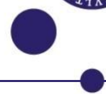
Faculty of Health Sciences



***Mechanisms for socio-economic inequalities in health in children in a life course perspective***

# Pre and perinatal inequalities in health

## Early life is key to improvements in health equity

## 'All human beings are born free and equal …'

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World Conference on
Social Determinants of Health

RIO DE JANEIRO | BRAZIL | 19–21 OCTOBER 2011

# Rio Political Declaration on Social Determinants of Health

***Rio de Janeiro, Brazil, 21 October 2011***

6. Health inequities arise from the societal conditions in which people are born, grow, live, work and age, referred to as social determinants of health. These include early years' experiences, education, economic status, employment and decent work, housing and environment, and effective systems of preventing and treating ill health. We are convinced that action on these determinants, both for vulnerable groups and the entire population, is essential to create inclusive, equitable, economically productive and healthy societies. Positioning human health and well-being as one of the key features of what constitutes a successful, inclusive and fair society in the 21st century is consistent with our commitment to human rights at national and international levels.

**10**

There are five key action areas critical to addressing health inequities: (i) to adopt better governance for health and development; (ii) promote participation in policy-making and implementation; (iii) to further reorient the health sector towards reducing health inequities; (iv) to strengthen global governance and collaboration; and (v) to monitor progress and increase accountability

**11.2**

(xi) Give special attention to gender-related aspects as well as early child development in public policies and social and health services;

# Old news ....

Does disadvantaged social position lead to disadvantaged health?

Is it an automatic, almost unavoidable, process?

THE RELATIONSHIP OF FETAL AND INFANT MORTALITY TO RESIDENTIAL SEGREGATION

An Inquiry Into Social Epidemiology*

ALFRED YANKAUER, JR., M.D.†

*Rochester Health Bureau and Uniersity of Rochester School of Medicine and Dentistry*

SIR ARTHUR NEWSHOLME in 1909 wrote: "Infant Mortality is the most sensitive index we possess of social welfare and of sanitary administration, especially under urban conditions."[1] This concise statement, quoted many times, has remained a keystone in public health thinking.

In the City of New York during the three years 1945-1947, 2,060 infants of resident non-white parentage died before completing the first year of their lives. If the same infant mortality rate had prevailed among them as among infants of white parentage, only 1,130 would have died. For these three years the annual average non-white infant mortality rate was 87% higher than the white rate.

These striking contrasts are not limited to the City of New York, and in a general white or Negro segment of our population is relegated to an under-privileged status.[4] In urban areas one of these mechanisms is residential segregation, the systematic effort to deny the Negro dwelling rights in any but a designated area of the city. It seemed appropriate therefore to examine the possible relationship of residential segregation and fetal and infant deaths among urban Negroes and whites.

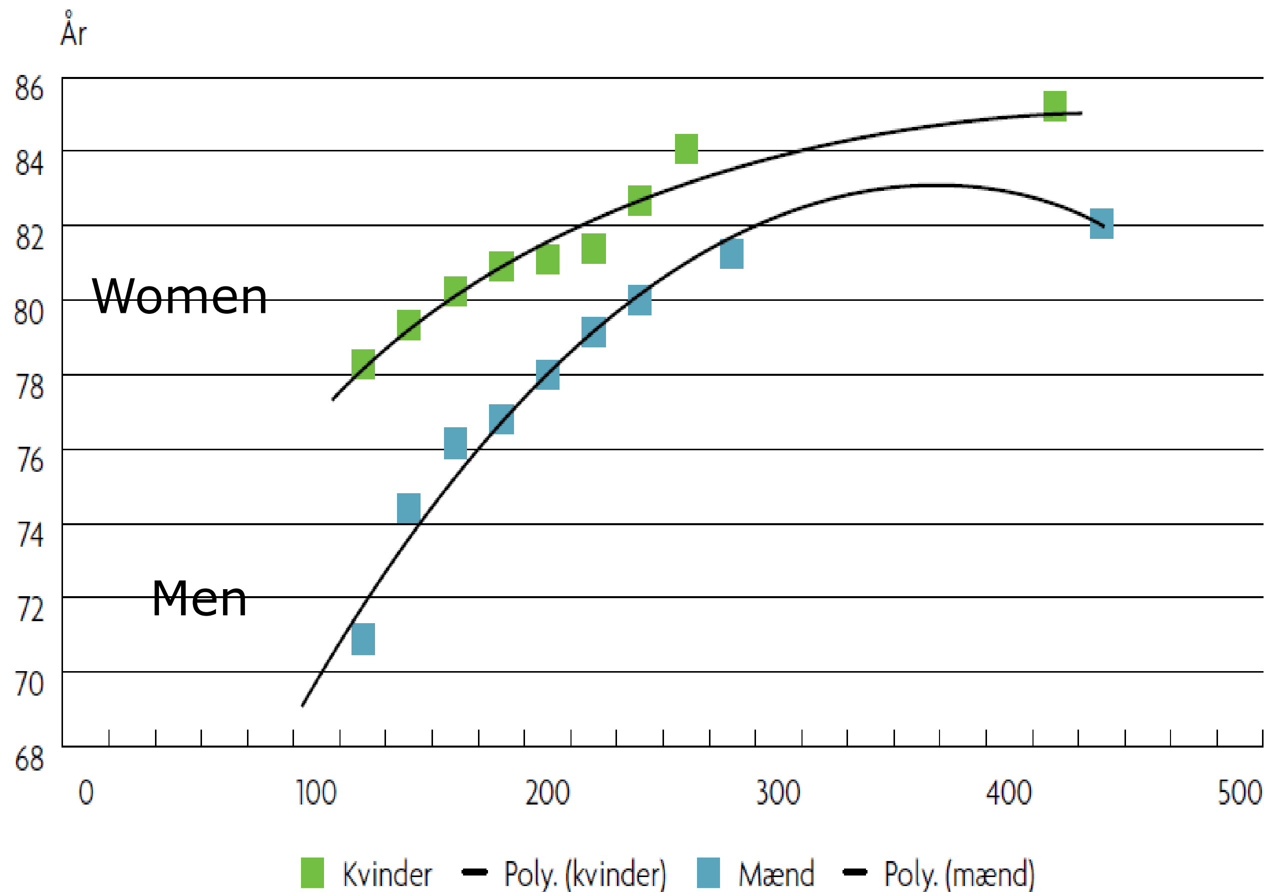
MATERIAL AND METHOD

The largest group of urban Negroes in the United States lives in the City of New York. In 1940 the Negro population enumerated was 458,444 and estimates based on the Census Bureau sample of April 1947 indicate an increase of over 50% during the seven-year period since 1940.[5]

