SODEZZ

Sociální determinanty zdraví u sociálně a zdravotně znevýhodněných a jiných skupin populace
(CZ.1.07/2.3.00/20.0063)

Prof. Johan Mackenbach

"Health and disease in an unequal world“

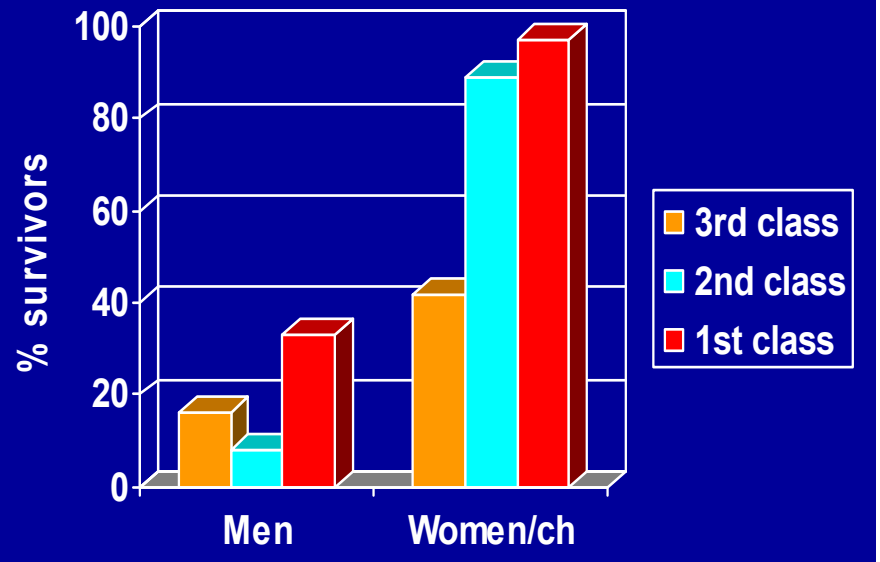
INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

29.2.2012

HEALTH AND DISEASE IN AN UNEQUAL WORLD
-
A VIEW FROM EUROPE

Johan Mackenbach
Department of Public Health
Erasmus MC
Rotterdam, Netherlands

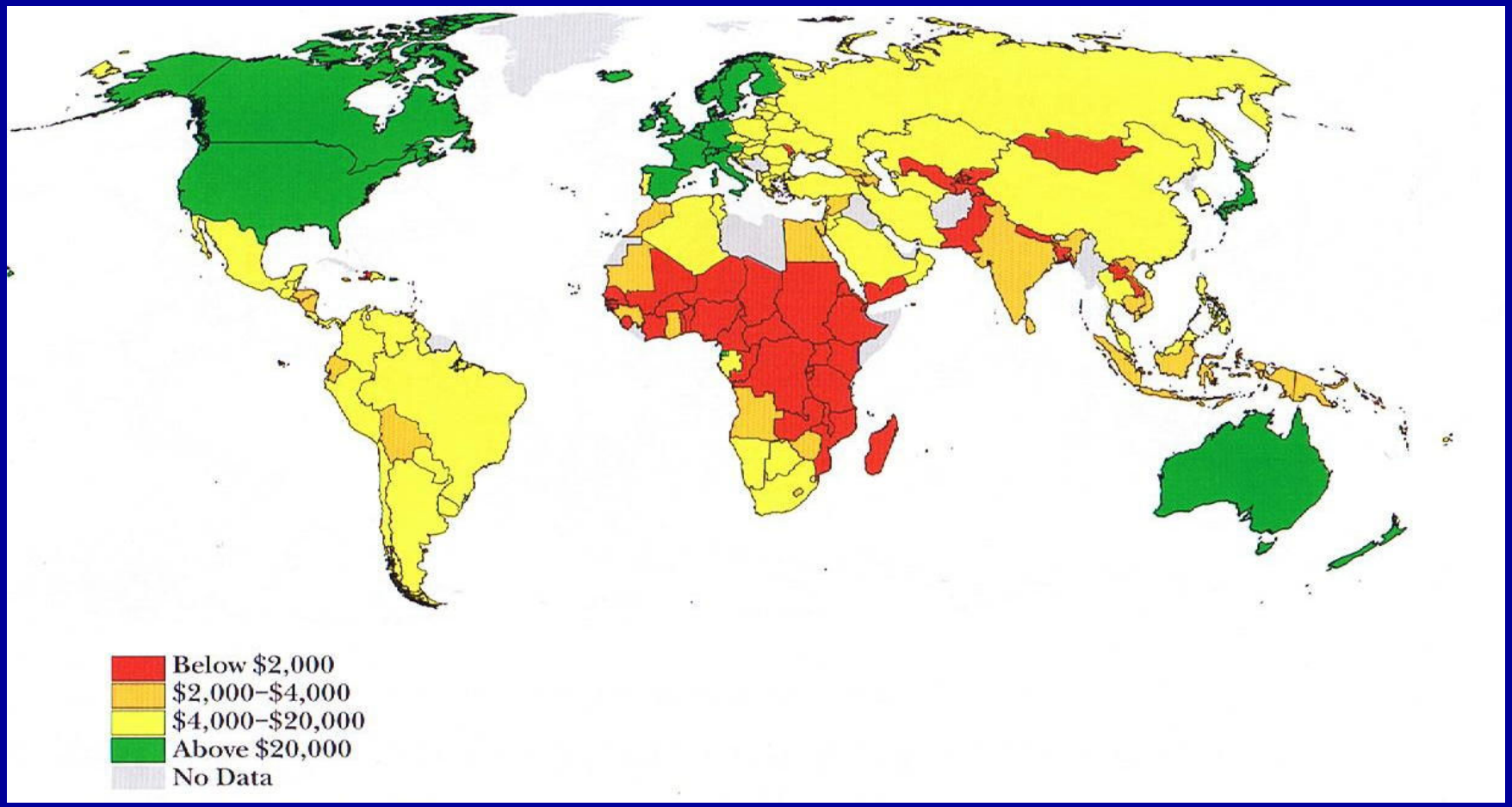
SURVIVAL ON THE S.S. TITANIC April 15, 1912



Hall 1986

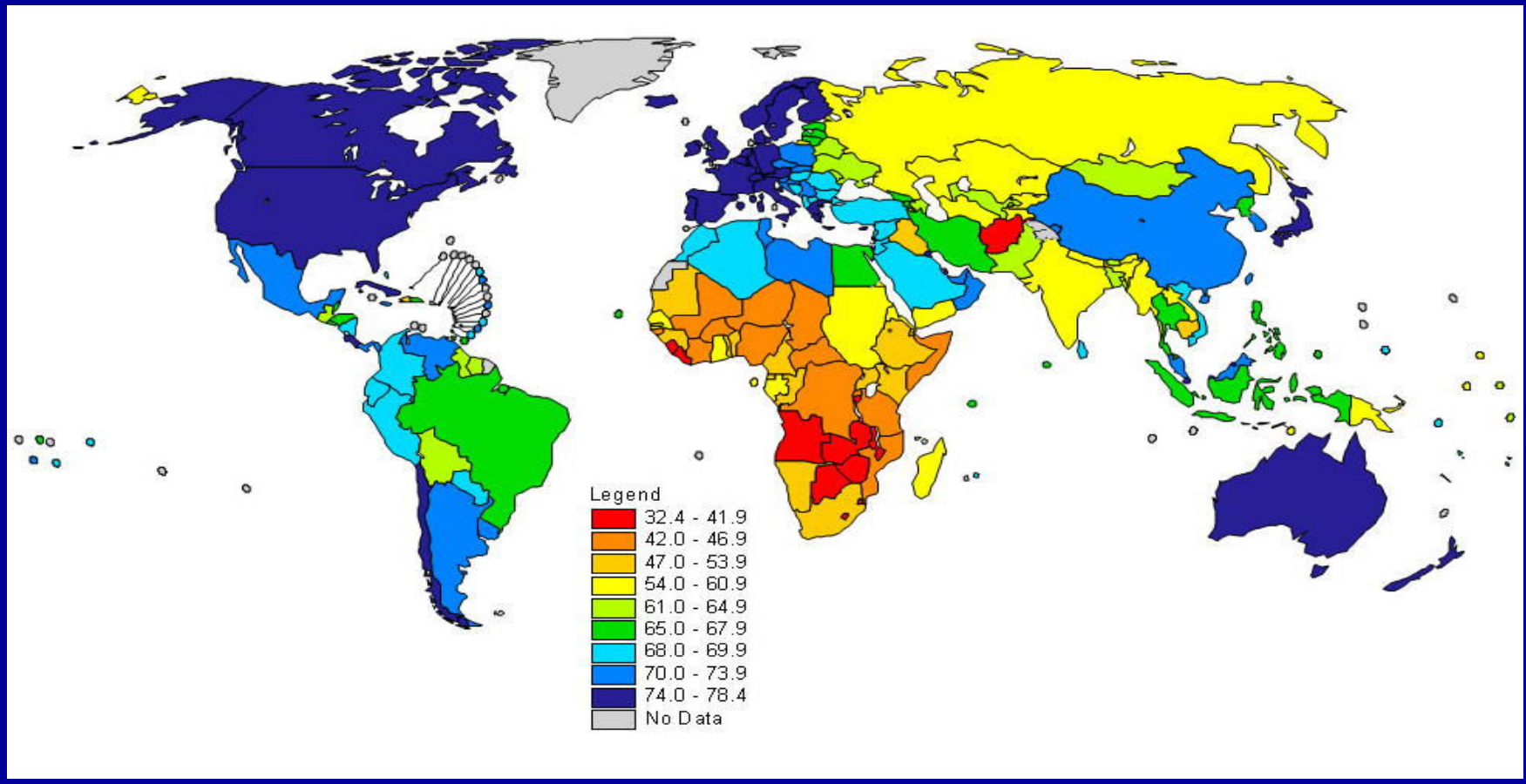
ECONOMIC PROSPERITY

average income per inhabitant, 2002



World Bank 2004

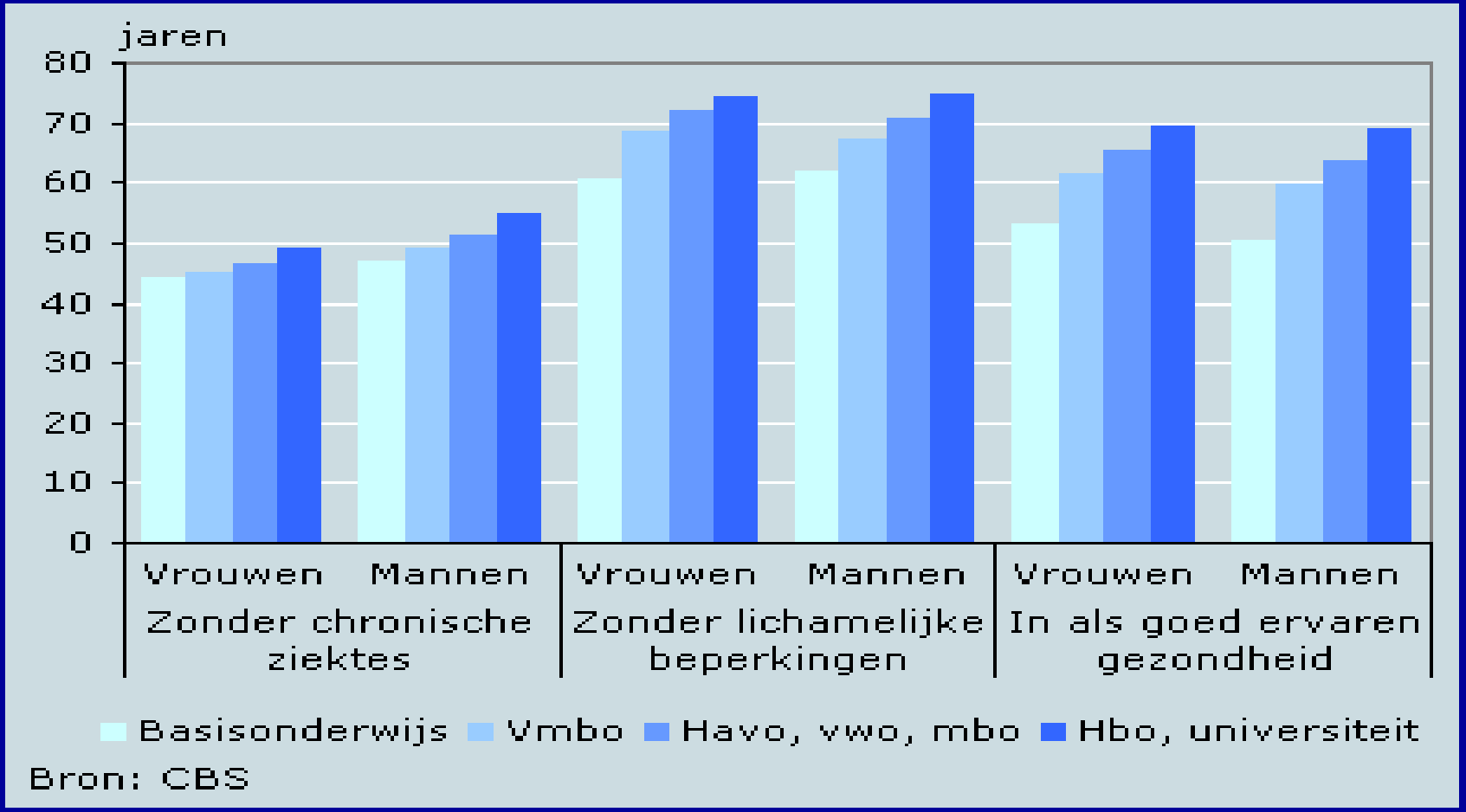
LIFE EXPECTANCY
at birth, in years, men 2003



