

Secondhand smoke exposure increases odds of hospital asthma readmission for children

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A new study shows that exposure to secondhand smoke at home or in the car dramatically increases the odds of children being readmitted to the hospital within a year of being admitted for asthma.

The study, published in the journal *Pediatrics*, raises the possibility that measurement of tobacco exposure could be used in clinical practice to target smoking cessation efforts and reduce the likelihood of future hospitalizations.

To determine tobacco exposure, the researchers at Cincinnati Children's Hospital Medical Center and Penn State Milton S. Hershey Children's Hospital measured cotinine in the blood and in saliva of more than 600 children. Cotinine is a substance produced when the body breaks down nicotine and provides a scientific assessment of tobacco exposure.

"The ability to measure serum and salivary cotinine levels presents the possibility of an objective measure that can be obtained when a child is seen in the emergency department or in the hospital and may be used to predict future hospitalizations," says Robert Kahn, MD, MPH, associate director of general and community pediatrics at Cincinnati Children's and senior author of the study.

"Such a measure for exposure to [tobacco smoke](#) could be used to target specific interventions at caregivers of those children before discharge from the hospital. Several interventions, including parental counseling and contact with the [primary care physician](#), could be adopted in [clinical practice](#)."

The study is part of the Greater Cincinnati Asthma Risks Study, which seeks to understand the causes of hospital readmission, particularly for low

income and [minority children](#). The researchers studied children between the ages of 1 and 16 admitted to Cincinnati Children's between August 2010 and October 2011. Serum and salivary cotinine levels were taken during their hospital stay, and their primary caregivers were asked about tobacco exposure. All children were followed for at least 12 months to see if they were readmitted to the hospital.

The researchers found that there was no correlation between caregiver report of [tobacco exposure](#) and readmission. But a more scientific analysis of actual secondhand exposure via measurement of cotinine in the blood and saliva demonstrated a readmission risk in children exposed to [secondhand smoke](#) more than twice that of children not exposed.

"Of the 619 [children](#) in the study, 76 percent were covered by Medicaid," says Judie Howrylak, MD, PhD, a physician at Hershey Children's and lead author of the study. "Certainly there could be a financial incentive for insurance companies to help caregivers quit smoking, rather than pay the downstream costs of a future asthma readmission."

Provided by Cincinnati Children's Hospital Medical Center

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