

Millions of smokers may have undiagnosed lung disease

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Credit: Vera Kratochvil/public domain

More than half of long-term smokers and ex-smokers who are considered disease-free because they passed lung-function tests have respiratory-related impairments when more closely evaluated with lung imaging, walking and quality-of-life tests. Many of those people likely have the earliest stages of chronic obstructive pulmonary disease, an incurable progressive disease (COPD) that is the third leading cause of

death in the United States.

"The impact of chronic smoking on the lungs and the individual is substantially underestimated when using lung-function tests alone," said James D. Crapo, professor of medicine at National Jewish Health and senior author of the study, which is being published June 22, in *JAMA Internal Medicine*. "Lung disease is common in smokers whose lung-function tests fall within population norms."

COPD is diagnosed by having people blow as hard and as long as they can into a device called a spirometer, which measures how much air they can blow out in one second and how much total air they can force out of their lungs. Individuals' results are compared to population norms and adjusted for age, size and gender.

The researchers evaluated 8,872 people ages 45 to 80 who had smoked at least a pack of cigarettes a day for 10 years (10 pack-years) or the equivalent. Most had smoked considerably more, 35 to 50 pack-years. About half the participants were considered disease-free based on their lung-function tests.

When researchers considered other criteria including impairments in physical function, respiratory symptoms, CT scans, use of respiratory medications, and respiratory-specific quality of life, they found that 55 percent of the "disease-free" study participants had some form of respiratory related impairment.

CT scans found emphysema or airway thickening in 42 percent of the disease-free participants. Twenty-three percent had significant shortness of breath compared to 3.7 percent of never smokers. Fifteen percent walked less than 350 meters in six minutes, compared to 4 percent of never smokers. The disease-free smokers also had considerably worse quality of life than never smokers, with 25 percent of them having scores

on questionnaires that exceeded a threshold considered clinically significant.

"Smokers who have 'normal' lung-function tests often have significant respiratory disease. Many of those smokers likely have the early stages of chronic [obstructive pulmonary disease](#)," said Elizabeth Regan, MD, PhD, lead author and assistant professor of medicine at National Jewish Health. "We hope these findings will help debunk the myth of the healthy smoker and highlight the importance of smoking prevention and cessation to prevent [lung disease](#) and other long-term effects of smoking."

Recent research has shown that lung CT screening of smokers with smoking histories of at least 30-pack years can lead to early detection of lung cancer and reduce deaths by 20 percent. Early detection of COPD may also enable early treatment that can improve symptoms, functional abilities and quality of life. Drs. Crapo and Regan hope the findings will encourage long-term [smokers](#) to get lung CT screenings to detect early stages of [lung cancer](#) and COPD.

Provided by National Jewish Health

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