WHO 2005

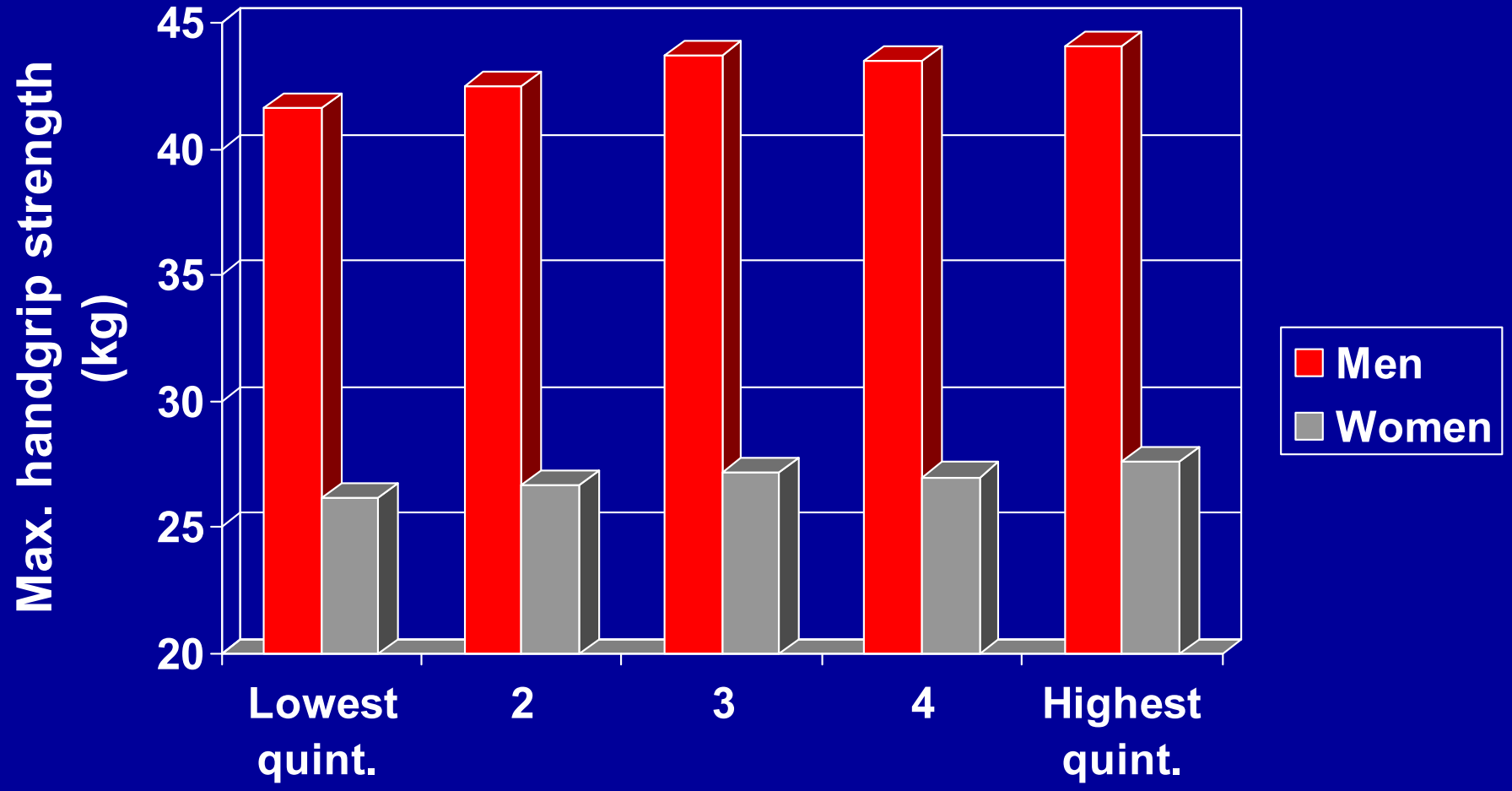
HEALTH EXPECTANCY

inequalities by level of education, Netherlands, ca. 2005

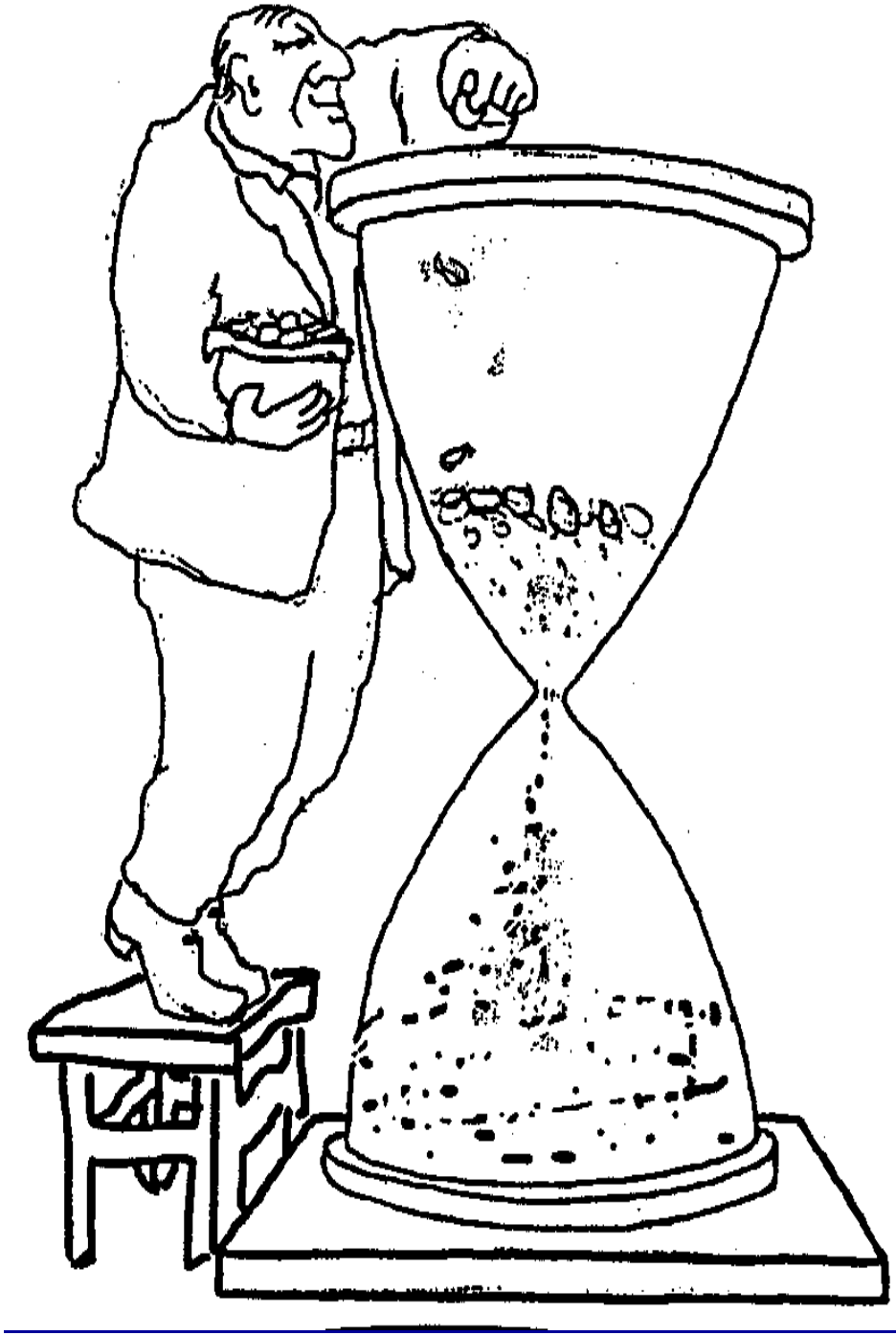


HANDGRIP STRENGTH OF THE ELDERLY IN EUROPE

by level of wealth, 2005



Avendano 2006



The great paradox of public health:

despite prosperity, more equal income distribution, welfare state, equal access to health care, …

health inequalities persist, and even are widening

TWO RESEARCH STRATEGIES

- Zooming in: individuals, and how they differ in socioeconomic position, specific risk factors, and health outcomes

- Zooming out: societies, and how they differ in social structure, risk factor distribution, and health inequalities

COMPARATIVE STUDIES OF HEALTH INEQUALITIES

- Cross-sectional study 1980s (EU Biomed)
- Trend study 1980s/90s (EU Public Health)
- Elderly study 1990s (EU FP6)
- Smoking studies 1990s (EU Public Health)
- 'Eurothine' 1990s/2000s (EU Public Health)
- EURO-GBD-SE 2000s (EU Public Health)
- DEMETRIQ (EU FP7)

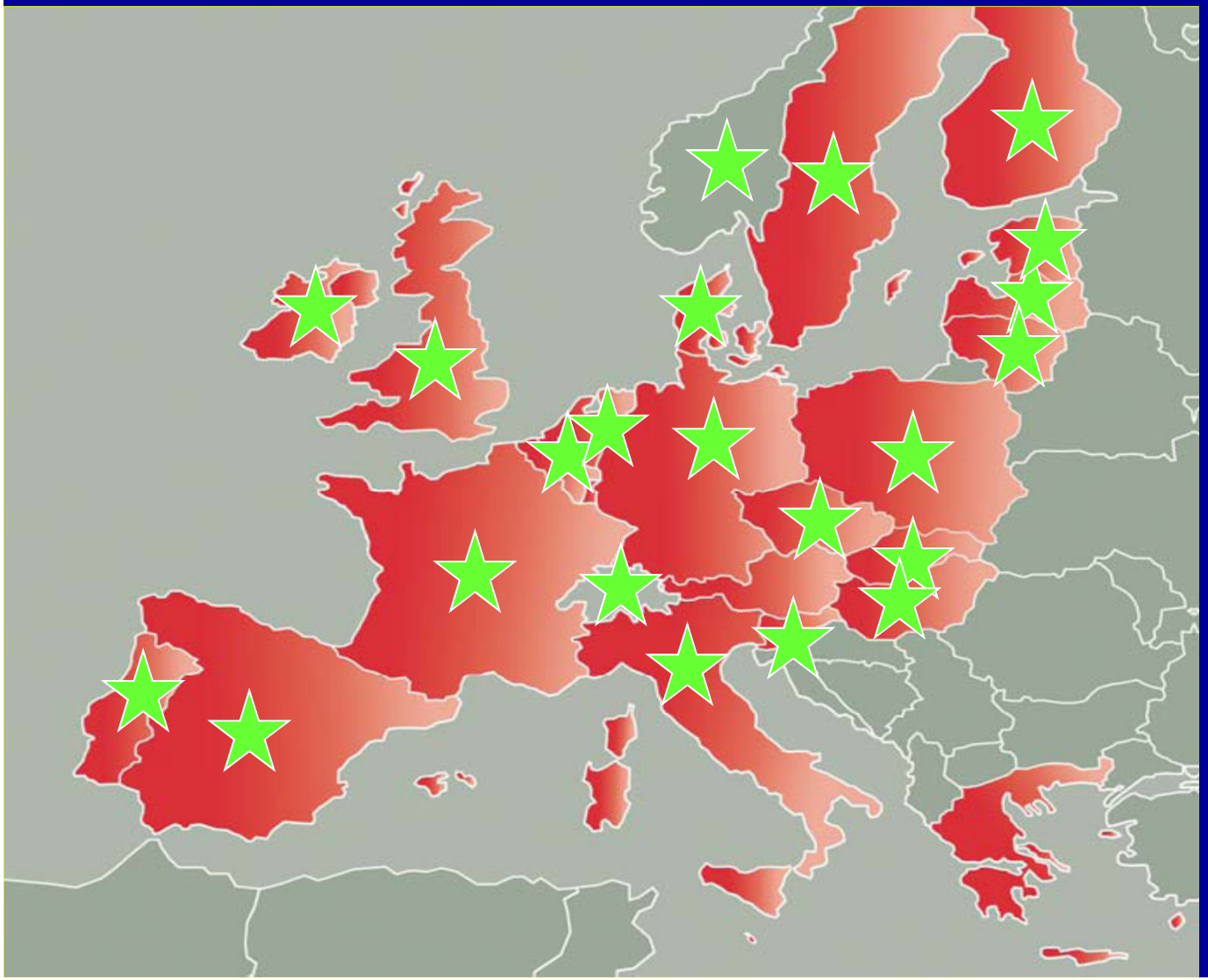
About 60 papers in NEJM, Lancet, BMJ, JECH, IJE, SSM, EJC, IJC, Heart, EHJ, Stroke, Tob Control, …

OUTLINE

- Overview of results of comparative studies within Europe
- Interpretation: three different “regimes” of health inequalities
- Why health inequalities persist despite the welfare state

EUROTHINE

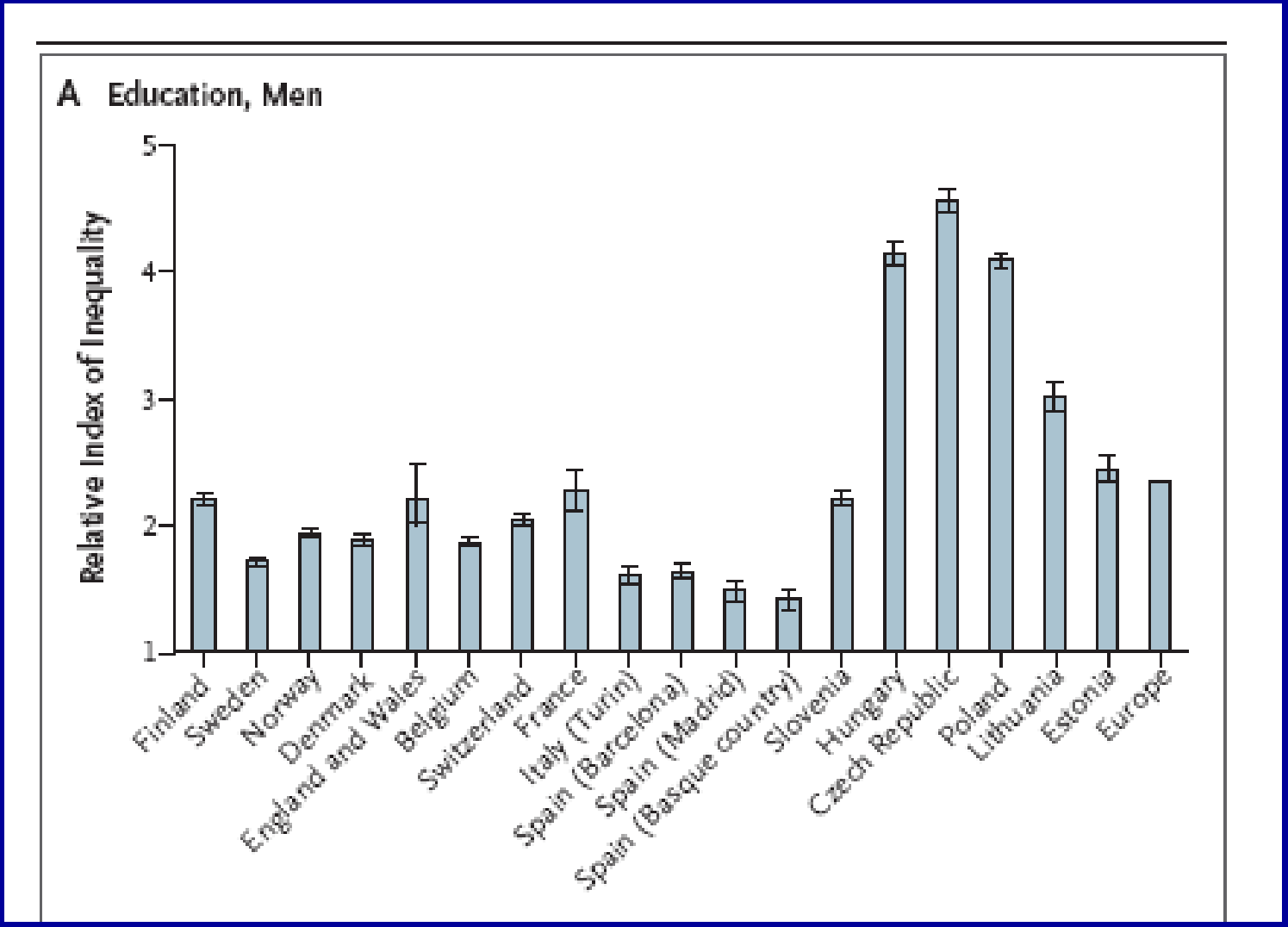
"TACKLING HEALTH INEQUALITIES IN EUROPE"



