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Kids in apartment buildings exposed to more tobacco smoke

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Children who lived in apartments with non-smokers had higher levels of a tobacco byproduct in their blood than children from smoke-free single-family homes, according to a new study that suggests multiunit housing is a significant source of second-hand smoke.

This is the first study to show increased tobacco exposure in the blood of children who live in multiunit housing, even if no one smokes in their apartment, said Dr. Jonathan Winickoff of MassGeneral Hospital for Children, senior author of the article published online today in the journal *Pediatrics*.

"No matter how careful a parent you are, you will not be able to protect your child against tobacco smoke exposure if you live in multiunit housing that isn't smoke-free," he said in an interview.

The authors analyzed data from the 2001-2006 National Health and Nutrition Examination Survey.

Parents of children from 6 to 18 years old answered questions about smoking and where they lived.

More than 5,000 children had physical exams during which they gave blood and urine samples.

Eighty-five percent of children living in apartments had levels of cotinine that indicated recent tobacco exposure compared with 80 percent of children living in attached houses and 70 percent of children in single-family homes.

Cotinine is a by-product of nicotine found in the blood.

The children may have been exposed to smoke outside their homes, at school or day care, the authors say.

Adults who smoke outside the home could also have brought back inside the house tobacco contaminants that cling to their clothes, a phenomenon called "third-hand smoke."

Second-hand smoke has been associated with illnesses such as asthma and ear infections as well as sudden infant death syndrome, according to research cited in the study.

Children are more vulnerable because their smaller lungs are still developing and they tend to spend more time inside their homes.

Winickoff said other people in multiunit housing, including elderly or disabled people who may not get outside very often, are also at risk of tobacco exposure.

The researchers suspect that smoke seeps between walls or through common air ducts in apartment buildings.

"For people who don't smoke in their own units, this is the final link in the chain," he said.

"This is getting not only into the air we see, but into the blood of children."

Winickoff hopes private and public landlords will make their buildings smoke-free.

"Landlords are faced with a new decision based on this research: not whether their buildings should go smoke-free but exactly how soon to begin that process," he said.

The Boston Housing Authority has proposed to make all 64 of its public housing developments smoke-free by 2013.

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Under the proposal, about 27,000 residents in 12,000 units would be prohibited from smoking in common areas and their own apartments.