



To: City Development

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Subject: Essential Evidence on a page: No 76 Benefits of shift from car to active travel

Top line: Active transport offers an effective antidote for the harmful health effects of a sedentary lifestyle. Among the health effects the most important and best established is a gain in healthy life expectancy. This is reflected in significant financial savings to society.

There is a growing awareness of the need to change our transportation habits by reducing our use of cars and shifting instead to active transport, i.e. walking and bicycling. Such change can bring about significant benefits for our health and environment. To help policy makers, urban planners and local administrators make the appropriate choices, it is necessary to quantify all the significant impacts of such a change.

Two studies have carried out such an assessment for specific cities or regions: Woodcock et al¹ evaluated the health impacts that can be expected for London and for New Delhi, and de Hartog et al² evaluated mortality impacts for the Netherlands. For the benefits of reduced air pollution these studies used detailed site-specific models for atmospheric dispersion and chemistry. In a 2012 paper researchers carried out a similar assessment of the health impacts, calculating the population exposure to air pollution using the most comprehensive assessment of automotive pollution impacts in Europe.³

The researchers for the 2012 study calculated results per individual driver who switches to active transport. They considered a distance of 5 km for bicycling (and 2.5 km for walking) and provided a detailed evaluation of four effects when people change their transportation mode from driving to bicycling or walking:

- the health benefit of the physical activity,
- the health benefit for the general population due to reduced pollution,
- the change in air pollution impacts for the individuals who make the change,
- and changes in accidents (crashes)⁴

Despite the uncertainties, and whatever one assumes about the impacts of car emissions, the key conclusions about the health impacts are not affected: by far the most important item is the health benefit due to physical activity. Switching from car to walking provides a yearly monetary benefit of £1220 and a switch to cycling of £1121. The benefit for the general population due to reduced air pollution is much smaller, and in large cities it is larger than the cost due to changed exposure for a driver who switches from car to bicycle; in small cities or rural areas the public benefit is small or negligible.

The concern about pollution exposure of bicyclists, often evoked in the context of bicycling in cities, is unfounded when compared to the benefits of the cycling activity; of course, such exposure should be minimized as far as is practical. Accidents (crashes) can be a more serious problem and more should be done to reduce the risks.

¹ See Essential Evidence No 42 www.bristol.gov.uk/tpevidencebase

² de Hartog, J.J., Boogaard, H., Nijland, H., Hoek, G., 2010. Do The health benefits of cycling outweigh the risks? *Environmental Health Perspectives*, 118 (8), 1109–1116.

³ Rabl, A., de Nazelle, A. 2012 Benefits of Shift from Car to Active Transport, *Transport Policy*, 19: 121–131. (paper issued by journal November 2011)

⁴ See Essential Evidence No 75 www.bristol.gov.uk/tpevidencebase