

Household Air Pollution and Child Health

Date: March 20, 2013

Time: 1:00-2:00 p.m. ET

Please register at: http://bit.ly/PEPH_HAPCH

(registration required)

Description: Air quality inside the home plays an important role in the respiratory health of children. Air pollutants such as particulate matter (PM), nitrogen dioxide, and carbon monoxide are just a few that researchers and public health professionals have identified as asthma triggers. Research has shown that PM levels can often be higher inside the home than outside and that Americans, especially children, are spending more time indoors. During the winter months, this fact is even more evident when families use a variety of heating sources to keep their homes warm. There is a need to understand better the potential health effects of these household air pollutants on children, as well as strategies for reducing exposures. This webinar highlights research focused on rural communities in Montana, as well as urban communities in Baltimore, Maryland. The presenters will highlight their efforts to reduce the exposures of household air pollution in order to improve children's respiratory health.

"Biomass Combustion: An Important Source of Indoor PM_{2.5} in Rural Communities"

Tony Ward, Ph.D., and Curtis Noonan, Ph.D., University of Montana



Tony Ward, Ph.D.

Biomass combustion exposures occur in a variety of settings throughout the world. In the United States, wood stoves are a common source of residential heating in many rural and Native American communities. Even in these more rural settings, ambient concentrations of fine particulate matter (PM_{2.5}) due to wood stove emissions have been frequently shown to exceed current health-based air quality standards. A small community in the Northern Rocky Mountain region of the United States recently completed a community-wide program, replacing over 1,100 older model wood stoves with newer technology stoves. This wood stove changeout resulted in a 27% reduction in ambient levels of winter PM_{2.5}, with corresponding reductions in the reporting of childhood respiratory symptoms and infections. Reductions in indoor PM_{2.5} were also observed, but results were more variable. In addition to results from wood stove changeout studies, the presenters will also discuss the pros and cons of using air filtration units in wood burning homes to reduce indoor PM_{2.5}.



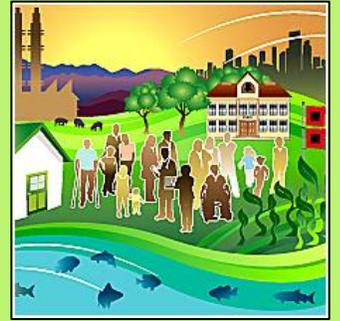
Curtis Noonan, Ph.D.

"Home Interventions to Improve Indoor Air Quality and Asthma Health in an Inner City Environment" – Nadia Hansel, M.D., Johns Hopkins University



Particulate matter (PM) concentrations are high in the inner city, and high PM concentrations are linked to worse asthma outcomes in children. HEPA air cleaners placed in children's homes may reduce PM concentrations by 30-50% and may modestly reduce symptoms. In addition, nitrogen dioxide (NO₂) concentrations in inner city homes are quite high and are also independently associated with worse asthma health in children. NO₂ concentrations may be reduced by replacement of gas stoves with electric stoves and placement of

HEPA and carbon filter air cleaners in homes. However, reductions are likely modest, implementation on a broad scale would need to include assessment of housing structure in the community, and the effect of NO₂ reduction on asthma symptoms remains essentially unknown.



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PEPH Webinar Series

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If you have any questions about this webinar or future webinars, please contact Liam O'Fallon (ofallon@niehs.nih.gov, 919-541-7733).

Individuals with disabilities who need accommodation to participate in this event should contact Liam O'Fallon (ofallon@niehs.nih.gov, 919-541-7733). TTY users should contact the Federal TTY Relay Service at 800-877-8339. Requests should be made at least 5 business days in advance of the event.

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