



What does active mobility mean for health? Lessons from health impact assessment

Linking active Mobility & Health

Linking active mobility and health is the key issue of the “Physical Activity Through Sustainable Transport Approaches” (PASTA) project. Those who decide to opt for active modes of transport are believed to be overall more physically active than those relying on motorized private transport.

Active Mobility (walking, cycling and the use of public transport) is thought to have multiple implications for **health** by changing the exposure to certain health determinants like:

→ *physical activity, traffic incidents, air pollution, noise, social interaction, crime, besides others, are related to active mobility.*

Changes in exposure levels of health determinants will most likely result in changes in **associated health outcomes** like: *subclinical changes, signs and symptoms, specific diseases, injuries, and disabilities, quality of life, life expectancy, and premature mortality.*

Table 1: Example of some health outcomes associated with active mobility

Active mobility – health determinants and outcomes				
Physical activity	Air pollution	Noise	Green spaces	Social interaction
Cardiovascular disease	Cardiovascular disease	Cardiovascular disease	Cardiovascular disease	Cardiovascular disease
Respiratory diseases	Respiratory diseases	Sleep disturbance	Respiratory diseases	Respiratory diseases
Cancer	Cancer	Annoyance	Mental health	Mental health
Life expectancy	Life expectancy	Life expectancy	Life expectancy	Life expectancy
Quality of life	Quality of life	Quality of life	Quality of life	Quality of life

Benefits one translates into benefits for all!

The uptake of active mobility impacts not only the health determinants of individual **travelers** who decide to walk, cycle or use public transport, but also for **society** as a whole. e.g.

- Where active mobility translates into a shift away from the use of motorized transport, the knock-on effect of this is a reduction in air pollution and traffic noise levels in cities and an overall improvement in the quality of life for all residents.
- Active mobility is also thought to be a solution to problems associated with the extensive occupancy of public space by cars. With increases in active mobility less car-dedicated infrastructure would be needed and could be replaced by green space that in itself was shown to provide numerous societal and health benefits.
- Active mobility, moreover, is thought to stimulate social cohesion with people interacting on the streets while actively commuting.

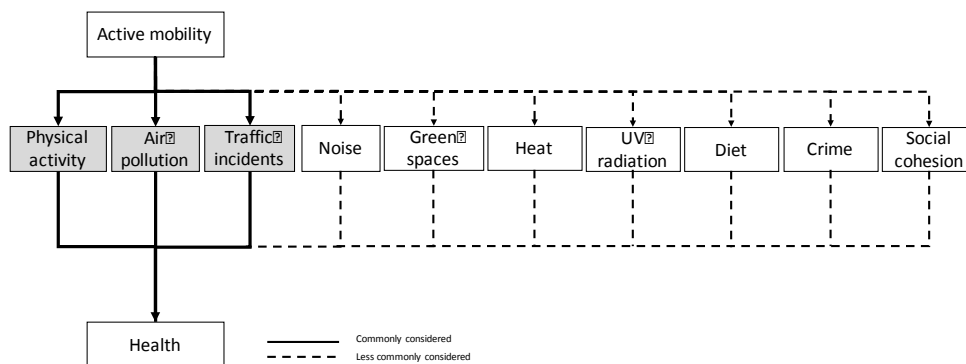


Figure 1: Health determinants of active mobility

But is increased active mobility potentially bad for my health?

Certain health risks, such as the increased risk to traffic incidents and an increased inhalation rate of air pollution (because of physical strain) for the active travelling person need to be considered. A quantification of the health benefit-risk trade-off is needed to conclude overall whether active mobility is a favorable policy for sustainable urban development and should be promoted. In this sense, health impact assessment (HIA) has been suggested to be a useful tool to quantify the associated health effects of active mobility.

Literature review

As part of the PASTA project, a systematic literature review was carried out to identify existing studies (until 2015) published in scientific literature that quantified the health impacts of different active mobility policies or interventions.

30 studies were identified that assessed different mode shift scenarios from motorized transport to active modes of transport¹. These studies used different assessment methods (comparative risk assessment, cost benefit-analysis, etc.) to compare the expected changes in exposure levels (of health determinants considered) and derive an overall conclusion of whether the assessed policy (i.e., scenario) provided net benefits or risks to health. Results showed that:

- 27 out of the 30 studies evaluated active mobility policies to provide net health benefits. The three studies that showed negative results were distinctive in their assessment approaches and assessed traffic safety only or compared to extensive intervention costs.
- The 27 studies that estimated net health benefits concluded that the benefits of active mobility result of increases in physical activity levels that outweighed detrimental effects of air pollution exposure (for the traveller) and even the risk of traffic incidents. Societal benefits of reduced air pollution and noise levels can also be expected with an increase in active mobility.

