

Can active mobility's health effects give us more support for the low carbon mobility transition?

Policy brief by Dr Anna Clark, Trivector Traffic, September 2018

Key messages

- Active mobility can improve the health of individuals and of society as a whole.
- Most of the health benefits generated from active mobility (AM) are provided through increases in physical activity, that outweigh the negative effects of air pollution exposure and traffic incidents.
- Health impact assessment is a useful tool to assess the health impact of active mobility and can be used to inform decision makers.
- Active mobility is not only healthy, but also an energy-efficient mode of transport with very low emissions. Increasing the share of AM means supporting the low carbon mobility transition.
- Transport and public health professionals need to engage with each other and make sure that the benefits of low-carbon active mobility is clear and accounted for in transport planning and public health interventions.

Introduction

Insufficient physical activity is a leading health risk in Europe and accounts for around 1 million deaths every year. At the same time, Europe is struggling to reach transport climate targets. Active mobility tackles both of these challenges since those who are actively mobile (i.e. use walking and cycling as modes of transport) are overall more physically active than those relying on motorised private transport. Additionally, active mobility (AM) is also an energy efficient mode of transport with emissions close to zero. To mitigate climate impact from the transport sector, decision makers are required to make evidence-informed decisions. There is a need for better understanding of how active mobility can deliver health, economic and climate benefits to support decision makers in increasing the share of active mobility in the transport system.

Calculating the health effects of active mobility can bring further support for implementation of better AM measures. This brief presents the findings from the pan-European EU-funded Physical Activity Through Physical Activity Approaches (PASTA) project with 12 000 study participants in seven cities. It will describe how the evidence-based WHO Health Assessment Tool (HEAT) can support decision-making:

- To Enlighten policy makers that cycling and walking also deliver important societal (and economic) benefits through health effects, which can be quantified and monetised;
- To make this contribution explicit in appraisals of investments in transport and urban planning policies and interventions;
- To support advocacy of cycling and walking

The brief will also present the factors that influence levels of active mobility.

Health effects of low-carbon and active mobility

Active mobility is considered to have multiple effects on health through determinants such as physical activity, traffic incidents, air pollution, noise and social interaction. Changes in exposure to levels of these health determinants will most likely result in changes in associated health outcomes. In a systematic literature review of health impacts of different active mobility policies or interventions, 30 studies were identified. They assessed different mode shift scenarios from motorised transport to active mobility. Results showed that:

- 27 out of the 30 studies showed positive net health benefits from active mobility measures. The three studies that showed negative results were distinctive in their assessment approaches and assessed only traffic safety or included a comparison to extensive intervention costs.
- The positive net health benefits are due to the fact that an increase in physical activity levels of the individuals outweighed the individual harmful effects of air pollution exposure and the risk of traffic incidents. The societal benefits of reduced air pollution and noise levels also add up to the important net benefits.

WHO Health Assessment Tool HEAT

Under the lead of WHO, a multidisciplinary group of experts has developed HEAT¹ – a practical tool for the economic assessments of the health effects from cycling and from walking. It facilitates population-wide assessment, translating the effects of active mobility measures into a quantitative evidence-based evaluation of the effects on health and climate.

The tool can be used in many different situations, for example:

- when planning a new piece of cycling or walking infrastructure.
- to value the reduced mortality from past and/or current levels of cycling or walking.
- to provide input into more comprehensive economic appraisal exercises, or prospective health impact assessments

Calculating the health effects of cycling in Stockholm using HEAT

Stockholm is one of many cities aiming to increase the share of cycling. The health effect of the current level of cycling in and out from the inner city of Stockholm was evaluated using HEAT. Data on the number of cyclists passing in and out from the inner city of Stockholm was based on Stockholm's annual cycling assessment. The cycling is mainly commuter traffic, and based on previous studies on commuter cycling in Stockholm we used the mean distance of 9 kilometres per trip and assumed that the observed cyclists were cycling 124 days per year on average.

The total number of cyclists passing in and out from Stockholm inner city was 58 380 per day. The health effect of this amount of cycling was calculated using the HEAT tool. The cycling was estimated to prevent 11 deaths annually at a total value of 525 million Swedish kronor per year (about 53 million Euro).

¹Health Economic Assessment Tool

Enabling and challenging factors for low-carbon and active mobility

The factors that affect levels of AM can be categorised into five main fields summarized in the figure.

