

# Millions of premature deaths tied to air pollution

September 18 2015

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(HealthDay)—Outdoor air pollution leads to more than 3 million premature deaths per year, primarily in Asia, according to a letter published online Sept. 16 in *Nature*.

Johannes Lelieveld, Ph.D., from the Max Planck Institute for Chemistry in Germany, and colleagues used a global atmospheric chemistry model to investigate the link between premature mortality and seven emission source categories in urban and rural environments. The researchers found that outdoor [air pollution](#), mostly by fine [particulate matter](#) with a diameter smaller than 2.5 micrometers (PM<sub>2.5</sub>), leads to 3.3 million [premature deaths](#) per year worldwide, predominantly in Asia. The largest impact on [premature mortality](#) globally comes from residential energy use such as heating and cooking, prevalent in India and China. In the

United States, emissions from traffic and power generation are important. Agricultural emissions make the largest relative contribution to PM<sub>2.5</sub> in the eastern United States, Europe, Russia, and East Asia, with the estimate of overall health impact depending on assumptions regarding particle toxicity.

In a related study published online Sept. 16 in *Nature Geoscience*, Carly Reddington, Ph.D., from the University of Leeds in the United Kingdom, and colleagues used a global aerosol model to show that reductions in fires associated with deforestation in the Brazilian Amazon (2001 to 2012) have caused mean surface particulate matter concentrations to decline by about 30 percent in the dry season.

"We estimate that this reduction in particulate matter may be preventing roughly 400 to 1,700 premature adult deaths annually across South America. "

**More information:** [Abstract-Lelieveld](#)  
[Full Text \(subscription or payment may be required\)](#)  
[Abstract-Reddington](#)  
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