★ Data on inequalities in mortality or self-reported morbidity available

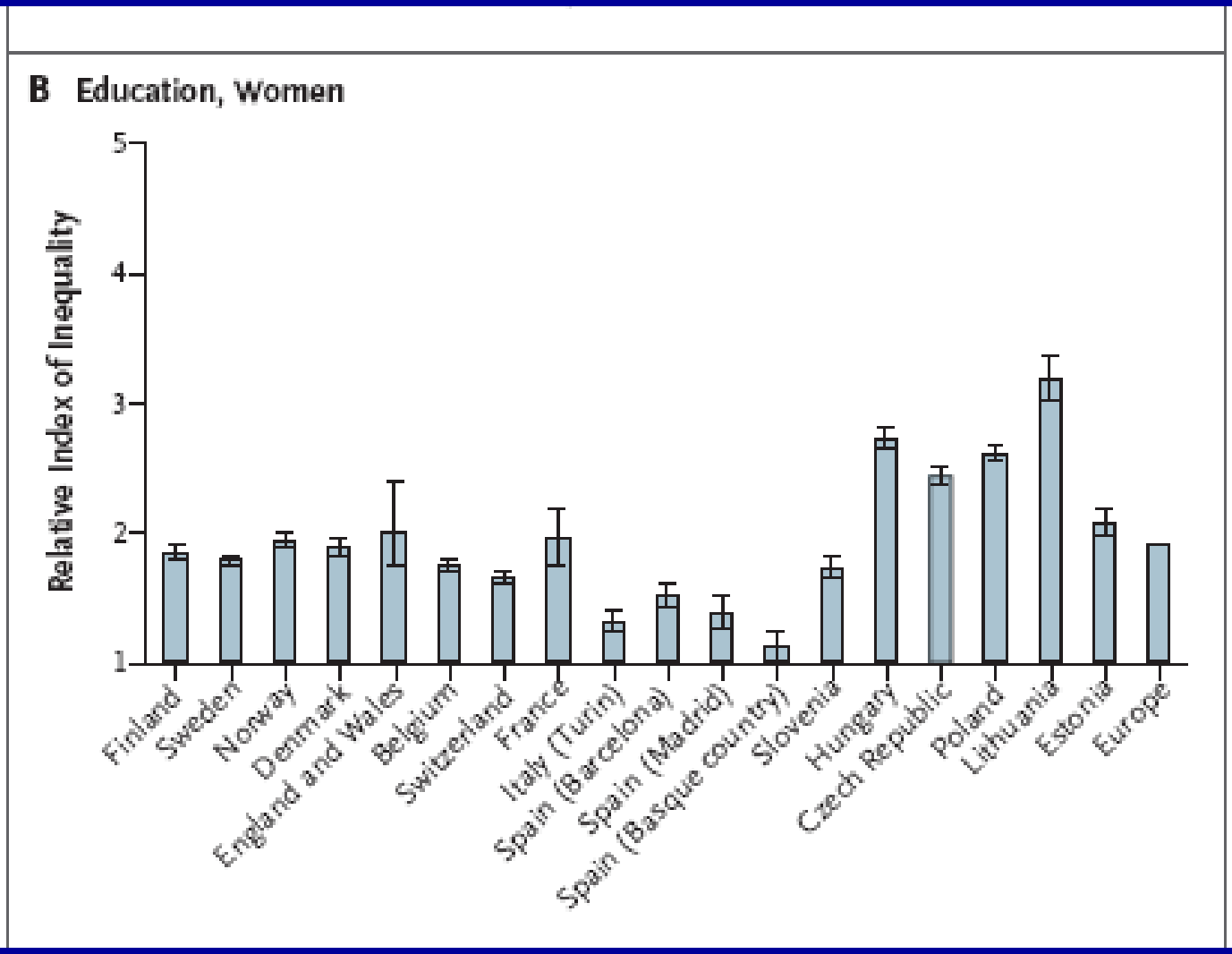
Supported by a grant from the European Commission

