

# Indoor Environment CONNECTIONS™

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## Study Says Filters Reduce Cardiovascular Problems

by Tom Scarlett

A new study has found that using air filters reduces the risk of cardiovascular disease caused by air pollution.

The investigation, published January 24 in the Journal of the American Thoracic Society's American Journal of Respiratory and Critical Care Medicine, studied adults living in a small community in British Columbia, where wood burning stoves are the main sources of pollution.

It found that high efficiency particle air (HEPA) filters reduced the amount of airborne particulate matter, resulting in improved blood vessel health and reductions in blood markers that are associated with an increased risk of cardiovascular disease. The researchers recruited 45 adults from 25 homes.

Alan Veeck, executive director of the National Air Filtration Association (NAFA), said the study confirmed what previous research has shown.

The researchers "know a lot about when the air gets dirty outside, and the admissions to emergency rooms based on asthma and cardiovascular problems increase."

NAFA's Tech Seminar this April in Dallas will be featuring a keynote address by a leading researcher on the topic "Cardiovas-

cular Effects of Inhaled Particles."

In the study, each participant's home was monitored for two consecutive seven-day periods, during which time a HEPA filter (Honeywell model 50300) was operated in the main activity room and a quieter HEPA filter (Honeywell 18150) was operated in the participant's bedroom.

HEPA filters were operated normally during one seven-day period and without the internal filters in place during the other period.

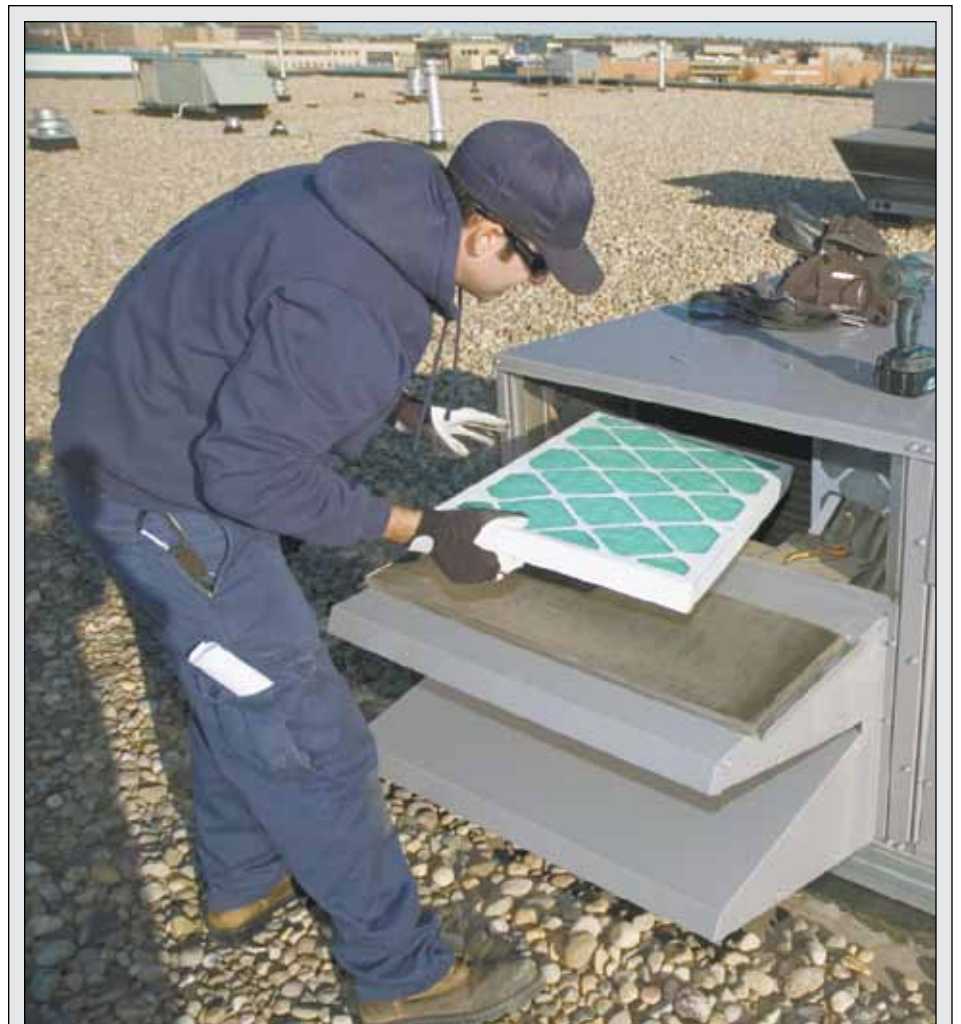
The order of filtration or non-filtration was random and participants did not know during which period the air was being filtered. Indoor pollution sampling equipment was placed in each home's main activity room.

