



Cycling, walking and health: the WHO perspective

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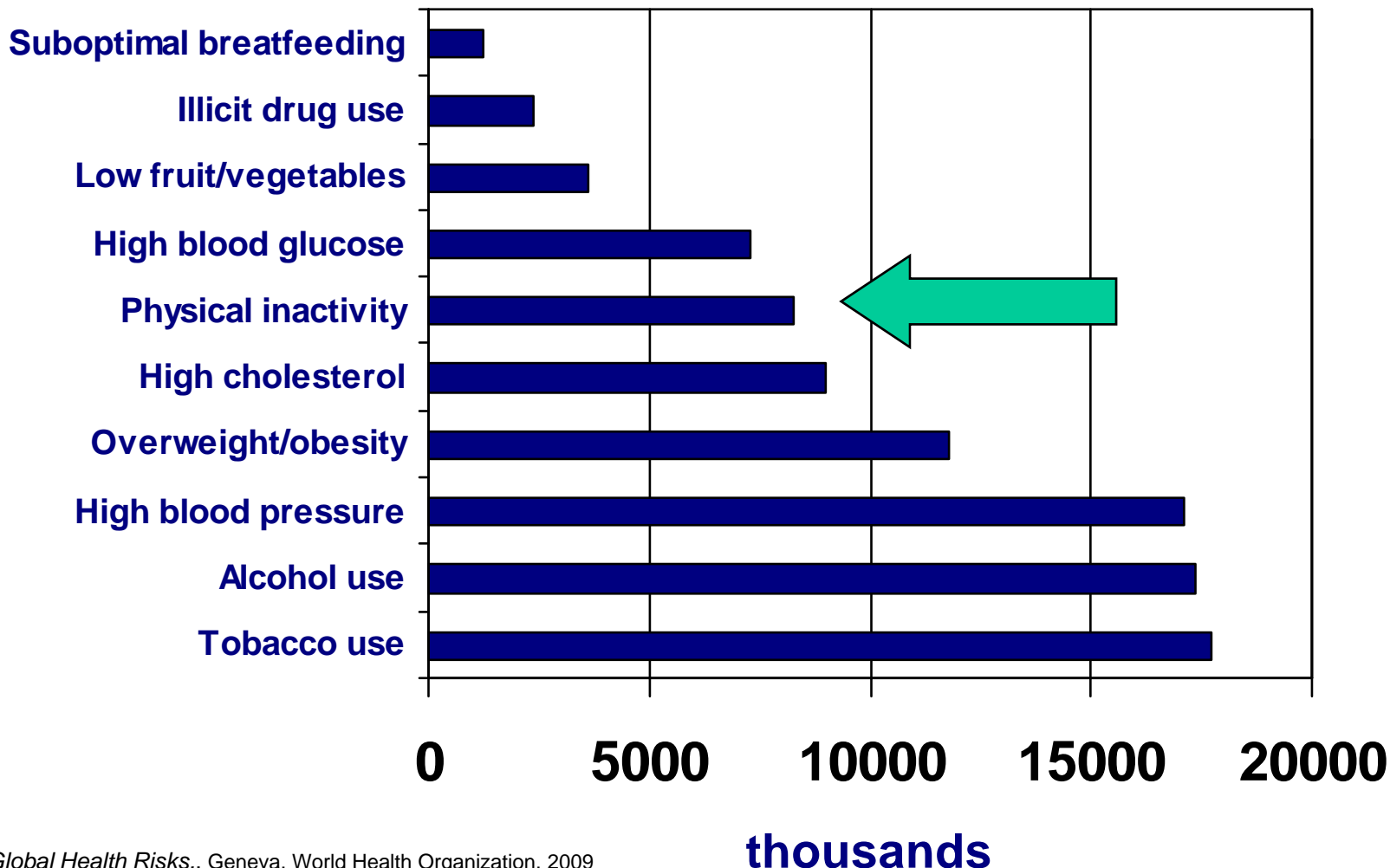
Madrid, 11 June 2010

In this presentation:

- Physical activity and health
- Cycling, walking and health
- Promoting cycling and walking
 - Physical environment
 - Policy environment
 - Supportive tools