RELATIVE INEQUALITIES BY EDUCATION
TOTAL MORTALITY, 1990s, MEN



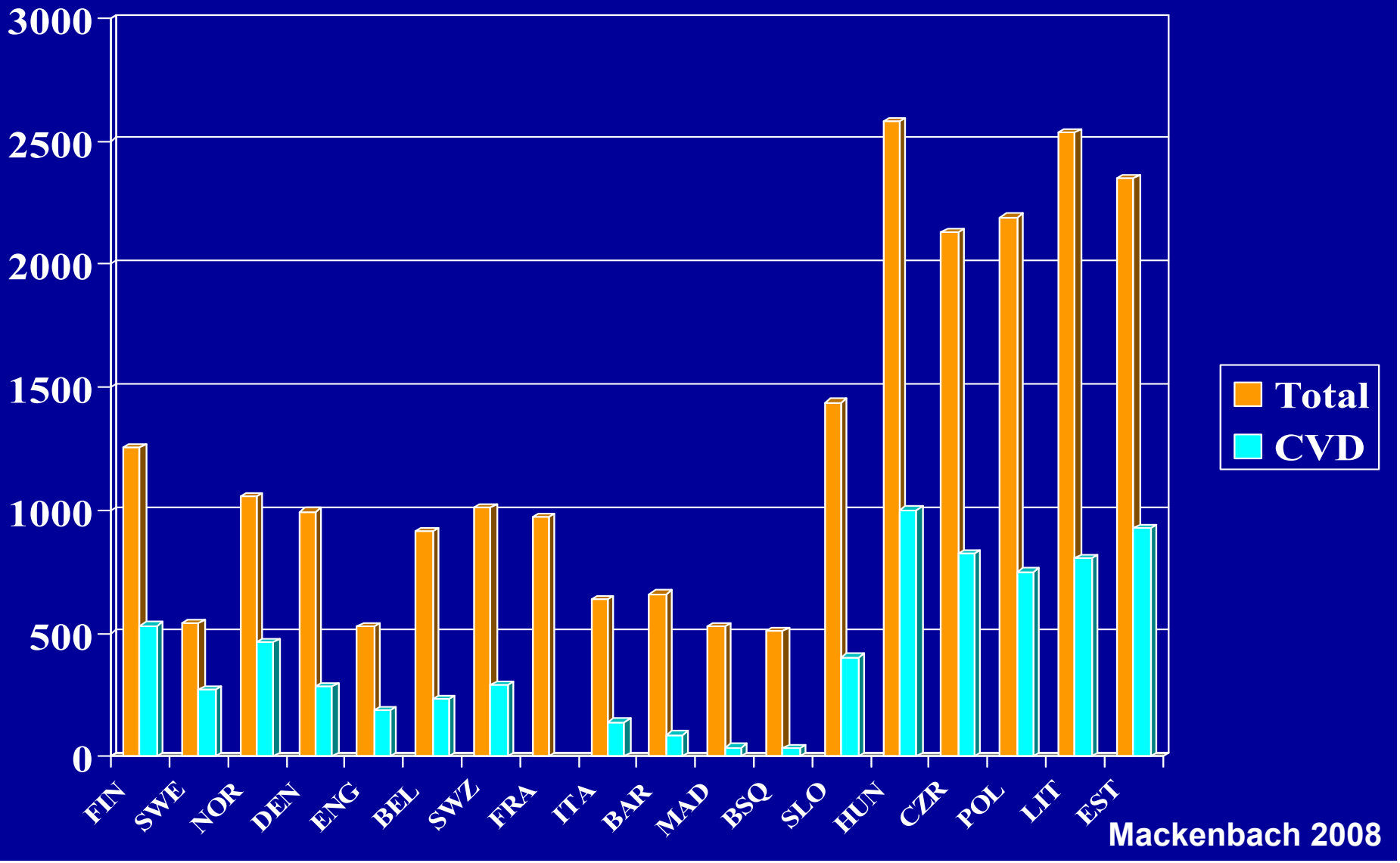
Mackenbach et al 2008

RELATIVE INEQUALITIES BY EDUCATION TOTAL MORTALITY, 1990s, WOMEN



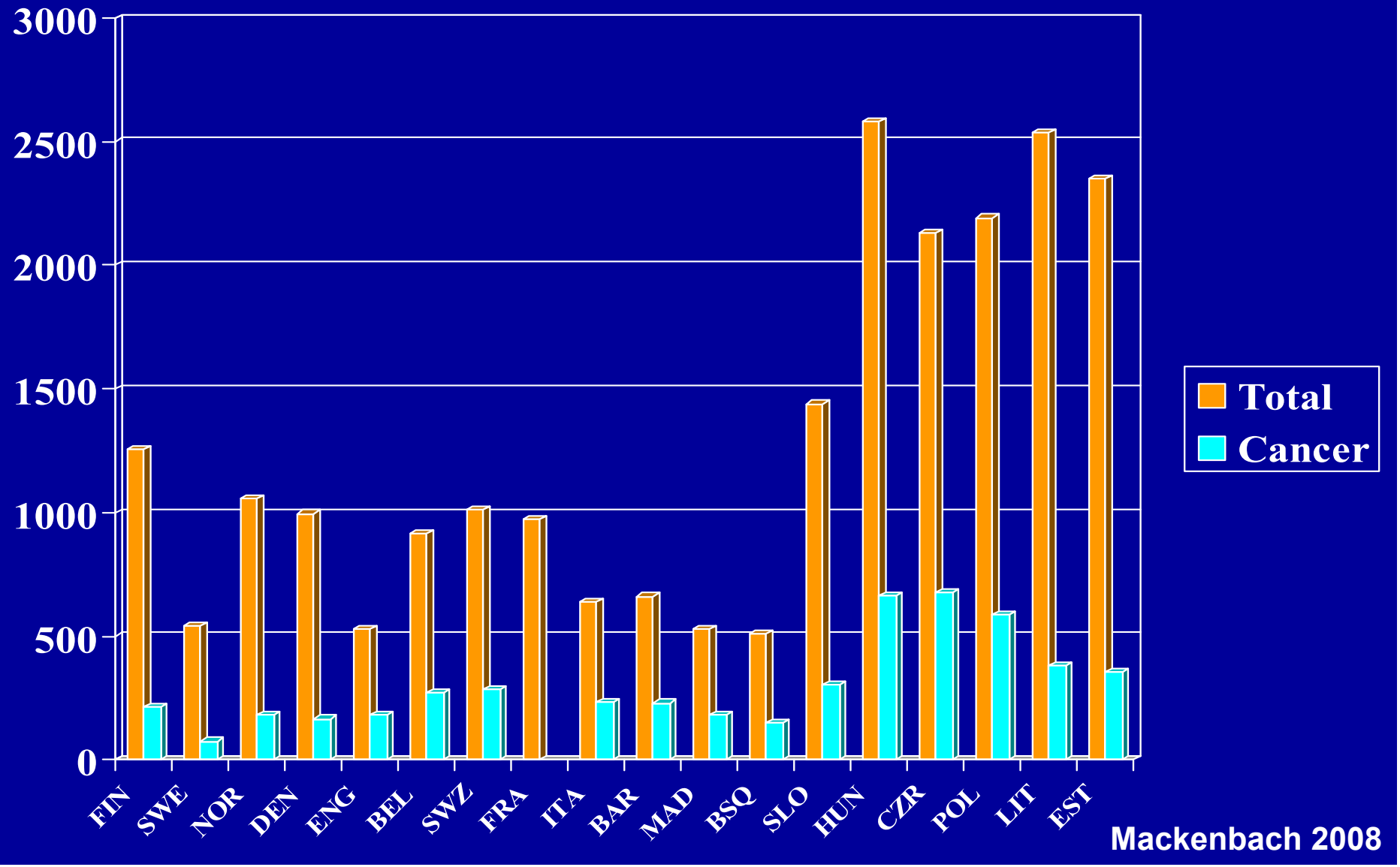
Mackenbach et al. 2008

ABSOLUTE INEQUALITIES BY EDUCATION TOTAL AND CVD MORTALITY, 1990s, MEN



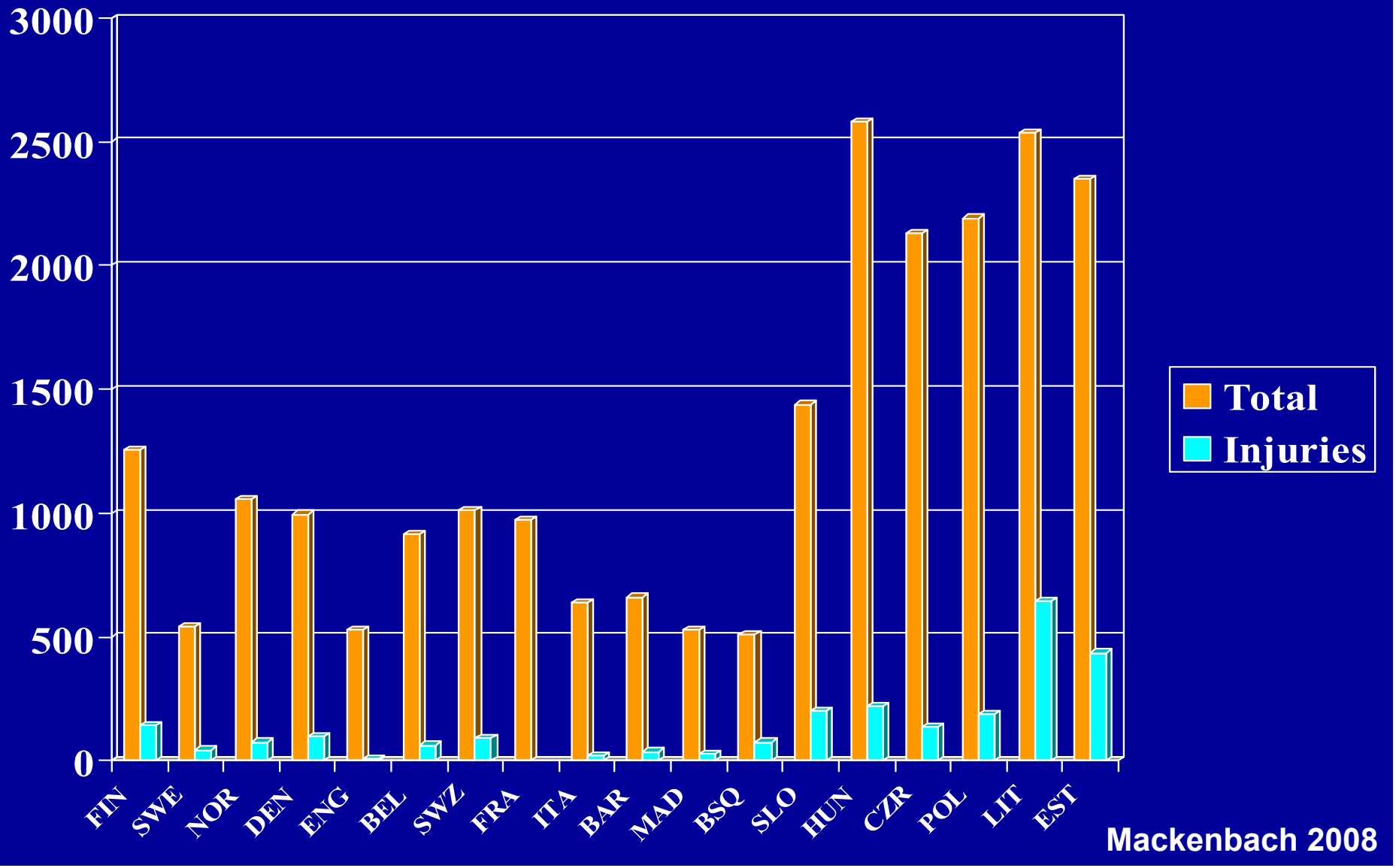
Mackenbach 2008

ABSOLUTE INEQUALITIES BY EDUCATION TOTAL AND CANCER MORTALITY, MEN



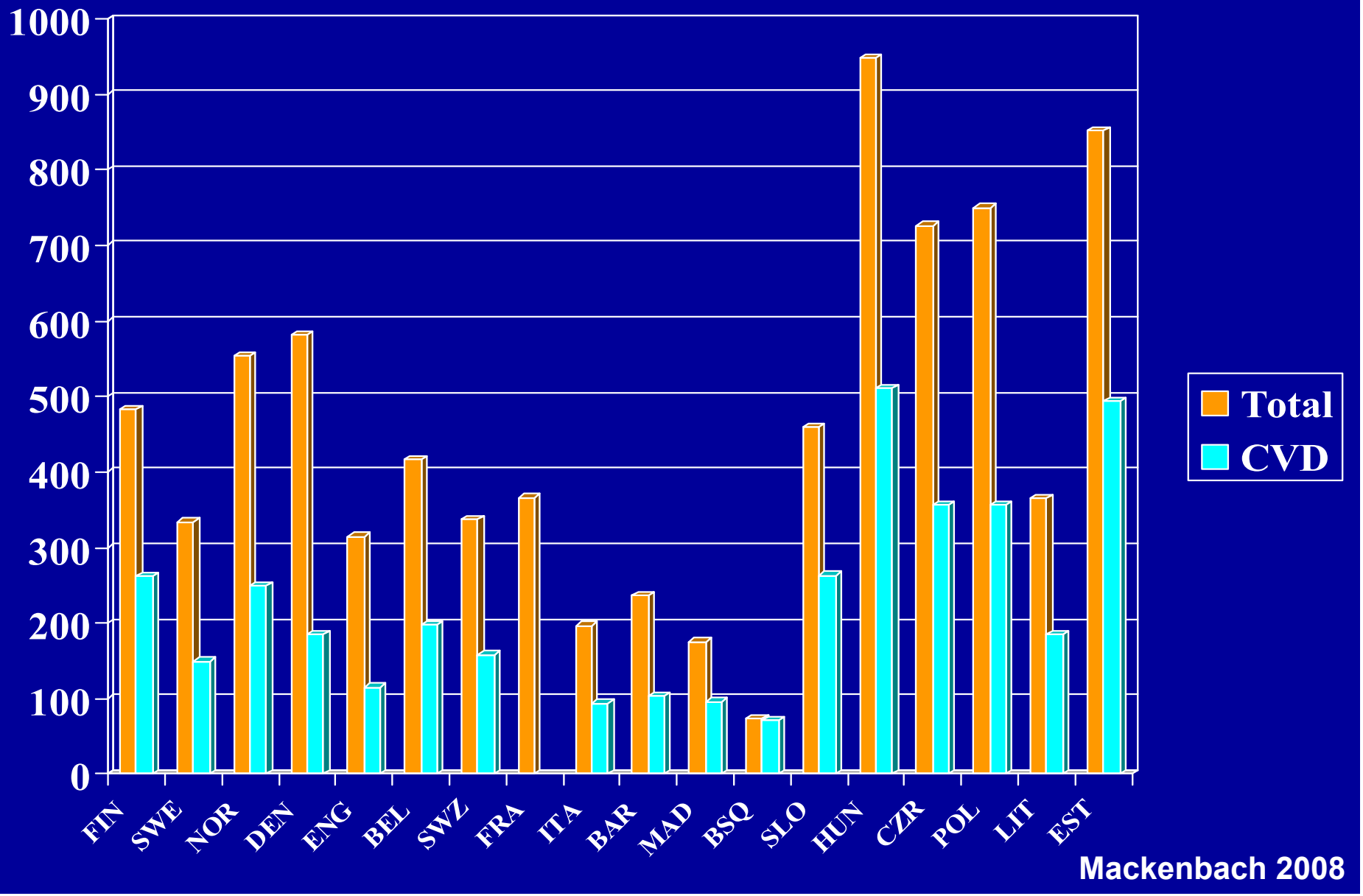
Mackenbach 2008

ABSOLUTE INEQUALITIES BY EDUCATION TOTAL AND INJURY MORTALITY, 1990s, MEN



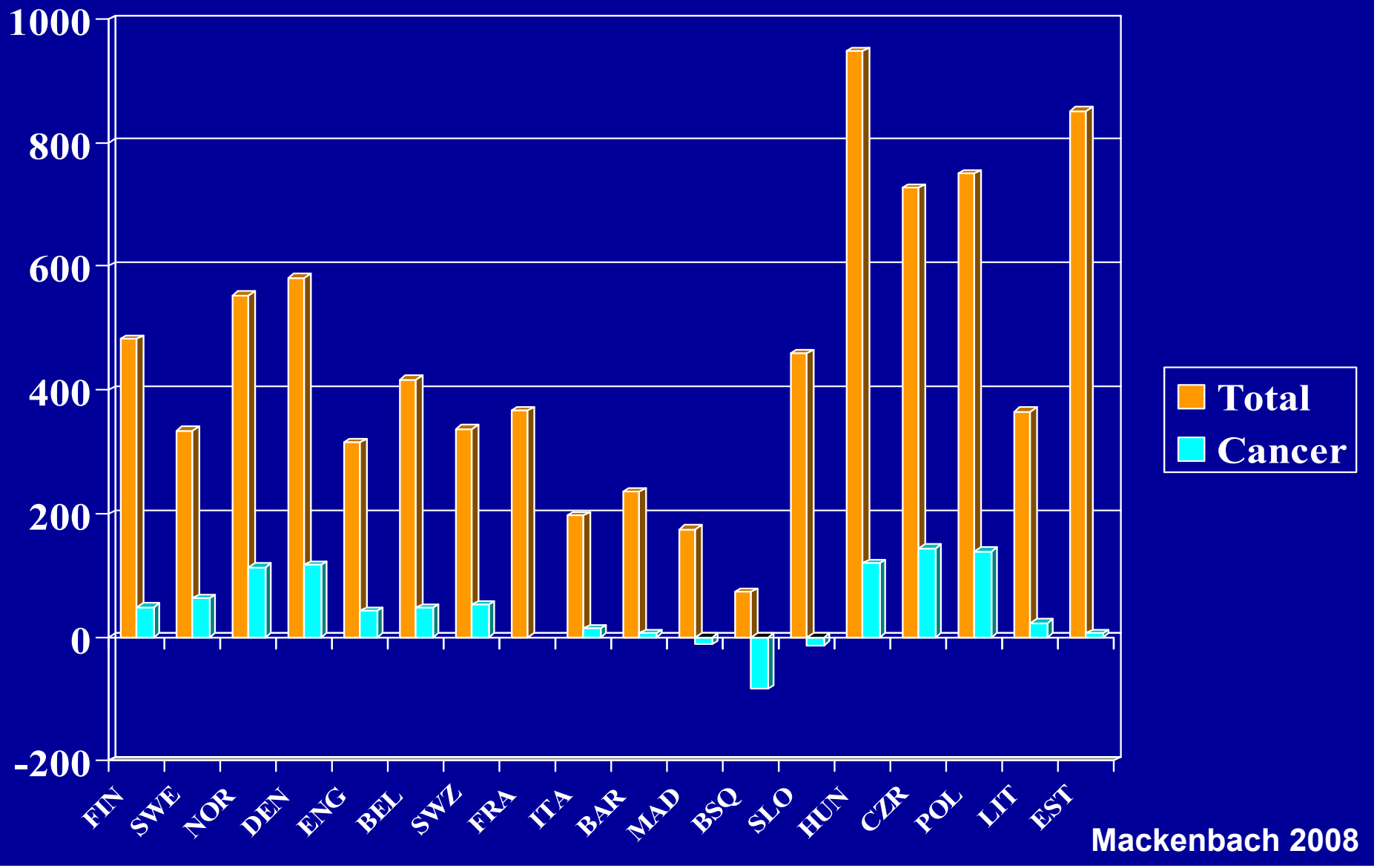
Mackenbach 2008

ABSOLUTE INEQUALITIES BY EDUCATION TOTAL AND CVD MORTALITY, WOMEN



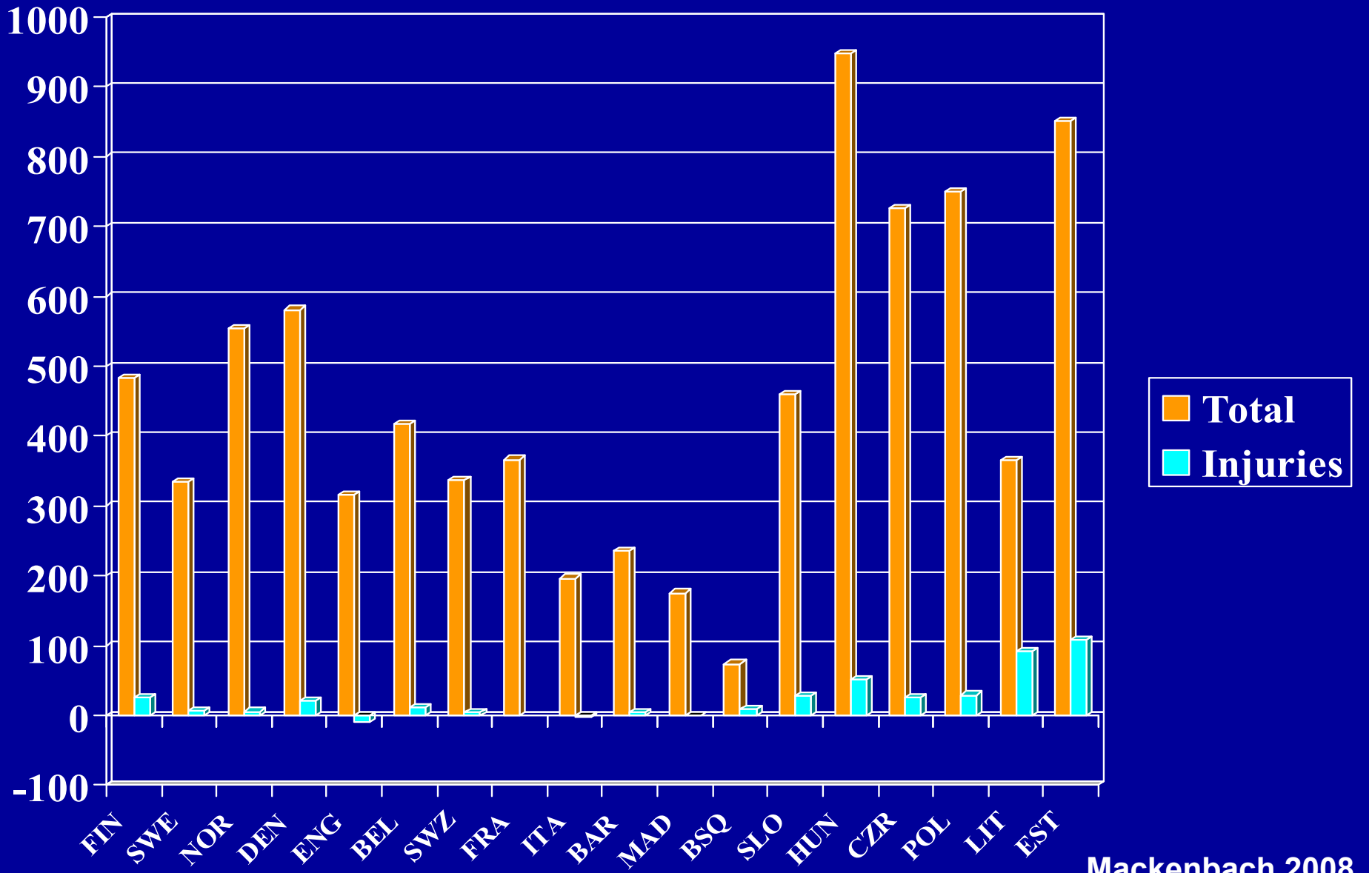
Mackenbach 2008

ABSOLUTE INEQUALITIES BY EDUCATION TOTAL AND CANCER MORTALITY, WOMEN



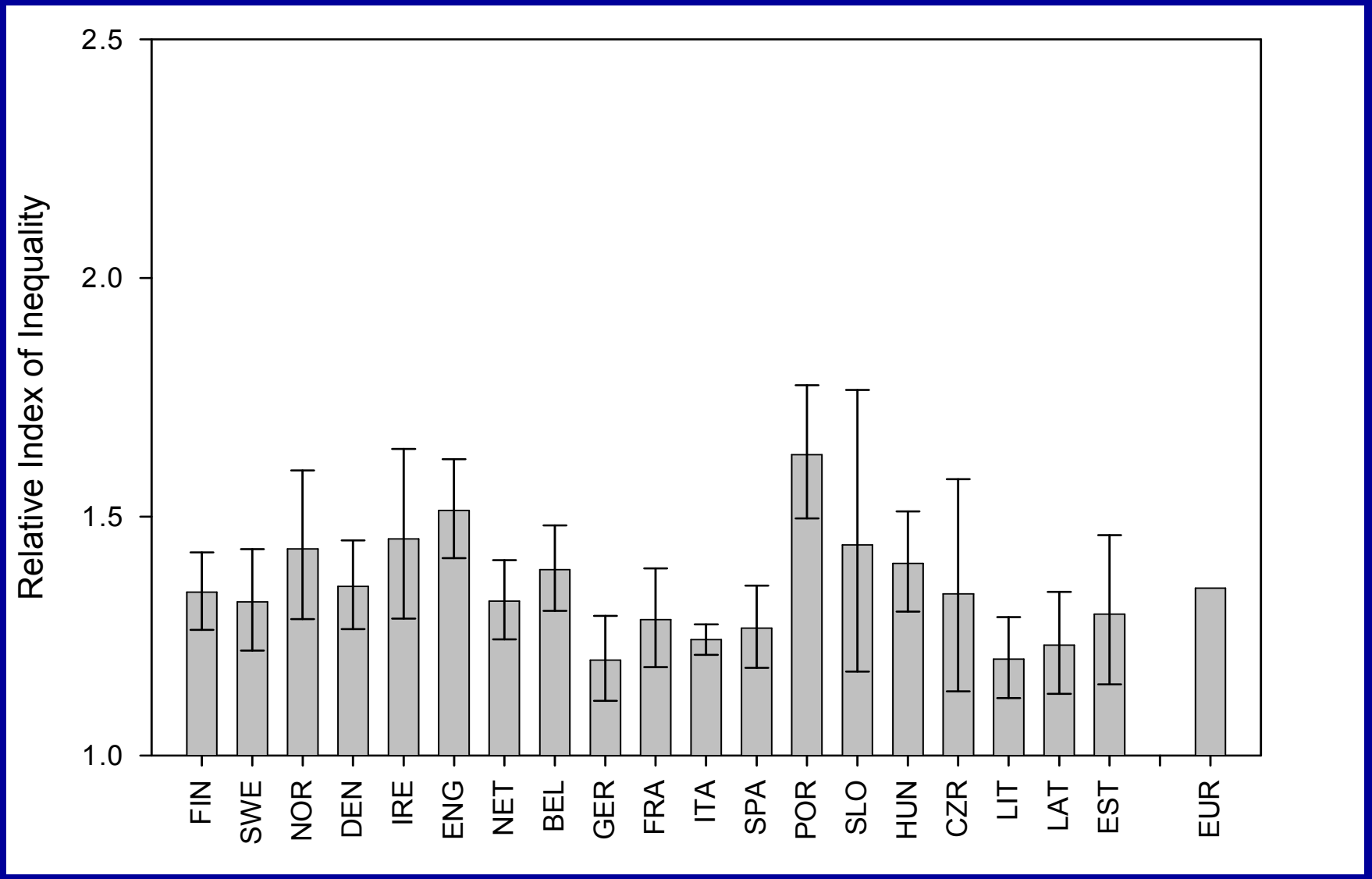
Mackenbach 2008

ABSOLUTE INEQUALITIES BY EDUCATION
TOTAL AND INJURY MORTALITY, WOMEN



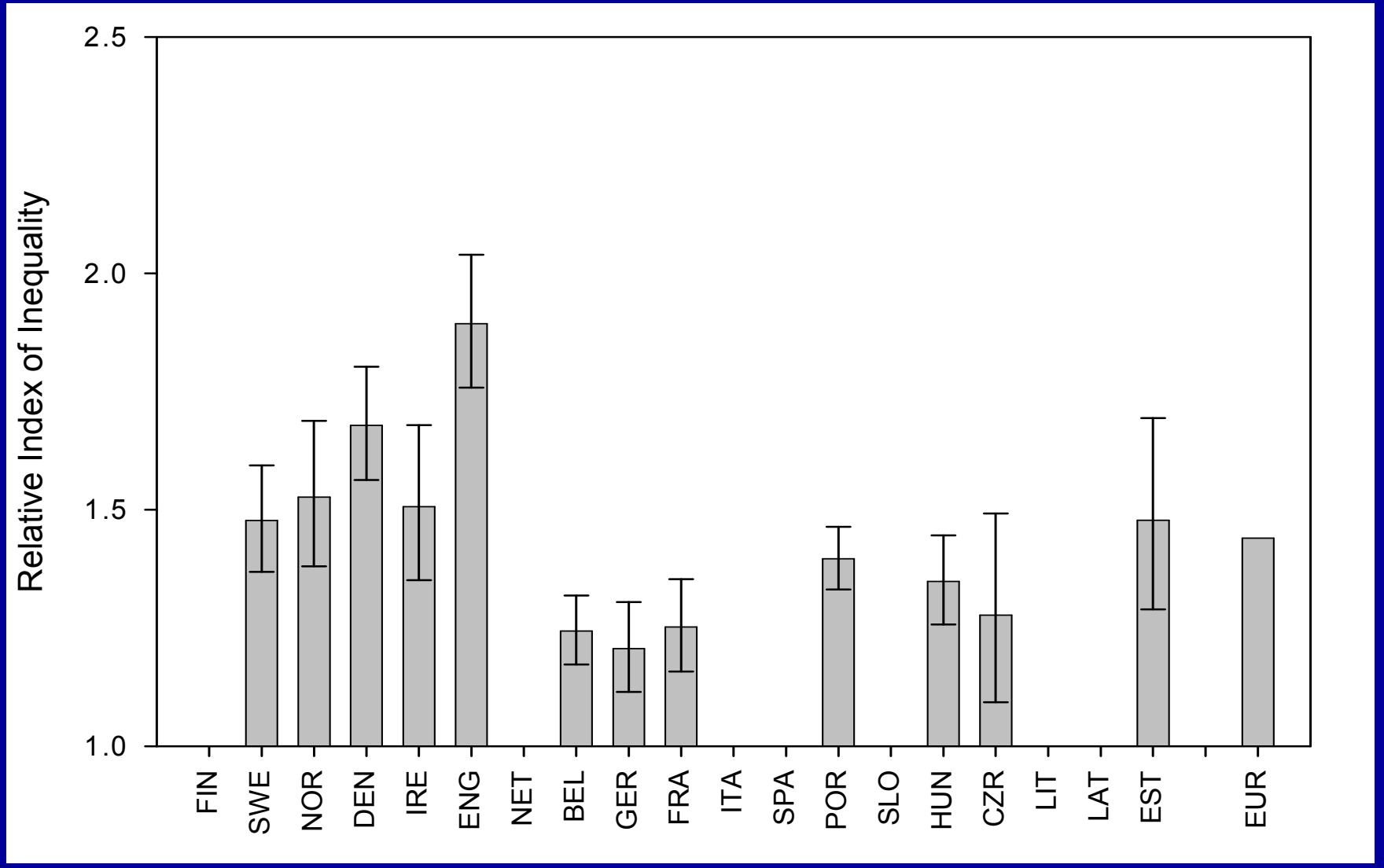
Mackenbach 2008

RELATIVE INEQUALITIES BY EDUCATION SELF-ASSESSED HEALTH, 2000s, MEN



Mackenbach 2008

RELATIVE INEQUALITIES BY INCOME SELF-ASSESSED HEALTH, 2000s, MEN



Mackenbach 2008

