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## ARTICLES

## Tobacco-Smoke Exposure in Children Who Live in Multiunit Housing

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**OBJECTIVE** There is no safe level of secondhand tobacco-smoke exposure, and no previous studies have explored multiunit housing as a potential contributor to secondhand tobacco-smoke exposure in children. We hypothesized that children who live in apartments have higher cotinine levels than those who live in detached homes, when controlling for demographics.

**METHODS** We analyzed data from the 2001–2006 National Health and Nutrition Examination Survey. The housing types we included in our study were detached houses (including mobile homes), attached houses, and apartments. Our study subjects were children between the ages of 6 and 18 years. Cotinine levels were used to assess secondhand tobacco-smoke exposure, and those living with someone who smoked inside the home were excluded.  $\chi^2$  tests, *t* tests, and Tobit regression models were used in Stata. Sample weights accounted for the complex survey design.

**RESULTS** Of 5002 children in our study, 73% were exposed to secondhand tobacco smoke. Children living in apartments had an increase in cotinine of 45% over those living in detached houses. This increase was 212% ( $P < .01$ ) for white residents and 46% ( $P < .03$ ) for black residents, but there was no significant increase for those of other races/ethnicities. At every cutoff level of cotinine, children in apartments had higher rates of exposure. The exposure effect of housing type was most pronounced at lower levels of cotinine.

**CONCLUSIONS** Most children without known secondhand tobacco-smoke exposure inside the home still showed evidence of tobacco-smoke exposure. Children in apartments had higher mean cotinine levels than children in detached houses. Potential causes for this result could be seepage through walls or shared ventilation systems. Smoking bans in multiunit housing may reduce children's exposure to tobacco smoke.

**Key Words:** secondhand smoke • passive smoking • environmental tobacco smoke • multiunit housing • apartment

**Abbreviations:** NHANES = National Health and Nutrition Examination Survey

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