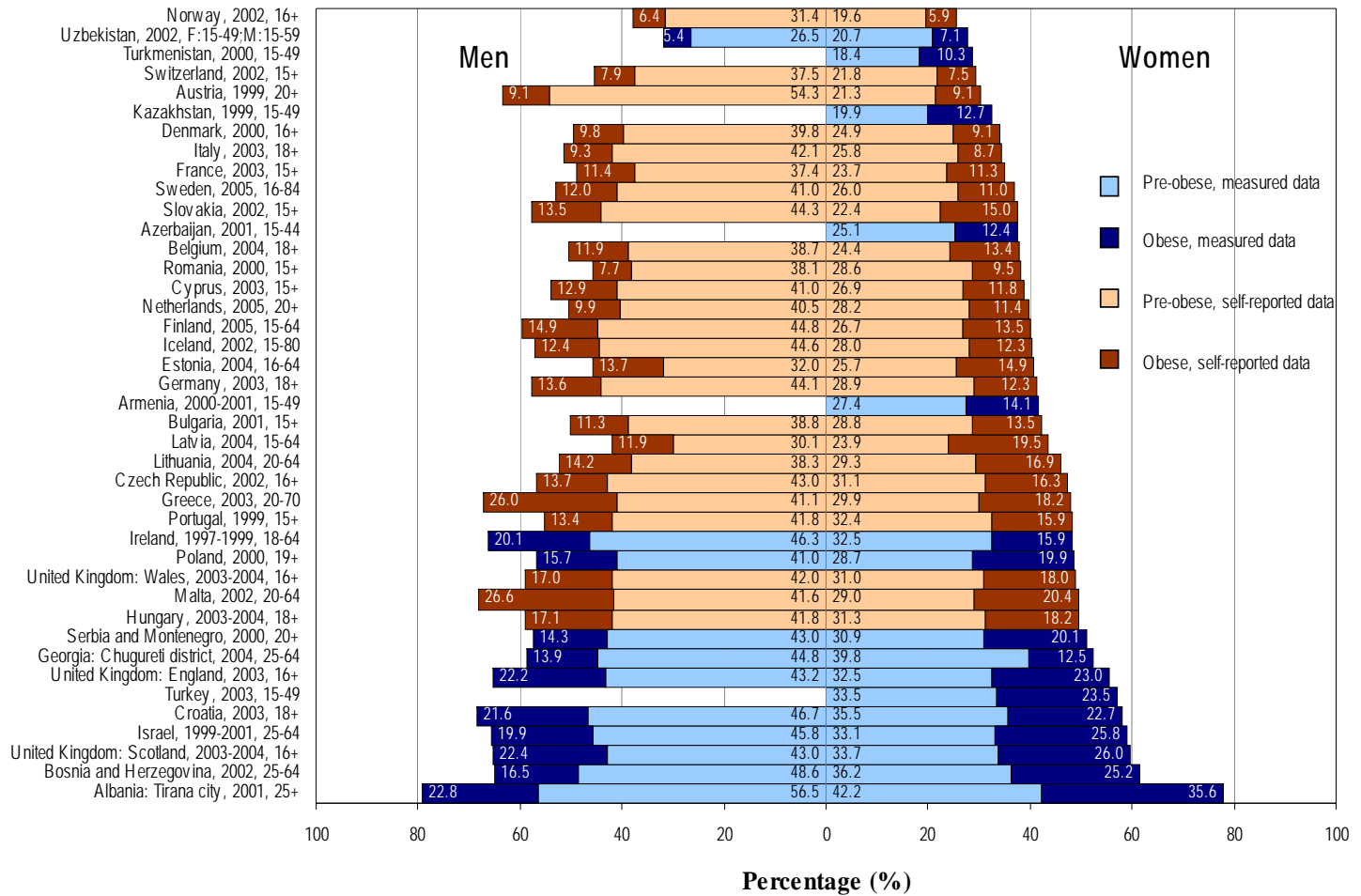
Physical inactivity is a leading risk factor for health in Europe, associated to nearly 1 million deaths/year

