

Study finds air pollution linked to diabetes and hypertension in African-American women

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(Boston) -The incidence of type 2 diabetes and hypertension increases with cumulative levels of exposure to nitrogen oxides, according to a new study led by researchers from the Slone Epidemiology Center (SEC) at Boston University. The study, which appears online in the journal *Circulation*, was led by Patricia Coogan, D.Sc., associate professor of epidemiology at the Boston University School of Public Health and the SEC.

While it is well established that [air pollution](#) increases the risks of acute cardiovascular events such as stroke and [myocardial infarction](#), it is not known whether exposure increases the risk of [chronic diseases](#) like diabetes and hypertension. However, emerging findings from laboratory and clinical studies suggest that air pollution may predispose to both conditions.

Researchers assessed the risks of incident hypertension and diabetes associated with exposure to [nitrogen oxides](#) (NO_x) and particulate matter (PM_{2.5}) in a cohort of approximately 4,000 African American women living in Los Angeles. NO_x are indicators of traffic-related air pollution. From 1995-2005, 531 incident cases of hypertension and 183 incident cases of diabetes occurred among the participants in the Los Angeles area. The risk of diabetes increased by a significant 24 percent, and the risk of hypertension by 11 percent, for each 12 ppb increase in exposure to NO_x. There also were suggestive increases in risks of both diseases

associated with exposure to (PM_{2.5}), but the evidence for this was weaker than for NO_x.

According to the researchers, two previous follow-up studies have suggested that traffic-related pollution increased the incidence of diabetes, but no African Americans were included. "A link between air pollution and the risks of diabetes and hypertension is of particular importance to African American women, because the incidence of both conditions is almost twice as high in [African American women](#) as in white women and African Americans live in more highly polluted areas than white Americans," said Patricia Coogan, D.Sc., the study's lead author. "In addition, even a modest effect of air pollutants on the risks of hypertension and diabetes will have significant public health impact due to the high incidence of these conditions and the ubiquity of exposure to air pollution," she added.

Provided by Boston University Medical Center

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