High Hourly Air Pollution Levels More Than Double Stroke Risk

**ScienceDaily** (Sep. 22, 2006) — High hourly levels of air pollution, more than double the risk of one type of stroke, suggests research published ahead of print in Occupational and Environmental Medicine.

Currently, the risk of respiratory and cardiovascular problems tends to be linked to the average daily amount of air pollution, rather than variations in hourly levels. The researchers assessed data on stroke deaths in people aged 65 years and older, occurring between January 1990 and December 1994 in 13 major urban areas in Japan.

Levels of air pollutants, including nitrogen dioxide, particulate matter, and photochemical oxidants, were monitored hourly at various sites in each of the 13 areas. When the two sets of data were put together, a pattern emerged for intracerebral haemorrhage - where a blood vessel bursts inside the brain - for the warmer months between April and September.

This showed that high hourly rates of particulate matter (in excess of 200 ug/m3) around two hours before death were more than double the risk of one type of stroke, ranging from 14.4% to 41.4%.

The findings held true, irrespective of the average daily level of air pollutants.

No such effect was found for ischaemic stroke, where the arteries in the brain become furred up and narrowed as a result of fatty deposits. This is possibly because the time lag between the start of this type of stroke and death is rather longer than that for a bleed into the brain.

Pervious research shows that the effects of air pollution act quickly on the body, say the authors, with inhaled particles detectable in the blood within 60 minutes. Peak levels can stay in the blood for up to an hour.

Their findings prompt the authors to suggest that preventative measures should be based on average hourly measures rather than just average daily measures alone.

**Related Stories**

- **Air Pollution May Increase Risk Of Appendicitis** (Oct. 7, 2008) — Could there be a link between high levels of air pollution and the risk of appendicitis? New research suggests a novel ...
- **Traffic Exhaust Can Cause Asthma, Allergies And Impaired Respiratory Function In Children** (Apr. 10, 2006) — Children exposed to high levels of air pollution during their first year of life run a greater risk of developing asthma, pollen allergies, and impaired respiratory function. However, genetic factors ...
- **Air Pollution Linked To Early Death** (Aug. 1, 2007) — Even comparatively low levels of air pollution boost the chances of an early death, suggests new research. Black smoke and sulphur dioxide were strongly linked to the chances of an early death, the ...
- **Air Pollution Shrinks Fetus Size, Study Suggests** (Jan. 10, 2008) — Exposure to air pollution significantly reduces fetus size during pregnancy, according to a new study. While some people may think there is no air pollution because the air looks clean, most air ...

**Just In:**

- **'Globetrotting' New Worms Discovered**
- **Tracking Pollution From Space**

**Science Video News**

- **Engineers processed data from NASA's Aura satellite in order to track and predict the movement of airborne pollution. Using satellite data to measure. ...**
- **Atmospheric Scientists And Engineers Demonstrate Amount Of Pollution In U.S. Originating Overseas**
- **Atmospheric Chemists Show Morning Fog Captures Particulate Matter**
- **Environmental Engineers Link Contamination Levels to Tides**

**Breaking News**

- **Scientists say UK risks losing innovation edge**
- **Big Bang experiment may reveal dark universe: CERN**
- **Scientists find why "sunshine" vitamin D is crucial**
- **Obama to push White House vision for NASA in April**
- **Methane bubbles in Arctic seas stir warming fears**
- **more science news**

**In Other News ...**

- **Toyota says no flaw found with safety electronics**
- **Obama targets insurers, sells reform plan**
- **New poll spells potential trouble for Democrats**
- **Villagers bury their dead after Nigeria...**

**Need to cite this story?**

Adapted from materials provided by BMJ Specialty Journals, via EurekAlert, a service of AAAS.