

INCREASED PHYSICAL ACTIVITY LEVELS AND IMPROVED PUBLIC HEALTH BY ENVIRONMENTAL MODIFICATIONS

BACKGROUND

Decreased physical activity level among the western population is one of the most important factors for increased occurrence of over-weight, heart disease and metabolic syndromes such as Type 2 diabetes. It is estimated that the cost of physical inactivity in Sweden is 6 billion SKR/year (600 million €/year).

Access to stimulating and safe environments is a fundamental resource necessary for people to perform physical activity. This environment can be provided in the form of outdoor facilities such as green areas and parks in cities or living in close proximity to nature outside the city borders. However, in many rural areas of northern Sweden and Finland, the infrastructure is not optimal for people to engage in physical activity. On the contrary, many smaller towns and villages lack the necessary road constructions for people to walk, run or bike on because roads are narrow and lack sidewalks. Speed limits are also often high. In the wintertime, snow and ice on the roads makes it even more difficult so use the road system by other means than car. Also, the darkness and lack of road lights further decreases accessibility and increases the health risks of using these roads.

As a result, people are forced to use cars, even for very short transports and the level of physical activity is very low, especially in the wintertime. In particular, children, elderly and people with physical disabilities are affected by the current situation. Children cannot transport themselves to school, friends and after-school activities. Elderly without a car are forced to either use taxi or rely on help from relatives when they are in need of transport. Therefore, many elderly must move to a nursing home much sooner than necessary if better infrastructure was provided. People using wheel-chairs also have limited access to outdoor activities in these settings.

In the NICE report (2008) it is concluded that there is lack of knowledge regarding the effects environmental changes on physical activity levels. Few studies have used comparisons groups, well defined measurements of physical activity, long time follow-up and taking confounding factors into account.

The lack of walk and bike roads in rural parts of Northern Sweden and Finland is detrimental for public health, increases the burden on the welfare system and increases pollution. The cold climate is yet one more factor which decreases physical activity in these settings.

HYPOTHESIS

By constructing walk and bike roads in rural areas of northern Sweden and Finland, public health will increase, the cost for healthcare and care for elderly will decrease. By reducing the number of short distance car trips, pollution will decrease. Also, people living in town centers will have easier access to more rural areas without relying on cars.

AIMS

Investigating the effects of bike and walk paths on public health of people living in selected rural areas where such roads are not yet constructed.

METHODS

1. The study can span several research areas, including:

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| a. Health | d. Sociology |
| b. Environment | e. Rural development |
| c. Road construction | f. Economics |

- Measurements on humans could include questionnaires, testing of work capacity, blood and muscle samples.
- Environmental measurements could include air and water pollution, noise and
- Sociological measurements could include usage of the nature as recreational areas, social interactions among people and participation in social events.
- Socio-economical investigations could include health and nursing home costs for the community.

Repeated measurements should be conducted over a time span of several years. Data should be treated with multivariate methods to find interactions between cause and effect.

STUDY DESIGN

- Select geographically rural areas without existing bike and walk roads
- Cost-benefit calculations
- Measurements of physical activity levels, physical performance and several health aspects
- Measurements of other variables related to the environment, social aspects and economy
- Construction of bike and walk roads
- Re-occurring follow-up measurements of 2) and 3) for several years
- Evaluation of health and cost effectiveness

SVENSK SUMMERING: CYKELVÄGAR OCH FOLKHÄLSA

Genom att bygga en cykelväg till områden där det inte redan finns, ökar tillgängligheten att utöva fysisk aktivitet. Detta medför positiva effekter på folkhälsa, lägre sjukskrivningar och samhällsekonomiska vinster. Syftet med studien är att studera dessa hälsoeffekter.

Metod: 1) Undersökning av hälsa och beteende av populationen i ett geografiskt område utan tillgång till cykelväg. Undersökningar består t.ex. av enkäter, blodprover och fysiologiska tester av arbetskapacitet. 2) Byggnation av cykelväg. 3) Uppföljning under ett antal år där samma tester som utfördes före cykelvägen regelbundet genomförs. 4) Utvärdering av förändringar i populationens hälsa och motionsvanor.

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FUNDING

Vägverket www.vv.se/templates/page3_1276.aspx

Räddningsverket www.srv.se/templates/SRV_AreaPage_242.aspx

SFHI www.fhi.se/templates/Page_187.aspx

Naturvårdsverket www.naturvardsverket.se/sv/

Hjär-Lungfonden www.hjart-lungfonden.se/

AFA www.afaforsakring.se

Fas www.fas.se

OTHER WEB-SITES

www.friluftsforskning.se/

www.naturvardsverket.se/sv/

www.vv.se/

www.nice.org.uk

TIME SCHEDULE

2008

- Congress in Boden with invited speakers, open to public
- Formation of research objective
- Formation of research groups/networks
- Project manager
- Financial frames

2009

- Selection of areas
- Cost-benefit investigation
- Design of research projects
- Application for funding

2010-2011

- Data collection

2012-2013

- Road construction

2014-

- Follow up studies
- Continuous data evaluation and reporting