Life course origins of chronic diseases: How to reconcile the contributions of competing epidemiological approaches

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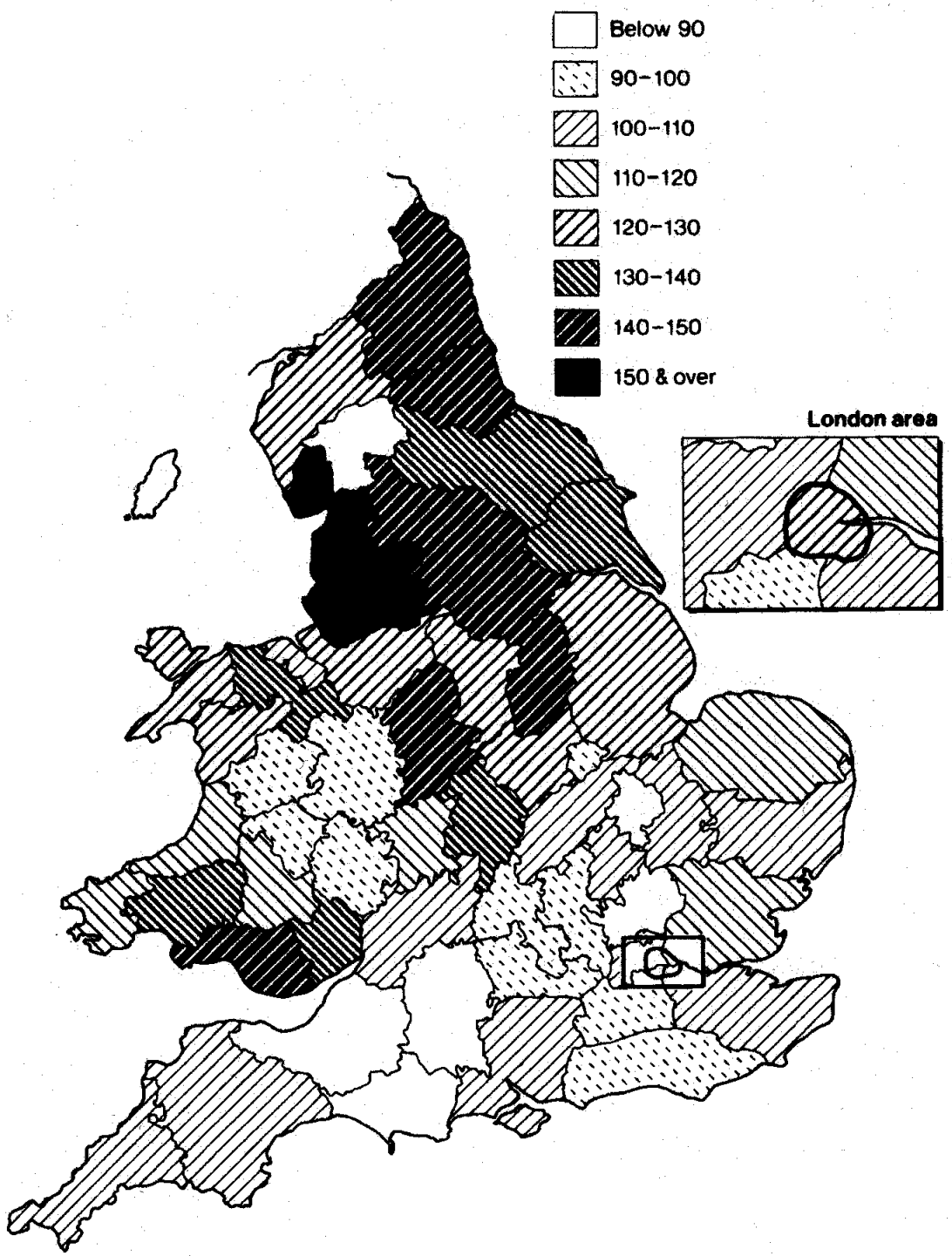
How to reconcile competing epidemiologies of chronic disease patterns?