Disability adjusted life years lost due to risk factors in EURO, 2004



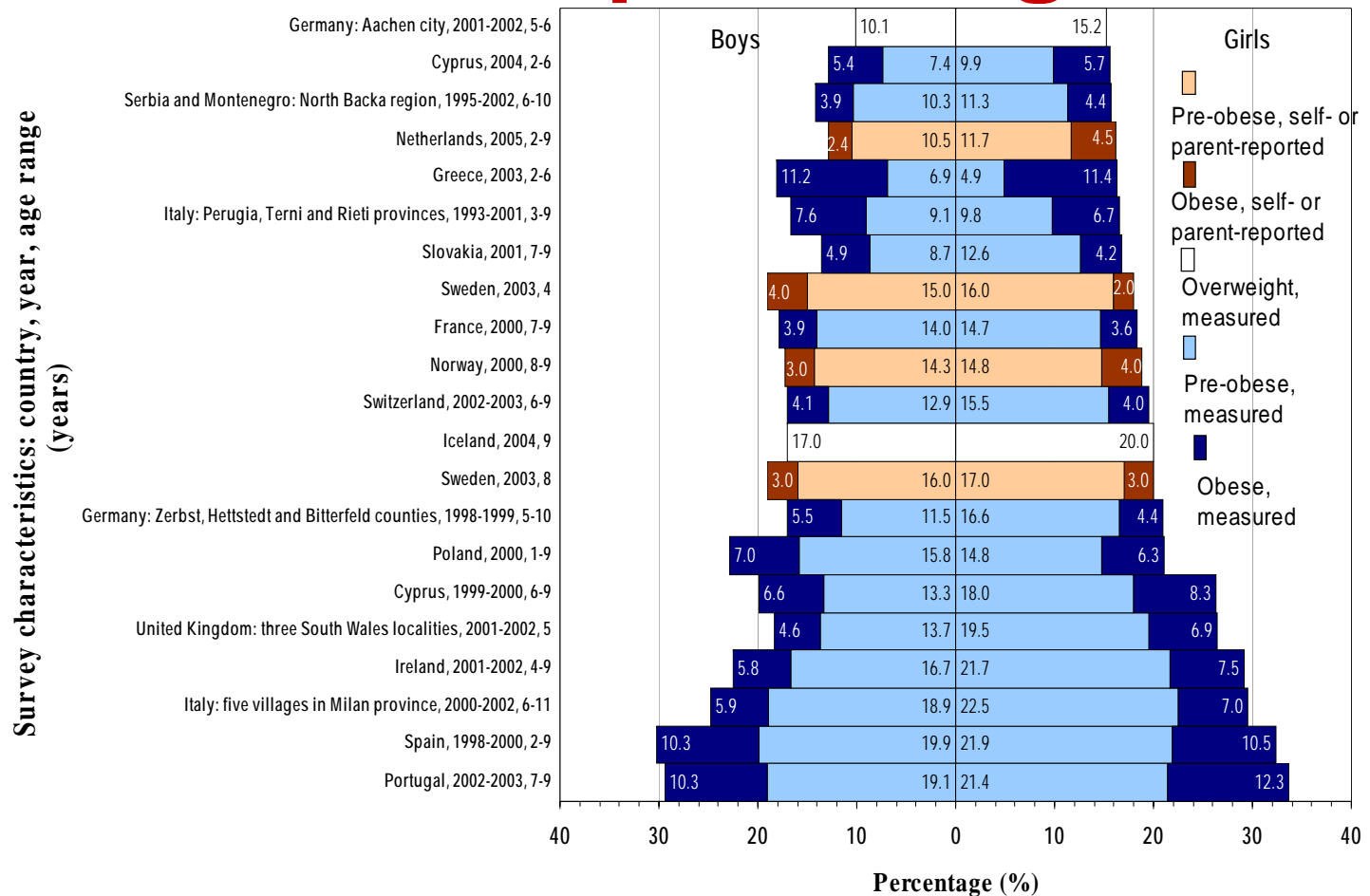
Overweight among adults in the WHO European Region

Survey characteristics: country, year, age range (years)



Source: WHO Regional Office for Europe, 2006.

