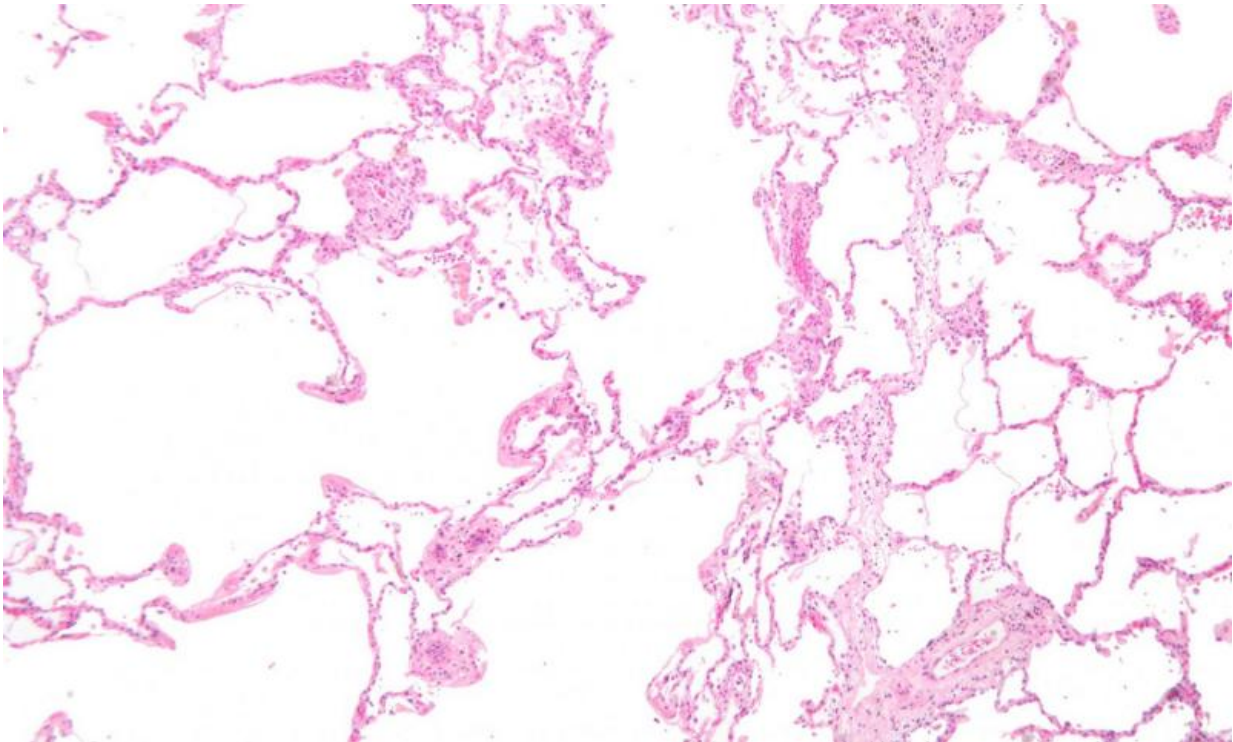


# Fruit and veg-rich diet linked to much lower risk of chronic lung disease (COPD)

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Micrograph showing emphysema (left – large empty spaces) and lung tissue with relative preservation of the alveoli (right). Credit: Wikipedia, CC-BY-SA 3.0

A diet rich in fruit and vegetables is linked to a significantly lower risk of developing chronic lung disease (COPD) in former and current smokers, finds research published online in the journal *Thorax*.

Each additional daily serving was associated with a 4-8% lower risk, the findings show. COPD, short for chronic [obstructive pulmonary disease](#), is an umbrella term for respiratory conditions that narrow the airways, which include bronchitis and emphysema.

The primary risk factor for its development is smoking, and the World Health Organization predicts that COPD is set to become the third leading cause of death worldwide.

Recent evidence suggests that diet may be an important factor in the development and/or prevention of COPD.

To try and find out if fruit and vegetable intake might have a dietary role, the researchers tracked the respiratory health of more than 44,000 men aged between 45 and 79 for 13 years up to the end of 2012.

The sample was drawn from all men who had been born between 1918 and 1952 in central Sweden. They completed a food frequency questionnaire detailing how often they consumed 96 different food items in 1997, at the start of the study.

They were also quizzed about other potentially important factors, such as educational attainment, weight, height, physical activity and inactivity levels and how much, and how often, they drank alcohol.

And they were asked how many daily cigarettes they smoked, on average, between the ages of 15 and 20; 21 and 30; 31 and 40; 41 and 50; and 51 and 60.

Almost two thirds of the men (nearly 63%) had smoked at some point; around one in four (24%) were current smokers; and nearly four out of 10 (38.5%) had never smoked.

During the monitoring period, 1918 new cases of COPD were diagnosed. The number of new cases in current and former smokers was estimated to be 1166 and 506/100,000 people, respectively, among those eating fewer than 2 daily portions of fruit and vegetables; but in those eating more than 5, the equivalent figures were 546 and 255.

In all, those eating 5 or more daily servings were 35% less likely to develop lung disease than those eating 2 or fewer daily servings.

And when the data were stratified by smoking, current and former smokers eating 5 or more portions of fruit and vegetables every day were, respectively, 40% and 34%, less likely to develop COPD.

Each additional serving was associated with a 4% lower risk of COPD in former smokers and an 8% lower risk in current smokers.

Compared with those who had never smoked and who ate 5 or more portions of fruit and vegetables, current and former smokers eating fewer than 2 daily portions were, respectively, 13.5 times and 6 times more likely to develop COPD.

Those at the high end of the consumption scale were 7.5 times (current smokers), and more than 3.5 times (former smokers), as likely to develop COPD.

Apples or pears; [green leafy vegetables](#); and peppers seemed to exert the strongest influence on risk, but no such associations were seen for berry fruits; bananas; citrus fruits; cruciferous and root vegetables; tomatoes; onions; garlic; or green peas.

As oxidative tissue stress and inflammation may be involved in COPD development, and smoking is a potent trigger of these processes, the antioxidants abundant in fruit and vegetables may curb their impact,

suggest the researchers, who add that smoking cessation should still continue to be promoted as the mainstay of prevention.

But in a linked editorial, Drs Raphaelle Varraso and Seif Shaheen emphasise that as this is an observational study, no firm conclusions can be drawn about cause and effect; a clinical trial would be needed for that.

But they write: "it could be argued that there is nothing to be lost by acting now. We would argue that clinicians should consider the potential benefits of a healthy diet in promoting lung health, and advocate optimising intake of fruits and [vegetables](#), especially in smokers who are unable to stop smoking."

**More information:** Fruit and vegetable consumption and risk of COPD: a prospective cohort study of men,  
[thorax.bmj.com/lookup/doi/10.1136/thoraxjnl-2015-207851](http://thorax.bmj.com/lookup/doi/10.1136/thoraxjnl-2015-207851)

Editorial: Could a healthy diet attenuate COPD risk in smokers?  
[thorax.bmj.com/lookup/doi/10.1136/thoraxjnl-2016-209608](http://thorax.bmj.com/lookup/doi/10.1136/thoraxjnl-2016-209608)

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