

Smoking in cars produces harmful pollutants at levels above WHO indoor air quality standards

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Smoking during car journeys pumps harmful particulate matter into the indoor air space at levels that far exceed World Health Organization guidance—even when the windows are open or air conditioning is switched on—finds the largest study of its kind, in *Tobacco Control*.

Such levels of exposure are likely to affect the health of any child passengers, say the authors.

Levels of [fine particulate matter](#) were measured every minute in the rear passenger area during typical car journeys made by [smokers](#) and non-smokers over a three day period.

The measurements were made using an [aerosol](#) monitor that is frequently deployed to assess [second hand smoke](#) exposure, placed at child head height.

Seventeen drivers, 14 of whom were smokers, made a total of 104 journeys, lasting from 5 to 70 minutes, with an average duration of 27 minutes.

The journeys were made in various locations across the West of Scotland and in and around Great Yarmouth and Lowestoft in the East of England.

Particulate matter levels were available for 83 journeys, of which 34 were smoke free. They averaged 7.4 $\mu\text{g}/\text{m}^3$ during non-smoking journeys, but were around 10 times as high (85 $\mu\text{g}/\text{m}^3$) during smoking journeys.

Levels of particulate matter were strongly linked to the numbers of cigarettes smoked. Levels peaked at an average of 385 $\mu\text{g}/\text{m}^3$, and on one occasion got as high as 880 $\mu\text{g}/\text{m}^3$.

Five of the smokers said they smoked 20 or more cigarettes a day; seven smoked between 10 and 19 a day; the rest smoked fewer than 10.

Smokers tended to open car windows to provide some ventilation, but levels of particulate matter still exceeded the maximum safe limit recommended by the [World Health Organization](#) of 25 $\mu\text{g}/\text{m}^3$, at some point during all car journeys during which somebody smoked.

The authors point out that exposure to second hand smoke is linked to several children's [health problems](#), including sudden infant death, middle ear disease, wheeze and asthma.

"Children are likely to be at greater risk from [second hand smoke] exposure due to their faster breathing rates, less developed immune system and their inability to move away from the source in many home and car settings," they say.

They endorse the recent report from the Royal College of Physicians Tobacco Advisory Group, which called for a ban on smoking in cars, in a bid to reduce the overall prevalence of smoking and the harms associated with exposure to second hand smoke.

Several other countries, including Canada, the US, Australia, Cyprus and South Africa have already introduced state or national legislation to ban

smoking in cars in which children are passengers, they say.

More information: Second hand smoke in cars: assessing children's potential exposure during typical journey conditions 2012; 578-83; [doi: 10.1136/tobaccocontrol-2011-050197](https://doi.org/10.1136/tobaccocontrol-2011-050197)

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