

# Children exposed to secondhand smoke at higher risk for atrial fibrillation

September 23 2019

---



Credit: CC0 Public Domain

Children of parents who smoke had a significantly increased chance of developing atrial fibrillation later in life, according to a study published today in the *Journal of the American College of Cardiology*. The findings

highlight a new association between secondhand smoke exposure and heart rhythm disorder risk.

Atrial fibrillation (AFib), the most common heart rhythm disorder, is expected to affect 16 million Americans by 2050. Cigarette smoking remains one of the top modifiable risk factors for [cardiovascular disease](#), with 14 percent of U.S. adults currently smoking despite public awareness campaigns to reduce smoking. Smoking has been established as a risk factor for [atrial fibrillation](#), with estimates that 7 percent of all AFib can be attributed to smoking.

Using data from both the original Framingham Heart Study and the Framingham Heart Offspring Studies, the researchers analyzed a total of 5,124 Offspring cohort participants under the age of 18 from 1971 to 2014. Parents were evaluated by a physician every two to four years, and [children](#) were evaluated every four to eight years.

Smoking was defined in both studies as participants smoking more than one cigarette daily during the year prior to their study examination. Smoking status was calculated in terms of packs per day, where one pack of cigarettes represented 20 cigarettes and a half pack represented 10 cigarettes. Secondhand smoke exposure was defined as the presence of a parent smoking anything more than zero packs per day.

Participants were considered to have AFib through an assessment of results from medical records, ECGs and Holter monitors. A total of 2,816 (55 percent) of the children in the Offspring cohort had parental smoking status data available. Secondhand smoke exposure was experienced by 82 percent of the children, and parental smoking status averaged at 10 cigarettes per day.

Among the Offspring cohort, 14.3 percent of participants developed AFib over a follow-up period of 40.5 years. For each pack per day

increase in parental smoking, children had an 18 percent increase in developing AFib.

"Our observations provide new information pertinent to smoking cessation, highlighting the harms that may be associated not only 'to others,' but to close and the most vulnerable members of the family," said Gregory M. Marcus, MD, MAS, professor in the Division of Cardiology at the University of California, San Francisco, and one of the study's senior authors. "With the rising prevalence of AFib, it is imperative to address modifiable [risk factors](#) such as cigarette smoking to reduce the global burden of AFib."

The researchers also found that 17 percent of the children of parents who smoke were more likely themselves to smoke, suggesting another way that parental smoking might predispose children to AFib in the long-term. Previous investigations have also confirmed that a smoking parent increases the likelihood of a child's chance of smoking later in life. Smoking cessation by the parents may lead to a decreased smoking incidence for their children.

"Although some of the relationship between parental smoking and offspring AFib was explained by offspring smoking themselves, the results of this study indicate that [secondhand smoke exposure](#) in childhood is a risk factor for future development of AFib," said Alanna M. Chamberlain, Ph.D., MPH, an epidemiologist in the Department of Health Sciences Research at Mayo Clinic in an accompanying editorial comment. "This study boasts several unique advantages, including a rigorous methodology to ascertain incident diagnoses of AFib in the [offspring](#), such as repeated evaluations with ECGs and routine surveillance for cardiovascular outcomes."

The study has several limitations, including a lack of available data for parental smoking status in nearly 45 percent of the Offspring

participants, as well as variations in parental smoke exposure among children of separated, divorced, single parents or other smoking family members. The demographic makeup of the Framingham Heart Study is a predominantly white cohort in one geographic area. However, the researchers stressed the importance of continued efforts toward [smoking cessation](#) and prevention of [smoking](#) initiation.

**More information:** *Journal of the American College of Cardiology* (2019). [DOI: 10.1016/j.jacc.2019.07.060](https://doi.org/10.1016/j.jacc.2019.07.060)

Provided by American College of Cardiology

Citation: Children exposed to secondhand smoke at higher risk for atrial fibrillation (2019, September 23) retrieved 25 April 2024 from <https://medicalxpress.com/news/2019-09-children-exposed-secondhand-higher-atrial.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--