Overweight among schoolage children in the WHO European Region



Source: WHO Regional Office for Europe, 2006

What do we know about physical activity and health

↓ ↓ Coronary heart disease

↓ ↓ High blood pressure

↓ ↓ Stroke

↓ ↓ Diabetes II

↓ ↓ Metabolic syndrome

↓ ↓ Colon cancer

↓ ↓ Breast cancer

↑ ↑ Life expectancy

↑ ↑ Body composition / healthy BMI

↑ ↑ Fitness

↑ ↑ Functional health in old age

↑ ↑ Good biomarker profile incl. for osteoporosis

↑ Sleep quality

↑ Health related quality of life

↑ ↑ Strong evidence

↑ Modest evidence

Source:

Physical Activity Guidelines Advisory Committee Report, US Department for Health and Human Services, 2008

Cycling and effects on total mortality

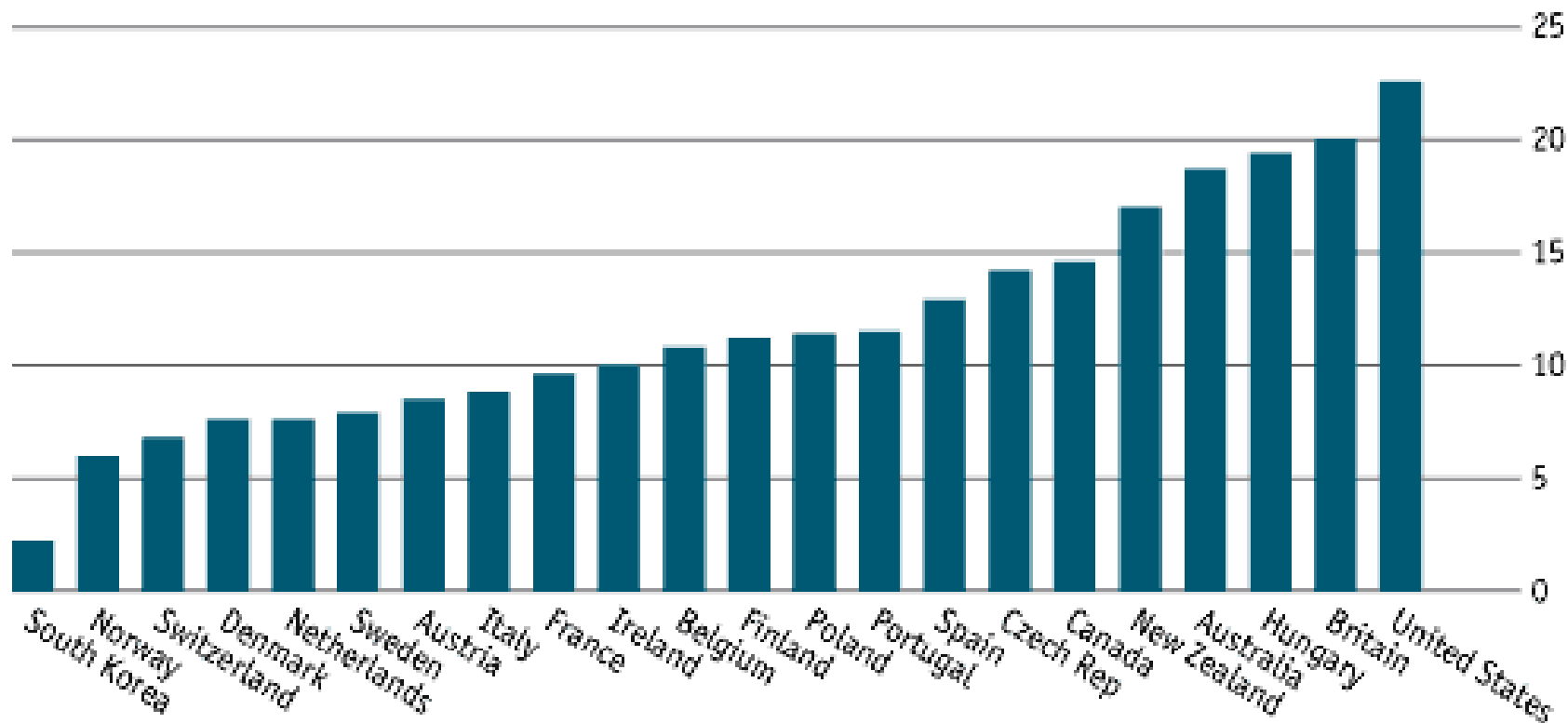
FINDINGS		Reduction in risk for all cause mortality
Andersen et al (2000) Copenhagen Hearth Study	Danish adults reporting cycling to and from work: RR = 0.72 (95 % CI: 0.6, 0.9) for all cause mortality	38 %
Matthews et al (2007) Shangay Women's Health Study	Chinese women reporting regular cycling for transportation: RR=0.79 (0.61-1.01) (0.1-3:4METs) and 0.66 (0.40-1.07) (>3.5METs) for all-cause mortal.	27-52%

