

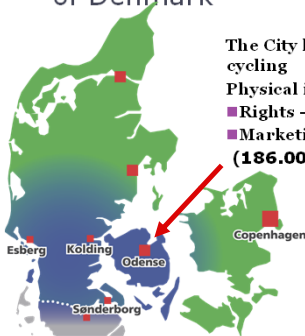
Cycling and health

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It is possible to change behaviour!

- The City of Odense did a three year intervention with the purpose of increasing commuter cycling

Odense – The National Cycle City of Denmark

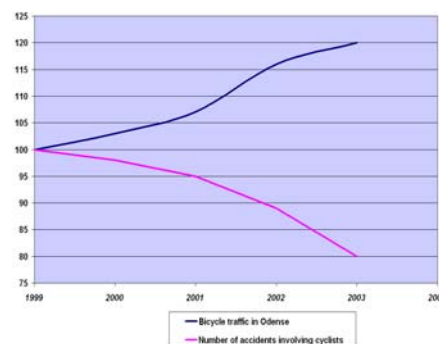


The City has done a lot to increase cycling
Physical improvements
 ■ Rights – rules
 ■ Marketing – campaigns
(186.000 citizens)



Odense – The National Cycle City of Denmark

Results 1999-2003:
 ■ > 50 sub-projects
 ■ Bicycle traffic increase by 20 pct.
 ■ Accidents involving cyclists decrease by 20 pct.



www.cyclecity.dk

Some of the interventions included:

Right-hand turn lanes



Right of cyclists over motorists



Linked traffic light system



Awareness of cyclists – the column to the right counts all cyclists



Priority of bicycle lanes



Importance of bikelanes

- 400 meter bikelane established along a road leading to city
- Resulted in 18% increased cycling
- 89% feel more safe after bike lane was constructed



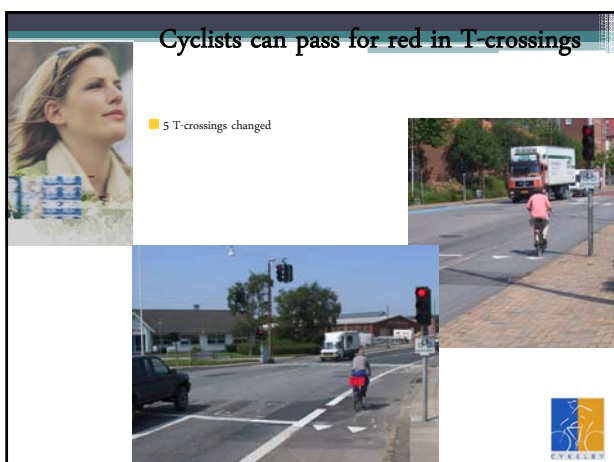

Bikelane turn before light signal

- Signal changed for cars, so cyclists have priority
- Made in 20 different crossings in city
- Many main roads
- 77% feel more safe



Cyclists can pass for red in T-crossings

- 5 T-crossings changed

'Green wave' for cyclists marching 15-20 km/h

- "it is annoying to stop for red"
- Solve the problem
- 45 lights established




Pendler rute for cyclists

- Cyclists have priority. Changed in many crossings.




Pendler rute for cyclists - results

- 15% fewer stops
- Travel speed increased 2%

Perceived:

- 34% perceive higher speed
- 55% perceive fewer stops
- 69% agree giving cyclists priority (including car drivers)



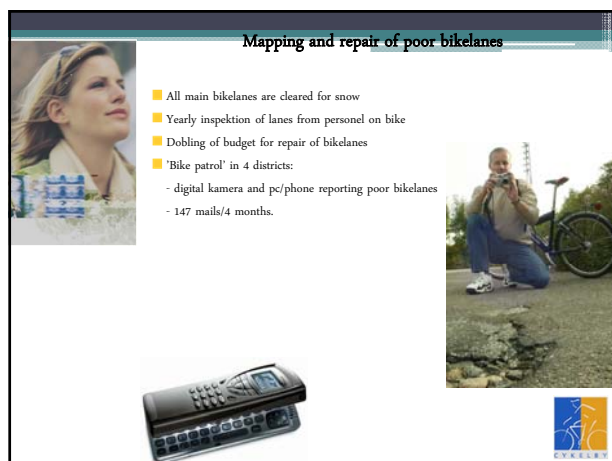


Cyclists allowed in 'walking streets'

- Make it easier for cyclists in inner city
- Allowed between 9PM and 9AM




Mapping and repair of poor bikelanes

- All main bikelanes are cleared for snow
- Yearly inspektion of lanes from personnel on bike
- Doubling of budget for repair of bikelanes
- "Bike patrol" in 4 districts:
 - digital kamera and pc/phone reporting poor bikelanes
 - 147 mails/4 months.

