

Protecting our Health: Implementing an anti-idling campaign in Australia

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Implementing an anti-idling campaign in Australia

Executive summary

Exposure to traffic-related emissions has been shown to significantly increase childhood asthma incidence and prevalence in Australia. Young children are most at risk to traffic-related air pollution outside of schools and childcare centres due to their proximity to idling vehicles. Traffic exhaust also contains powerful greenhouse gases and makes a large contribution to climate change. Without further interventions, the transport sector is projected to be Australia's largest source of emissions by 2030.

The benefits of reducing unnecessary vehicle idling include:

- Immediate and long-term public health benefits
- Reductions in transport-related carbon emissions
- Reduced costs to consumers at the fuel bowser
- Builds political capital and broadens public support towards future policy reform

We recommend the launch of a federal public awareness campaign aimed at changing vehicle idling behaviours.

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Background

Asthma is the leading burden of disease in Australian children, and traffic emissions are a key causative factor (HEI, 2022). In Europe, air pollution has been estimated to cause one third of all childhood asthma cases, with traffic emissions identified as a key source (Khreis et al., 2019). Australian evidence reveals even very small increases in traffic exhaust exposure are associated with large increases in asthma risks (Knibbs et al., 2018). Traffic exhaust particles are small and toxic, and when inhaled, they penetrate the bloodstream impacting every organ in the body (Figure 1). Traffic-related exhaust is associated with a wide range of acute and chronic diseases and premature death, which is estimated at 11,000 deaths per year in Australia (Walter & Say, 2023). For example, diesel exhaust is classified as a group 1 carcinogen by the International Agency for Research on Cancer, based on sufficient evidence that exposure to diesel exhaust causes lung cancer (IARC, 2012).

Children are the most vulnerable to traffic pollution due to their undeveloped immune defences and comparatively higher respiratory rate, comparative lung surface area and cell turnover (Makri & Stilianakis, 2008). They also spend more time outdoors engaging in physical activities for extended periods, and their lower height puts them closer to vehicle exhausts where pollutants are at a higher concentration.

An overview of existing evidence, policies and practices

Across Europe, cities are banning diesel vehicles and introducing low-emission zones to protect children in dense urban areas. In contrast, there is an increasing trajectory of vehicle emissions in Australian cities. Our high urbanicity, high reliance on private vehicles, and inadequate planning policies around schools and childcare centres, result in many Australian children spending regular periods in traffic pollution ‘hot spots’.

A study in Brisbane school children demonstrated transient exposure to nitrogen dioxide (NO₂) – a common pollutant for vehicle exhaust, was associated with a 38 per cent increase in emergency department presentations for asthma (Cheng et al., 2022), occurring only hours after exposure. These short-term exposures were also associated with increased risks for acute upper and lower respiratory tract infections (Cheng et al., 2021). School-place exposure has been shown to increase systemic inflammation (Clifford et al., 2018), and negatively impact children’s cognitive development and behaviour (Forns et al., 2016; Sunyer et al., 2015).

These studies demonstrate the tangible gains that can occur by reducing children’s short-term peak exposures to vehicle exhaust in the vicinity of schools. Reducing traffic-related air pollution results in measurable reductions in healthcare system burden and subsequent healthcare cost savings. These benefits will be local and some are likely to be apparent within an election cycle. Raising awareness, and creating

the impetus for collaborative action that includes stakeholders at the local level, has proven an effective and pragmatic means to reduce exposure to air pollution at schools (Rumchev et al., 2021).

Additional to the immediate health benefits, this initiative contributes to and paves the way for further reforms required to meet decarbonisation objectives in the transport sector. Firstly, anti-idling policies have been shown to reduce the amount of fuel required, reducing consumer costs (Smit, 2020). Secondly, raising public awareness about the health impacts of traffic pollution and encouraging anti-idling behaviour is ‘low-hanging fruit’, that has been shown both in Australia and in international jurisdictions to yield significant reductions in carbon emissions, and garner the public support required for further reforms.

For example, Smit (2020) estimated that carbon emissions due to idling equate to emissions from a little over 1.5 million cars on the road per year. Moreover, *excessive idling* is not sufficiently captured in these estimates due to a lack of information on idling behaviour (Smit, 2020). Excessive idling reflects a long and unnecessary idling period (more than a few minutes) when the vehicle is parked, as they commonly are in the vicinity of schools and childcare centres. For instance, when parking overnight at trucks stops is included, long-haul trucks in the USA typically idle 1800 hours per year, making the idling impact on total emissions more relevant (five to eight per cent of total emissions).



In 2007, a review of air quality education suggested that Australians are lacking in knowledge relating to the health implications of air pollution (Skamp et al., 2007).

Internationally, awareness campaigns encouraging anti-idling behaviours are commonplace and have produced measurable improvements in local air quality and public health. New York introduced anti-idling laws in 1972 and more recently used musician Billy Idol to front an anti-idling campaign (City of New York, 2020). Southern California introduced buffer zones and anti-idling policies around schools over 20 years ago; subsequent analysis of children in these areas revealed a significant association with increased lung size by the time they were 15 years of age (Gauderman et al., 2015). The introduction of a low emission zone in the Tokyo area was linked to an 11 per cent reduction in heart-related deaths (Chamberlain et al., 2023). In Denmark and Finland, car parking around some school areas has been banned (Prezel & Hatch, 2023) and in 2019, the City of London introduced a campaign targeting idling around schools, with the slogan, ‘engine off, every stop’, paving the way for the introduction of ultra-low emission zones (ULEZ) (City of London, 2021).

