

# Living with a smoker may raise blood pressure in boys

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Exposure to secondhand smoke, even at extremely low levels, is associated with increased blood pressure in boys, according to new research being presented Sunday, May 1, at the Pediatric Academic Societies (PAS) annual meeting in Denver.

Children with elevated [blood pressure](#) are at increased risk of having [high blood pressure](#), or hypertension, as adults. Hypertension is associated with a higher risk of heart and [kidney disease](#) and is the third leading contributor to illness and death worldwide. Yet, knowledge of risks factors for elevated blood pressure among children is limited.

Studies in non-smoking adults have shown associations between both secondhand smoke and outdoor air pollution with increased blood pressure, but no research has looked at this relationship in children.

In this study, researchers analyzed data from four National Health and Nutrition Examination Surveys conducted from 1999-2006 by the [Centers for Disease Control and Prevention](#). They assessed 6,421 youths' exposure to secondhand smoke from their own reports of whether they lived with a smoker and through participants' levels of cotinine, a substance produced when the body breaks down nicotine. Cotinine levels are considered the best marker of [tobacco smoke exposure](#).

Results showed that boys ages 8 to 17 years old who were exposed to secondhand smoke had significantly higher systolic blood pressure than boys not exposed to tobacco smoke.

"While the increases in blood pressure observed among boys in our study may not be clinically meaningful for an individual child, they have large implications for populations. Over one-third of children in the U.S. and globally are exposed to secondhand smoke levels similar to those associated with adverse cardiovascular effects in our study," said Jill Baumgartner, PhD, lead author of the study and research fellow at the University of Minnesota's Institute on the Environment.

However, the study also showed that girls who were exposed to secondhand smoke had lower blood pressures than girls who were not exposed to tobacco smoke.

"These findings support several previous studies suggesting that something about female gender may provide protection from harmful vascular changes due to secondhand smoke exposure. An important next step is to understand why," Dr. Baumgartner said.

The results of the study - the first to look at the effect of secondhand smoke exposure on blood pressure among children - suggest that the cardiovascular effects of tobacco smoke exposure may begin very early in life, she said. It is not known whether these changes are reversible if children are removed from smoke exposure. "What is clear, however, is that this study adds to overwhelming evidence that preventing children's exposure to secondhand smoke is an important public health initiative."

"The relationship between secondhand smoke exposure and blood pressure observed in our study provides further incentive for governments to support smoking bans and other legislation that protect children from [secondhand smoke](#)," Dr. Baumgartner concluded.

**More information:** To see the abstract, go to [www.abstracts2view.com/pas/view.php?nu=PAS11L1\\_229](http://www.abstracts2view.com/pas/view.php?nu=PAS11L1_229)

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