

Topics Conditions

Latest news Week's top Unread news

search

Home Health June 3, 2015

Air pollution below EPA standards linked with higher death rates

A new study by researchers at Harvard T.H. Chan School of Public Health found that death rates among people over 65 are higher in zip codes with more fine particulate air pollution (PM2.5) than in those with lower levels of PM2.5. It is the first study to examine the effect of soot particles in the air in the entire population of a region, including rural areas. The harmful effects from the particles were observed even in areas where concentrations were less than a third of the current standard set by the Environmental Protection Agency (EPA).

"Most of the country is either meeting the EPA standards now, or is expected to meet them in a few years as new power plant controls kick in," said senior author Joel Schwartz, professor of environmental epidemiology. "This study shows that it is not enough. We need to go after coal plants that still aren't using scrubbers to clean their emissions, as well as other sources of particles like traffic and wood smoke."

The study appears online June 3, 2015 in *Environmental Health Perspectives*.

Previous studies have linked both short- and long-term exposure to PM2.5 with increased mortality, through mechanisms such as heart disorders, increased blood pressure, and reduced lung function.

The researchers used satellite data to determine particle levels and temperatures in every zip code in New England. This allowed them to examine the effects of PM2.5 on locations far from monitoring stations, and to look at the effects of short-term exposures and annual average exposures simultaneously. They analyzed health data from everyone covered by Medicare in New England - 2.4 million people - between 2003 and 2008 and followed them each year until they died.

They found that both short- and long-term PM2.5 exposure was significantly associated with higher death rates, even when restricted to zip codes and times with annual exposures below EPA standards. Short-term (two-day) exposure led to a 2.14% increase in mortality per 10 µg/m3 increase in PM2.5 concentration, and long-term (one-year) exposure led to a 7.52% increase in mortality for each 10 µg/m3 increase.

"Particulate air pollution is like lead pollution, there is no evidence of a safe threshold even at levels far below current standards, including in the rural areas we investigated," said Schwartz. "We need to focus on strategies that lower exposure everywhere and all the time, and not just in locations or on days with high particulate levels."

Explore further: Contaminant particles increase hospital admissions for children with respiratory illnesses

More information: "Low-Concentration PM2.5 and Mortality: Estimating Acute and Chronic Effects in a Population-Based Study," Lihua Shi, Antonella Zanobetti, Itai Kloog, Brent A. Coull, Petros Koutrakis, Steven J. Melly, and Joel D. Schwartz, *Environmental Health Perspectives*, online June 3, 2015, DOI: 10.1289/ehp.1409111

Journal reference: Environmental Health Perspectives

13 shares

Provided by Harvard School of Public Health

feedback to editors

0 12
 +1 Tweet
 submit
 reddit Favorites Email Print PDF



Featured

Most popular

Most shared

Developing delirium in the ICU linked to fatal outcomes Jun 04, 2015 0



Academic struggles more common in children with epilepsy who have brain surgery Jun 02, 2015 0



Eyes sealed shut: Seamless closure of surgical incisions Jun 02, 2015 0



Concerns remain for 'Viagra for women' twice rejected by FDA Jun 02, 2015 0



New color blindness cause identified Jun 02, 2015 0

Medical Xpress on facebook

MedicalXpress.com

+1

+ 6,991



8 Famous Lesbians Who Were Married To Men
MadameNoire



#1 Worst Exercise That Ages You Faster
MAX Workouts Fitness Guide



84 Year Old Women Wins Largest Jackpot Ever of \$590.5 Million !!
Lottosend



3 Things That Golf Pros Know That Amateurs Don't
Hank Haney University

Sponsored Links by Taboola

Related Stories

Long-term exposure to air pollution increases risk of hospitalization for lung, heart disease Apr 17, 2012

Older adults may be at increased risk of being hospitalized for lung and heart disease, stroke, and diabetes following long-term exposure to fine-particle air pollution, according to a new study by researchers at Harvard ...

Long term exposure to air pollution linked to coronary events

Jan 21, 2014

Long term exposure to particulate matter in outdoor air is strongly linked to heart attacks and angina, and this association persists at levels of exposure below the current European limits, suggests research conducted at ...

Contaminant particles increase hospital admissions for children with respiratory illnesses Jun 01, 2015

Particles of less than 2.5 microns emitted by vehicles have negative

Recommended for you

Nestle pulls Maggi noodles after India safety scare 50 minutes ago

Nestle said Friday it was withdrawing its Maggi instant noodles from sale in India after a scare over excess lead content that has seen the hugely popular snack burnt on the streets and temporarily banned in several states.

Women's contribution to healthcare constitutes nearly five percent of global GDP, but nearly half unpaid, unrecognized 8 hours ago

A major new Commission on women and health has found that women are contributing around \$3 trillion to global health care, but nearly half of this (2.35% of global GDP) is unpaid and unrecognized.

Healthy teens exhibit exercise-induced bronchoconstriction 14 hours ago

(HealthDay)—Healthy adolescents may have exercise-induced



User comments

Please sign in to add a comment. Registration is free, and takes less than a minute. Read more

[Click here to reset your password.](#)

[Sign in to get notified via email when new comments are made.](#)

- top
- Home
- Search
- Mobile version
- Help
- About us
- FAQ
- ontact
- Science X Account
- Sponsored Account
- Newsletter
- RSS feeds
- Cancer / Oncology
- HIV & AIDS news
- Immunology news
- Genetics news
- Connect