- Healthy Habits Can Lengthen Life
- How Dietary Factors Influence Disease Risk
- Cruciferous Vegetables and Cancer Prevention
- Plan Your Plate: Shifting to a Healthy Eating Style
- Dietary Guidelines for Americans
- MyPlate (USDA)

References: Fruit and Vegetable Intake and Mortality: Results From 2 Prospective Cohort Studies of US Men and Women and a Meta-Analysis of 26 Cohort Studies. Wang DD, Li Y, Bhupathiraju SN, Rosner BA, Sun Q, Giovannucci EL, Rimm EB, Manson JE, Willett WC, Stampfer MJ, Hu FB. *Circulation.* 2021 Mar 1. doi: 10.1161/CIRCULATIONAHA.120.048996. Online ahead of print. PMID: 33641343

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