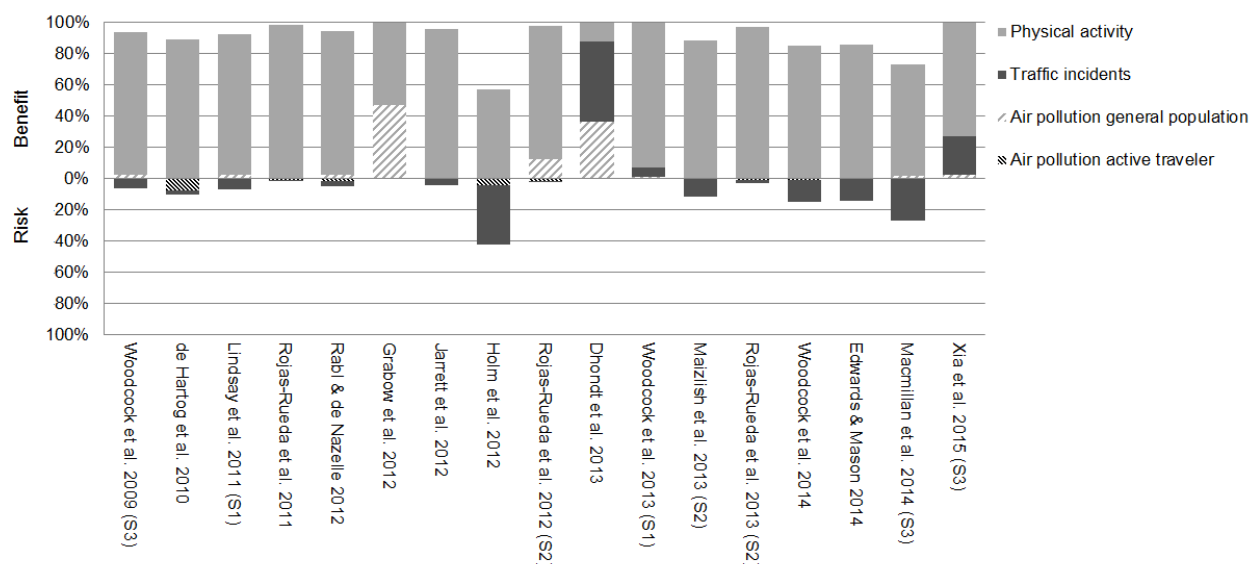


Figure 2: Health determinant contribution to the estimated health impact of mode shift scenarios to active mobility. Mueller N. et al. (2015). Health impact assessment of active transportation: A systematic review. Preventive Medicine 76 (2015) 103–114.

Review of a specific active mobility intervention

A second stage in the PASTA project involved reviewing a specific active mobility intervention namely the expansion of cycling networks in the seven PASTA cities (and 160 further European cities) to assess the impact this had on active mobility behavior i.e. cycling modal share and the subsequent associated health impacts.

The expectation was that the expansion of cycling networks would lead to increases in cycling mode share. Especially in cities with a currently low cycling mode share, expansion of cycling networks may increase the cycling mode share (up to 25%).

