

Dirty air in arenas could pose health risk: CBC investigation

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[CBC News](#)

The polluted air inside some Canadian hockey arenas could be putting people at risk, a CBC News investigation reveals.

The report found the exhaust that routinely streams out of ice resurfacing machines in skating arenas is to blame for high levels of tiny particles, which experts say are having an effect on people who skate in rinks.

"It's quite serious. I think you'll find a large number of arenas have high levels of ultrafine particles," said Kenneth Rundell, who runs the human performance lab at Marywood University in Scranton, Pa.

Pollutant particulates that have a diameter of less than 0.1 microns are defined as "ultrafine particles" — particles so small they can easily deposit deeply into the lungs, agitating asthma and some cardiovascular illnesses. Lung cancer and heart disease are commonly known as diseases related to high exposure of ultrafine particles that can be inhaled.

With Rundell's help, the CBC tested 42 arenas in Halifax, Sudbury, Winnipeg, Edmonton and Vancouver. Of those rinks, 24 per cent tested higher than 60,000 particles of pollution per cubic centimetre — a level that Rundell said decreases lung capacity.



Ice resurfacing machines in skating arenas release high levels of tiny particles into the air. (CBC)

TOP 10 POLLUTED ARENAS

1. West Kildonan, Winnipeg
2. Canlan Burnaby 8 Gold, Vancouver
3. Chelmsford, Sudbury
4. Canlan North Shore Red, Vancouver
5. Notre Dame, Winnipeg
6. Westwood, Edmonton
7. Spryfield, Halifax
8. Countryside, Sudbury
9. Canlan Burnaby 8 Green, Vancouver
10. Canlan Burnaby 8 Public, Vancouver

Rating based on maximum count of ultrafine pollution particles per cubic centimetre during CBC spot checks.

What's more, 14 per cent also tested higher than 100,000 particles of pollution per cubic centimetre, roughly the equivalent of the air quality that might be experienced standing next to Toronto's Highway 401, the busiest road in the country.

In some of the arenas tested, the CBC found that ice resurfacing machines spewing the microscopic pieces of toxic dust operated once every hour. An arena in Winnipeg peaked at 250,000 particles of pollution per cubic centimetre.

Rundell believes pollution in arenas is damaging the lungs of hockey players and figure skaters.

"We found the ice-rink athletes, all the skating athletes, the figure skaters, the short track speed skaters and the hockey players had a higher prevalence of exercise induced asthma ... and their lung function was chronically low," he said.

Curbs for children suggested

Rundell advised limiting the time young people spend in arenas if they're filled with hundreds of millions of ultrafine particles.

Jeff Brook, the senior research scientist with Environment Canada, is among dozens of scientists around the world beginning to study how ultrafine particle pollution is affecting health.

"We really should be trying to make attempts to minimize kids' exposure to ultrafine particles while waiting for more info to come in on their impacts," he said.

At the Notre Dame arena in Winnipeg, which had one of the 10 highest particulate counts in CBC's spot checks, parents of young hockey players were surprised to learn of the potential health risk.

"People should be aware what they're breathing in," said Sandy Manness, whose son plays regularly in the arena. "I mean, they're cutting smoking, and that's bad for your health too. So if they're doing that, then why aren't they taking more consideration of the younger kids?"

"There should be something done," agreed Jeff Reit, whose son also plays hockey at Notre Dame.

"It's not something that's just a matter of fact of playing hockey, that you're going to have this amount of pollution. If there's that much just in this arena, then they should be doing something about it."

Improving ventilation systems in buildings or installing vents nearer to the ice rather than in the roof could help clear the air indoors.

Another, more costly solution is to start using ice resurfacing machines powered by electricity to eliminate the use of fossil fuels. But those kinds of machines are not likely to become commonplace, as they might run into the six figures.