

# Quitting smoking, but not cutting back, linked to better lung health

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Picture of a subject in the study: Quitting Smoking, But Not Cutting Back, Linked to Better Lung Health. Credit: ATS

Researchers analyzed data collected over 30 years from 3,140 participants in the Coronary Artery Risk Development in Young Adults

(CARDIA) study. When they enrolled, participants lived in four U.S. cities—Birmingham, AL, Chicago, IL, Minneapolis, MN, and Oakland, CA—and their average age was 25. Nearly half were African American, and nearly half smoked at some point in their lives. Participants underwent periodic spirometry to assess lung function and a chest CT scans 15, 20 and 25 years after enrolling.

"The CARDIA dataset gave us a unique opportunity to learn about the impact of different levels of smoking on lung health and [lung disease](#) risk," said lead author Amanda Mathew, Ph.D., research assistant professor at Northwestern University Feinberg School of Medicine.

"Participants were asked about their smoking each year, which minimized recall bias and allowed us to model changes in smoking habits over time."

Compared to those who never smoked, stable heavy smokers experienced the greatest decline in lung function as measured by FEV1, or the amount of air that can be forcibly exhaled in one second (-42.2 mL/year). In addition, stable heavy smokers were 26 times more likely to develop emphysema and nearly eight times more likely to develop [obstructive lung disease](#).

The researchers also examined lung health risk among light smokers, which they defined as having less than a 10 pack-years smoking history. Pack-years is estimated by multiplying the number of cigarette packs smoked a day times the number of years a person smoked. According to the authors, these light smokers are often excluded from clinical trials for [chronic lung disease](#).

The study compared stable, low-rate smokers (those smoking less than 10 cigarettes per day, on average) with smokers who had quit. Those who had quit had a 9.8 pack-year smoking history vs. a 6.4 pack-year history of those who smoked at a low intensity. Despite having smoked

more cigarettes, smokers who quit preserved more [lung function](#) (-33.8 vs. -35.7 mL/year) and had a lower risk of developing emphysema (3.4 vs. 8.5 times the risk of never smokers) than stable, low-rate smokers.

"We were surprised to find that those who quit had lower disease risk than the group we identified as stable, low-rate smokers, even though those who quit had a greater lifetime exposure to cigarettes," Dr. Mathew said.

The authors adjusted findings for a number of factors that might have biased results, including age, race, gender, body mass index and asthma. Study limitations include not being able to adjust for secondhand smoke, marijuana smoke or e-cigarette use.

Still, Dr. Mathew said, the study's take-home message for [smokers](#) is clear. "There is no safe threshold of [smoking](#) on lung health," she said. "Cutting down can be a great first step, but quitting for good is the most effective way to reduce [lung](#) disease risk."

**More information:** Abstract 6982: Life Course Cigarette Smoking and Lung Health from Young Adulthood to Middle Age: Findings from the CARDIA Lung Study

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