Ref: Am Sociol Reviews 1950; 644-648

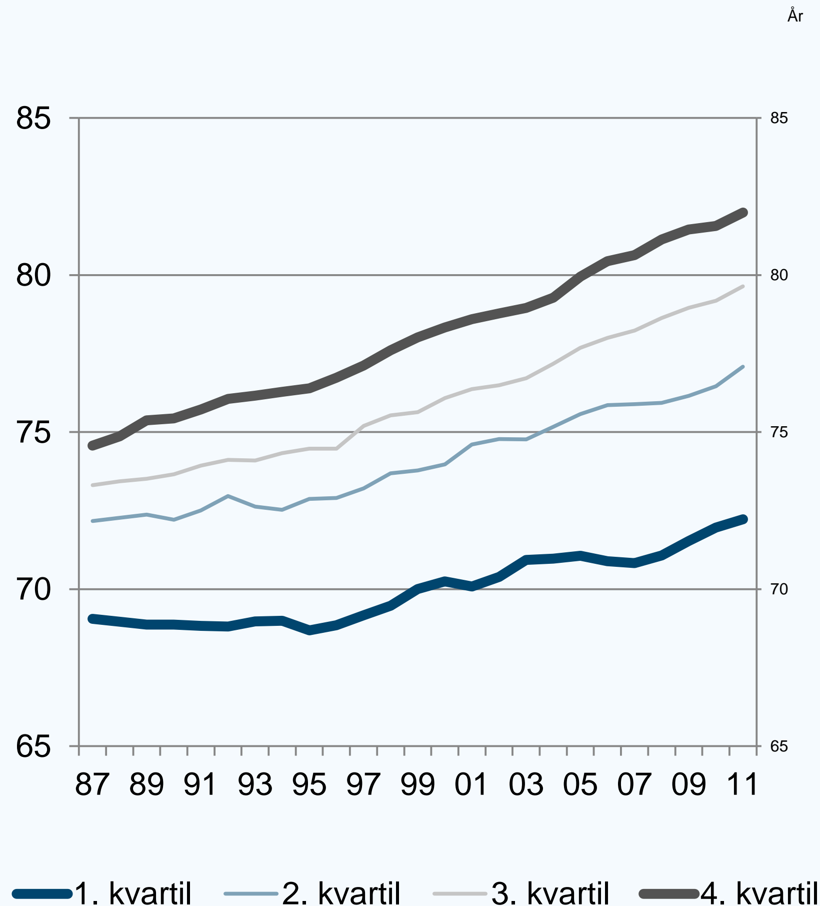
# The situation in Denmark, 2008-09

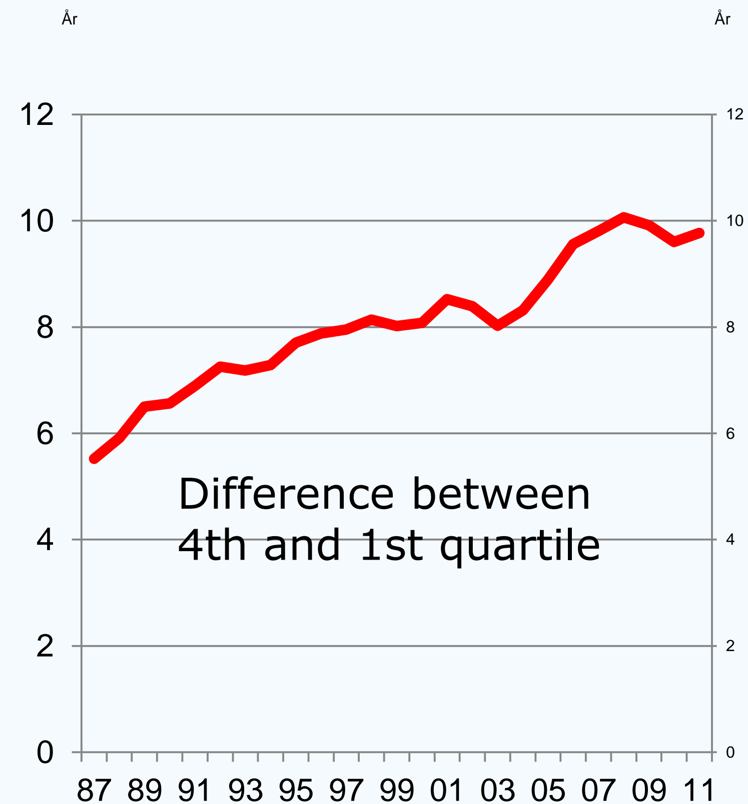
A curve-linear relationship between income and life expectancy (deciles marked)



# A widening gap in life expectancy

## Denmark, time trend from 1987 to 2011, income quartiles



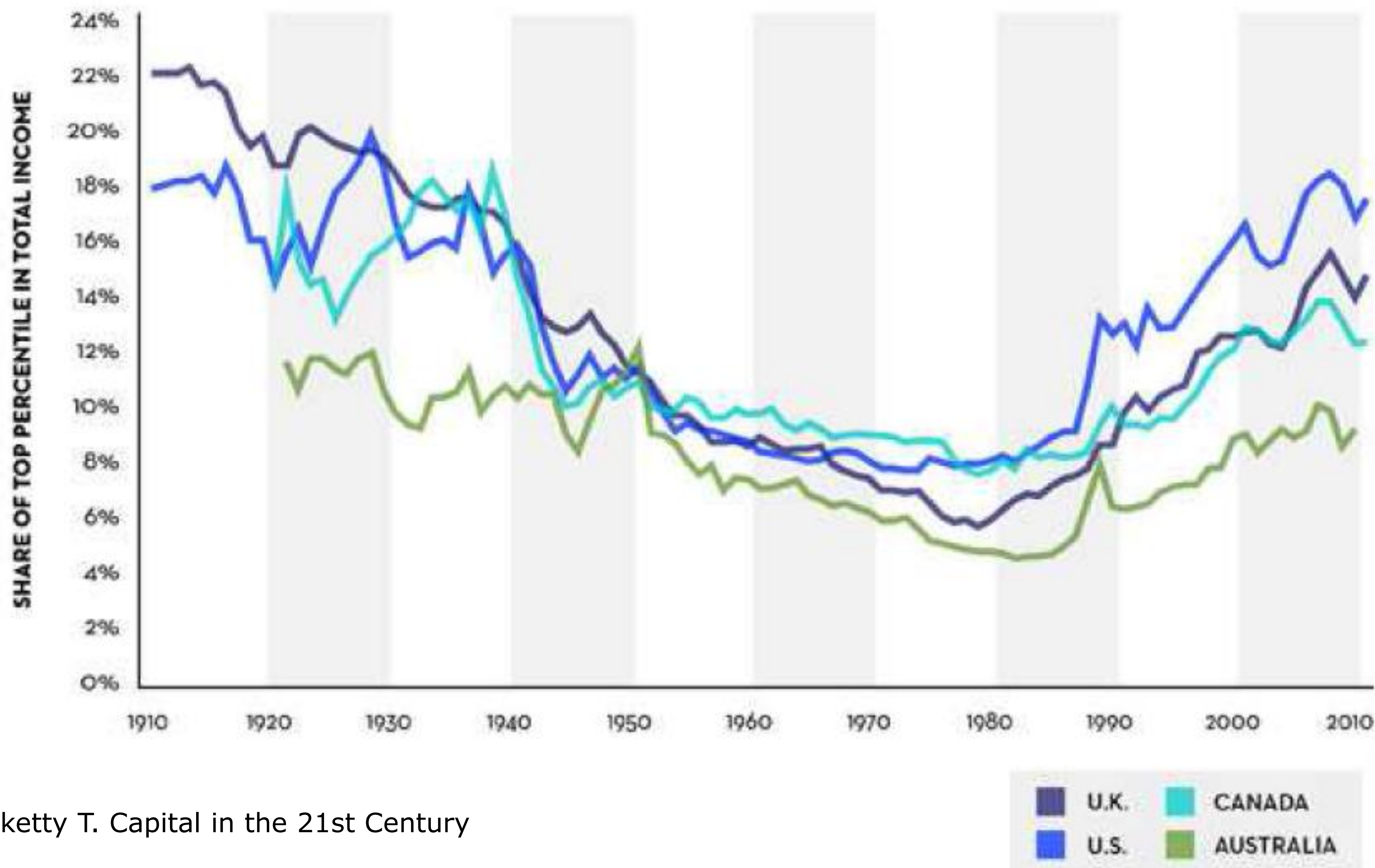
# Recent global and national analyses

Commission on Social Determinants of Health FINAL REPORT I EXECUTIVE SUMMARY

Closing the gap in a generation

Health equity through action on the social determinants of health

Commission of Social Determinants of Health, 2009




Piketty T. Capital in the 21st Century

# The (hypo)critical questions

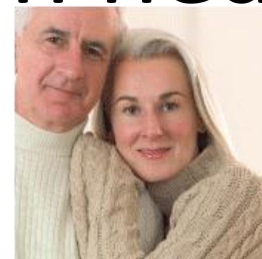
Why do health inequalities increase in Denmark

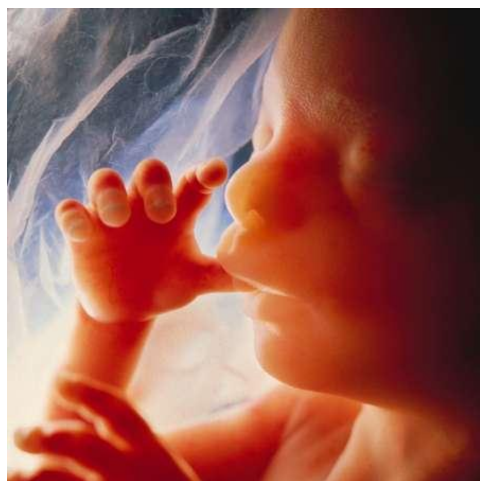
- Where we have had health inequalities high on the political agenda for decades ?
- Where the welfare state is developed and (still) universal?
- Where income inequality is low (as measured by Gini-coefficient) and absolute poverty minor?