Participants were asked to record their activities, locations and proximity to pollution sources every 60 minutes. Of the 25 homes enrolled in the study, 13 had woodstoves in use during the study period.

At the end of each seven-day period blood and urine samples were collected from each participant and markers of cellular injury, as well as the body's response to that injury, were measured.

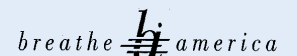
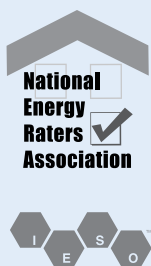
Endothelial function also was evaluated using a fingertip device to evaluate blood

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According to the American Journal of Respiratory and Critical Care Medicine, replacing inefficient HVAC filters like the one shown in this photo with HEPA filters results in improved blood vessel health and reduced risk of cardiovascular disease.

### In partnership with these organizations:



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# In 2013, RESNET to Join ACCA, IAQA, RPA at Expo

The Air Conditioning Contractors of America (ACCA), the Indoor Air Quality Association (IAQA), and the Radiant Professionals Alliance (RPA) will hold their combined 2011 Indoor Air Expo in San Antonio, Texas from February 15-17.

Work has already begun on future events, and this week the three associations announced that, in 2013, they will be joined by the Residential Energy Services Network (RESNET) as the fourth co-sponsor of a joint expo for the indoor environmental and energy services industry.

“RESNET is excited about co-locating our national RESNET Building Performance Conference with ACCA, IAQA, and RPA in 2013,” say Steve Baden, executive director of RESNET. “The co-located conferences and trade show creates a strategic partnership and gives ACCA, IAQA, RPA, and RESNET members the platform to create partnerships at the local level.”

RESNET is a not-for-profit membership corporation and national standards-making body for building energy efficiency rating systems. RESNET’s mission is to improve the energy efficiency of the nation’s housing stock and to qualify more families for home ownership, by expanding the national availability of mortgage financing options and home energy ratings.

“This is another step in creating the most comprehensive marketplace experience in the

home and building services industry,” says Paul T. Stalknecht, ACCA president and CEO.

“We are glad to have partners like IAQA, RPA, and now RESNET, who realize that coming together offers terrific learning and sharing opportunities for HVACR contractors, IAQ professionals, radiant professionals, and energy raters – indeed, for everyone who provides homeowners and building managers with comfort, health, and energy efficiency.”

“RESNET is a natural fit for the expo, and a great new partner for ACCA, IAQA, and RPA,” adds Glenn Fellman, executive director of IAQA. “Our members are often involved in energy audits and associated green building and home initiatives. Bringing all of our members together to share knowledge and experiences is a win-win for everyone.”

According to Ted Lowe, RPA Executive Director, “RPA looks forward to RESNET joining our collective EXPO as a natural extension of the HVAC worlds’ dedication to improving the living environment through energy efficiency. The logical integration of their standards with our contractors and systems can only lead to better options for North American buildings and their occupants.”

The 2012 expo, sponsored by ACCA, IAQA and RPA, will be held March 5-7, 2012 in Las

Vegas, Nevada. RESNET will join the partnership in 2013.

The Air Conditioning Contractors of America (ACCA) is a non-profit association serving more than 60,000 professionals and 4,000 businesses in the HVACR community, who work together to promote professional contracting, energy efficiency, and healthy, comfortable indoor environments for all Americans. For more information, visit [www.acca.org](http://www.acca.org).

The Indoor Air Quality Association (IAQA) is a nonprofit, multi-disciplined organization, dedicated to promoting the exchange of indoor environmental information, through education and research, for the safety and well being of the general public. For more information, visit [www.iaqa.org](http://www.iaqa.org).

The Radiant Professionals Alliance (RPA), founded in 1994, is an international non-profit trade organization representing the radiant and hydronic comfort industries with standards and programs for installation, education, public awareness, and events. For more information, visit [www.radiantpanelassociation.org](http://www.radiantpanelassociation.org).

Residential Energy Services Network (RESNET) is a not-for-profit membership corporation and standards-making body for building energy efficiency rating systems. For more information, visit [www.resnet.us](http://www.resnet.us).

## Filters, *from page 1*

volume in small blood vessels, and air samples were collected and analyzed.

After analyzing their data, the researchers found portable HEPA filters reduced the average concentrations of fine particulates inside homes by 60 pc and wood smoke by 75 pc, and their use was associated with improved endothelial function (a 9.4 pc increase in reactive hyperemia index) and decreased inflammation (a 32.6 pc decrease in C-reactive protein).

“Our results support the hypothesis that systemic inflammation and impaired endothelial function, both predictors of cardiovascular morbidity, can be favorably influenced by a reduction of particle concentration and add to a growing body of evidence linking short-term exposure to particulate matter with a systemic inflammatory response,” said the lead researcher on the study, Ryan Allen of Simon Fraser University, in British Columbia.

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