CAUSES OF DEATH: 3 DIFFERENT "REGIMES"

- Northwest: large inequalities for cancer (m/w) and CVD (m/w)
- South: small inequalities for cancer (w) and CVD (m/w)
- East: huge inequalities for cancer (m), CVD (m/w), injury (m/w)

CAUSES OF EXCESS DEATH

IN LOWEST GROUP, 1990s, MEN

SII IN DEATHS PER 100000 PYs

	All causes	Cancer	Cardio-vascular disease	Injury	All other diseases
Norway	980	169	434	70	305
England/W	862	225	401	19	157
Italy (Turin)	639	232	140	23	243
Spain (Basque)	384	107	16	63	177
Czech Rep	2130	676	825	138	489
Estonia	2349	355	929	436	618

Mackenbach et al. 2008

CAUSES OF EXCESS DEATH

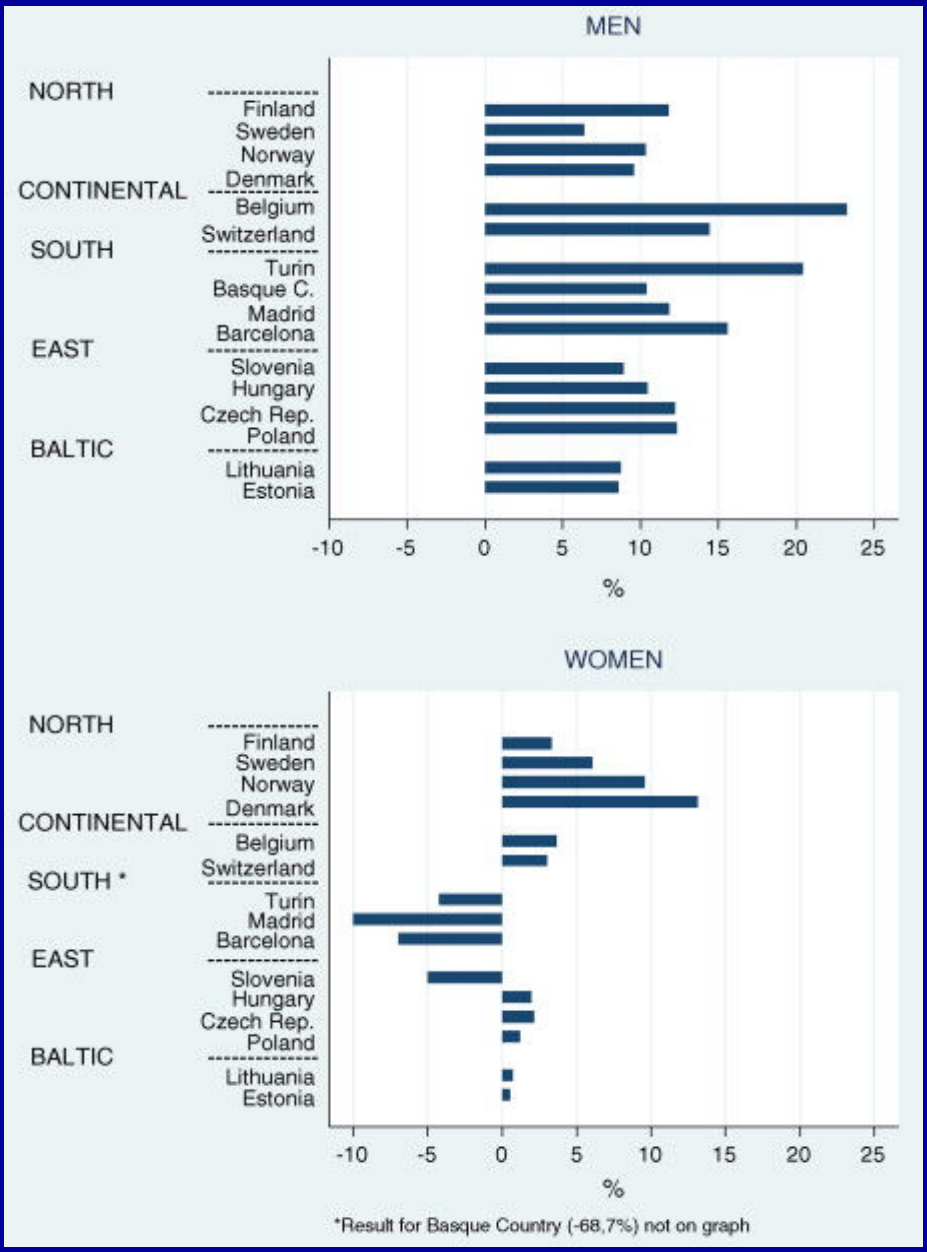
IN LOWEST GROUP, 1990s, WOMEN

SII IN DEATHS PER 100000 PYs

	All causes	Cancer	Cardio-vascular disease	Injury	All other diseases
Norway	518	103	239	5	169
England/W	462	111	236	1	96
Italy (Turin)	197	15	94	-3	94
Spain (Basque)	51	-76	56	7	74
Czech Rep	726	144	356	26	203
Estonia	851	7	493	109	252

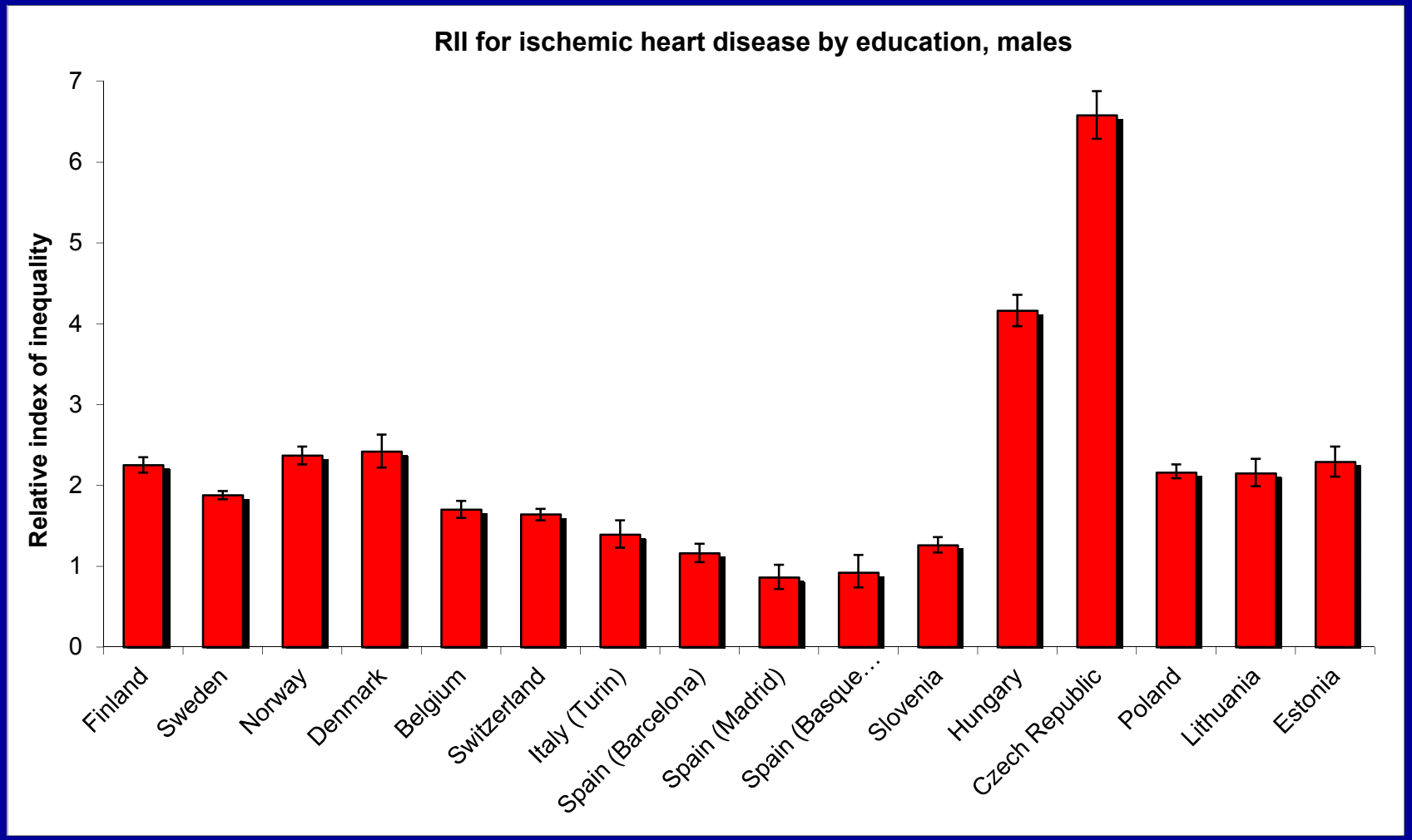
Mackenbach et al. 2008

Lung cancer is higher among lower educated men, and alone explains 10-20% of inequalities in total mortality (top panel), but still has reverse pattern in Southern Europe among women (bottom panel)