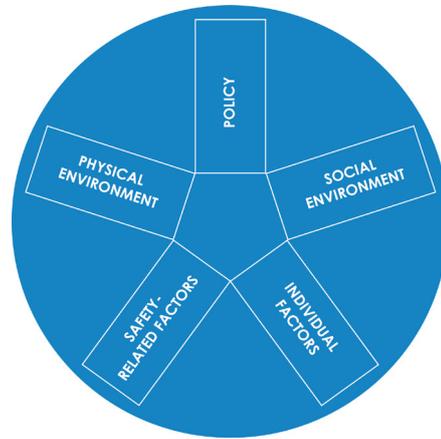


Figure 1. Five categories of factors that summarizes what affect levels of active mobility.

Physical environment

The physical environment is a well-studied factor of levels of active mobility where three subcategories can be distinguished: the transport option; the physical environment and the natural environment. The transport option is the accessibility to destinations by different transport modes partly covered by the physical environment which includes infrastructure for different transport modes. The natural environment includes factors such as weather and topology. Favourable design, high density and diversity (the “3Ds”) have been proven to increase the share of active mobility. Also, aesthetic, green and perceptibly-safe urban environments were shown to simulate AM. It is important to note the role of subjective perceptions of physical environment differ between individuals. Thus, it is sometimes more relevant to take actions on the public perception (soft measures) than to invest in the building or amelioration of infrastructures (hard measures).

Social environment

The social environment plays an important role in determining an individual’s mobility behaviour. If the individual chooses to cycle or walk instead of using other modes of transport, the choice depends on how they perceive these modes of transport, and this depends partly on the prevailing social norms. Norms can be both descriptive (what the individual thinks is “normal”) or subjective (what others think). Both affect how an individual can perceive active mobility, and whether they engage in it. Promoters of active mobility can work on altering the social environment to increase levels of AM.

Individual factors

Individual factors include socio-economic status, household composition, vehicle access, etc. They also include factors relating to personal attributes and beliefs such as habit or stages of change. There is evidence that active mobility is associated with individual factors such as gender, age, physical ability, level of education, household income, household structure (and presence of children), vehicle access (both car and non-motorised modes), driver’s licence status, ethnicity, working situation and an active lifestyle. Prior behaviour such as habits and life events are also individual factors affecting choice of transport.

Safety-related factors

Objective and subjective safety are of importance when it comes to choosing a certain transport mode. Objective safety includes measurable numbers of traffic incidents and is dependent on the volume and speed of motorised traffic. The mere presence of dedicated infrastructure for AM increases the level of safety of AM. Subjective safety is the perceived safety of individuals for a specific transport mode, and it is a crucial determinant for cycling and thus is of interest in promoting it. Better objective safety is certainly important to increase subjective safety but is not enough. Increasing the positive experience of AM through learning and training options, increased public acceptance, increased support and enthusiasm for cycling are equally important factors which influence subjective safety.

Policies

Policies can affect active mobility, however there is still very little known about the effectiveness of policy measures in increasing levels of active mobility. There are some indications that comprehensive approaches are more effective than individual measures. Interventions targeting a specific group offers the best available evidence of effectiveness of policies.

Implications and guidance

The evidence-based WHO Health Assessment Tool (HEAT) can help policymakers to realise that cycling and walking deliver important societal (and economic) benefits through health effects, which can be quantified. It makes this contribution explicit in appraisals of investments in transport and urban planning policies and interventions. This knowledge can be used to support advocacy of cycling and walking in the urban planning process.

The use of HEAT differs across Europe. The HEAT is included in national-level official guidance in two countries, United Kingdom and Sweden, and encouraged by Austria, Finland and France. To increase the use of HEAT, it is recommended to focus on countries and regions of highest potential (e.g. where economic appraisal is part of the planning process), to create a network of trained HEAT-users to support other users, to invest in data collection and to encourage key stakeholders to give it a try.

Active mobility is not only healthy, but also a very energy efficient mode of transport generating emissions close to zero. By increasing the share of active mobility, one is supporting the low carbon mobility transition. Transport planners and public health professionals needs to engage with each other and make sure the benefits of low-carbon active mobility are clear and accounted for in transport planning and public health interventions. To support change from car-centred policies to more sustainable and healthy modes of travel, there needs to be joint cooperation between the general public and policy makers in regard to low-carbon active mobility.

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