



National Study Finds Strong Link Between Diabetes and Air Pollution

A national epidemiologic study finds a strong, consistent correlation between adult diabetes and particulate air pollution that persists after adjustment for other risk factors like obesity and ethnicity, report researchers from Children's Hospital Boston. The relationship was seen even at exposure levels below the current EPA safety limit. The report is among the first large-scale population-based studies to link diabetes prevalence with air pollution. The study focused on fine particulates of 0.1-2.5 nanometers in size (known as PM2.5), a main component of haze, smoke and motor vehicle exhaust. The investigators obtained county-by-county data on PM2.5 pollution from the EPA, covering every county in the contiguous United States for 2004 and 2005. They then combined the EPA data with data from the CDC and the U.S. Census to ascertain the prevalence of adult diabetes and to adjust for known diabetes risk factors, including obesity, exercise, geographic latitude, ethnicity and population density.

The study found that:

- There was a strong and consistent association between diabetes prevalence and PM2.5 concentrations.
- For every 10 microgram per cubic meter increase in PM2.5 exposure, there was a 1 percent increase in diabetes prevalence. This finding was seen in both 2004 and 2005, and remained consistent and significant when differing estimates of PM2.5 exposure were used.
- Even among counties falling within EPA limits for exposure, those with highest versus the lowest levels of PM2.5 pollution had a more than 20 percent increase in diabetes prevalence, which remained after controlling for diabetes risk factors.

"From a policy perspective, the findings suggest that the current EPA limits on exposure may not be adequate to prevent negative public health outcomes from particulate matter exposure," said one researcher. Based on their findings, the researchers call for more study of environmental factors in diabetes, including basic research on the inflammatory mechanisms in diabetes and the role of PM2.5.

Source: Children's Hospital Boston, September 29, 2010
<http://www.childrenshospital.org/newsroom/Site1339/...>