⇒ indication that positive effects of active commuting more important than possible negative effects of air pollution

There is an inverse (ecological) association between active transportation and obesity rates (1)

Obesity

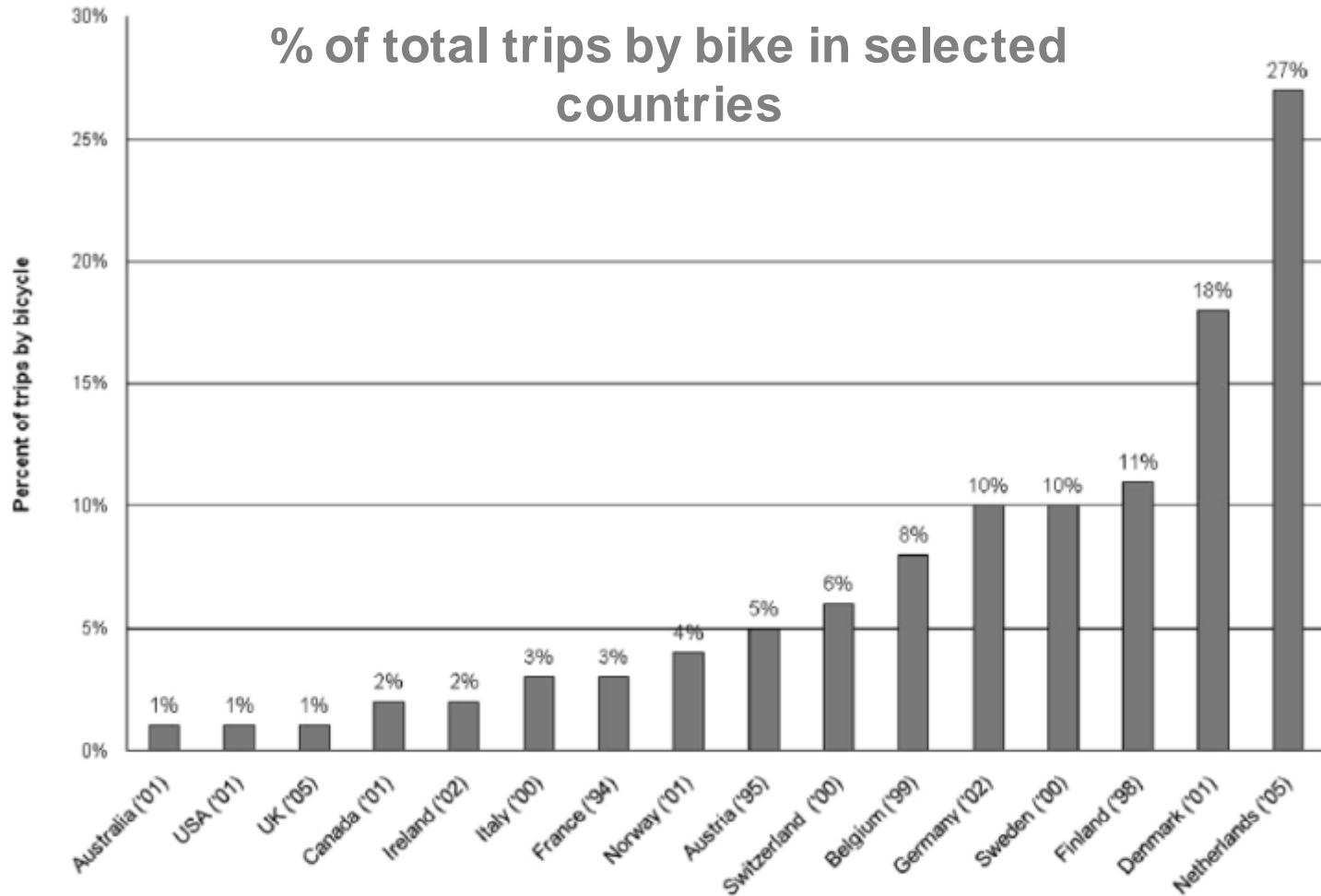
% of population* with Body Mass Index over 30, latest year available



