

## **PARTICLE POLLUTION AND HEALTH**

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On June 14, 2012, U.S. Environmental Protection Agency (EPA) [proposed to strengthen](#) the nation's air quality standards for fine particle pollution (particulate matter) to improve public health and visibility. Exposure to particle pollution causes premature death and is linked to a variety of significant health problems. Particle pollution also harms public welfare, including causing haze in cities and some of our nation's most treasured national parks.

EPA has issued a number of rules that will help states meet the proposed revised standards by making significant strides toward reducing fine particle pollution.

### **THOUSANDS OF STUDIES SHOW PARTICLE POLLUTION HARMS HEALTH**

An extensive body of scientific evidence indicates that long- and short-term exposures to PM<sub>2.5</sub> cause premature death and adverse cardiovascular effects, including increased hospitalizations and emergency department visits for heart attacks and strokes. The evidence also links PM<sub>2.5</sub> exposure to harmful respiratory effects.

- Health effects caused by ***long-term exposure to fine particles (PM<sub>2.5</sub>)***, which is based on an annual standard, include:
  - Premature death, especially related to heart disease
  - Cardiovascular effects, such as heart attacks and strokes
- Long-term exposure to fine particles also is linked to reduced lung development as well as the development of chronic respiratory diseases, such as asthma, in children
  - Some studies also suggest that long-term PM<sub>2.5</sub> exposures may be linked to cancer and to harmful developmental and reproductive effects, such as infant mortality and low birth weight.
- Health effects caused by ***short-term exposure to fine particles (PM<sub>2.5</sub>)***, which is based on a daily standard, include:
  - Premature death, especially death related to heart and lung diseases
  - Increased hospital admissions and emergency department visits for cardiovascular effects, such as non-fatal heart attacks and strokes.
- Short-term PM<sub>2.5</sub> exposures also are linked to increased hospital admissions and emergency department visits for respiratory effects, such as asthma attacks, as well as increased respiratory symptoms, such as coughing, wheezing and shortness of breath. In addition, short-term PM<sub>2.5</sub> exposures are linked to reduced lung function, especially in children and people with lung diseases, such as asthma.

- ***Short-term exposure to coarse particles*** is linked to premature death and hospital admissions and emergency department visits for heart and lung disease.
- People most at risk from fine and coarse particle pollution exposure include people with heart or lung disease (including asthma), older adults, children, and people of lower socioeconomic status. Research indicates that pregnant women, newborns, and people with certain health conditions, such as obesity or diabetes, also may be more susceptible to PM-related effects.

#### **MORE INFORMATION**

- To read the proposed standards and additional summaries, visit <http://www.epa.gov/airquality/particlepollution/actions.html>
- For more information on the science on PM and health, see the [Integrated Science Assessment](#) prepared for this review of the PM Standards at <http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=216546>
- For [risk and exposure assessments](#), visit [http://www.epa.gov/ttn/naaqs/standards/pm/s\\_pm\\_2007\\_risk.html](http://www.epa.gov/ttn/naaqs/standards/pm/s_pm_2007_risk.html)