Information about cycle infrastructure

- Maps in Danish and English
- internet page
- Folders
- Cycle counting columns 16 different places

Internet based bike routes are calculated similar to car routes

Cykelruteplan anbefalede rute på kort

From: Odense Cykelløber
To: Nørregade, 5000 Odense C
Via: Sydbank Universitetsbibliotek

Safe Routes to School in Odense

- Analyses on children's insecurity in traffic - 45 schools around 1980
- App. 200 construction projects are established
- Free school transport by law if the roads are too dangerous

Safe Routes to School in Odense

- Traffic accidents with children: Injuries 2000, police and hospital

Category	Percentage
6-16 years	11%
Others	89%

Safe Routes to School in Odense

- Traffic accidents with children 1985-2001:

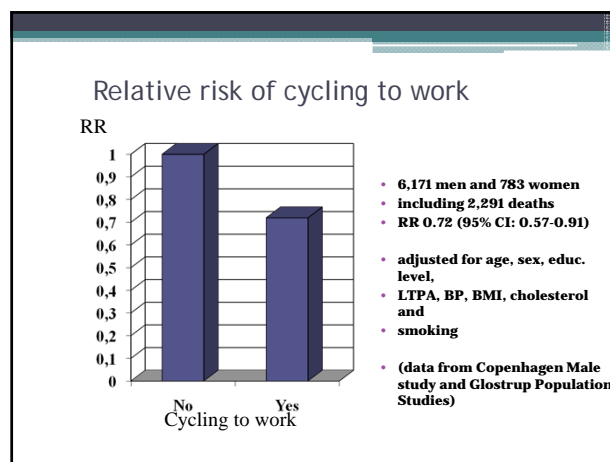
Injured children 6-16 years, police and hospital

Year	Injured children (approx.)
1985	85
1986	88
1987	75
1988	72
1989	78
1990	80
1991	75
1992	70
1993	65
1994	55
1995	50
1996	45
1997	50
1998	40
1999	55
2000	65
2001	60

Safe Routes to School in Odense

- Evaluation of projects 1986-99:
- 29 % fewer police registered accidents at those sites
- 18 % directly caused by the school projects
- 9 fewer injuries per year
- 2 mill. Euros per year saved by the society
- 0,8 mill. Euros per year saved directly by the municipality

Cycling data from Copenhagen



Preventive Medicine 53 (2011) 172-177

Contents lists available at ScienceDirect

Preventive Medicine

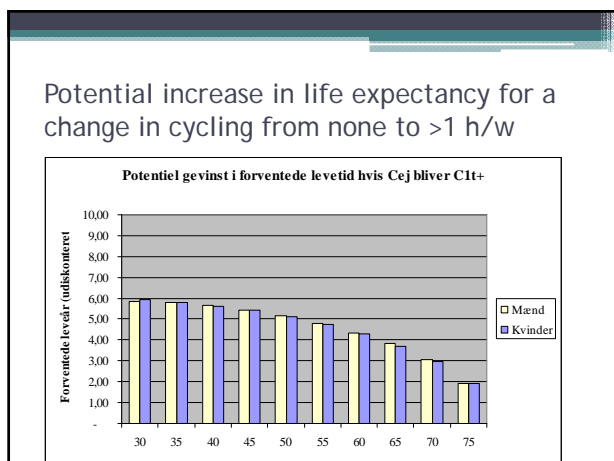
ELSEVIER journal homepage: www.elsevier.com/locate/ypmed

The effect on cardiorespiratory fitness after an 8-week period of commuter cycling – A randomized controlled study in adults

Niels Christian Møller ^{a,*}, Lars Østergaard ^a, Jens Raaberg Gade ^b, Jeppe Lund Nielsen ^b, Lars Bo Andersen ^{a,c}

economic valuation

Walking and cycling: what are they worth?



Active Travel to School and Cardiovascular Fitness in Danish Children and Adolescents

ASHLEY R. COOPER¹, NIELS WEDDERKOPP², HAN WANG¹, LARS BO ANDERSEN³, KARSTEN FROBERG², and ANGIE S. PAGE¹

¹Department of Exercise, Nutrition and Health Sciences, University of Bristol, UNITED KINGDOM; ²Institute of Sports Science and Clinical Biomechanics, University of Southern Denmark, Odense, DENMARK; and ³Department of Sports Medicine, Norwegian School of Sports Sciences, Oslo, NORWAY

First we published cross-sectional analysis of travel mode and fitness

Med. Sci. Sports Exerc., Vol. 38, No. 10, pp. 1724–1731, 2006.

Contents lists available at ScienceDirect

Preventive Medicine

journal homepage: www.elsevier.com/locate/ypmed

ELSEVIER

Longitudinal associations of cycling to school with adolescent fitness

Ashley R. Cooper^{a,*}, Niels Wedderkopp^b, Russell Jago^a, Peter L. Kristensen^c, Niels C. Møller^c, Karsten Froberg^c, Angie S. Page^a, Lars Bo Andersen^{c,d}

^a Exercise, Nutrition and Health Sciences, University of Bristol, UK
^b The Back Research part of Clinical Locomotion Science, University of Southern Denmark, Odense, Denmark
^c Institute of Sports Science and Clinical Biomechanics, University of Southern Denmark, Odense, Denmark
^d Department of Sports Medicine, Norwegian School of Sports Sciences, Oslo, Norway

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Bicycling to school improves the cardiometabolic risk factor profile: a randomised controlled trial

Lars Østergaard,¹ Line A B Borrestad,^{1,2} Jakob Tarp,¹ Lars Bo Andersen^{1,3}

Finally

- We have just finished a school based intervention promoting cycling in 12 schools using another 12 schools as controls
- It works, but our problem is that the main reason for not cycling to school in Denmark is distance
- **Two third of teenagers cycle and most of the others walk, because the distance is too short!**



Thank You!