# No answers,
# but hopefully food for thought

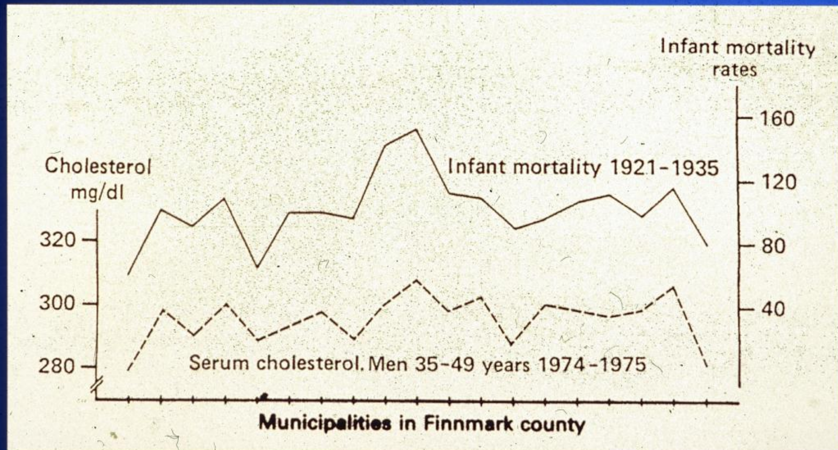
- We have not – in reality - taken a life-course perspective to health inequalities
- What are important health inequalities in early life?
- Do we actually know how to change these outcomes?

# Life-course perspectives on health





# Infant health and adult health



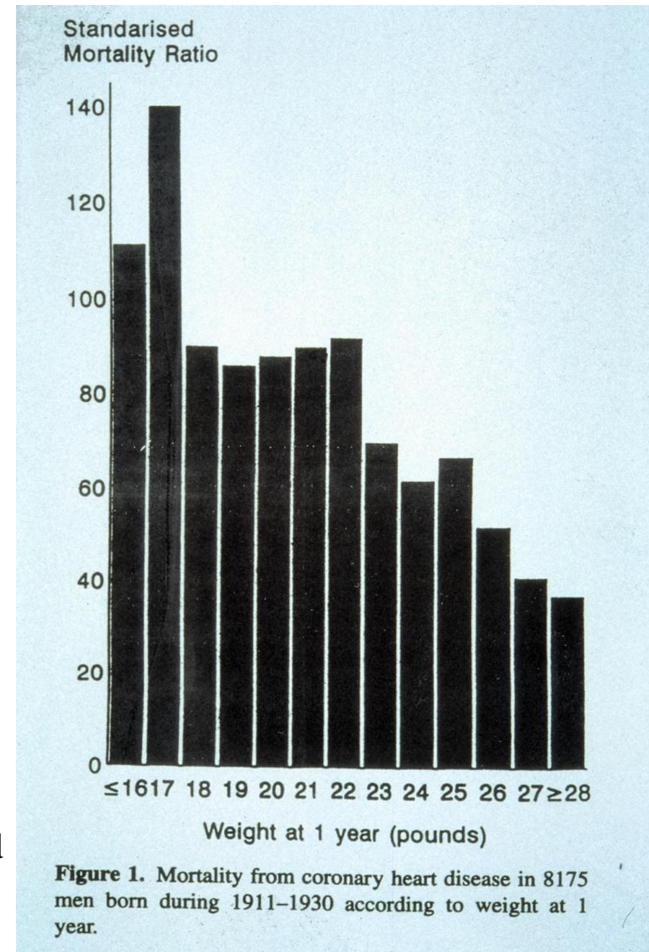
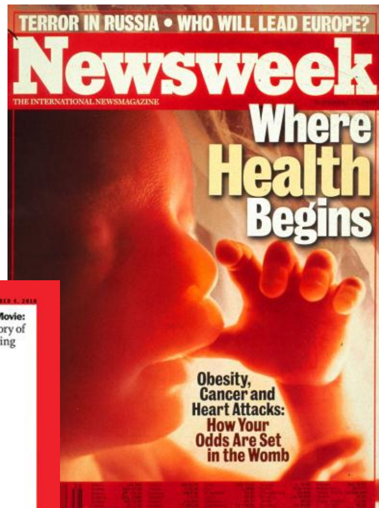
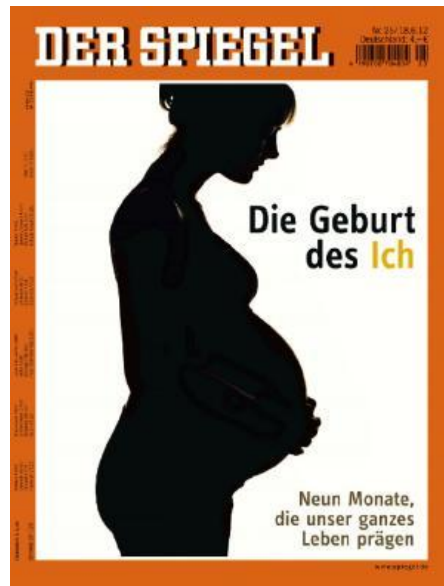




**Figure 1.** Mortality from coronary heart disease in 8175 men born during 1911–1930 according to weight at 1 year.

Barker DJ, Mothers, babies and Disease in later life
BMJ Publishing Group 1994

# DOHaD Developmental Origin of Health and Disease






Strong associations between

- Birth weight
- Gestational age at birth
- Intrauterine nutrition
- Other early life circumstances

and adult health

# 20th century epidemiology

Social position

Occupational hazards
Air quality
Smoking
Nutrition

Genetic disposition for respiratory disease

Respiratory disease

Asthma
COLD
Lung cancer

adulthood

Old age

# Programming

Or something related

Social position

Occupational hazards
Air quality
Smoking
Nutrition

Intra-uterine nutrition

and

Genetic disposition for respiratory disease

Respiratory disease

Asthma
COLD
Lung cancer

adulthood

Old age

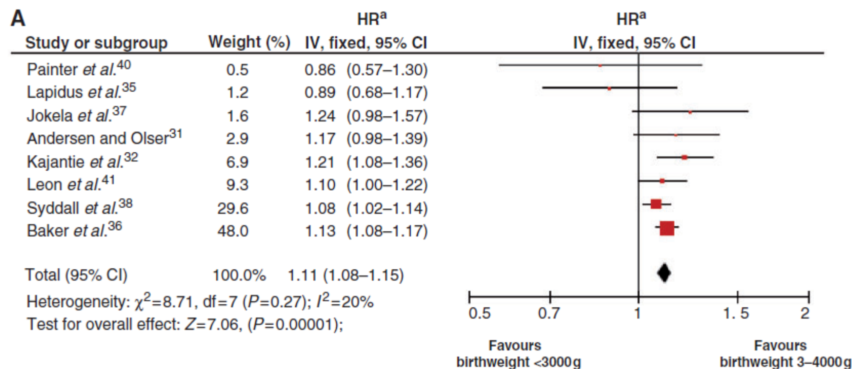
# Birth characteristics predict adult health

## Birth weight and mortality

Published by Oxford University Press on behalf of the International Epidemiological Association
International Journal of Epidemiology 2011;1–15
doi:10.1093/ije/dyq267
© The Author 2011; all rights reserved.

