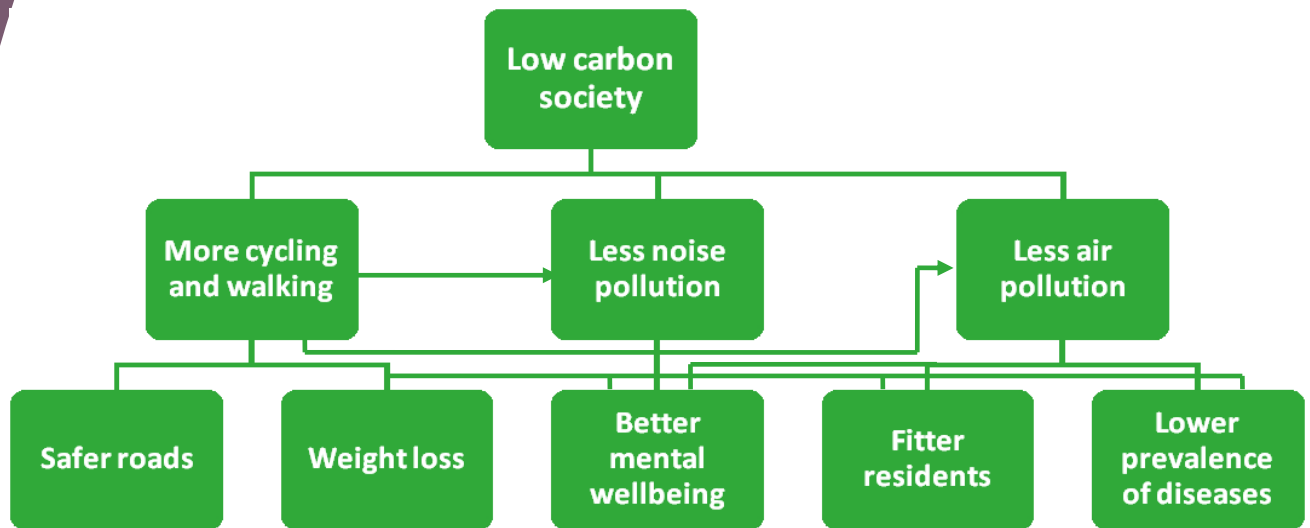


## HEALTH

**Health in a low carbon society**

A low carbon society is good for the environment, but did you know that it can also improve the health of the people living within it? The diagram below shows some of the health benefits that can result from policies that reduce emissions from the transport sector.



A low carbon transport system can reduce the use of motorised vehicles and therefore create more pleasant environments for people to cycle and walk in. This increase in physical activity, as well as the reduction in air pollutants that result from lower car use, can reduce the incidence of numerous diseases. Increased physical activity, reduced traffic noise and more pleasant urban environments can also enhance mental wellbeing. This is good news for individuals and also for the Government as it can reduce the burden on services such as public health services, contribute to the achievement of numerous targets, and provide a business case for increasing investment in transport to create even more benefits. All in all, everyone will gain from a low carbon society: individuals and the Government!



A study in Copenhagen showed that commuters who regularly cycled to work had a 39% lower mortality rate than those who didn't<sup>1</sup>.

**Let's start with a few interesting facts...**

- People who do not exercise and then start cycling move from the third of the population who are the least fit to the fittest half of the population in just a few months<sup>1</sup>.
- Even short-term exposure to air pollutants in high concentrations can contribute to premature mortality, respiratory and cardio-vascular hospital admissions, and exacerbate asthma and other respiratory symptoms<sup>2</sup>.
- Environmental noise disturbs sleep, causes stress, reduces concentration, and increases risk of some heart diseases<sup>3</sup>.
- Cycling daily can generate similar improvements in physical performance as fitness training programmes<sup>4</sup>.

## How can a low carbon society improve my physical health?

Within a low carbon society there will be less air pollutants that can harm our health, less traffic noise, and more physical activity through walking and cycling – either for whole journeys or to and from public transport services. Therefore, respiratory (particularly asthma), cardiovascular and lung diseases will not be as common. The prevalence of strokes, type 2 diabetes, and some cancers could also be reduced whilst the condition of bones, muscles and joints could improve. Physical activity can also reduce obesity, which is itself a risk factor for some of the health problems mentioned above. Obesity can also have a marked effect on self-esteem, which can influence other behaviours that affect health, such as smoking and socialising<sup>5</sup>. Improvements to physical health through improved road safety are the subject of another factsheet.



Walking is easily accessible to most people regardless of income and location and can be continued into old age as it has a low impact on joints and muscles<sup>6</sup>.

## How can a low carbon society improve my mental health?

Noise from traffic can contribute to stress, anxiety and depression. Stress has been associated with many negative health impacts such as back problems, high blood pressure and depression but increasing physical activity such as walking and cycling, as well as decreasing car use, can have the opposite effect<sup>7</sup>. Even moderate physical activity can reduce the body's physiological response to stress and offer protection against health problems related to chronic stress<sup>8</sup>.



### Economic benefits

Health improvements from low carbon transport also impact our economy. Inactivity, for example, can have direct and indirect costs to governments and businesses, such as loss of productivity through sick leave and the cost of addressing conditions linked to lack of exercise. Several recent studies have reported economic benefits of walking and cycling interventions which are highly statistically significant<sup>9</sup>.

There are direct and quantifiable adverse health impacts in cities with high air pollutant concentrations.<sup>2</sup>

## How can the CATCH project help?

The CATCH (Carbon Aware Travel Choice) project shows you how your city is performing in terms of carbon emission reduction and how you can help to make a positive change. It also shows how your city is performing in terms of related impacts on health, including:

- Traffic collisions per capita per year;
- Incidence of cardiovascular disease by year;
- Annual diagnoses of respiratory illnesses.

[www.carbonaware.eu](http://www.carbonaware.eu)

## References:

<sup>1</sup> Fentem, P H. *ABC of sports medicine: Benefits of exercise in health and disease*. British Medical Journal, 308: 1291-5. 1994.

<sup>2</sup> See COMEAP ([www.dh.gov.uk/ab/COMEAP/DH\\_108448](http://www.dh.gov.uk/ab/COMEAP/DH_108448)) and CAFE (<http://ec.europa.eu/environment/archives/cafegeneral/keydocs.htm>). Accessed 9 Nov 2010.

<sup>3</sup> The London Health Commission. *Noise and Health making the link*. 2004.

<sup>4</sup> Hendriksen, I. *The effects of commuter cycling on physical performance and on coronary heart disease risk factors*. Amsterdam: Free University. 1996.

<sup>5</sup> Frank, L D, Andresen, M A and Schmid, T L. *Obesity Relationships with Community Design, Physical Activity, and Time Spent in Cars*. American Journal of Preventive Medicine, Vol. 27 No. 2. 2004.

<sup>6</sup> Ramblers' Association. *Health – Walking facts and figures – Information*. Available at: [www.ramblers.org.uk/Walking/policy/caseforwalking/benefits.htm](http://www.ramblers.org.uk/Walking/policy/caseforwalking/benefits.htm) (accessed 9 Nov 2010). 2010.

<sup>7</sup> Taylor, A. *Physical activity, anxiety, and stress: A review*. In Biddle, S, Fox, K, and Boutcher, S. *Physical activity and psychological well being*. London: Routledge. 2000.

<sup>8</sup> Scully, D. et al. *Physical exercise and psychological well being: a critical review*. British Journal of Sports Medicine, 32: 111-120. 1998.

<sup>9</sup> Davis, A. *Value for Money: an economic assessment of investment in walking and cycling*. Report for Government Office for the South West. 2010.

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