Source: OECD

*Aged 15 and over

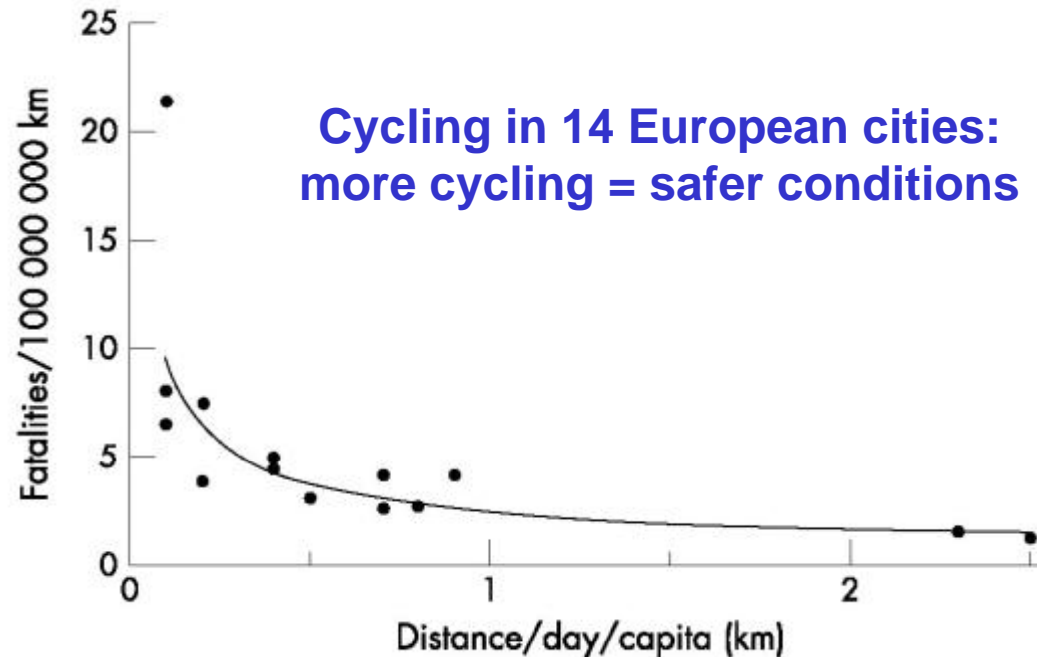
There is an inverse (ecological) association between active transportation and obesity rates (2)



From: Pucher & Buehler. Transport Reviews, 2008. Data from various sources.

Cycling and road traffic crashes

- In general, cyclists and pedestrians at higher risk
- **BUT**: “safety in numbers” effect



Jacobsen PL. Injury Prevention 2003;9:205-209

⇒ **Confirmed in Australian context (Robinson, Health PromJAus 2005)**

Cycling and air pollution

- No systematic review available for air pollution and physical activity- Evidence from singles studies:

including, e.g. :O'Donoghue et al. 2007; Rank et al., 2001; Chertok et al., 2004, van Wijnen et al., 1995; Kingham et al., 1998; Adams et al., 2001; Kingham et al., 1998

- Recent studies (May 2010) on exposure to particulate matter indicate that this is influenced by the breath rate of cyclists and choice of route.
- Active commuters likely to benefit from “safety in numbers effect”, **if** accompanied by suitable transport planning
- Such measures could at the same time lead to decreased air pollution, noise, emissions of greenhouse gases and congestion
- Overall, unlikely that promotion of active transport would be “unhealthy” and lead to additional costs

WHY ACTIVE TRANSPORT? Health promotion, sport and physical education alone are insufficient

- The scale of the problem is too big
- The environmental approaches needed are outside the control of the health and sport sectors
- New partnerships must be developed across different sectors
 - Transport, urban planning, housing, education, leisure time industry.



Active transport can help integrating physical activity in daily life

- Avoids dependence on facilities for sports
- Does not require making a time slot available for that
 - “I have no time for physical activity”
- Equitable and easily accessible options
- Feasible
 - 10% of trips made in car in Europe cover distances of less than 1 km
 - more than 30% less than 3 km and 50% of less than 5 km
- Most people can do it
- Highly cost-effective
 - Minimal investment of household income
- Is enjoyable!!!!