### Birthweight and mortality in adulthood: a systematic review and meta-analysis

Kari R Risnes,[1,2,3]* Lars J Vatten,[1] Jennifer L Baker,[4] Karen Jameson,[5] Ulla Sovio,[6] Eero Kajantie,[7] Merete Osler,[8] Ruth Morley,[9] Markus Jokela,[10] Rebecca C Painter,[11] Valter Sundh,[12] Geir W Jacobsen,[1,3] Johan G Eriksson,[13] Thorkild I A Sørensen[4] and Michael B Bracken[3]




## Preterm birth and adult disability

ORIGINAL ARTICLE

### Long-Term Medical and Social Consequences of Preterm Birth

CONCLUSIONS

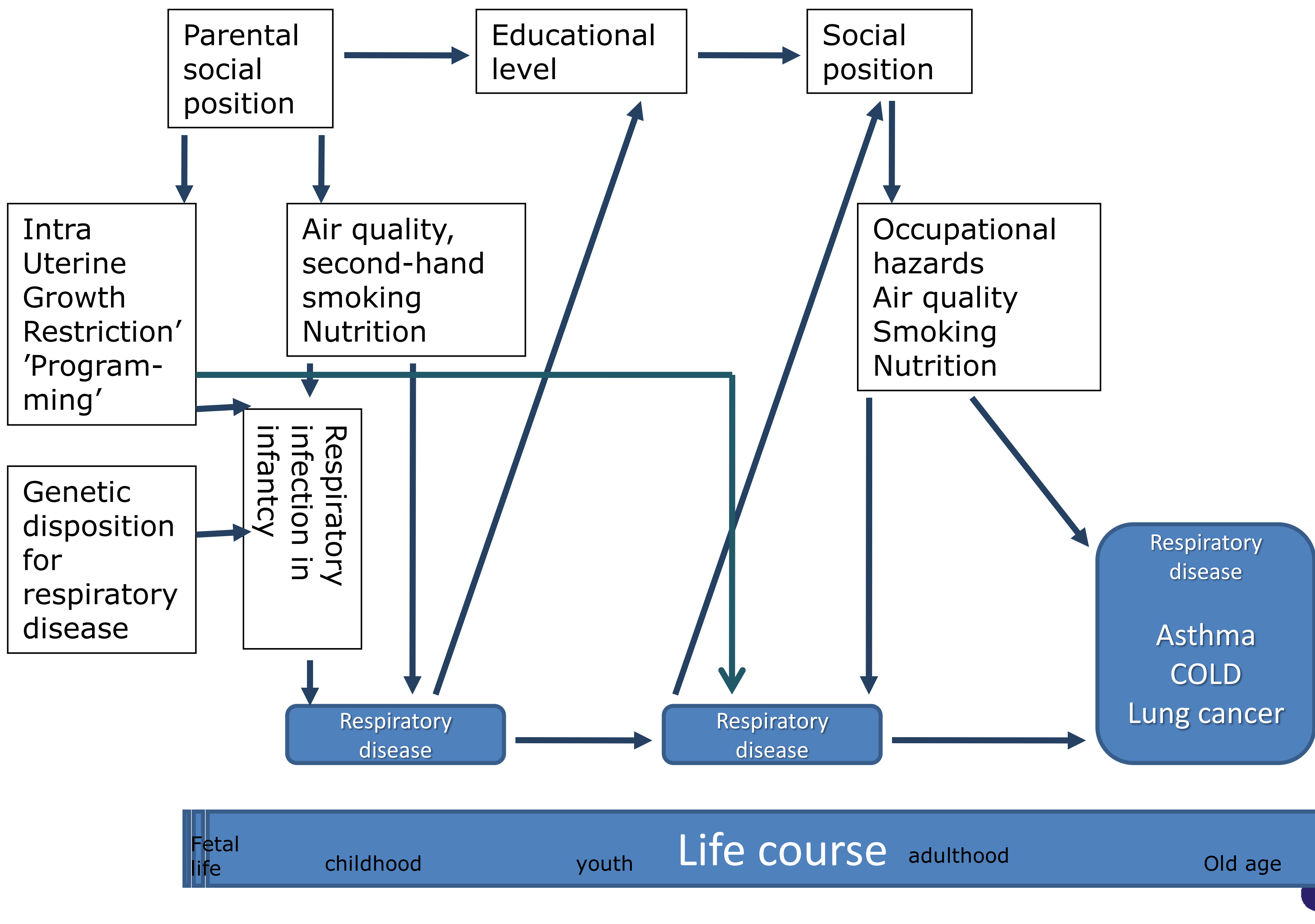
In this cohort of people in Norway who were born between 1967 and 1983, the risks of medical and social disabilities in adulthood increased with decreasing gestational age at birth.

N Engl J Med 2008;359:262-73.
Copyright © 2008 Massachusetts Medical Society.

Table 2. (Continued.)

| Disability | Subjects | | P Value for Trend |
|---|---|---|---|
| | no./total no. (%) | relative risk (95% CI) | |
| Any medical disability severely affecting working capacity¶ | | | <0.001 |
| 23 Wk to 27 wk 6 days | 38/359 (10.6) | 7.5 (5.5–10.0) | |
| 28 Wk to 30 wk 6 days | 138/1,674 (8.2) | 4.8 (4.1–5.7) | |
| 31 Wk to 33 wk 6 days | 272/6,548 (4.2) | 2.2 (2.0–2.5) | |
| 34 Wk to 36 wk 6 days | 781/32,062 (2.4) | 1.4 (1.3–1.5) | |
| ≥37 Wk | 14,286/850,437 (1.7) | 1.0 (reference) | |

# A life-course model for respiratory diseases (eg. asthma, COLD, lung cancer)




Ref: Osler M & Nybo Andersen A-M, 2011

# A life-course approach to health inequalities

**Article 1**
All human beings are born free and equal in dignity and rights.

And if not so,
it may have important consequences for equity in health throughout life

WHEREAS recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world,

WHEREAS disregard and contempt for human rights have resulted in barbarous acts which have outraged the conscience of mankind, and the advent of a world in which human beings shall enjoy freedom of speech and belief and freedom from fear and want has been proclaimed as the highest aspiration of the common people,

WHEREAS it is essential, if man is not to be compelled to have recourse, as a last resort, to rebellion against tyranny and oppression, that human rights should be protected by the rule of law,

WHEREAS it is essential to promote the development of friendly relations among nations,

WHEREAS the peoples of the United Nations have in the Charter reaffirmed their faith in fundamental human rights, in the dignity and worth of the human person and in the equal rights of men and women and have determined to promote social progress and better standards of life in larger freedom,

WHEREAS Member States have pledged themselves to achieve, in co-operation with the United Nations, the promotion of universal respect for and observance of human rights and fundamental freedoms,

WHEREAS a common understanding of these rights and freedoms is of the greatest importance for the full realization of this pledge,

NOW THEREFORE THE GENERAL ASSEMBLY PROCLAIMS this Universal Declaration of Human Rights as a common standard of achievement for all peoples and all nations, to the end that every individual and every organ of society, keeping this Declaration constantly in mind, shall strive by teaching and education to promote respect for these rights and freedoms and by progressive measures, national and international, to secure their universal and effective recognition and observance, both among the peoples of Member States themselves and among the peoples of territories under their jurisdiction.

UNITED NATIONS

BRITISH LIBRARY

# What are the important health inequalities in early life?

# Even on miscarriage risk …..

**Socioeconomic position and the risk of spontaneous abortion: a study within the Danish National Birth Cohort**

Educational inequality indicates a prevention potential

**Table 2** The risk of spontaneous abortion according to educational level, income level and labour market attachment, respectively, in the Danish National Birth Cohort

| | No. of events | Crude HR (95% CI) | Age adjusted HR (95% CI) |
|---|---|---|---|
| Educational level (n=88 958) | | | |
| BA or more (>12 years) | 589 | 1 | |
| Higher education (less than BA degree) | 1239 | 1.01 (0.92 to 1.11) | 1.02 (0.93 to 1.13) |
| Upper secondary education and vocational training | 1668 | 0.97 (0.88 to 1.06) | 1.01 (0.92 to 1.11) |
| Compulsory school (<10 years) | 527 | 1.14 (1.01 to 1.28) | 1.19 (1.05 to 1.34) |
| Income quintile (n=88 602) | | | |
| >80% | 785 | 1 | 1 |
| 60%–80% | 787 | 1.01 (0.91 to 1.11) | 1.1 (0.99 to 1.21) |
| 40%–60% | 796 | 1.03 (0.93 to 1.13) | 1.15 (1.04 to 1.27) |
| 20%–40% | 740 | 0.93 (0.84 to 1.03) | 1.09 (0.99 to 1.22) |
| <20% | 773 | 0.95 (0.86 to 1.05) | 1.15 (1.03 to 1.27) |
| Employment status (n=84 306) | | | |
| Employed | 3398 | 1 | 1 |
| Student | 295 | 0.91 (0.81 to 1.03) | 1.03 (0.91 to 1.16) |
| Unemployed (>50% of the year) | 128 | 1.04 (0.87 to 1.25) | 1.01 (0.84 to 1.20) |
| Disability pension | 17 | 1.61 (1.00 to 2.60) | 1.32 (0.82 to 2.13) |

Risks are expressed in HR.