Figure 3: Cycling networks of the 7 PASTA cities

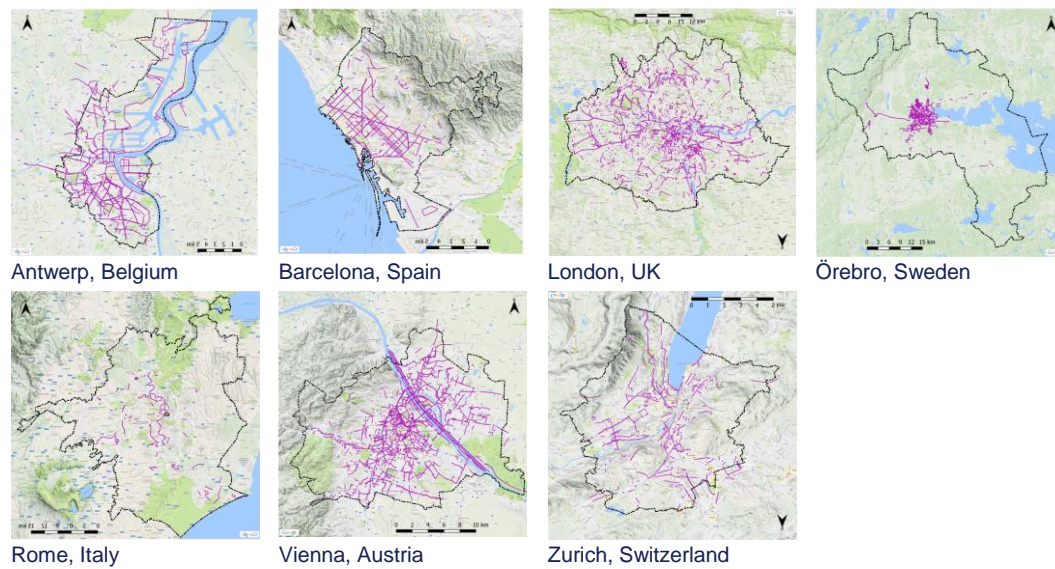
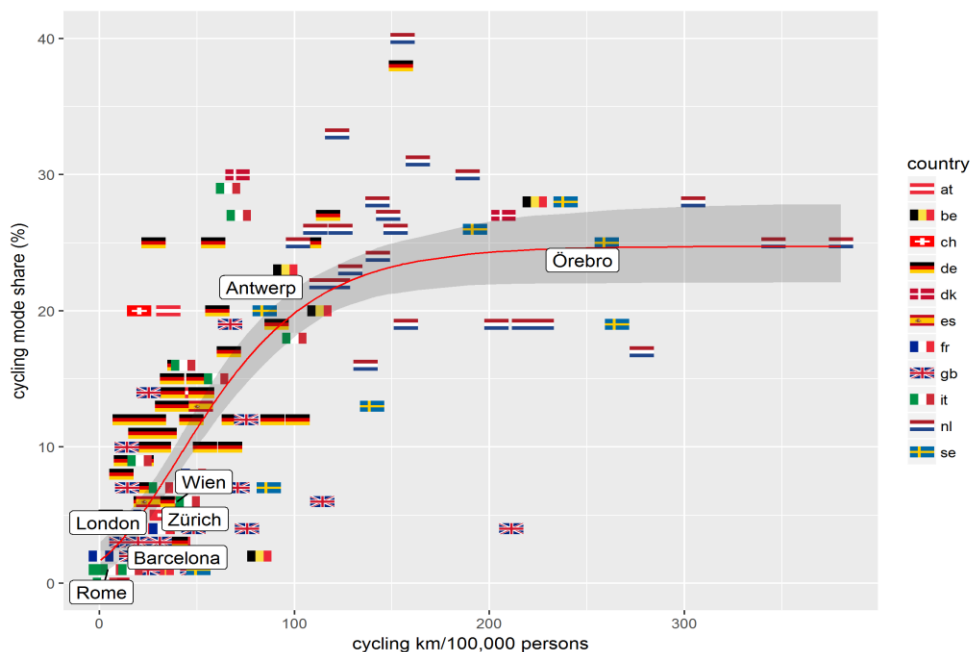


Figure 4. Relation between cycling network and cycling mode share in 167 European cities



What we learned?

- If all streets of the PASTA cities provided segregated cycling infrastructure, then in London 633 premature deaths were estimated to be preventable each year, followed by 225 in Rome, 124 in Barcelona, 81 in Vienna, 27 in Zurich and 4 in Antwerp.
- Active mobility is a favorable public policy towards sustainable urban development and human health. In European cities, most inner-urban car trips have a distance of <5 km. This is a distance that can easily be done by active modes of transport.
- The health benefits of physical activity outweigh the estimated detrimental effects of personal air pollution exposure and the risk of traffic incidents.
- Increases in active mobility can also help to reduce air pollution and noise levels in cities benefiting the society as a whole.

KEY MESSAGES

ACTIVE MOBILITY & HEALTH ...

- Active mobility can improve the health of the active traveler and of society as a whole
- Most of the health benefits are provided through increases in physical activity that outweigh the risks of air pollution exposure and traffic incidents
- Health impact assessment is a useful tool to assess the health impact of active mobility
- Health impact assessment is a useful tool to comply with “health in all policies.”

Contact

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