Photo courtesy of BASPO

Cycling: a “win-win-win” option that helps different sectors achieving their own goals

Goals	Interest
Reduce emissions of: –air pollutants; –greenhouse gases; –noise	Environment Health
Reduce congestion	Transport
Reduce road traffic injuries	Transport, Health
Reduce investments in infrastructure for more cars	Transport
Improve accessibility and quality of urban life	Transport, Health
Complement improvements to vehicles and fuels	Transport
Increase physical activity	Health
Promote tourism	Tourism and leisure industry
Create new jobs	Economy, welfare, labour

Promoting cycling: the physical environment Summarizing the evidence

Suggests environments that are...

- functional (provision of place to walk/cycle)
- safe
- provide access to destinations/facilities/ places
- convenient
- aesthetical

...are “supportive” or “walk” / “cycle” friendly neighbourhoods

For example.....



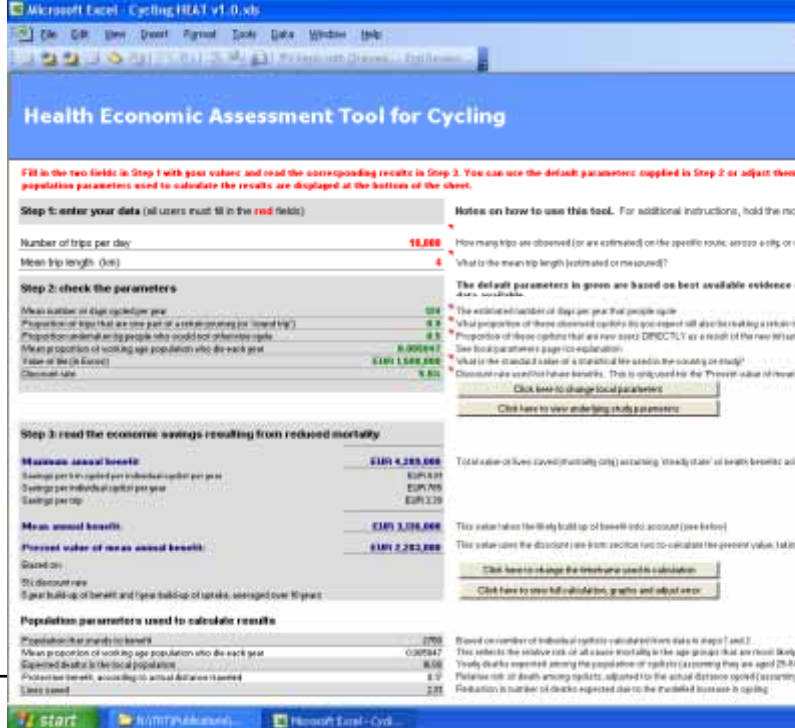
Promoting cycling: tools WHO/UNECE guidance and tool for economic assessment of health benefits from cycling and walking



ECONOMIC ASSESSMENT OF TRANSPORT INFRASTRUCTURE AND POLICIES

Methodological guidance on the economic appraisal of health effects related to walking and cycling

By: Nick Cavill
Sanna Kahlmeier
Henry Rutter
Francesca Barbone
Pekka Oja

Microsoft Excel - Cycling HEAT v1.0.xls

Health Economic Assessment Tool for Cycling

Fill in the two fields in Step 1 with your values and read the corresponding results in Step 3. You can use the default parameters supplied in Step 2 or adjust them according to your needs. The population parameters used to calculate the results are displayed at the bottom of the sheet.

Step 1: enter your data (all users must fill in the red fields)

Number of trips per day: **10,000**

Mean trip length (km): **4**

Step 2: check the parameters

Mean number of days cycled per year: **504**

Proportion of trips that are one part of a round-trip: **0.9**

Proportion of total trip people who would not otherwise cycle: **0.9**

Mean proportion of working age population who do not cycle: **0.000047**

Value of the life benefit: **€181,548,000**

Discount rate: **5.5%**

Step 3: read the economic savings resulting from reduced mortality

Maximum annual benefit: **€181,4,283,000**

Savings per km cycled per individual cyclist per year: **€21,527**

Savings per individual cyclist per year: **€21,705**

Savings per day: **€21,129**

Mean annual benefit: **€181,3,008,000**

Present value of mean annual benefit: **€181,2,283,000**

Discount rate: **5.5%**

5 year build-up of benefit and 1 year build-up of trips, averaged over 10 years

Population parameters used to calculate results

Population of target country to benefit: **2700**

Mean proportion of working age population who do not cycle: **0.00047**

Expected health to the total population: **8,000**

Population benefit, according to actual distance traveled: **1.0**

Value saved: **2.01**

Notes on how to use this tool. For additional instructions, hold the mouse over any red triangle.

