


The impact of transport on the health burden in the Netherlands: 1980-2020

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National Institute for Public Health and the Environment

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Introduction

- Transport & Economy
  - transport of people and goods
  - access to jobs, education, leisure, etc.

    Good for the economy

- Transport & Health
  - air pollution
  - noise
  - traffic accidents
  - sedentary lifestyle

    Bad for health

Transport & Health

- Noise
  - annoyance
  - sleep disturbance
  - stress
  - adverse effects on cognition (reading, memory, attention)
  - cardiovascular diseases including elevated blood pressure (under discussion)
- Air pollution (PM10)
  - respiratory mortality and morbidity
  - cardiovascular mortality and morbidity
- Traffic accidents
  - mortality and morbidity
- Sedentary life style
  - heart disease

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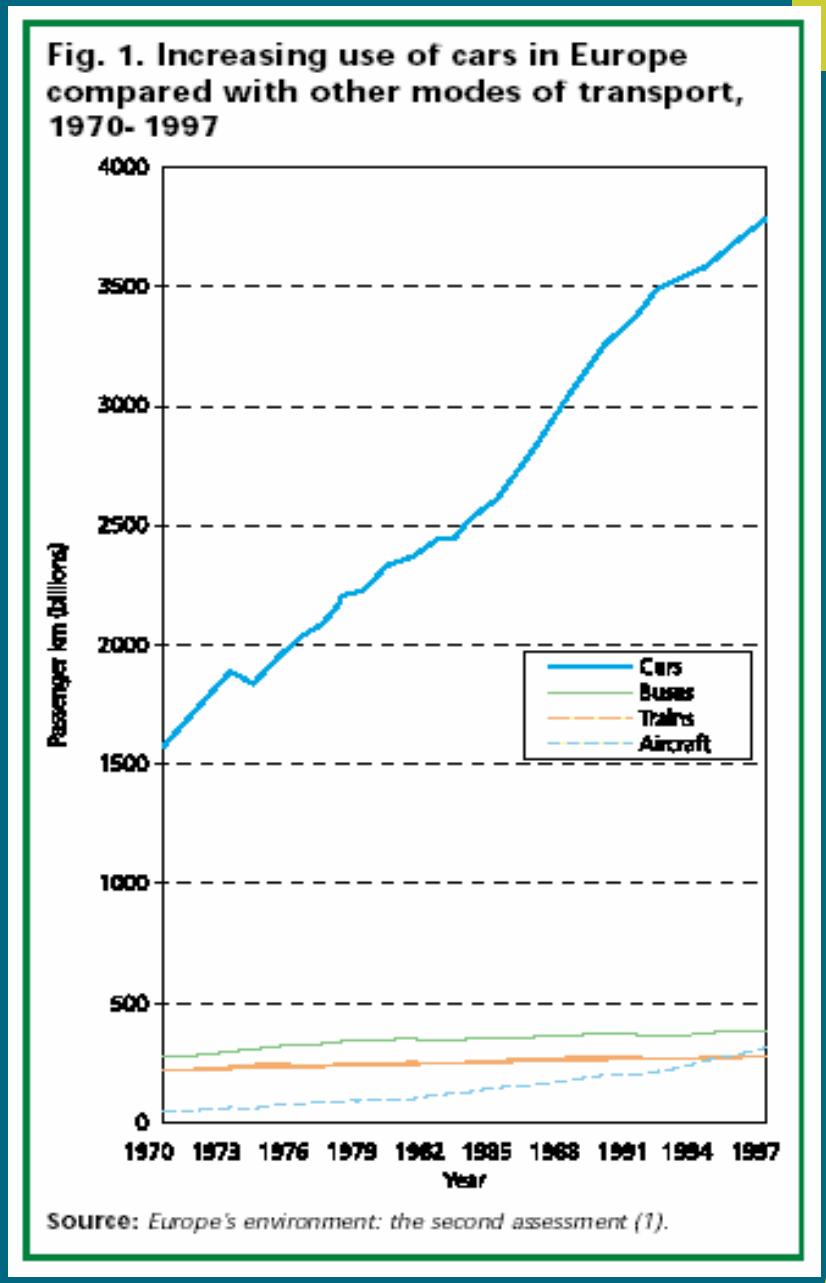
Transport trends

- Increase of passenger kilometers travelled by private car in recent decades (in the Netherlands and in Europe as a whole)
- Transport by car will continue to increase



