

Stopping at red lights exposes drivers to high levels of air pollution, new study finds

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Research published today in the journal *Atmospheric Environment* has found that drivers are exposed to dangerously high levels of air pollutants when stopped at red lights.

UK commuters spend an average of about 1.5 hours a day at the wheel. Road vehicles in particular are known to emit polluting [nanoparticles](#) which contribute to respiratory and heart diseases. Now, researchers at the University of Surrey have found that where drivers spend just 2% of their journey time passing through traffic intersections managed by lights, this short duration contributes to about 25% of total exposure to these harmful particles.

The team monitored drivers' exposure to air pollutants at various points

of a journey. Signalised traffic intersections were found to be high pollution hot-spots due to the frequent changes in driving conditions. With drivers decelerating and stopping at lights, then revving up to move quickly when lights go green, peak particle concentration was found to be 29 times higher than that during free flowing traffic conditions. As well as concentration, [researchers](#) found that as cars tend to be close together at lights, the likelihood of exposure to vehicle emissions is also significantly increased.

"Air pollution was recently placed in the top ten health risks faced by human beings globally, with the World Health Organization linking air pollution to seven million premature deaths every year," said lead author, Dr Prashant Kumar, from the University of Surrey.

"Our time spent travelling in cars has remain fairly constant during the past decade despite the efforts to reduce it and with more cars than ever joining the roads, we are being exposed to increasing levels of [air pollution](#) as we undertake our daily commutes."

"It's not always possible to change your route to avoid these [intersections](#) , but [drivers](#) should be aware of the increased risks at busy lights. The best ways to limit your exposure is to keep vehicle windows shut, fans off and try to increase the distance between you and the car in front where possible. Pedestrians regularly crossing such routes should consider whether there might be other paths less dependent on traffic light crossings. Local transport agencies could also help by synchronising traffic signals to reduce waiting time and consider alternative traffic management systems such as flyovers."

Provided by University of Surrey

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