



## Benefits to leaving the car at home quantified

**Relying less on cars** and switching to walking and cycling improves both our health and the environment. A recent study quantifies these benefits in financial terms to inform active transport projects and policies. It demonstrates how benefits from increased physical activity outweigh any costs of increased exposure to air pollution.

**Although there are countless** possible effects of a shift to active transport, they can be very difficult to evaluate. Previous studies, however, have demonstrated how the health impacts of physical activity and air pollution can be reliably estimated in terms of mortality rates.

The researchers modelled four different outcomes of active transport in Europe using data from previous studies: 1.) the health benefit of physical activity, 2.) the change in air pollution exposure for the individual, 3.) the health benefits to the general population from reduced pollution, and 4.) the change in accidents.

In order to measure these impacts on a common scale, monetary valuation was used. The valuation of fatal accidents was taken as the value of prevented fatality of €1.6 million (typical of the calculation used to measure traffic accidents in the EU). For physical activity and air pollution, the valuation of mortality is based on the change in life expectancy, taking the value of a life year (VOLY) as equal to €43,801.

For the individual who switches from car to bicycle, the health gain from the increase in physical activity was estimated at €1310/yr, with a lifetime benefit of €52,418. The public health gain of reduced pollution was €33/yr per person. However there was a negative value of -€19/yr for the individual making the change, from increased exposure to pollution whilst cycling. This was a typical estimate, but extremely variable with local conditions and in some cases could be a positive figure. A negative value of -€53/yr was also calculated from the higher frequency of fatal accidents that occur whilst cycling. For the walking scenario, the benefit of physical exercise was estimated at €1192/yr, with a cost of change in air pollution exposure to the individual of -€15/yr.

A substantial personal health benefit was recorded for individuals who change their mode of transport, thanks to the increased physical activity. However, with this comes a slight increase in pollution exposure. Nevertheless, the researchers suggest that this could be reduced if bicycles travel on a separate path with lower pollution levels. In larger cities, there was a clear benefit to the general population as a result of reduced air pollution. However, in rural areas or small cities the public benefit of this was small or negligible. In conclusion, the benefits of cycling or walking in terms of the effects of physical activity on the body outweighed by far any possible increase in exposure to pollution. Nevertheless, more should be done to reduce accidents that occur when cycling.

The researchers suggest that the results from this study can be applied to a wide range of sites from large cities to rural areas. In particular, the estimates can be used to evaluate the necessity of future transport policies and projects, for example, rental bicycle schemes and cycle paths in large cities.

**Source:** Rabl, A., de Nazelle, A. (2011) Benefits of shift from car to active transport. *Transport Policy* 19: 121-131.

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