Norsker FN et al. BMJ Open 2012 Jun 25;2(3).

# NorCHASE

Aims:

to increase the understanding of socially patterned health inequalities with specific focus on the pre-adult life, using register- and cohort data from Denmark, Finland, Norway, and Sweden.

Specifically:

socio-economic differentials in

- fetal death
- fetal growth
- preterm birth
- infant death, and
- child mortality

# NorCHASE data

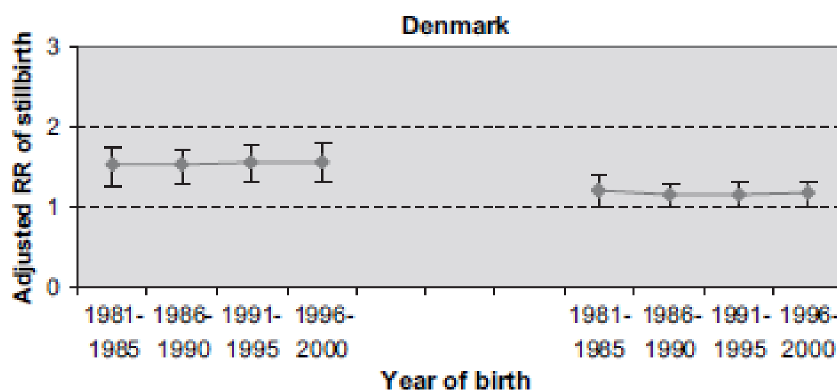
From Medical Birth Registries and Statistical Bureaus

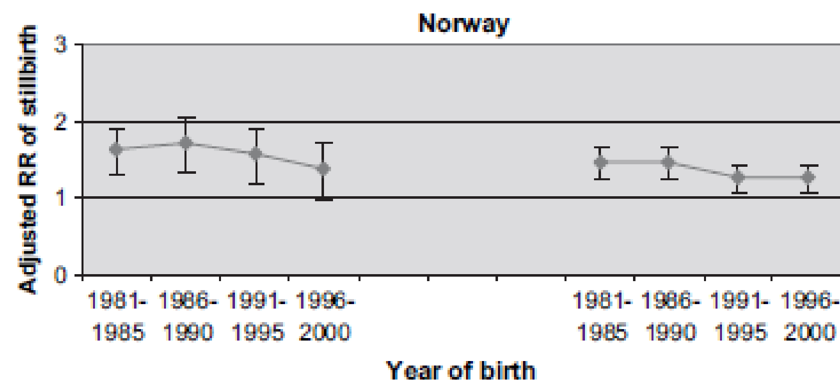
All children born 1981 – 2000 in Denmark, Norway, Sweden, for Finland 50%, 1987-2000)

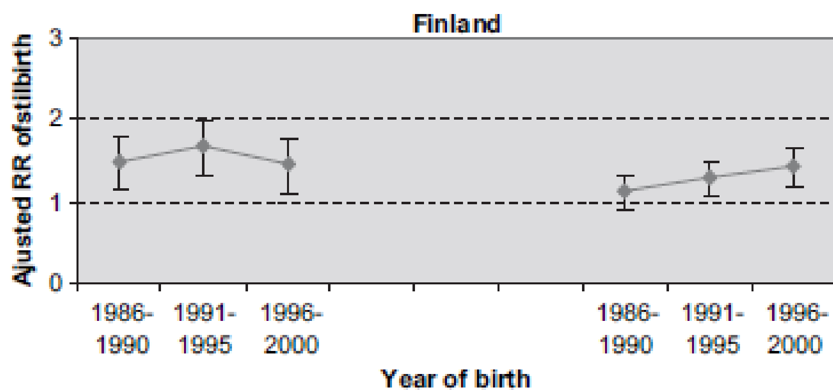
Approx. 5 mio children

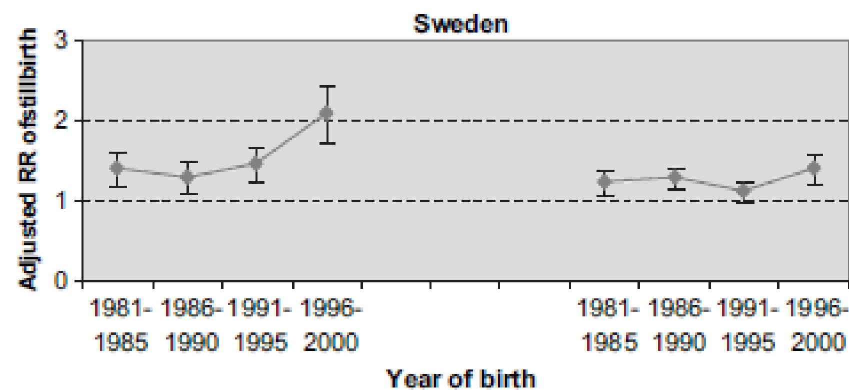
- Birth weight, gest.age, plurality, sex, congenital malformations
- Follow-up until 2003: death date, causes of death
- Maternal and paternal: age at birth, ethnicity, income, highest education, occupational status, cohabitation status, parity, social subsidies

# Maternal education and stillbirth




Increasing inequality in Sweden

Highest absolute risk in Denmark:

4‰ vs. 2.5, 3.6 og 3.5‰

Rom A et al.
J Epidemiol Community Health, 2010

# Infant death

Infant death highest in Denmark: 5.9 ‰ vs. 4.2, 5.3, og 4.7 ‰

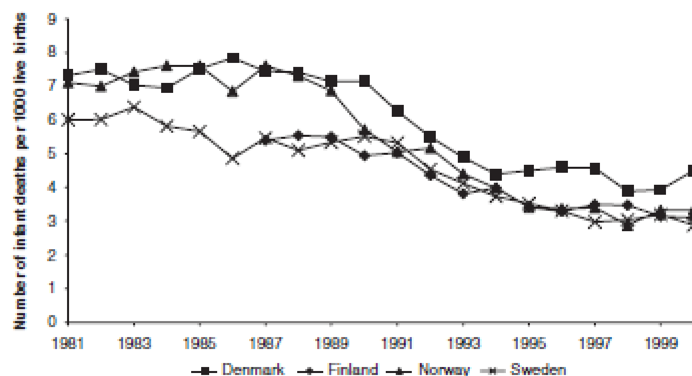



**Figure 1** Infant mortality in Denmark, Finland, Norway and Sweden, 1981–2000

Increasing inequality in infant death in DK

Both in terms of crude RR and RII, constant in terms of RD

## Neonatal mortality (0-27 days)

| | Denmark | | | |
|---|---|---|---|---|
| | 1981–85 | 1986–90 | 1991–95 | 1996–2000 |
| Risk difference | 1.28 | 1.09 | 1.70 | 1.33 |
| 95% CI[a] | (0.62, 1.93) | (0.47, 1.72) | (1.12, 2.28) | (0.76, 1.91) |
| Relative risk | 1.35 | 1.30 | 1.62 | 1.50 |
| 95% CI[b] | (1.15, 1.38) | (1.12,1.52) | (1.38, 1.90) | (1.27, 1.78) |
| Relative index | 1.54 | 1.44 | 1.95 | 1.72 |
| of inequality 95% CI[c] | (1.23, 1.94) | (1.17, 1.79) | (1.55, 2.44) | (1.36, 2.19) |