Van der Heyden et al. 2009

Ischemic heart disease is higher among lower educated men, but not in Southern Europe

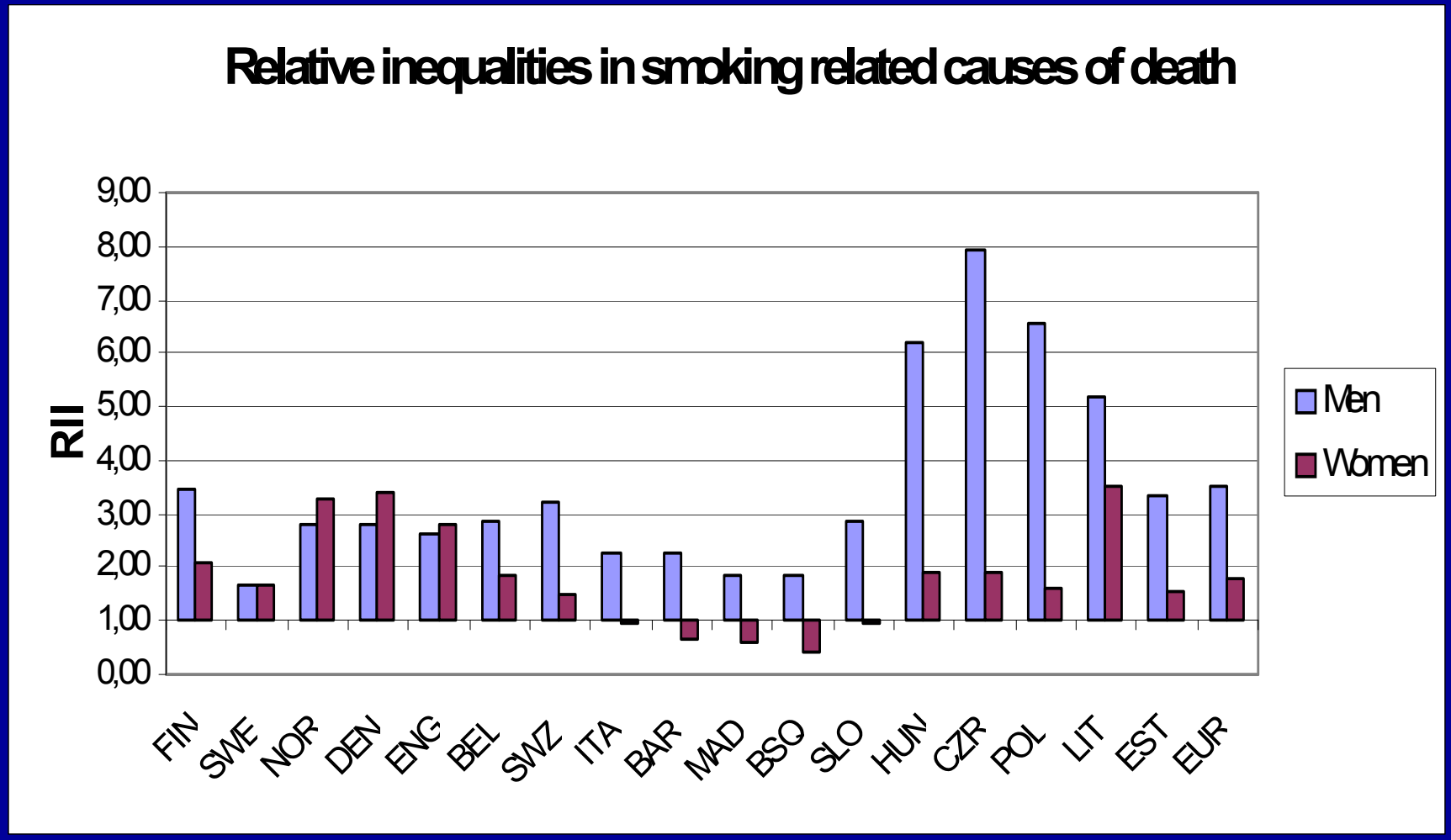


Kulhanova, in prep.

DETERMINANTS: 3 DIFFERENT "REGIMES"

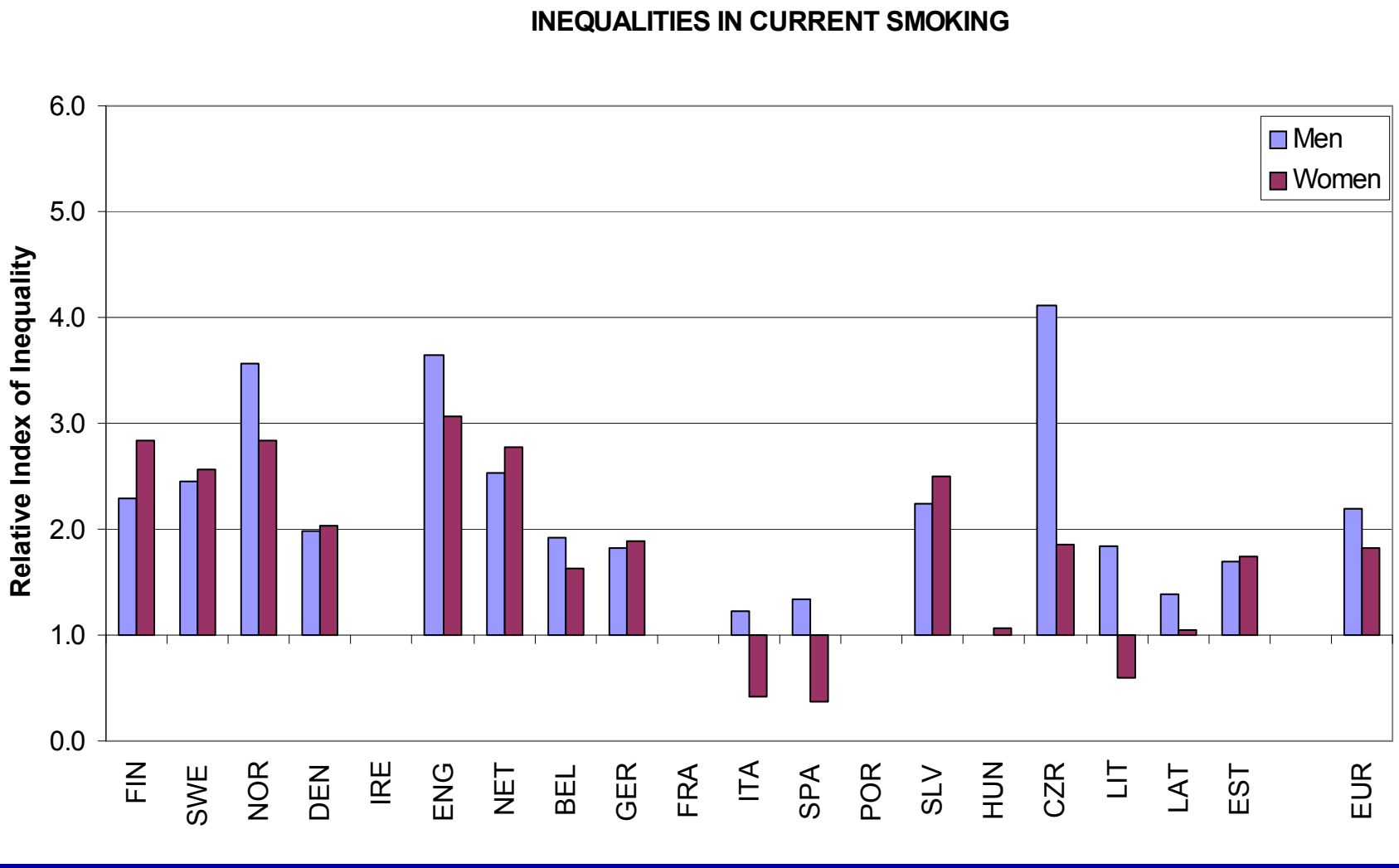
- Northwest: large inequalities for smoking (m/w), alcohol (m/w), obesity (m/w); small inequalities for health care (m/w)
- South: small inequalities for smoking (m/w), alcohol (w), health care (m/w); large inequalities for obesity (m/w)
- East: large inequalities for smoking (m), alcohol (m/w), health care (m/w); small inequalities for obesity