Researchers

Policy-maker

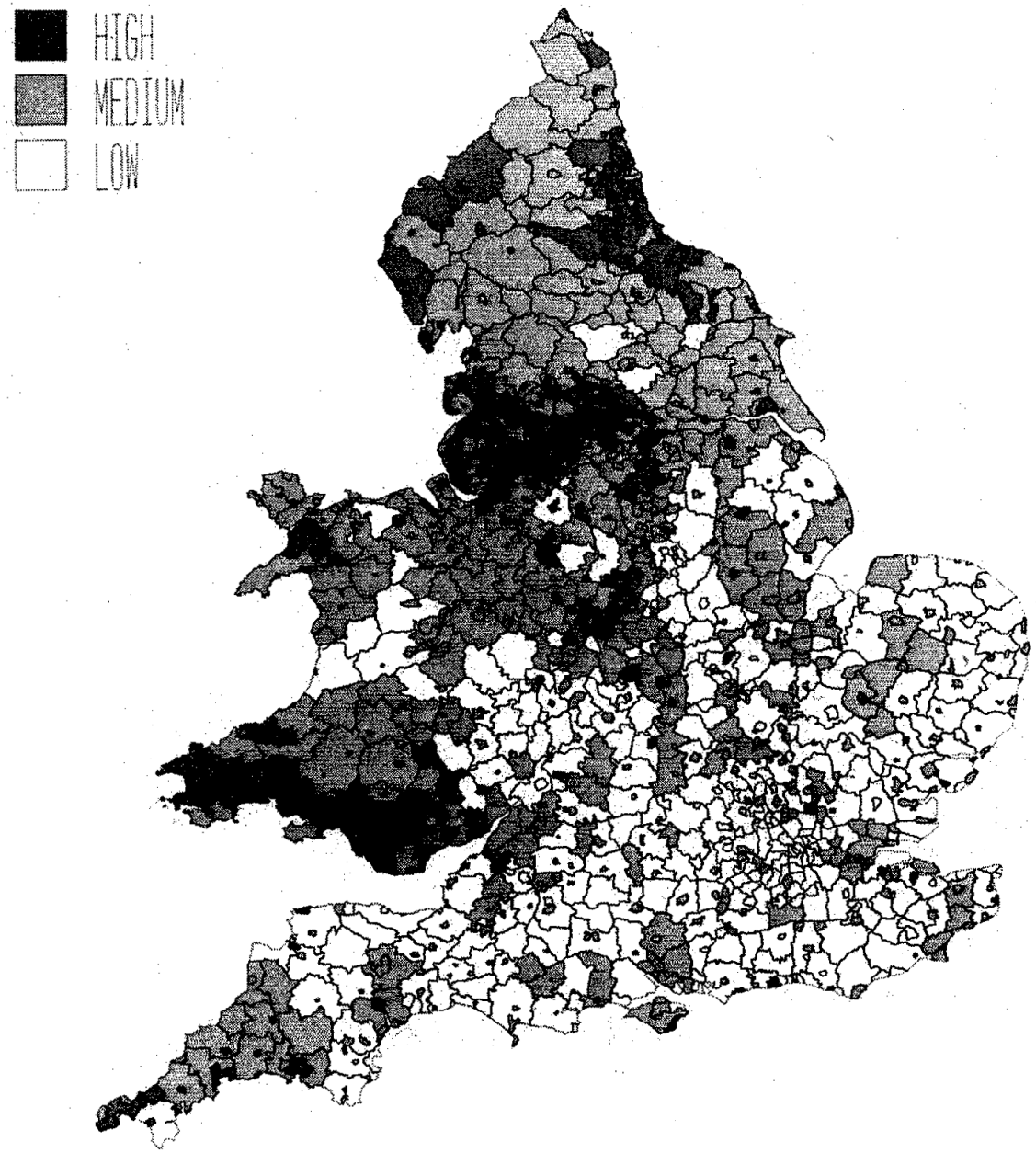
Sociologist of science

1. Truth vs. error
2. Broad correlations w/ policies
3. Diverse practical commitments
4. Histories: life history within institutional history



from
Barker
1998

Fig. 1.3 Infant mortality rates per 1000 births in England and Wales during 1901–10.



from Barker 1998

Fig. 1.2 Standardised mortality ratios (SMR) for coronary heart disease in England and

