

# Air pollution from cars killing thousands of NZers yearly

In findings which have startled scientists, new data shows car pollution is killing thousands of New Zealanders each year and costing the country billions of dollars.



Photo: 123RF

The first-of-its-kind study has measured the health impacts of nitrogen dioxide, a toxic gas emitted by fossil fuel cars.

It found 3300 people were dying yearly because of air pollution, and it was mostly because of cars.

That meant as a whole, 10 percent of the people who died each year in the country were dying because of air pollution.

Exposure was also sending more than 13,000 people to hospital for respiratory and cardiac illnesses and giving the same number of children asthma.

The social cost of these health impacts was estimated to be \$15.6 billion.

The study, Health and Air Pollution in New Zealand, was conducted by New Zealand experts in air quality, health, and economics.

It was the study's third instalment since 2012, but for the first time, pollution data from vehicles was measured.

The new numbers were more substantial than previous records of air pollution - making car pollution more harmful than the damage household fires caused.

Researchers said the extent of the nitrogen dioxide impacts were "unexpected" and "startling".

Nitrogen dioxide emission in New Zealand is almost exclusively from burning petrol and diesel.

The country has almost 4.4 million motor vehicles and that figure is on an upwards trend.

## **Fossil fuel cars killing thousands**

Previously, air pollution measured in the country had been largely from fine pollution particles - which came from domestic fires, car brakes, and industry.

That pollution caused an estimated 1300 deaths in adults per year.

A closer look now showed that a further 2000 people were dying because of exposure to nitrogen dioxide.

That was because the pollutant was a major factor in stroke, heart disease, lung cancer and chronic respiratory diseases.

Young children, elderly, asthmatics and people with pre-existing heart or lung diseases were most vulnerable to both forms of air pollution.

### **Hospitalisations and unhealthy children**

The new figures more than doubled Aotearoa's air pollution hospitalisation statistics.

Nitrogen dioxide is sending an estimated 8500 people to hospital with cardiovascular or respiratory illness, compared to 4600 from other air pollutants.

An extra 6000 people are being hospitalised with a respiratory condition from nitrogen dioxide exposure.

It brings the total annual hospitalisations from all air pollution to 13,100.

New Zealand already has some of the highest asthma rates in the world, and the new research estimated that 13,200 cases of asthma in children were exclusively because of car pollution.

### **The cost of the harm**

Not only is air pollution killing people and harming their health, it is costing the country \$15.6b; and 60 percent of that is because of nitrogen dioxide.

The "social costs" of air pollution calculated in the study took into account the costs to society when people were sick or died from exposure.

It was not just in terms of the direct medical costs with illness and death, but a loss of output from people taking time off work, school and the loss of income.

The study used a "value of statistical life" which was the same used to cost road crash deaths.

At 2019 prices, that was \$4.5 million per person's premature death.

It also estimated a cost of \$36,000 for each person admitted to hospital with cardiac issues, and \$31,700 for people with respiratory issues triggered by air pollution.

Childhood asthma hospitalisations are costing the country \$1800 per case.

Air pollution is also causing 1.745 million restricted activity days - days where people cannot do the things they normally would because of the bad air.

Increased air pollution also makes people less likely to engage in physical activity, which of itself has wide-ranging public health impacts.

Data for the study was collected from 2016 statistics because at the study's commencement in 2019, it was the most suitable on hand.

### **NZ's low pollution levels still have 'quite significant health effects' - study leader**

**Click below on the online dashboard launched today to find out which areas in New Zealand suffer the worst air pollution. [Health and air pollution in New Zealand](#)**

Dr Gerda Kuschel, the study's project lead, said the results were so unexpected the team had to review them twice.

"We were quite shocked, and of course your first response is, 'well have we done something wrong?' So we went through a very rigorous internal review of the results and the calculations because it was so unexpected," Kuschel said.

Much of the research on health impacts of nitrogen dioxide had been for countries with higher levels of air pollution.

"We're in a really privileged position on the one hand, in New Zealand we do have low levels of air pollution but unfortunately we've still found out that this is an issue and has quite significant health effects."

On the \$15.6 billion price tag of air pollution, Kuschel said it was one way of measuring the burden of air pollution.

"It's the cost to society - if someone is sick or dies there is a loss of productivity to the economy. That person can't work, family members are probably having to look after somebody," she said.

The impacts were also inequitable - not only to vulnerable groups, but people who were around more traffic.

NIWA air quality scientist Dr Ian Longley said "If we live in a quiet residential street, there is some traffic pollution around, but if you live next to a major road the levels will be double. Particularly if you live near roads which have a lot of congested traffic or those where there are a lot of clusters of tall buildings".

Dr Ian Longley has been studying car pollution for two decades and said the results were not surprising - but hopefully were a wake-up call.

Ministry for the Environment senior analyst Drew Bingham said while New Zealand still had low levels of air pollution there was no such thing as "safe levels".

"We still find important health impacts, and that's not to say that New Zealand has great air pollution all the time everywhere, we do know that there are places where air pollution can be at quite high levels."

Associate Minister for the Environment Phil Twyford noted that the data was collected before Labour was in government.

The study used data from 2016.

"This report provides a snapshot of the decade of decline before our government was elected, and underscores the importance of the environmental progress we have made for the health and well-being of New Zealanders," Twyford said.

"It also provides further evidence of why we need policies like the Clean Car Discount which has just recently seen a record amount of EVs and hybrids registered in its first year, state sector decarbonisation projects like getting rid of coal boilers in schools, and reform of our resource management system which will require prescribed limits on air pollution."

Car ownership statistics for the country, the most recent of which were from 2019, still showed an upwards trend of 4.4 million vehicles.

5:23 pm on 6 July 2022



[Kirsty Frame](#), Wellington issues reporter  
[Kirsty.frame@rnz.co.nz](mailto:Kirsty.frame@rnz.co.nz) | [@kirstyframed](#)