RELATIVE INEQUALITIES BY EDUCATION SMOKING-RELATED MORTALITY, 1990s



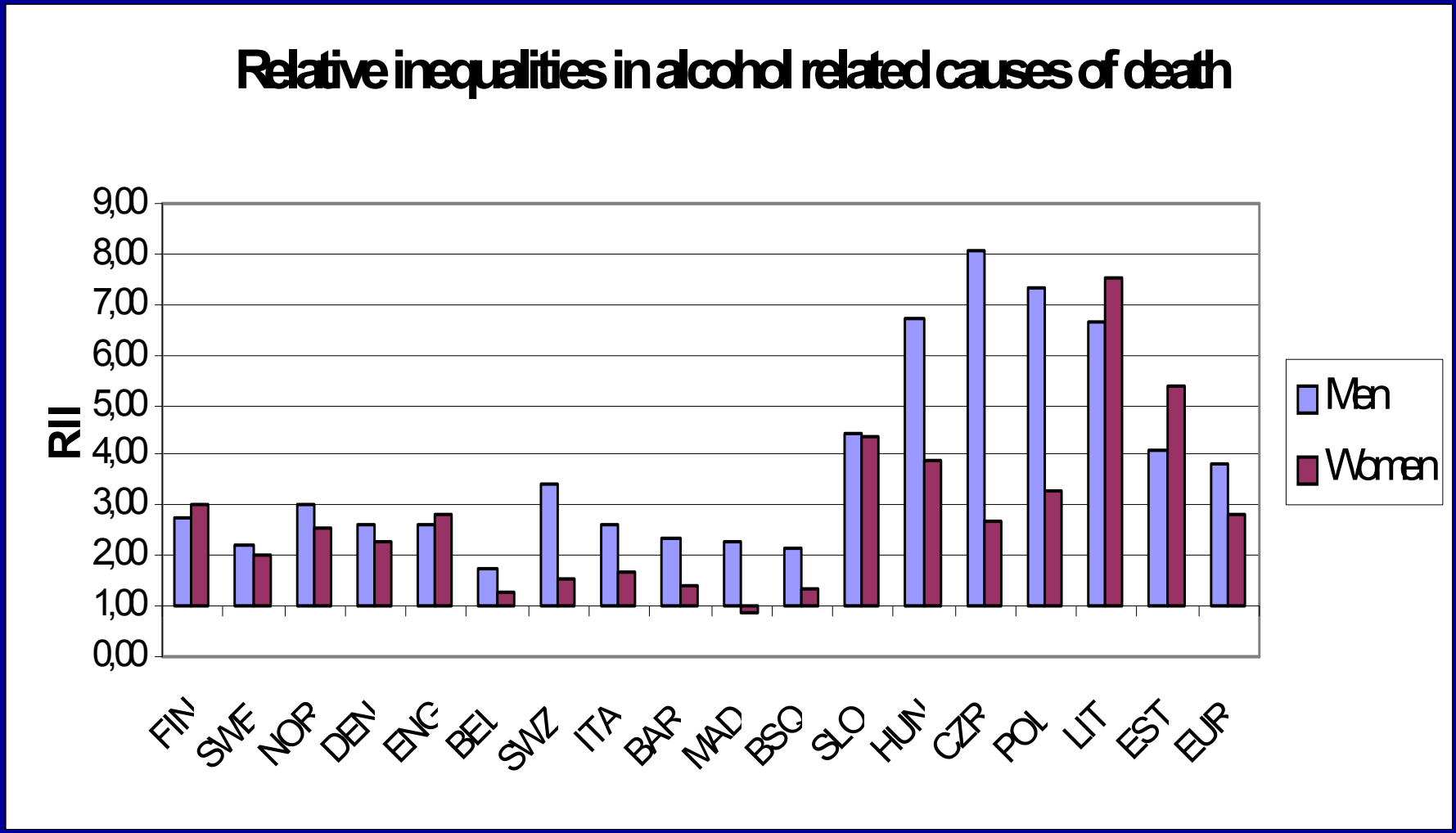
Mackenbach et al. 2008

RELATIVE INEQUALITIES BY EDUCATION CURRENT TOBACCO SMOKING, CA. 2000



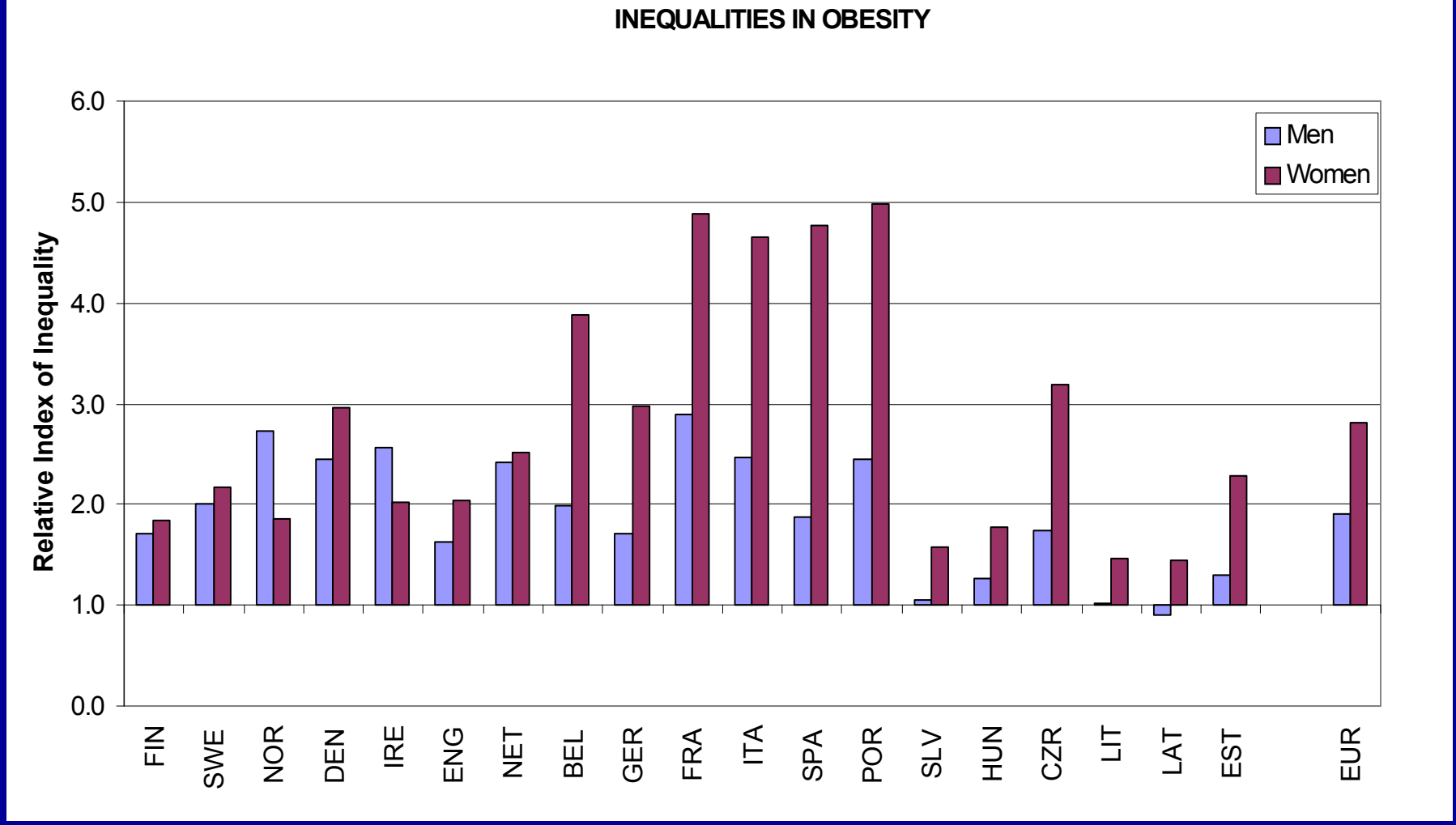
Mackenbach et al. 2008

RELATIVE INEQUALITIES BY EDUCATION ALCOHOL-RELATED MORTALITY, 1990s



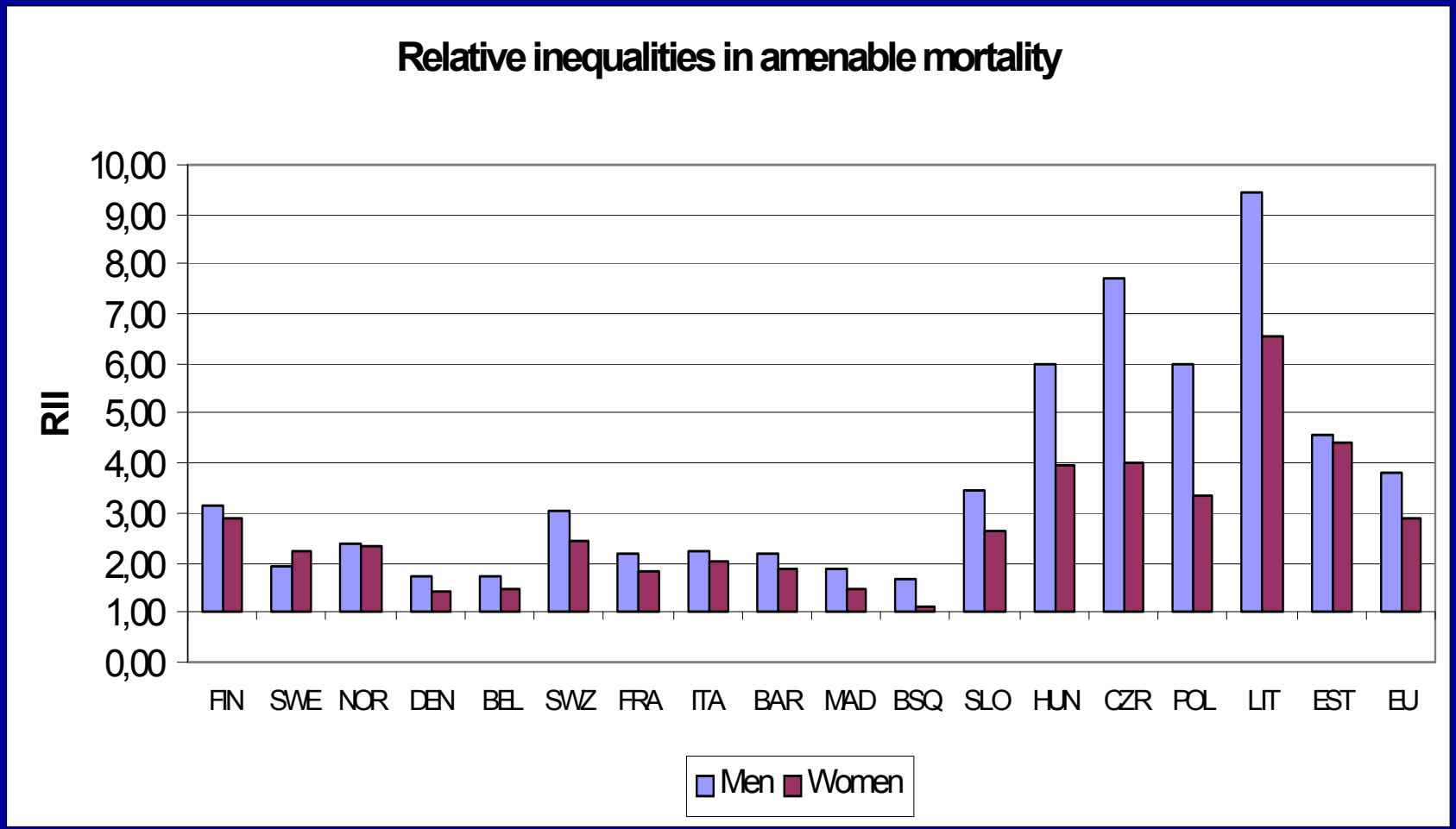
Mackenbach et al. 2008

RELATIVE INEQUALITIES BY EDUCATION OBESITY, CA. 2000



Mackenbach et al. 2008

RELATIVE INEQUALITIES BY EDUCATION MORTALITY AMENABLE TO MEDICAL INTERVENTION, 1990s



Mackenbach et al. 2008

INEQUALITIES IN LIFE EXPECTANCY AMENABLE TO MEDICAL CARE, 1990s

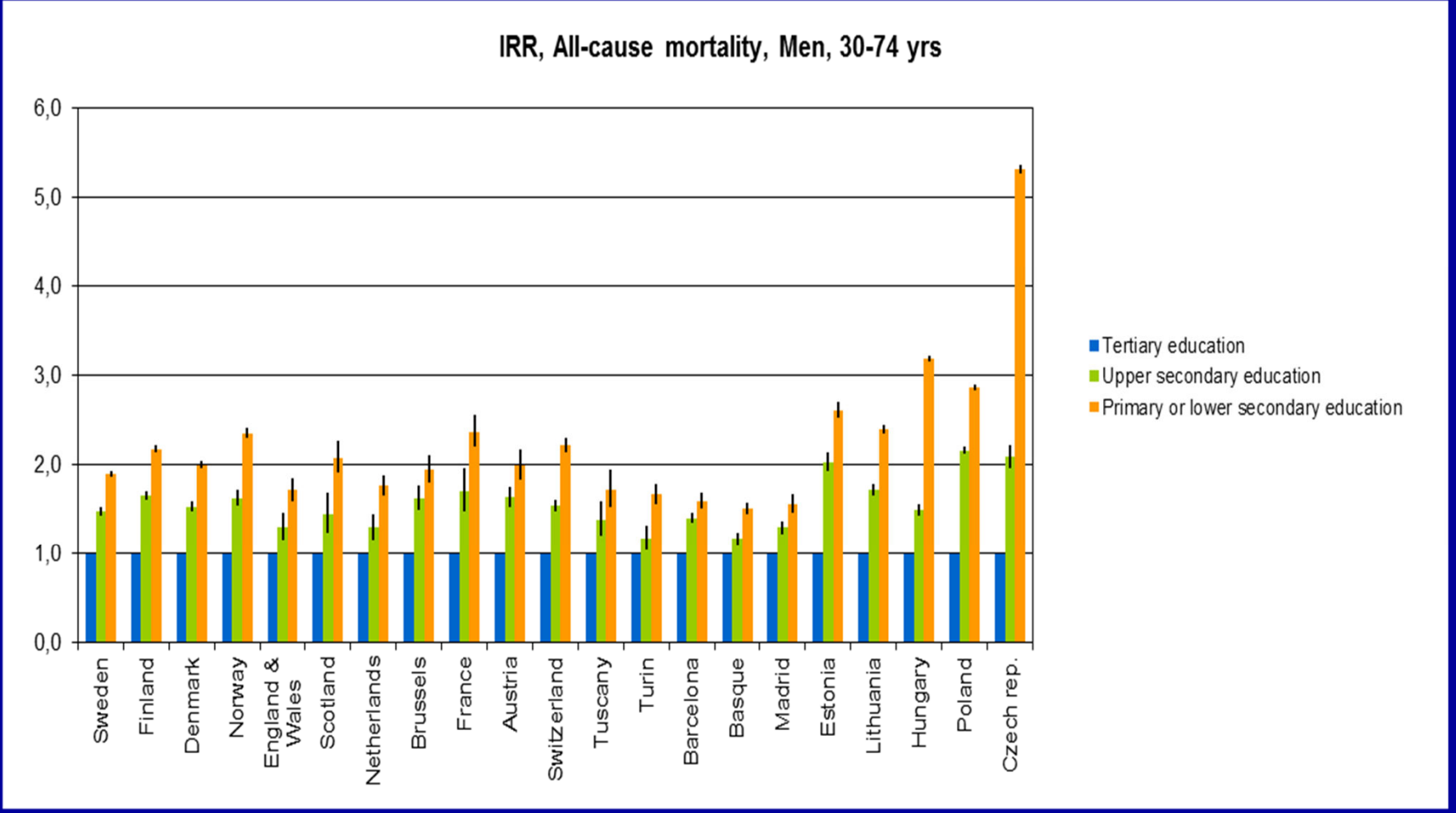
	Temp. life expectancy lower educated (years)	Temp. life expectancy higher educated (years)	Difference (days between 35 and 69)	Difference due to amenable conditions (days)
Norway	32.4	33.3	322	45
Belgium	33.0	33.5	197	22
Italy (Turin)	32.9	33.4	182	23
Spain (Basque)	33.6	33.8	62	33
Czech Rep	31.6	33.3	629	96
Estonia	27.3	31.2	1418	335

Stirbu et al. 2010

EURO-GBD-SE

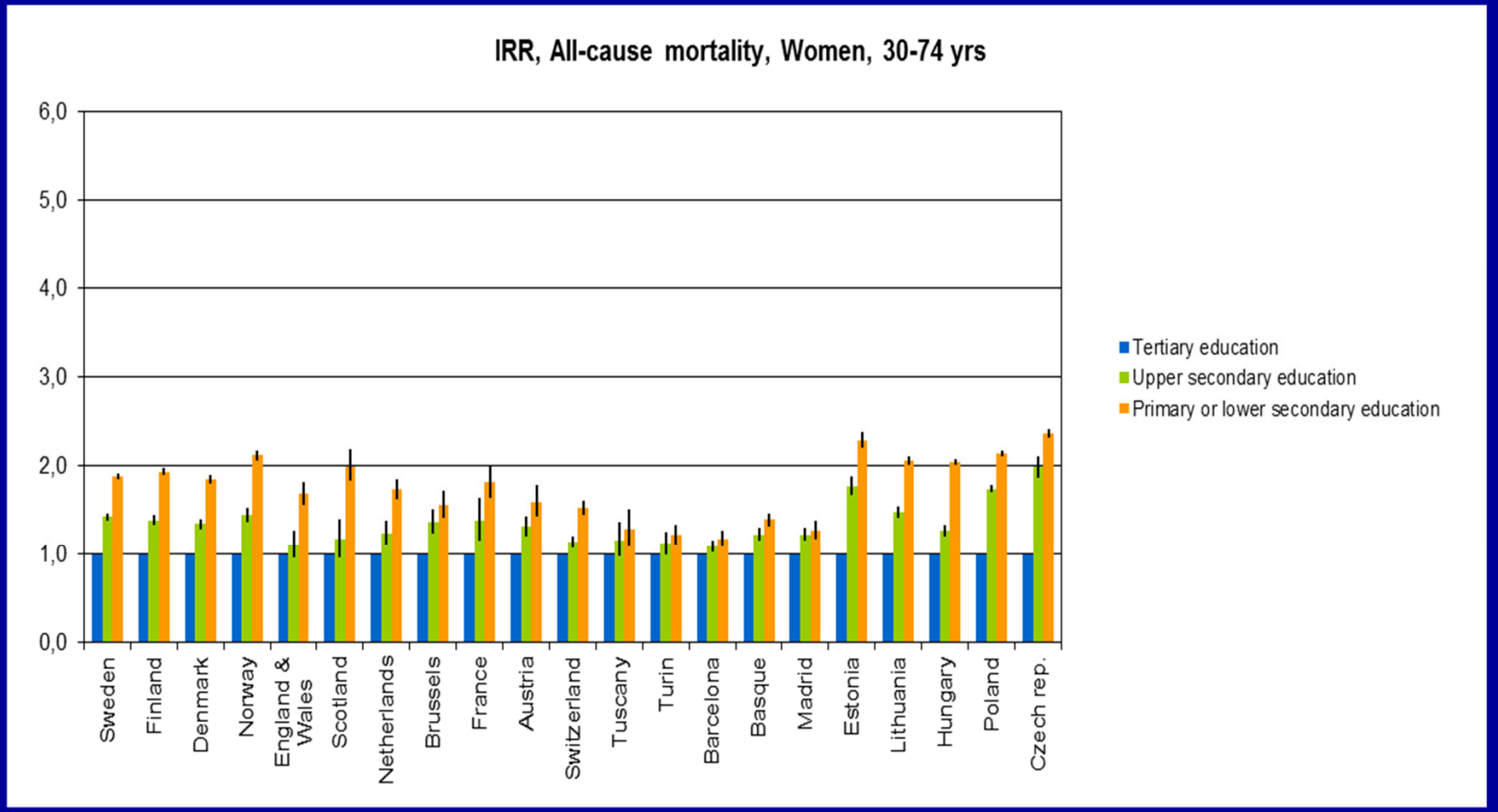
- Update of Eurothine for the 2000s, focused on mortality
- Application of ‘Global Burden of Disease’ methodology
- Population-Attributable Fractions to estimate contribution of risk factors

