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Am J Prev Med. 2013 Jan;44(1):63-6. doi: 10.1016/j.amepre.2012.09.048.

Tobacco smoke exposure in a sample of Boston public housing residents.

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Abstract

BACKGROUND: There is no safe level of tobacco smoke exposure. Nonsmoking residents of public housing are at particular risk of suffering the health consequences of tobacco smoke exposure.

PURPOSE: To compare levels of tobacco smoke exposure among nonsmoking residents of the Boston Housing Authority (BHA) to previously published data from the National Health and Nutrition Examination Survey and identify factors associated with such exposure in the BHA.

METHODS: Nonsmoking adults and children from two BHA housing developments were invited to participate in a tobacco smoke exposure screening in which they completed a short survey and provided a saliva sample for cotinine analysis. Data were collected in 2011 and analyzed in 2012.

RESULTS: Of 51 eligible study participants, 88% (95% CI=76%, 95%) had detectable cotinine levels (0.15 ng/mL lower limit of detection) compared to at most 56% of residents nationally (using a more sensitive 0.05 ng/mL lower limit of detection). Geometric mean cotinine levels among study participants were 0.52 ng/mL (95% CI=0.37 ng/mL, 0.74 ng/mL) compared to at most 0.10 ng/mL nationally. Residents living in homes with strict no-smoking rules had lower cotinine levels than those without such rules (0.40 ng/mL vs 1.07 ng/mL, $p=0.006$).

CONCLUSIONS: Tobacco smoke exposure is substantially higher in this sample of nonsmoking BHA residents than among nonsmoking Americans nationally. A comprehensive prohibition on smoking in BHA housing units enacted in October 2012 will help protect this highly exposed group of residents and serve as a model for other housing authorities.

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