

# Variable congestion charges may yield more stable air quality and improved health

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Higher congestion charges in the morning and in the spring would even out the negative health effects caused by air pollution from cars in large cities.

This is concluded in a study by researchers from the School of Business, Economics and Law, University of Gothenburg, Sweden, and the Faculty of Science at the University of Gothenburg, Sweden.

CO<sub>2</sub> emissions from cars are contributing to the global warming due to the so-called [greenhouse effect](#). The purpose of congestion charges in large cities is to reduce both congestion and CO<sub>2</sub> emissions from cars.

However, researchers at the University of Gothenburg show that if the congestion charges are set right, they will also contribute to a more consistent air quality by evening out the emissions of nitrogen dioxide, particulate matter and [carbon monoxide](#), implying positive health effects.

The researchers base their conclusion on observations of the levels of [nitrogen dioxide](#), [particulate matter](#) and carbon monoxide in Stockholm, London and Santiago. These cities are very different in many ways, but still show the same pattern.

'Our analysis indicates that despite traffic flows being larger in the afternoon, NO<sub>x</sub> and NO<sub>2</sub> pollution in the morning peak is larger than in the peak in the afternoon,' says environmental economist Jessica Coria.

Similar patterns are found in the cities of Bogota, Los Angeles and Beijing, which have also been studied by the researchers.

The purpose of the study is to show at what times the congestion charges should be the highest in order to harmonise with nature's ability to cleanse itself and dilute the emissions from cars. If the congestion charges are allowed to vary with the capacity of nature to handle pollution, then they may reduce not only global warming but also the dangerous health effects of urban air pollutants.

'If people would choose to drive at different times than today, the levels of pollution would be evened out, which in turn would have [positive health](#) effects,' says Jessica Coria.

The study is still in progress and the researchers expect to be able to present precise figures regarding charges, times of day and seasonal recommendations in 2013.

Provided by University of Gothenburg

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