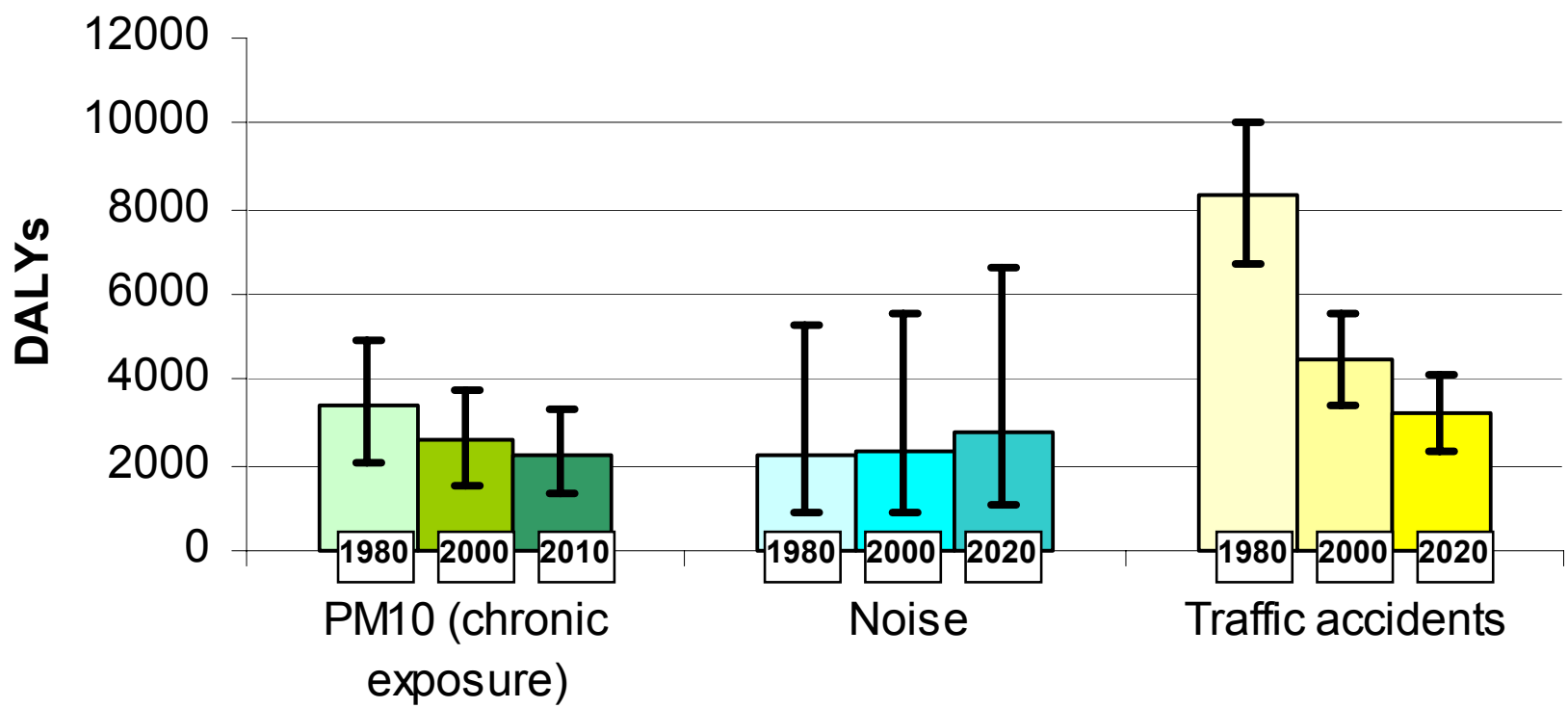
HIA transport

- Aim:
  - Calculation of the impact of transport on health in the Netherlands in the period 1980-2020, using DALY's
  - Integrated HIA as a basis for the evaluation of measures to prevent/diminish health effects
- Health effects in calculation:
  - noise (annoyance and sleep disturbance)
  - PM10 pollution (short term and long term exposure, cardiovascular and respiratory mortality and morbidity)
  - Traffic accidents (mortality and injury)

DALYs

- **DALY**s: **D**isability **A**djusted **L**ife **Y**ears
- DALY =
  - number of people in a certain state (morbidity or mortality) **x**
  - severity of the state (0 = healthy, 1 = death) **x**
  - duration of the state
- DALYs enable quantitative comparison of health risks and health trends.

