

# Ultrafine particles linked to deaths: Canada study

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Air pollution caused by "ultrafine particles," emitted by automobiles and industrial activity, has been linked to 1,100 deaths a year in Montreal and Toronto, according to new Canadian research.

So-called UFPs—1,000 times thinner than a strand of hair—have been found to cause [cardiovascular disease](#) and have been linked to cancer in adults, while exposure can increase the rate of low birth weight babies.

The research, published earlier this week in the *American Journal of Respiratory and Critical Care Medicine*, was the first of its kind in Canada.

"Ultrafine particles are incredibly small, allowing them to penetrate deep into the lungs and enter the bloodstream," Scott Weichenthal, the study's lead investigator and a professor at McGill University, told AFP.

Researchers measured air pollution levels in Toronto and Montreal in neighborhoods home to a total of 1.5 million adult residents, between 2001 and 2016.

The study found long-term exposure to UFPs correlated with a seven percent increase in the risk of non-accidental deaths.

Areas situated close to major roadways, airports and rail yards in particular had high concentrations of UFPs, the study found, lining up with findings reached by researchers in Europe.

"Our [research](#) shows a clear link between long-term UFP exposures and increased mortality risk, underscoring the urgent need for regulatory actions targeting these particles," Weichenthal said.

UFP emissions are unregulated by air pollution rules, unlike larger "particulate matter," whose dangerous effects on health are better understood.

**More information:** Marshall Lloyd et al, Airborne Nanoparticle Concentrations Are Associated with Increased Mortality Risk in

Canada's Two Largest Cities, *American Journal of Respiratory and Critical Care Medicine* (2024). [DOI: 10.1164/rccm.202311-2013OC](https://doi.org/10.1164/rccm.202311-2013OC)

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