## Post-neonatal mortality (28-364 days)

| | Denmark | | | |
|---|---|---|---|---|
| | 1981-85 | 1986-90 | 1991-95 | 1996-2000 |
| Risk difference | 1.36 | 2.29 | 1.75 | 1.14 |
| 95% CI[a] | (0.80–1.92) | (1.70–2.87) | (1.29–2.20) | (0.75–1.52) |
| Relative risk | 1.55 | 1.96 | 2.39 | 2.32 |
| 95% CI[b] | (1.29–1.87) | (1.65–2.32) | (1.91–2.99) | (1.77–3.04) |
| Relative index | 1.98 | 2.77 | 3.56 | 3.26 |
| of inequality 95% CI[c] | (1.51–2.61) | (2.15–3.56) | (2.59–4.91) | (2.21–4.81) |

Arntzen A et al.
Eur J Public Health, 2008

# Infant death

## Key points

- The risk of infant death decreased considerably in all educational groups in the Nordic countries in the period 1981–2000.
- The inverse associations between maternal education and risks of neonatal and postneonatal mortality persist throughout the period of observation.
- For postneonatal mortality, the relative differences by maternal education increased over time, whereas the absolute differences decreased
- For neonatal mortality, the absolute and relative differences by maternal education decreased in Finland and Sweden, both differences increased in Denmark, whereas in Norway the absolute differences decreased and the relative differences increased.

n

| | Sweden | | | |
|---|---|---|---|---|
| ] | Crude RR | 95% CI | Adj. RR | 95% CI |
| .02 | 1.63 | 1.36–1.95 | 1.50 | 1.25–1.81 |
| .47 | 1.22 | 1.05–1.41 | 1.18 | 1.02–1.37 |
| | 1.00 | | 1.00 | |
| .42 | 1.61 | 1.34–1.93 | 1.45 | 1.21–1.74 |
| .51 | 1.20 | 1.04–1.38 | 1.18 | 1.02–1.35 |
| | 1.00 | | 1.00 | |
| .20 | 2.26 | 1.86–2.76 | 2.06 | 1.68–2.51 |
| .05 | 1.18 | 1.00–1.39 | 1.15 | 0.98–1.36 |
| | 1.00 | | 1.00 | |
| .24 | 2.57 | 1.93–3.42 | 2.49 | 1.87–3.33 |
| .80 | 1.47 | 1.16–1.86 | 1.44 | 1.13–1.82 |
| | 1.00 | | 1.00 | |

e 22 weeks or more in Denmark,

# Preterm birth

**Table 3.** The risk of moderately preterm birth (32–36 completed gestational weeks) by mother's educational attainment in Denmark, Finland, Norway and Sweden

| | | Year of birth | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1981–85 | | | 1986–90 | | | 1991–95 | | | 1996–2000 | | |
| Country | Mother's education | % | OR | [95% CI] | % | OR | [95% CI] | % | OR | [95% CI] | % | OR | [95% CI] |
| Denmark | <10 years | 5.00 | 1.50 | [1.42, 1.59] | 5.15 | 1.55 | [1.47, 1.63] | 5.42 | 1.63 | [1.55, 1.71] | 5.50 | 1.53 | [1.46, 1.61] |
| | 10–12 years | 4.10 | 1.22 | [1.15, 1.29] | 4.33 | 1.29 | [1.23, 1.35] | 4.21 | 1.23 | [1.19, 1.30] | 4.42 | 1.22 | [1.17, 1.27] |
| | >12 years | 3.39 | 1.00 | Reference | 3.40 | 1.00 | Reference | 3.41 | 1.00 | Reference | 3.66 | 1.00 | Reference |
| Finland | <10 years[a,b] | – | – | – | 5.55 | 1.58 | [1.41, 1.76] | 4.87 | 1.39 | [1.25, 1.54] | 5.04 | 1.32 | [1.19, 1.47] |
| | 10–12 years | – | – | – | 4.03 | 1.14 | [1.04, 1.25] | 3.98 | 1.12 | [1.03, 1.21] | 4.16 | 1.08 | [0.99, 1.17] |
| | >12 years | – | – | – | 3.55 | 1.00 | Reference | 3.58 | 1.00 | Reference | 3.88 | 1.00 | Reference |
| Norway | <10 years | 5.54 | 1.43 | [1.33, 1.53] | 6.70 | 1.59 | [1.49, 1.69] | 6.72 | 1.58 | [1.48, 1.69] | 6.51 | 1.45 | [1.35, 1.55] |
| | 10–12 years | 4.69 | 1.20 | [1.14, 1.26] | 5.24 | 1.22 | [1.17, 1.28] | 5.40 | 1.25 | [1.20, 1.30] | 5.52 | 1.21 | [1.17, 1.26] |
| | >12 years | 3.95 | 1.00 | Reference | 4.33 | 1.00 | Reference | 4.37 | 1.00 | Reference | 4.59 | 1.00 | Reference |
| Sweden | <10 years | 6.13 | 1.40 | [1.35, 1.46] | 6.05 | 1.39 | [1.34, 1.45] | 5.89 | 1.44 | [1.38, 1.50] | 5.38 | 1.32 | [1.26, 1.39] |
| | 10–12 years | 5.23 | 1.19 | [1.15, 1.23] | 5.16 | 1.17 | [1.14, 1.21] | 4.79 | 1.16 | [1.12, 1.19] | 4.70 | 1.15 | [1.11, 1.19] |
| | >12 years | 4.44 | 1.00 | Reference | 4.42 | 1.00 | Reference | 4.17 | 1.00 | Reference | 4.12 | 1.00 | Reference |

Educational gradients, esp DK & N

Difference in prevalence trends

Pedersen CB et al.
Paediatr Perinat Epidemiol 2009

# Social inequality in preterm birth

## A comparative study using European birth cohorts

A CHICOS case study

# Study outline ....

– A comparative study looking at the association between socio-economic position and risk of preterm birth.

- Separate analyses of data from each cohort- not data pooling.
- Compare by characteristics of countries and cohorts
  - National policies, e.g. iatrogenic deliveries
  - National characteristics, e.g. economics
  - Interpretation of socio-economic markers
  - Cohort design differences, e.g. participation

– To examine to which extent life style factors mediate social-economic disparities in preterm birth

# Participating cohorts

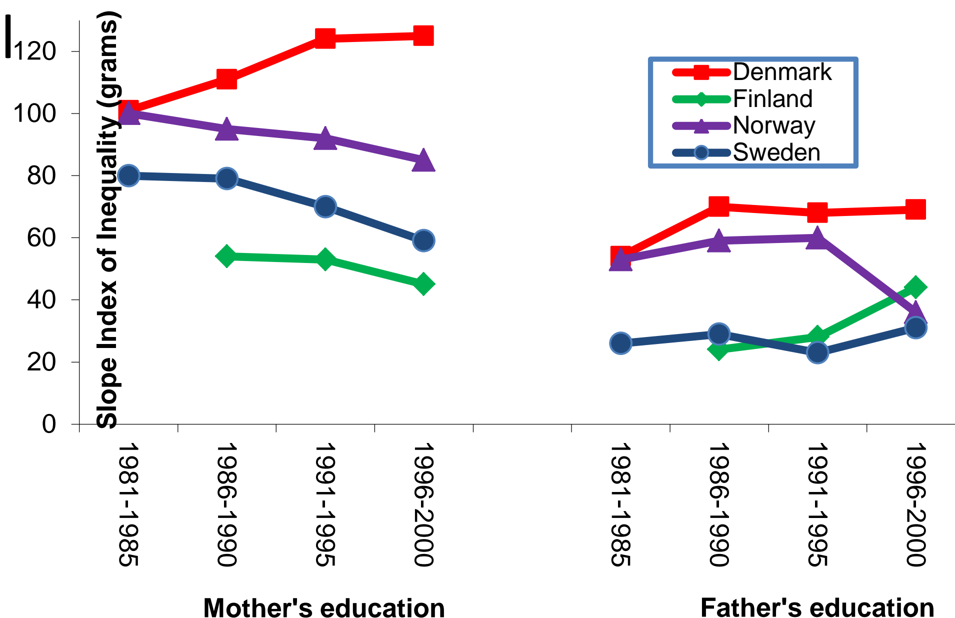
1. Aarhus birth cohort (DK, N=93,000)
2. ABCD (NL, N=7,863)
3. BiB (UK, N=13,000)
4. CCC 2000 (DK, N=6,090)
5. DNBC (DK, N~100,000)
6. Generation R (NL, N=9,778)
7. INMA (E, N=3,944)
8. MoBA (N, N=107,000)
9. NINFEA (I, N=3000)
10. PÉLAGIE (F, N=3,421)
11. PIAMA (NL, N=4,146)
12. SNiP (D, N=4,783)

# Results from the CHICOS case-study

Poulsen GN et al. Submitted 2014

# Birth weight

Disparities in all countries and both for maternal and paternal education




The largest inequality in Denmark AND increasing, in contrast to other three countries

Similar findings for SGA and when using absolute risk measures

Mortensen LH et al.
J Epidemiol Community Health 2008

# Widening the inequalities …

## Participation in preventive child health examinations

Even though preventive child health examinations might be important to the health of the child, not all children do participate in them.

