

# Smoking around your kindergartner could raise their blood pressure

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If you smoke around your children, they could have high blood pressure or be headed in an unhealthy direction before learning their ABC's, according to research reported in *Circulation: Journal of the American Heart Association*.

The study is the first to show that breathing [tobacco smoke](#) increases the blood pressure of children as young as 4 or 5 years old.

"The prevention of adult diseases like stroke or heart attack begins during childhood," said Giacomo D. Simonetti, M.D., first author of the study at the University of Heidelberg in Germany and currently assistant professor of pediatrics at the Children's Hospital of the University of Berne in Switzerland. "Parental smoking is not only negative for children's [lung function](#), but poses a risk for their future cardiovascular health."

In an extension of a standard school health exam, 4,236 kindergarten boys and girls (average age 5.7) in the German district that includes Heidelberg had their blood pressure measured. Of parents reporting they smoked, 28.5 percent were fathers, 20.7 percent mothers and 11.9 percent were both parents.

Children with a smoking parent were 21 percent more likely to have systolic blood pressure (the top number in a reading, measured as the heart contracts) in the highest 15 percent, even after adjusting for other heart disease risk factors, such as birth weight, [body mass index](#), and

hypertension in the parents.

"Passive smoking increased the risk of having blood pressure at the upper end of normal, and some of these children already had [high blood pressure](#)," Simonetti said.

After correcting for other risk factors — having parents with high blood pressure, being born prematurely or at a low birth weight, being overweight or obese — blood pressures were significantly higher in the children of smoking parents.

The impact was greater for systolic blood pressure (average increase 1.0 mm Hg) than diastolic blood pressure (average increase 0.5 mm Hg), the lower number in a reading measured when the heart rests between beats.

"Smoking adds to other risk factors," Simonetti said. "Average blood pressure increased in proportion to the cumulative number of risk factors present."

Smoking by mothers had a larger impact than fathers smoking, probably because more of their [smoking](#) was done in the home while fathers smoked more at their workplaces, researchers said.

Smoke exposure is likely to have a similar impact on blood pressure in children in the United States, the researchers said.

"Childhood blood pressure consistently tracks into adult life," Simonetti said. "Removing any avoidable risk factors as soon as possible will help reduce the risk for heart disease later on and improve the long-term health of children."

The study findings suggest that encouraging strictly smoke-free environments, specifically at home, may help preserve [cardiovascular](#)

[health](#) not only in adults but also in children, researchers said.

Provided by American Heart Association

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