



Public Health Observatory  
New Zealand  
Te Rōpū Mātai Hauora Pāpori  
O Aotearoa

**Lunchtime Webinar**  
**12.00 pm – 1.00 pm**  
**Friday 26 August 2022**

## **HAPINZ 3.0: A tale of two pollutants**

**Dr Gerda Kuschel**  
Director  
Emission Impossible



**Kylie Mason**  
Principal Intelligence Analyst  
Environmental Health Intelligence NZ



**URL to join:** <https://massey.zoom.us/j/85479402035>

**Next page for the abstract of the presentation**

## Abstract

New Zealand has good air quality in most locations for most of the time. However, exhaust emissions from vehicles and solid fuel (wood and coal) used for domestic heating combine to produce unacceptable air quality in some locations, particularly during winter.

Understanding how much air pollution people are exposed to is critical to understanding potential health impacts. Despite the relatively low levels of pollution in New Zealand, the health burden associated with air pollution is still substantial.

The Health and Air Pollution in NZ (HAPINZ 3.0) study assessed the air pollution health effects experienced by New Zealanders for 2016. It updated the findings about health effects of air pollution in New Zealand from the first two HAPINZ studies (for base years of 2001 and 2006).

HAPINZ 3.0 found anthropogenic (human-generated) air pollution in New Zealand in 2016 resulted in:

- the premature deaths of more than 3,300 adult New Zealanders
- more than 13,100 hospital admissions for respiratory and cardiac illnesses, including 845 asthma hospitalisations for children
- over 13,200 cases of childhood asthma
- about 1.745 million restricted activity days (days on which people could not do the things they might otherwise have done if air pollution had not been present).

Of the more than 3,300 deaths associated with anthropogenic air pollution, more than 60% (2,000) were associated with nitrogen dioxide (NO<sub>2</sub>) pollution – which is largely from motor vehicles. The other deaths (nearly 1,300) were associated with fine particulate (PM<sub>2.5</sub>) pollution – largely from domestic fires.

HAPINZ 3.0 was the first study to assess NO<sub>2</sub> impacts in NZ. We were surprised by the results as we had not expected such strong effects at relatively low levels of pollution. While PM<sub>2.5</sub> exposure still needs to be managed, significant attention will need to go to addressing NO<sub>2</sub> exposure and its primary source – motor vehicle emissions.

This webinar reviews the study methodology and key findings, and also highlights the tools now available for better understanding public health impacts from air pollution in New Zealand.

**Next page for biographies of Dr Gerda Kuschel and Kylie Mason**

## Presenters

### Dr Gerda Kuschel

Gerda is a Senior Air Quality Specialist at Emission Impossible Ltd, with more than 30 years working for a broad range of industries across Australia and New Zealand, including oil & gas processing, metal smelting, research & development, government agencies, and environmental consulting. She has authored more than 450 technical reports, good practice guides, briefing papers, submissions and articles on air quality and environmental sustainability.

Gerda led the research team which undertook the latest Health and Air Pollution in New Zealand study (HAPINZ 3.0) and she is very passionate about motor vehicles ... and scuba diving!

It is also her birthday in two days so please be kind and don't ask too many tricky epidemiological questions as her PhD is in chemical engineering rather than public health ...

### Kylie Mason

Kylie, a Principal Intelligence Analyst in Environmental Health Intelligence NZ based at Massey University, has over 15 years' experience working in statistics and public health monitoring and surveillance. She has a Master's degree in Applied Statistics, and a postgraduate certificate in environmental health. She joined EHINZ in 2013, previously working at the Ministry of Health in data analysis and national surveys.

As part of the EHINZ team, Kylie has been involved in a variety of projects, including environmental burden of disease studies and developing social vulnerability indicators. She currently leads the population vulnerability domain.

Kylie was part of the HAPINZ 3.0 research team and helped develop the HAPINZ dashboard for exploring the study outputs at the regional level.