The economic potential of active travel

“The economic costs arising from disease and ill-health as a consequence of physically inactive lifestyles are an avoidable drain on the nation’s wealth as well as its health and well-being. Physical activity provides many health benefits; protection against major killers such as heart disease, stroke and diabetes. As such, the National Heart Forum warmly welcomes and supports Sustrans’ work to draw attention to the economic potential of walking and cycling as part of routine travel behaviour.”

Sir Alexander Macara, Chairman, National Heart Forum

Physical activity is now recognised as an important element of a healthy lifestyle, reducing the risks of ill-health and premature death. The trend is for physical activity levels to decline, associated with mechanisation in the home, workplace and public places, an increase in sedentary leisure activities, and widespread use of the private car.

Research over the last decade has begun to indicate the economic costs of this decline in physical activity and to show the desirability of reversing it. Calculating the cost and benefits of physical activity is more complicated, and to date less has been done in this direction.

Physical inactivity costs are generally calculated either as directly associated with health care by the NHS or as indirect costs. Indirect costs include expenditure not attributable to the NHS, such as informal care, inferior physical and mental function, deficient physical and mental wellbeing, and loss of productivity through sick leave.

There are major gains to be made from mortality and morbidity reductions among people who are currently irregularly active. This is a large sector of the population, and the difference in risk of ill-health between being irregularly active and regularly active is relatively large. However, substantial gains are also possible among sedentary people; even low levels of physical activity reduce risks of ill-health. In addition, there is a "dose response" effect for physical activity; the more people are physically active the less they are at risk of disease.

Sustrans’ Active Travel programme encourages people to incorporate health-enhancing physical activity into the daily routine, by choosing active (cycling and walking) rather than sedentary transport modes - more people more active more often.

Active travel may be a more convenient and attractive form of physical activity for many people than conventional sports.
Physical inactivity is costing us dear

The Health Survey for England\(^{(2)}\) demonstrates that 60% of men and 70% of women are not reaching recommended levels of physical activity. Using a criterion of less than one 30 minute period of moderate activity per week, 23% of men and 26% of women are sedentary.

One US study showed costs associated with inactivity between $24.3 billion and $37.2 billion (2.4% and 3.7% of total healthcare expenditure)\(^{(3)}\).

Direct costs, including diagnosis and treatment (hospital stay, nursing home, medications, doctor call outs), are substantial and when obesity costs were included:

> "Overall, a minimum of 9.4% of all direct costs incurred in delivering health care in the US are attributable to insufficient energy expenditure which directly leads to medical conditions or the accumulation of adiposity which contributes to excess morbidity and mortality."\(^{(3)}\)

This research also highlighted that indirect costs, including early retirement and increased risk of disability pensions, together amounted to at least $48 billion (at 1995 prices).

US and Dutch studies have calculated that the maximum proportion of each disease attributable to lack of physical activity and therefore the maximum possible saving in cost if these people become physically active (Population Attributable Risk (PAR) relating to physical inactivity) is:

- 35% for heart disease
- 32% for colon cancer
- 35% for type 2 diabetes\(^{(4,5)}\).

Canadian research using similar PAR figures for physical inactivity estimated that in 1999 $2.1 billion was spent on direct health care costs attributable to physical inactivity, 2.5% of the total health care costs in that year (calculated at $86 billion)\(^{(6)}\).

The National Heart Forum (NHF) estimates that 37% of deaths from coronary heart disease (CHD) are due to lack of physical activity; 9% of these could be avoided if people who are currently sedentary or have a light level of physical activity increased to a moderate level. The direct annual healthcare costs of heart disease in the UK are £1.6 billion\(^{(7)}\) but the indirect cost to the UK economy is some £8.5 billion, because of days lost due to

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Inactivity is bad for you

Relative risk of mortality from inactivity for three examples of ill-health

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Source: Powell and Blair 1994
death, illness and informal care of people with the disease. In total CHD costs the UK economy about £10 billion a year\(^\text{[7]}\).

The costs to the NHS of other major diseases associated with physical inactivity are also substantial; very large savings could be made from prevention. For example, the costs of type 2 diabetes in the UK were calculated in 2000 at £2 billion\(^\text{[8]}\). The incidence of type 2 diabetes is inversely related to physical activity\(^\text{[9]}\) and, following early detection, activity can contribute to the reversal and the prevention or delay of complications in this diabetes. The beneficial effects of moderate intensity physical activity are even more important to people at an elevated risk of type 2 diabetes due to overweight, elevated blood pressure, or parental history of type 2 diabetes\(^\text{[10]}\). Increased physical activity could also help reduce economic costs, for example, of colon cancer, osteoporosis, mental health problems, and falls among older people\(^\text{[11]}\). More research is needed both into the costs associated with physical inactivity and the benefits of increased activity.

### Overweight and obesity

Weight is commonly defined in terms of body mass index (BMI), bodyweight in kilogrammes divided by height in metres squared. A desirable BMI for health is considered to be in the region of 20 to 25. From 25 to 30 is defined as overweight and a BMI of 30 and over is defined as obese. The majority of healthcare costs arise from people who are overweight, simply because overweight people outnumber the obese; 46% of men and 32% of women in England in 1998 were overweight\(^\text{[12]}\). The trend however is for obesity to rise, and per capita healthcare costs for obese people are likely to be higher than for those who are overweight given the greater risk of ill-health among obese adults.