- Pronounced social inequality in the use of child health examinations exists in Denmark despite the fact that they are offered free of charge.
- Important risk factors for non-participation include household income, the parent's occupational and educational level as well as the number of older biological siblings.

Søndergaard G et al. Non-participation in preventive child health examinations at the general practitioner in Denmark: a register-based study. Scand J Prim Health Care 2008

Paediatric and Perinatal Epidemiology
Affiliated to the Society for Pediatric and Perinatal Epidemiologic Research

doi: 10.1111/j.1365-3016.2011.01255.x 1

# Time trends in socio-economic factors and risk of hospitalisation with infectious diseases in pre-school children 1985–2004: a Danish register-based study

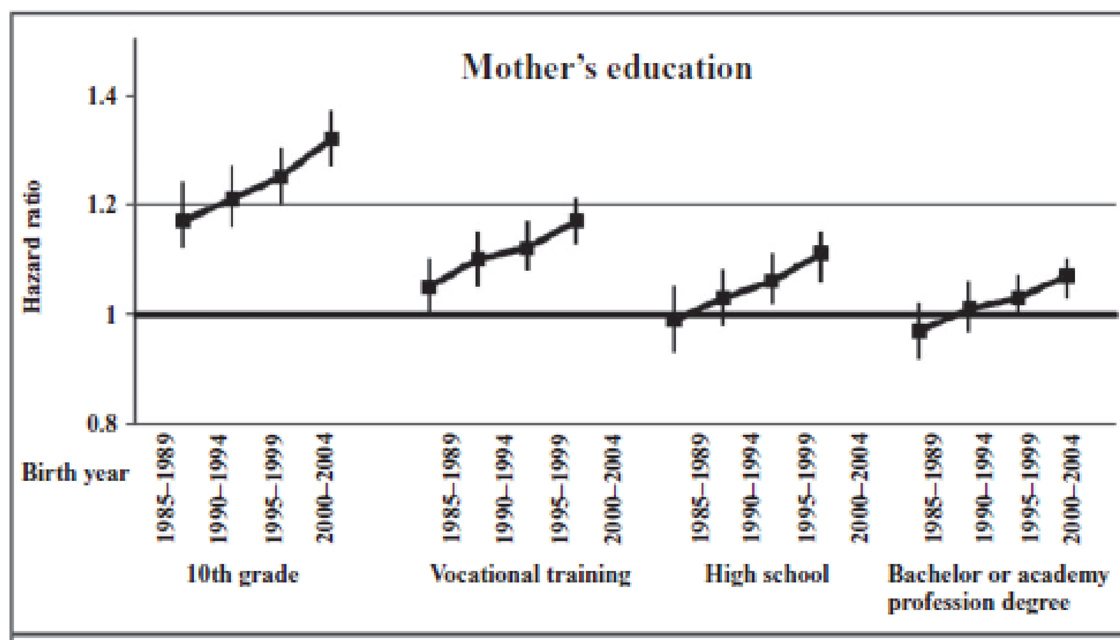
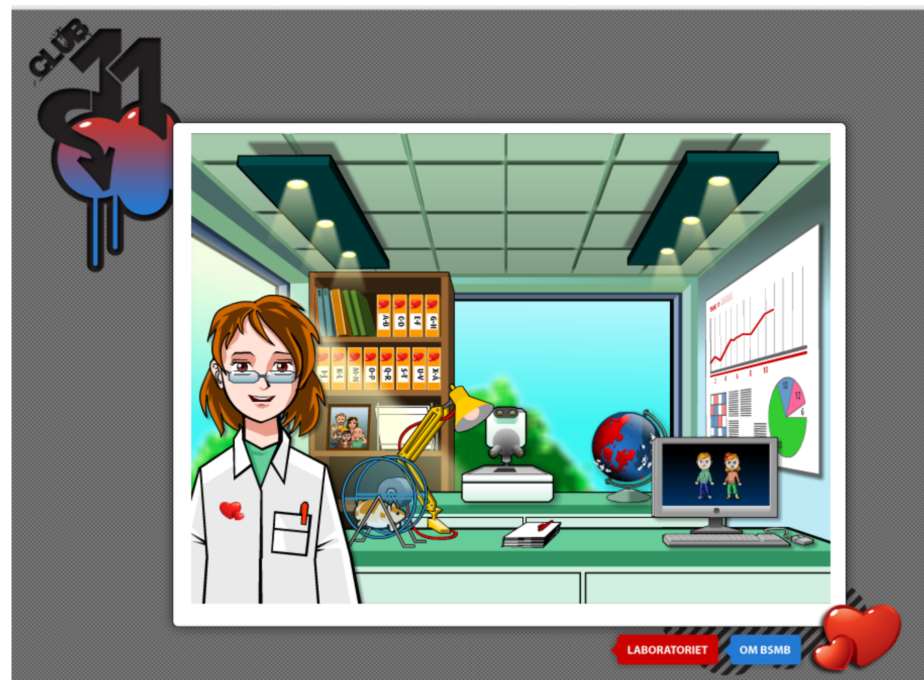



**Figure 1.** The time trend in hazard ratios for pre-school children (0–5 years) hospitalised for infectious diseases according to parental education. The reference group is parents with a master's degree or higher. Hazard ratios are estimated for the four 5-year intervals from 1985 to 2004. All children were born in Denmark 1985–2004. The black horizontal line represents the reference group (master's degree or higher). The vertical line (I) is the 95% confidence interval. Education is defined according to type of education: 10th grade (completion of no more than 10th grade), vocational training (e.g. craftsmen, hairdressers and waiters),

# Developmental inequalities with long-term consequences

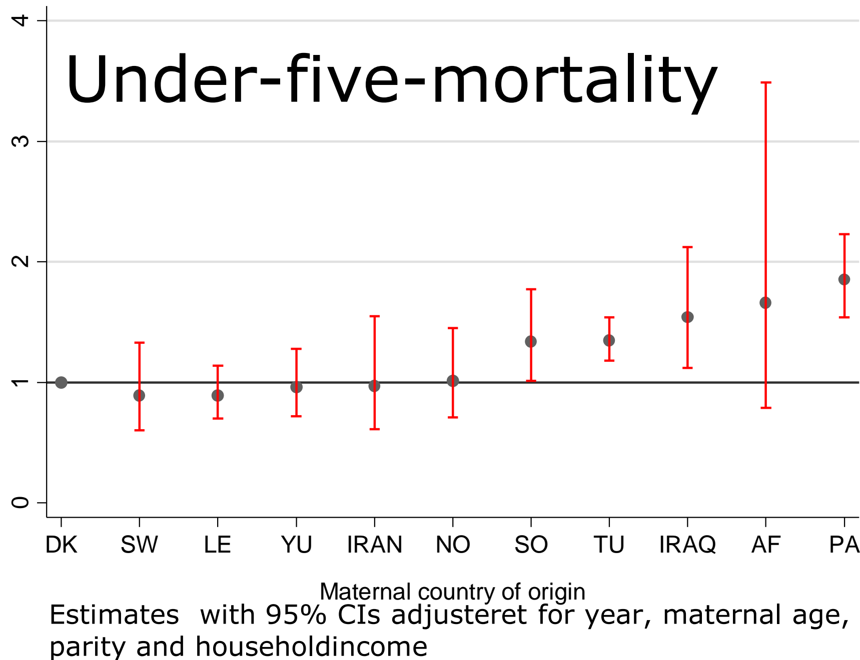
| Maternal occupation | Language delay | |
|---|---|---|
| High grade professionals | 8,4 % | |
| Low grade professionals | 9,0 % | |
| Skilled | 10,0 % | |
| Unskilled | 11,3 % | |
| Outside labour market | 15,6 % | |
| | | |
| Students | 8,5 % | |




The Danish National Birth Cohort
Unpublished work

Susceptible groups ….

