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Bad air causing cardiac disease, experts say

Persistent exposure may be causing cardiac diseases in those with no other risk factors

The Toronto Star
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Joseph Hall - Health Reporter

There is growing evidence that chronic exposure to air pollution levels common in places such as Toronto may be causing heart disease in otherwise healthy people, a top cardiac researcher said yesterday.

While the harmful effects of air pollution on people with pre-existing heart conditions has been well documented, persistent exposure to bad air may be causing cardiac diseases in those with no other risk factors, University of Michigan cardiologist Robert Brook says.

Brook, one of the first researchers to link air pollution with cardiac deaths, was speaking after a Canadian Heart and Stroke Foundation news conference in Toronto, during which the group gave Ontario a failing grade in a new report card on pollution and heart health.

Ontario joined Quebec and parts of the British Columbia interior as the three areas in Canada where fine particle pollution periodically exceeded acceptable air quality levels over a three-year period.

Air pollution, especially fine particulate exhaust from factories and cars, is believed to cause some 6,000 deaths in Canada each year, with about 70 per cent of those linked to existing cardiovascular diseases.

But Brook, who spoke as a pollution expert at the conference, said there is growing evidence dirty air may be having long-term heart effects on young, fit people.

"There are studies ... that show that there may be a cumulative long-term effect of being exposed over a lifetime or over many years," he said in an interview.

Indeed, one major study of women in several American cities published last year showed pollution may increase the risk of heart disease in healthy people by as much as 76 per cent, Brook says.

He says animal studies have also shown that exposure to pollution can cause hardening of the arteries, high blood pressure and diabetes, all of which are risk factors for heart disease and stroke.

As well, Brook says, several studies have recently linked atherosclerosis – hardening of the arteries – in humans to high pollution levels. "We need to see if air pollution is not only acting like a trigger to (kill) people who would have died in the next few days, or the next few years or weeks, but is shifting the risk of dying for the whole population."

Dr. Beth Abramson, a national foundation spokesperson, warned that high pollution levels were in no way confined to the industrialized or heavily trafficked areas where the dirty air is generated.

She says the fine particle pollution that is most worrisome to heart specialists can travel as far as 800 kilometres from its source.

"Air pollution is a pervasive and unavoidable health risk for heart disease that all Canadians face," Abramson says. "Most are unaware of its short- and long-term impact."

Abramson urged governments to make concerted efforts to cut pollution levels, through such things as better urban planning and increased public transit funding. She also urged people to forgo the car and walk or bike to work and other destinations as often as possible.

Those with known heart conditions, however, should keep an eye on daily air quality reports and avoid outside exercise when pollution levels are high.

The foundation also unveiled a new poll that showed only 13 per cent of Canadians have made the connection between pollution and cardiovascular disease.

In grading the various provinces and areas in Canada, the foundation looked at recorded levels of fine particulate matter that was 2.5 micrometres in diameter – about one fiftieth the diameter of a human hair – or smaller.

Particles this size, known as PM 2.5, can enter your lungs and bloodstream, where their inflammatory effect on arterial walls may be responsible for aggravating or causing heart conditions.

Any province that recorded average PM 2.5 levels above 30 on any given day in a year, were given an F grade by the foundation.

Environment Canada has set a PM 2.5 level of 30 or lower as the standard for acceptable air quality.

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