RELATIVE INEQUALITIES BY EDUCATION TOTAL MORTALITY, 2000s, MEN



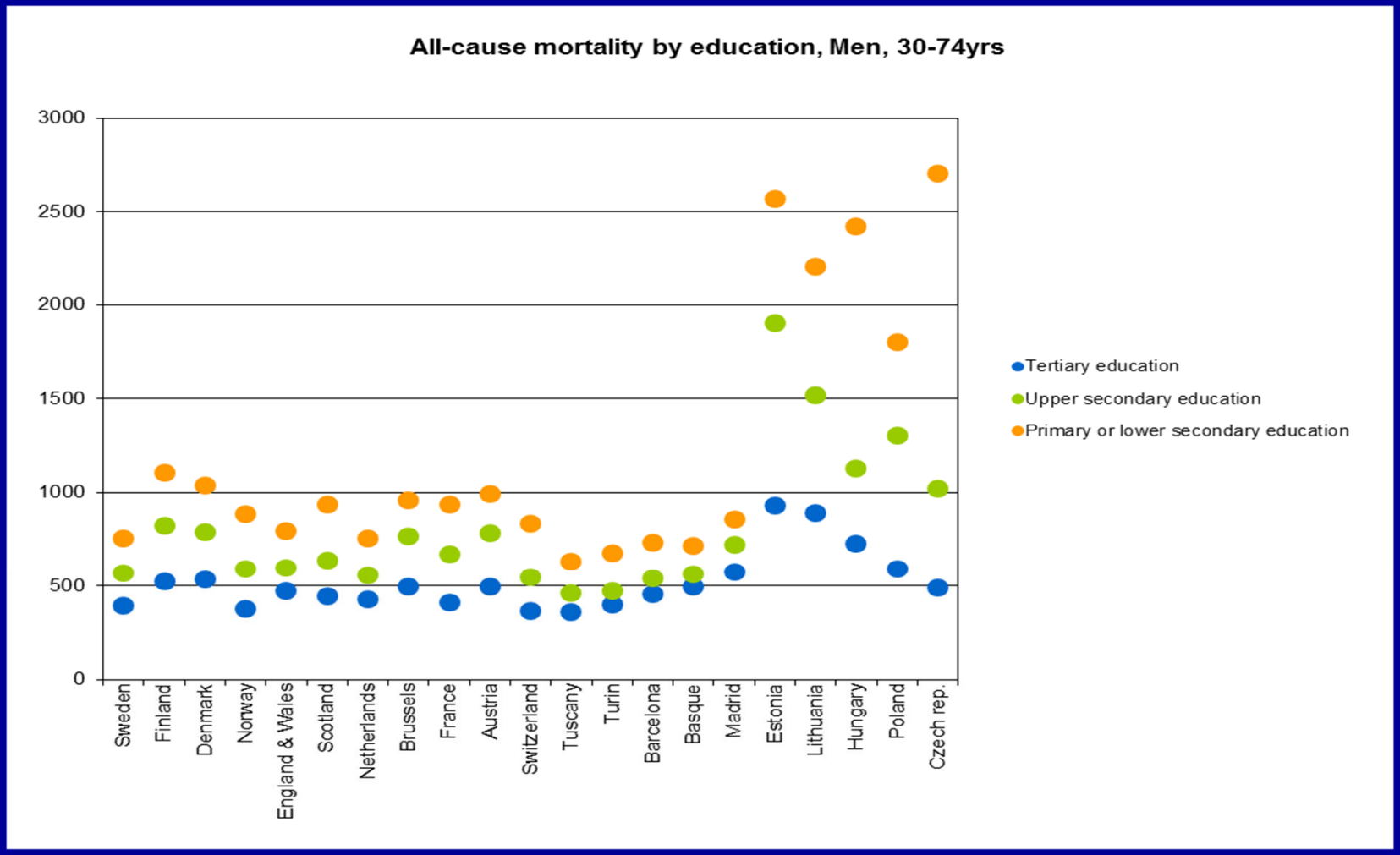
Ostergren, in prep.

RELATIVE INEQUALITIES BY EDUCATION TOTAL MORTALITY, 2000s, WOMEN



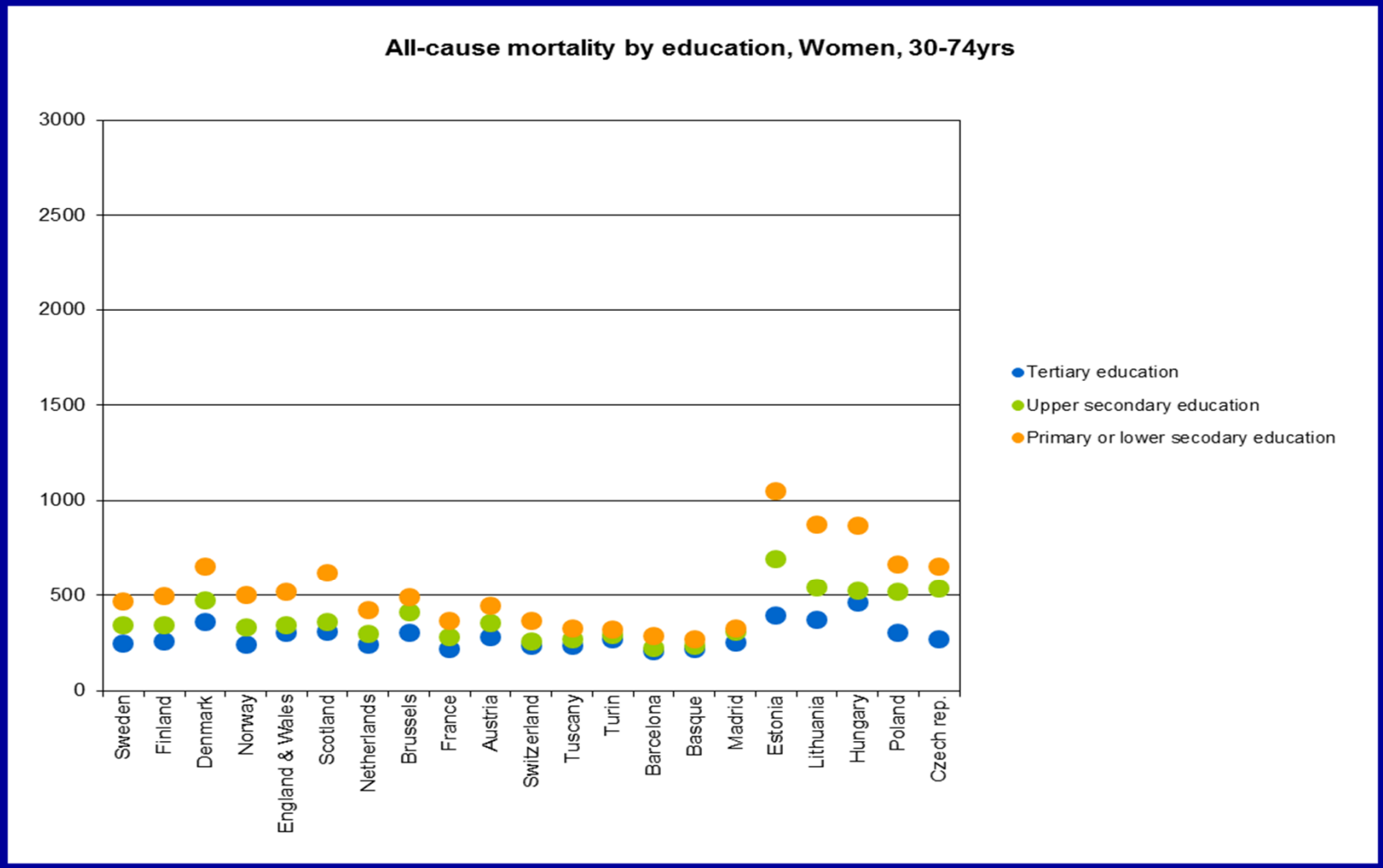
Ostergren, in prep.

ABSOLUTE INEQUALITIES BY EDUCATION TOTAL MORTALITY, 2000s, MEN



Ostergren, in prep.

ABSOLUTE INEQUALITIES BY EDUCATION TOTAL MORTALITY, 2000s, WOMEN



Ostergren, in prep.

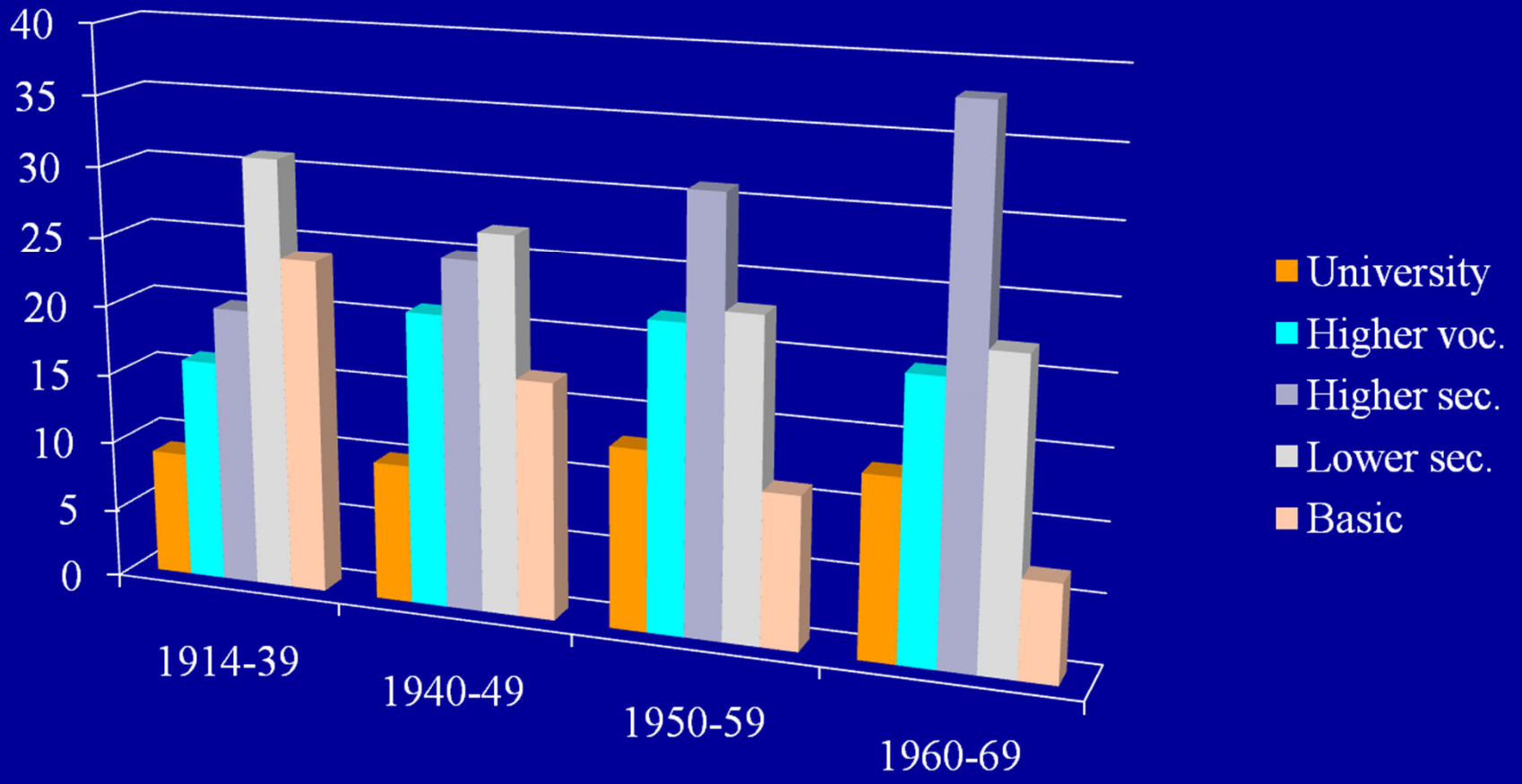
WHY HEALTH INEQUALITIES PERSIST DESPITE THE WELFARE STATE (1)

- Inequalities in access to material and immaterial resources have not been eliminated by the welfare state
- Composition of lower groups has become more unfavourable due to selective upward social mobility
- Marginal benefits of higher position for health have increased due to rise of diseases determined by consumption behavior

PERSISTENCE OF HEALTH INEQUALITIES = PERSISTENCE OF SOCIAL STRATIFICATION

RISE OF INTERGENERATIONAL SOCIAL MOBILITY

Education achievement by birth cohort, men, the Netherlands (%)



RMO 2011

TOBACCO CONTROL AND INEQUALITIES IN QUIT RATIOS

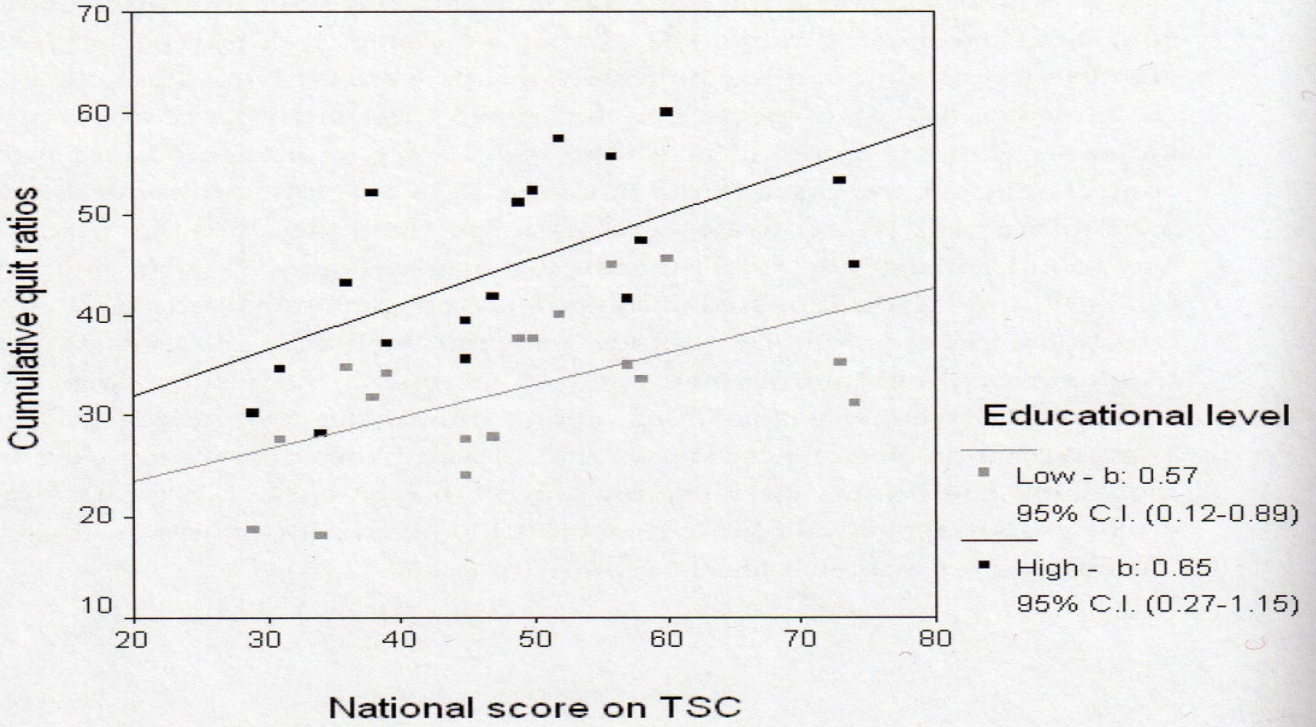


Figure 1. Scatter plot of 18 countries according to their score on the Tobacco Control Scale (TCS) and their quit ratios, for high and low educated; men and women together.

Schaap et al. 2008

CONCLUSIONS

- Health inequalities are omnipresent throughout Europe, but magnitude varies substantially, which suggests great potential for reduction
- The Eastern ‘regime’ of health inequalities is characterized by huge inequalities for cancer, CVD and injury, and in smoking, alcohol and health care
- Tackling these health inequalities is a prerequisite for improvement of overall population health