# Mortality for children born in Denmark according to maternal country of origin




Estimates with 95% CIs adjusteret for year, maternal age, parity and householdincome

Petersen GS et al.
Eur J Epidemiology 2011

**Table 3** Relative risks (RR) and 95% confidence intervals (95% CI) for stillbirth and infant mortality in ethnic minority groups compared with the ethnic majority, Denmark 1981–2003

| | Stillbirth | Infant mortality |
|---|---|---|
| | RR* (95% CI) | RR* (95% CI) |
| Danish | 1 | 1 |
| Turkish | 1.28 (1.07 to 1.53) | 1.41 (1.22 to 1.63) |
| Lebanese | 1.04 (0.76 to 1.43) | 1.05 (0.80 to 1.38) |
| Pakistani | 1.62 (1.25 to 2.09) | 1.88 (1.53 to 2.30) |
| Former Yugoslavian | 1.18 (0.86 to 1.62) | 0.95 (0.69 to 1.29) |
| Somali | 2.11 (1.60 to 2.77) | 1.39 (1.03 to 1.89) |

*Adjusted for calendar year.

Villadsen SF et al.
J Epidemiol Community Health 2009

Petersen GS et al.
Paediatric Perinat Epidemiol 2012

# Preterm and SGA

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**Table 2.** Odds ratios and 95% confidence interval for very and moderate preterm delivery and small-for-gestational age delivery by maternal country of origin: Denmark 1978–2007

| Completed weeks of gestation at delivery Ethnic group | Very preterm (<33 weeks) Age and parity adjusted[ab] | Moderate preterm (33–36 weeks) Age and parity adjusted[ab] | Small-for-gestational age Multivariable adjusted[ac] |
|---|---|---|---|
| Danish | 1.0 Reference | 1.0 Reference | 1.0 Reference |
| Turkish | 1.4 [1.2–1.8] | 1.1 [1.0–1.2] | 1.3 [1.2–1.3] |
| Former Yugoslavian | 1.3 [1.0–1.6] | 1.1 [1.0–1.2] | 1.2 [1.1–1.2] |
| Lebanese | 0.8 [0.5–1.4] | 1.1 [0.9–1.3] | 1.8 [1.6–2.0] |
| Pakistani | 1.6 [1.2–2.0] | 1.4 [1.2–1.6] | 2.4 [2.2–2.5] |
| Somali | 1.2 [0.8–1.9] | 0.8 [0.6–0.9] | 2.6 [2.4–2.8] |

[a]Adjusted for year of delivery.
[b]Estimates are standardised to the age and parity distribution of the Danish-born women.
[c]Estimates are standardised to the age distribution of the Danish-born women and adjusted for gestational age, sex of the child and

*Results:* All immigrant groups had an increased risk of SGA delivery with the highest risk among Lebanese-, Somali- and Pakistani-born women: risk differences (RDs) and 95% confidence intervals [CI] per 1000 deliveries of 50.2 [95% CI 43.7, 56.7], 70.1 [95% CI 62.2, 77.9] and 85.7 [95% CI 78.5, 92.9]. Turkish- and Pakistani-born women had increased RDs of 1.8 [95% CI 0.5, 3.1] and 2.2 [95% CI 0.1, 4.2] for very preterm and RDs of 3.5 [95% CI 0.9, 6.1] and 10.2 [95% CI 5.9, 14.5] for moderate preterm delivery. Lebanese-born women had a decreased risk of very preterm delivery, RD of –1.9 [95% CI –3.5, –0.3] and Somali-born women a lower risk of moderate preterm delivery, RD of –7.8 [–12.0, –3.6]. No differences were seen for the remaining groups. The association with length of residence for most immigrant groups was U-shaped, with highest risks among recent and long-term residents.

# What I am getting at …….

- We know that early life characteristics (e.g. birth weight and gestational age at birth) are predictive for adult mortality and morbidity
- We know that we have clear socially patterned inequalities in these characteristics
- We may not be able to tackle health inequalities before we can tackle health inequalities in early life ….

# What to do?

- How to avoid preterm birth?
- How to improve optimal fetal growth?
- How to prevent congenital diseases?

We do not know enough about mechanisms

# Recommendations in the Danish 'Marmot' Report

| **Determinant 1: Early childhood development** |
| --- |
| Early childhood development is impacted as early as during foetal life, and parents with low levels of education have greater risk of having children with low birth weight. The cognitive, verbal, social and emotional stimulation of the child has a huge influence on the child's further development and schooling, and thus affects the child's social position as an adult. A lack of stimulation in early development can influence the child's physical and mental health later in life. |
| **Objectives:**<br>- To reduce social inequality in the early cognitive, verbal, emotional and social development of children<br>- To reduce social inequality in birth outcomes |
| **Policy measures:**<br>- #1.1 Antenatal care comprising interventions that reach all women early in pregnancy and which can prevent preterm birth, low weight for gestational age, smoking of pregnant women, damaging occupational environment, etc.<br>- #1.2 Maternity visits by health nurses offered as a universal service to all families. At the same time, extra attention is given to reaching the socially and psychologically disadvantaged families, including families with substance abuse problems<br>- #1.3 Active outreach measures to ascertain that children with restricted social and cognitive development attend the preventive child health examinations at the general practitioner<br>- #1.4 Complete coverage and active recruitment of children with special needs through day care institutions and kindergarten class<br>- #1.5 Elimination of childhood poverty to prevent the long-term irreversible consequences that poverty has for children |

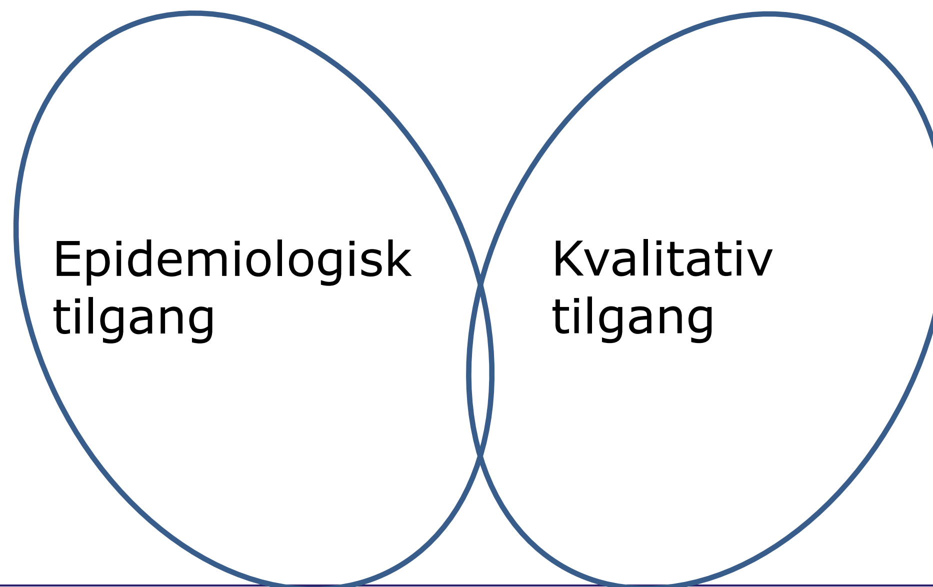
# Universalism vs targeted care

- Politicians (in my country) love weak groups
- ‘centered pregnancy’ initiatives for disadvantaged women
- Universal care is diminishing

# SULIM WP2
# Healthy reproduction in migrants

# SULIM WP2
# Aims

- Investigate use of preventive care
- Investigate consanuinity as a risk factor
- Develop a model for antenatal care for migrants in Denmark



# Needs assessment phase

Epidemiologic analyses
Qualitative interviews

# The intervention

- Setting: Antenatal care Midwives
- 4 antenatal clinics: **Amager, Ishøj**, Vesterbro, Hvidovre
- 5 hours course to midwives
- App og leaflet in 7 languages
- 5 min. more
- 3 dialogus meetings