These campaigns have been shown to improve local air quality, resulting in measurable health improvements, and simultaneously reduce overall transport-related carbon emissions (Smit, 2020). Importantly, they have also successfully paved the way for public acceptability of a range of other policies, including low-emission zones, anti-idling legislation, active transport initiatives

and increasingly stringent fuel standards and vehicle emission regulations.

Opposition to the current legislative reforms on vehicle emissions and fuel content highlight the need for a public awareness campaign that focuses on health (Walter, 2024). Framing the issue around protecting children garners a wider base of public support (Maibach et al., 2010) helping to counteract opposition.

If the public were made aware that leaving their engine running was tantamount to smoking a cigarette around a child, and that idling for more than ten seconds uses more fuel and resources than turning off the engine and restarting (Rumchev et al., 2021), it is easy to envisage behaviours and attitudes rapidly changing.

Raising awareness is an imperative first step to the success of any future reforms or mitigation strategies that require behavioural change.

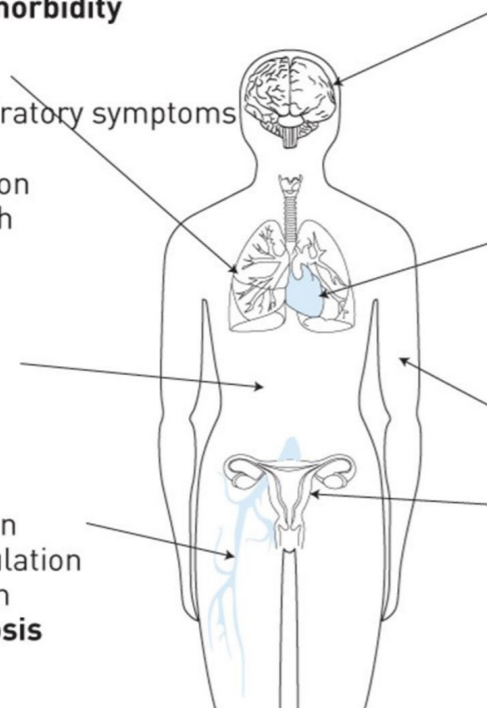
Idling can contribute up to 34 per cent of motor vehicle pollution and has been demonstrated to create traffic pollution ‘hot spots’ around schools (Mendoza et al., 2022), exposing the most vulnerable members of our society to the highest levels of traffic pollution. An initial focus on idling behaviours around schools and childcare centres targets these high-risk sites and assists in garnering public support and social legitimacy towards future policy reforms focused on decarbonising transport.

Respiratory disease mortality
Respiratory disease morbidity
Lung cancer
Pneumonia

Upper and lower respiratory symptoms
Airway inflammation
Decreased lung function
Decreased lung growth

Insulin resistance
Type 2 diabetes
Type 1 diabetes
Bone metabolism

High blood pressure
Endothelial dysfunction
Increased blood coagulation
Systemic inflammation
Deep venous thrombosis



Stroke
Neurological development
Mental health
Neurodegenerative diseases

Cardiovascular disease mortality
Cardiovascular disease morbidity
Myocardial infarction
Arrhythmia
Congestive heart failure
Changes in heart rate variability
ST-segment depression

Skin ageing

Premature birth
Decreased birthweight
Decreased fetal growth
Intrauterine growth retardation
Decreased sperm quality
Pre-eclampsia

Figure 1. Overview of diseases, conditions and biomarkers affected by outdoor air pollution. Bold type indicates conditions currently included in the Global Burden of Disease categories (Thurston et al., 2017).



Despite committing a significant amount of government funding into research on air pollution, there has been little progress towards strategies that go beyond monitoring and characterising the problem to providing actionable solutions that tangibly improve health and climate. Locally, Lane Cove Council in Sydney is lobbying the NSW Government to make idling for longer than two minutes a traffic offence and the Victorian Government stated in their most recent Air Quality Strategy that they would work with community groups to reduce pollution from idling cars at locations ‘where sensitive people can be concentrated, e.g., schools, childcare centres and hospitals’ (Victoria Government, 2022, p.21). To date, no decisive action has been taken.

Now is the time for action. To observe federal policy objectives of *ambient air quality that provides adequate protection for human health and wellbeing* and ensure that this protection is equivalent for all Australians, this action needs to be nationwide, beginning with an awareness campaign.

Recommendations

We recommend a national public health awareness campaign across multiple media streams that highlights the health impacts of traffic exhaust with a focus on children and unnecessary idling.

The awareness campaign could emulate the trajectory of the monumentally successful ‘Slip! Slop! Slap!’ campaign in Australia. The Slip! Slop! Slap! Campaign debuted in Australian media in 1980 (Walker et al., 2022) and led to a tranche of policy changes within schools and childcare centres, and population-wide adoption of sun protection behaviours. The campaign shifted cultural norms enabling additional reforms, including the criminalisation of solarium and tax deductions on sun-protection equipment for outdoor workers, as well as removing the Goods and Services Tax from sunscreen. The health impacts of vehicle exhaust in Australia are estimated to be higher than skin cancer (Australian Bureau of Statistics, 2018) (Walter & Say, 2023).

A similar public health campaign could begin to shift cultural norms around idling, and alert parents to the dangers of this commonplace behaviour, simultaneously providing broader political leverage for addressing transport-related carbon emissions.

A public awareness campaign presents a powerful and low-risk approach. Proactive implementation of an awareness campaign signals a serious intent to reduce the burden of asthma and other preventable diseases in Australia, including cardio-respiratory diseases, lung cancer and diabetes.

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