

NEW SECTION: News about the Environment

## Air Pollution Linked to Blood Clots in Legs

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MONDAY, May 12 (HealthDay News) -- Long-term exposure to the tiny, dirty particles in polluted air seems to increase the risk of deep vein thrombosis, which are blood clots in the thighs or legs, an Italian study finds.

"It is well-established that air pollution causes myocardial infarction [heart attack] and stroke," said Dr. Andrea Baccarelli, who led the study while at the Harvard School of Public Health. "This is the first time that anyone has connected air pollution with deep vein thrombosis."

Previous studies have suggested such a connection, said Baccarelli, who is now an assistant professor of environmental health at the University of Milan. "Several studies in animal models and in humans have shown that particulate matter, inhaled into the lungs, causes inflammation in the lungs," he said. "The inflammation can expand the cell body, so that the incidence of coagulation is increased."

Coagulation is the formation of clots that can block blood vessels. Baccarelli and his colleagues assessed the effect of air polluted with particulate matter smaller than 10 micrometers in diameter -- about one-40th the width of a human hair. Such particles come from the exhaust of vehicles, especially those with diesel engines, and burning of fossil fuels, the researchers said.

The scientists compared the exposure to such pollution on 870 residents of the Lombardy region of Italy who had been diagnosed with deep vein thrombosis, and 1,210 residents who did not have

deep vein thrombosis. The researchers used the average concentration of particulate matter measured by monitors at 53 sites.

Compensating for other environmental and health factors, the researchers found that the risk of deep vein thrombosis increased by 70 percent for every increase in particulate matter of 10 micrograms per square meter. Tests showed that the blood of people more exposed to such pollution took less time to form clots.

"This makes a very strong case that air pollution is connected to deep vein thrombosis," said Dr. Robert D. Brook, an assistant professor of internal medicine at the University of Michigan, who wrote an accompanying editorial in the journal. "But it is a first study and a single study," he added, "and I would be cautious about making generalizations and drawing conclusions on the basis of one study." Still, "the results are very positive," Brook said. "Even if they are overestimating the effect, the effect, which is relatively so robust, is there. But how strong it is requires further studies."

"If future studies corroborate their findings and address some of the limitations, it may be proven that the actual totality of the health burden posed by air pollution, already known to be tremendous, may be even greater than anticipated," Brook said.

Baccarelli agreed with Brook's assessment, saying, "clearly the finding needs to be confirmed in additional studies."

"We are working on that," he said. "We are seeking additional populations in which the same link between air pollution and deep vein thrombosis can be evaluated. We also hope that some of our colleagues elsewhere will be pushed to conduct other studies."

The findings are published in the May 12 issue of the Archives of Internal Medicine.