The National Audit Office has compiled evidence for the costs of obesity in England. In 1980, 8% of women and 6% of men were classified as obese and this had risen by 1998 to 21% of women and 17% of men\(^\text{[13]}\). There has also been a rise in the level of obesity among young people\(^\text{[14]}\), important because of its correlation with obesity in adulthood.

The rise parallels the emergence of a global obesity epidemic\(^\text{[15]}\). It is widely believed that the increase in obesity world-wide is due more to the decline in physical activity than to increases in energy intake\(^\text{[16]}\).

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### Risk factors for coronary heart disease

#### death from CHD under 75: related risk factors

- CHD attributable to physical inactivity (37%)
- CHD attributable to blood cholesterol >5.2mmol/l (46%)
- CHD attributable to obesity (6%)
- CHD attributable to blood pressure (13%)
- CHD attributable to smoking (19%)

*source: Britton and McPherson/NHF*

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### Trends in the prevalence in obesity

#### amongst men and women in England extrapolated to 2010

**Note:** Figures beyond 1988 were extrapolated on a straight line by the least squares method on the basis of data from 1980

*source: National Audit Office analysis of data from the Health Survey for England*
Costing the benefits of increased physical activity

There have been attempts to cost the health benefits of physical activity programmes targeted at specific age groups or sexes. Risk factors increase with age for many diseases associated with physical inactivity.

In the US, healthcare cost savings in heart disease treatment were found where sedentary adults walked regularly. $5.6 billion would be saved annually if 10% of adults began a regular walking programme\(^{(19)}\). In Canada, $150 million per year in direct healthcare costs could be saved as a result of a 10% reduction in physical inactivity\(^{(6)}\). The effects on CHD, stroke, colon cancer, breast cancer, type 2 diabetes and osteoporosis were accounted for in the calculations. Similarly, in Australia analysis of data relating to six illnesses indicates that a 10% decrease in physical inactivity would result in annual healthcare savings of $76 million\(^{(20)}\).

In Northern Ireland, the economic benefits of physical activity were modelled to assess the value of physical activity promotion\(^{(21)}\). The calculation was limited to three specific conditions: CHD, stroke and colon cancer and so the estimates were conservative. The 1996 Physical Activity Strategy Plan targeted to reduce the sedentary proportion of the population from 20% to 15%, and forecast:

- at least 121 lives could be saved each year among the under-75s
- an annual direct cost saving to the Northern Ireland Health Services of £0.62 million
- associated economic benefits worth £131 million.

Potential savings in life years lost due to physical inactivity, and reduced hospital admissions and...
treatment costs, indicate that it might be worth spending £2.35 million a year on promotion to achieve the increase in physical activity in the Strategy Plan target.

Studies have shown the benefits to employers of physically active staff; employees who participate in worksite health promotion and physical activities report fewer days off work sick. Lower overall rates of employee turnover are reported and up to 24% lower healthcare costs than for non participants\(^{(22)}\). However, there is an opportunity cost to participants, such as making time during work breaks. Activities which can be built into the normal day of employees, such as walking and cycling to work, may prove to be more acceptable and more cost-efficient than formal worksite programmes\(^{(23)}\).

**Ways forward**

Promotion of physical activity in the population costs less than the healthcare required by its absence; attention is turning towards physical activity which can be incorporated into the routines of daily life\(^{(24)}\). Programmes in primary care settings, such as at doctor’s surgeries, encourage sedentary adults to undertake some activity, and one calculation costed helping a sedentary person to become moderately active at less than £650. However, the same researchers acknowledged that improving the environment to make walking a more attractive option may have greater impact in increasing physical activity\(^{(25)}\). Increasingly, public health research is focusing on the environmental factors which enable people to build physical activity into their lifestyles\(^{(26,27)}\).

Environmental influences are also increasingly reflected in public policy. The 1999 WHO Charter on Transport, Environment and Health highlighted the key role of walking and cycling as transport modes in enhancing health\(^{(28)}\). Across policy fields including health, environment, and transport there is widespread recognition that programmes focused on walking and cycling as transport also have great potential to improve health, and so to reduce both direct and indirect healthcare costs\(^{(29)}\).

Improved infrastructure for walking and cycling can enable individuals to choose these modes more often. Given that over 44% of trips are under 2 miles in length and 70% under 5 miles\(^{(28)}\) there is tremendous potential for

*Countries across Europe now recognise the importance of measures to encourage active travel habits in children (Munich)*

Sustrans, working with local highway authorities and many other organisations, is implementing thousands of miles of routes for pedestrians and cyclists, through the National Cycle Network, the pioneering Safe Routes to Schools programme, and routes to stations and other major trip attractors. This is the largest environmental intervention in the UK which can give people the confidence to choose the healthy choices – by making them easy choices.

*Copenhagen seeks constantly to encourage higher levels of active travel*

The benefits to employers of a healthy and active workforce are increasingly recognised.
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To stay healthy children need at least one hour of physical activity every day. 

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