

Study finds link between hypertension and air pollution

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A new study soon to appear in the *Journal of Public Health* suggests that air pollution and living in apartment buildings may be associated with an increased risk for dangerous conditions like heart disease, stroke, and type 2 diabetes.

Cardiovascular diseases are a leading cause of death in developing countries. Hypertension and metabolic syndrome are important causes of cardiovascular diseases. Metabolic syndrome is further associated with abdominal obesity, elevated blood pressure, and higher blood glucose levels. These conditions are associated with a [higher risk](#) for various health problems. The causes of these disorders are complex and are related to [genetic factors](#), lifestyle, diet, and environmental factors including traffic air pollution, traffic noise, residential housing, and neighborhood quality.

Researchers here investigated the associations between a long-term exposure to ambient air pollution and residential distance to green spaces and major roads with the development of

[hypertension](#) and some components of metabolic syndrome. These associations were assessed among people living in private houses or multi-story houses in Kaunas City, a city of 280,000 and the second largest city of Lithuania.

In the present study, researchers investigated the association between a long-term exposure to ambient air [pollution](#) and the residential distance to green spaces and major roads with the development of hypertension and some components of [metabolic syndrome](#). These components included: a high triglyceride level, reduced high-density lipoprotein cholesterol, higher blood glucose, and obesity. The associations were assessed among people who lived in either private or multifamily houses.

The results indicate that [air pollution](#) levels above the median are associated with a higher risk of reduced high density lipoprotein. Traffic-related exposure was associated with the incidence of hypertension, higher triglyceride level and reduced high-density lipoprotein cholesterol. However, the negative impact of traffic air pollutants was observed only in the participants who lived in multifamily buildings.

Since there is more traffic near the multifamily [apartment buildings](#), this may be associated with the incidence of hypertension as well. In addition, a built-up environment, high residential density, street traffic and its configurations are further factors associated with social interactions and supportive relationships, which could also impact cardiovascular health.

The greenness, size, and type (activity) of the available open public spaces were observed to be inversely related to the risk factors assessed. Investigators have additionally found positive effects of the natural environment, and have emphasized the positive impact of such spaces on cardiovascular health.

"Our research results enable us to say that we should regulate as much as possible the living space for one person in multifamily houses, improve the noise insulation of apartments, and promote the development of [green spaces](#) in multifamily houses" said the study's lead author, Agn Brazien.

More information: "Association between the living environment and the risk of arterial hypertension and other components of metabolic syndrome" *Journal of Public Health* (2019).

Provided by Oxford University Press

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