

Green public housing may reduce health risks from environmental pollutants

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Low-income housing residents who live in "green" buildings that are built with eco-friendly materials and energy-efficient features appear to have fewer "sick building" symptoms (SBS) than residents of traditionally constructed low-income housing, according to a new study led by researchers at Harvard T.H. Chan School of Public Health. Asthma outcomes—hospitalizations, attacks, and missed school days due to asthma—were also significantly lower for children living in the green buildings.

The study will be published online October 15, 2015 in the *American Journal of Public Health*.

"Green design incorporates many aspects that could reduce environmental exposures and improve health, such as the removal of pollution sources and the addition of exhaust ventilation," said lead author Meryl Colton, a researcher at Harvard Chan School when the study was done and now a medical student at the University of Colorado. "Our study is unique in that it is the first green housing study large enough to examine changes in some important outcomes such as children's asthma attacks and [hospital visits](#)."

The Harvard Chan researchers worked in collaboration with the Boston Housing Authority to gather data from residents in three BHA developments in 2012 and 2013. They completed surveys with more than 200 residents and conducted more than 400 home inspections, and returned for follow-up surveys and visits approximately one year after

the initial interaction. Half of the housing units included in the study had been built using green building standards and policies and the other half were conventionally constructed.

Results showed that adults living in green units reported 1.35 fewer SBS symptoms, including headaches, itchy eyes, and breathing problems, than those living in conventional homes. Asthmatic children living in green homes experienced substantially lower risk of asthma symptoms, asthmatic attacks, hospital visits, and asthma-related school absences than children living in conventional public housing. The researchers also found that the green homes were less likely to have inadequate ventilation, mold, secondhand smoke, pests, and combustion byproducts inside, all of which can contribute to negative health outcomes.

"These results represent more than just the effect of better buildings. They represent the Boston Housing Authority's commitment to improve conditions for their residents. Better buildings and better policies, such as better pest control practices and smoke-free policies, can effectively improve indoor environmental quality and improve health," said senior author Gary Adamkiewicz, assistant professor of environmental health and exposure disparities. "We're seeing the evidence that these approaches work in practice. We know that [housing](#) has a direct and meaningful effect on health. When you improve conditions, you can see the [health](#) benefits."

More information: "Health Benefits of Green Public Housing: Associations With Asthma Morbidity and Building-Related Symptoms," Meryl D. Colton, Jose Guillermo Cedeno Laurent, Piers MacNaughton, John Kane, Mae Bennett-Fripp, John Spengler, and Gary Adamkiewicz, *American Journal of Public Health*, online October 15, 2015, [DOI: 10.2105/AJPH.2015.302793](https://doi.org/10.2105/AJPH.2015.302793)

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