

The health effect of air pollution from traffic

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What would happen if all petrol and diesel-powered vehicles were removed from a smaller European city? Up to 4% of all premature deaths could be prevented, according to a new study from Lund University in Sweden. The researchers used Malmö, Sweden, as a case study to calculate the health costs of inner city traffic.

Every year, over 400,000 people in Europe die prematurely due to [air pollution](#)—and there is clear evidence that the mortality rate is higher among people living in areas with more polluted air.

Malmö, Sweden, with a population of 320000, generally stays below the recommended EU threshold for small particles and nitrogen oxides annually. Despite this, the health benefits of removing exhaust fumes from the city would be significant.

"Decreased pollution would prevent 55–93 [premature deaths](#) (2–4% of all cases) each year, 21 new cases of childhood asthma (6% of all cases), 95 cases of childhood bronchitis (10% of all cases), 30 hospitalisations for respiratory diseases, 87 dementia cases (4% of all cases) and 11 cases of pregnant women with preeclampsia (11% of all cases)", explains Ebba Malmqvist, researcher at the Department of Occupational and Environmental Medicine at Lund University.

The change would also prevent 2 729 days of sick leave and 16 472 days of reduced activity due to ill health, the study found.

The researchers have been very cautious in their interpretations, and the

effects of decreased air pollution would probably be far greater in reality.

In Malmö, seven times more people die from these sources of air pollution than from traffic accidents.

"Our vision is zero traffic deaths, and considerable investments are made to ensure this – yet we turn a blind eye to the health effects of air pollution", says Ebba Malmqvist.

Malmö generally stays below EU average air pollution levels of small particles and [nitrogen oxides](#). According to the researchers, the chosen threshold is a compromise between the World Health Organisation's guidelines and political considerations. However, the epidemiological studies do not include limit values; as the values increase so do the risks.

"The limit value is to give EU citizens some protection against high levels of particles, but it does not represent a safe level. There is nothing to suggest that simply being below the limit value would have any [health effects](#) – on the contrary, we see negative effects even at levels below the EU value", says Anna Oudin, also researcher at the Department of Occupational and Environmental Medicine.

Despite the fact that researchers have been working on environmental considerations for more than 10 years, the decision-makers have apparently not absorbed the information.

"There is a tendency to believe that because we currently meet the environmental quality standards, our work is essentially done", says Anna Oudin.

As a result of the study, a number of workshops will be offered for employees working with urban planning issues in the City of Malmö, to

discuss how to solve environmental issues in the future. One of several ideas is to introduce environmental zones:

"Environmental zones exist in other cities, where the strictest zone prohibits cars fuelled by petrol or diesel. But Malmö must figure out what suits them. However, we have shown that promoting cleaner air and better [health](#) of the population is worthwhile", concludes Ebba Malmqvist.

More information: Ebba Malmqvist et al. Estimated health benefits of exhaust free transport in the city of Malmö, Southern Sweden, *Environment International* (2018). [DOI: 10.1016/j.envint.2018.05.035](https://doi.org/10.1016/j.envint.2018.05.035)

Provided by Lund University

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