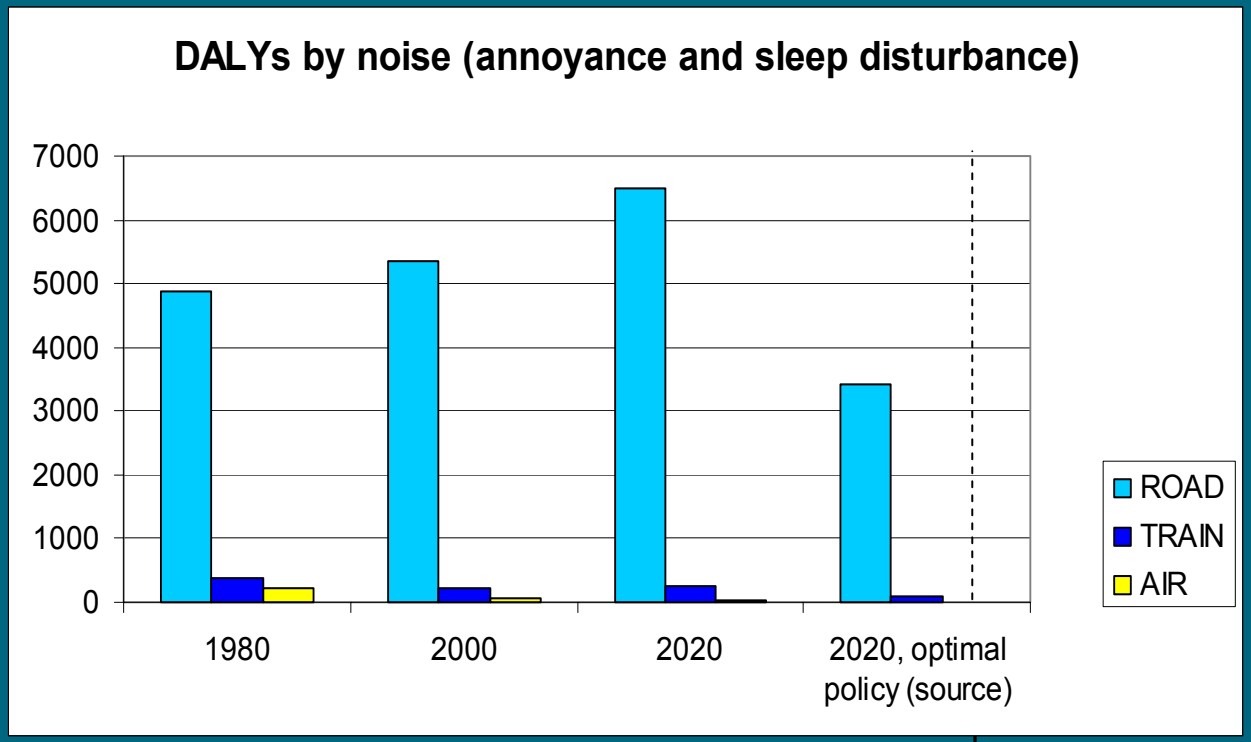
Results (1/2)


Transport related DALYs per 1.000.000 people in the Netherlands;1980-2020
DALYs
12000
10000
8000
6000
4000
2000
0
1980
2000
2010
1980
2000
2020
1980
2000
2020
PM10 (chronic exposure)
Noise
Traffic accidents

Results (2/2)

- Currently, traffic accidents generate most transport related DALYs in the Netherlands
- The number of noise and accident related DALYs could be similar in 2020
- DALYs related to chronic exposure to PM10 are many times higher than the DALYs related to acute PM10 exposure. Both are slowly increasing over time.

DALYs transport noise



Air: Sleep disturbance not included; no policy scenario for 2020

- 2020 policy scenario based on:
  - double asphalt layers and speed limitations (highways)
  - double asphalt layers and sound absorbing pavement (provincial roads)
  - More silent cars and tires (urban roads)
  - More silent break systems and rail construction (rail traffic)

Use of DALYs

- Potential use of DALYs
  - quantitatively compare health effects
  - assess effects of policy measures
  - support policy making
- Uncertainty
  - concentrations (measurements)
  - exposed population
  - dosis respons relations
  - duration of health state
  - severity of health state
  - trends

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http://unece.unog.ch/the-pep