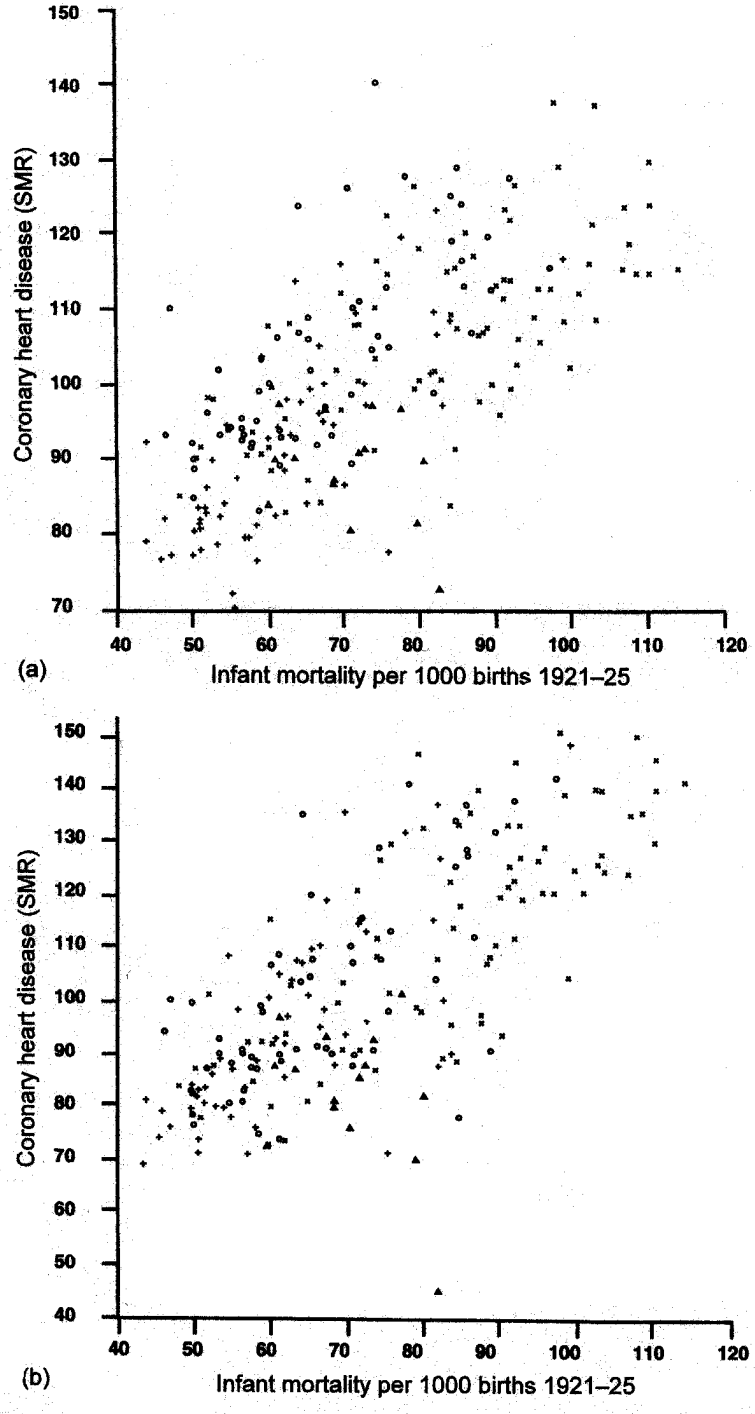


Fig. 1.4 Standardised mortality ratios (SMR) for coronary heart disease in (a) men and (b) women during 1968–78 and infant mortality during 1921–25 in England and Wales. Δ, London boroughs; X, county boroughs; O, urban districts; +, rural districts.