How many trips are observed (or are estimated) on the specific route, across a city or on a specific road?

What is the mean trip length (estimated or measured)?

The default parameters in green are based on best available evidence on European populations.

The estimated number of days per year that people cycle

What proportion of these observed cyclists do you expect will also be walking or otherwise cycling?

Proportion of these cyclists that are new users DIRECTLY as a result of the new infrastructure

See local parameters page for explanation.

What is the expected value of a statistical life used in the country or study?

Discount rate used for value benefits. This is equivalent to the "Present value of benefit" calculation.

Click here to change local parameters

Click here to view underlying study parameters

Total value of lives saved (mortality only) according to 'steady state' of health benefits according to the model.

This value takes the likely build-up of benefit into account (see below)

This value uses the discount rate from section two to calculate the present value, taking into account the build-up of benefit.

Click here to change the discount rate used in calculation

Click here to view full calculations, graphs and adjust error


Based on number of individuals cycled calculated from data in step 1 and 2.

This reflects the relative risk of all cause mortality in the age groups that are most likely to cycle.

Trials do not report directly on the prevalence of trips so a correction has been applied (25.4%).

Relative risk of death among cyclists, adjusted to the actual distance cycled (according to the model).

Population is number of deaths expected due to the modelled increase in cycling.




ECONOMIC ASSESSMENT OF TRANSPORT INFRASTRUCTURE AND POLICIES


METHODOLOGICAL GUIDANCE ON THE ECONOMIC APPRAISAL OF HEALTH EFFECTS RELATED TO WALKING AND CYCLING

Health Economic Assessment Tool for Cycling (HEAT for cycling)



User guide



Information@euro.who.int



THE PEP European Health and Environment Partnership Programme

Download the guidance document, HEAT for cycling and user guide from www.euro.who.int/transport/policy/20070503_1

Promoting cycling: tools

On-line catalogue of documents on PA promotion

<http://data.euro.who.int/PhysicalActivity>

Country	Title	Year	Issuing body
Austria	Masterplan cycling: strategy for the promotion of cycling traffic in Austria	2006	Lebensministerium
Czech Republic	National Cycling Strategy: Aims, Realities and Perspectives	2005	Centrum dopravního výzkumu pro potreby Ministerstva dopravy
Finland	Promoting pedestrian and bicycle traffic in Finland, the JALOIN programme 2001-2004	2005	Ministry of Transport and Communications
France	Proposal to encourage the development of the bicycle in France	2004	Mission parlementaire Velo
Germany	National Cycling Plan 2002-2012 Ride your bike!	2002	Federal Ministry of Transport, Building and Housing
Switzerland	National environment and health action plan	2001	Bundesamt für Gesundheit BAG

Promoting cycling: the international policy environment

- **Transport, Health and Environment Pan-European Programme (THE PEP)**
- **Children, Environment and Health Action Programme for Europe**
- **Charter on Counteracting Obesity (2006)**



Promoting cycling: tools Networking


- HEPA Europe: the European network for promotion of health-enhancing physical Activity
 - Brings together more than 80 institutions (academia, ministries, NGOs) from 24 European countries
 - Promotes:
 - The development of innovative multi-sectoral strategies;
 - Innovative approaches and good practices for physical activity
 - Research and evaluation of effectiveness of interventions



THANKS!


THE SOLID FACTS

Promoting physical activity and active living in urban environments



THE ROLE OF LOCAL GOVERNMENTS

Physical activity and health in Europe



EVIDENCE FOR ACTION

Find more information at:

- ***HEPA Europe (European network for promotion of health-enhancing physical activity)***

www.euro.who.int/hepa

- ***Transport, Health and Environment Pan European Programme (THE PEP)***

www.thepep.org

- ***Nutrition/obesity***

www.euro.who.int/obesity

www.euro.who.int/nutrition