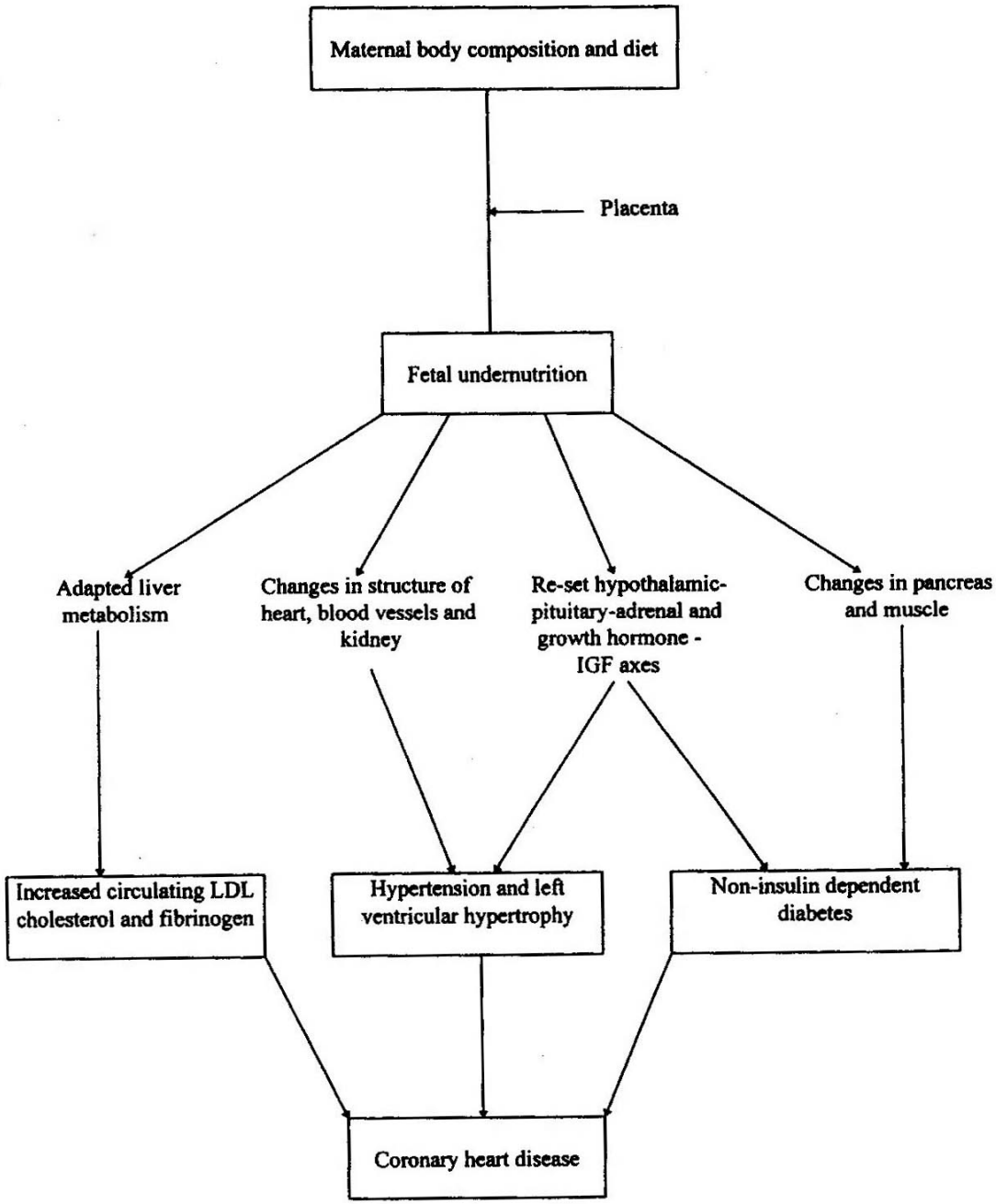


Fig. 8.7 A framework of possible mechanisms linking fetal undernutrition and coronary heart disease.

from Barker 1998

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Large-scale randomised evidence

Large streamlined "mega-trials"

- (ASCEND) A Study of Cardiovascular Events iN Diabetes
- (ATLAS) Adjuvant Tamoxifen -- Longer Against Shorter (ATLAS home page)
- (CCS-2) Second Chinese Cardiac Study
- (HPS) MRC/BHF Heart Protection Study (HPS Results)
- (PEP) Pulmonary Embolism Prevention trial
- (SEARCH) Study of the Effectiveness of Additional Reductions in Cholesterol and Homocysteine
- (SHARP) Study of Heart and Renal Protection
- Chinese colorectal cancer trial
- Chinese breast cancer trial
- Hepatitis B vaccine trial
- Leukaemia trials
- Development of large, simple trials in neuropsychiatric disease
- General development of trials

Large collaborative "meta-analyses" of trials

- (ATT) Antithrombotic Trialists' Collaboration
- (CTT) Cholesterol Treatment Trialists' Collaboration
- (EBCTCG) Early Breast Cancer Trialists' Collaborative Group
- (FTT) Fibrinolytic Therapy Trialists' Collaborative Group
- (PCTCG) Prostate Cancer Trialists Collaborative Group
- Collaborative meta-analyses of leukaemia trials

Large-scale observational epidemiology

Large collaborative meta-analyses of observational studies

- (PSC) Prospective Studies Collaboration
- Homocysteine, inflammation and blood rheology in CHD
- Meta-analysis of case-control studies of residential radon and lung cancer

Large retrospective, prospective or descriptive studies

- ISIS case-control study of the determinants of MI
- Chinese ecological studies (monograph)
- Large-scale retrospective studies of smoking and death in China
- Large-scale retrospective studies of smoking and death in India
- Other large retrospective studies in developing populations

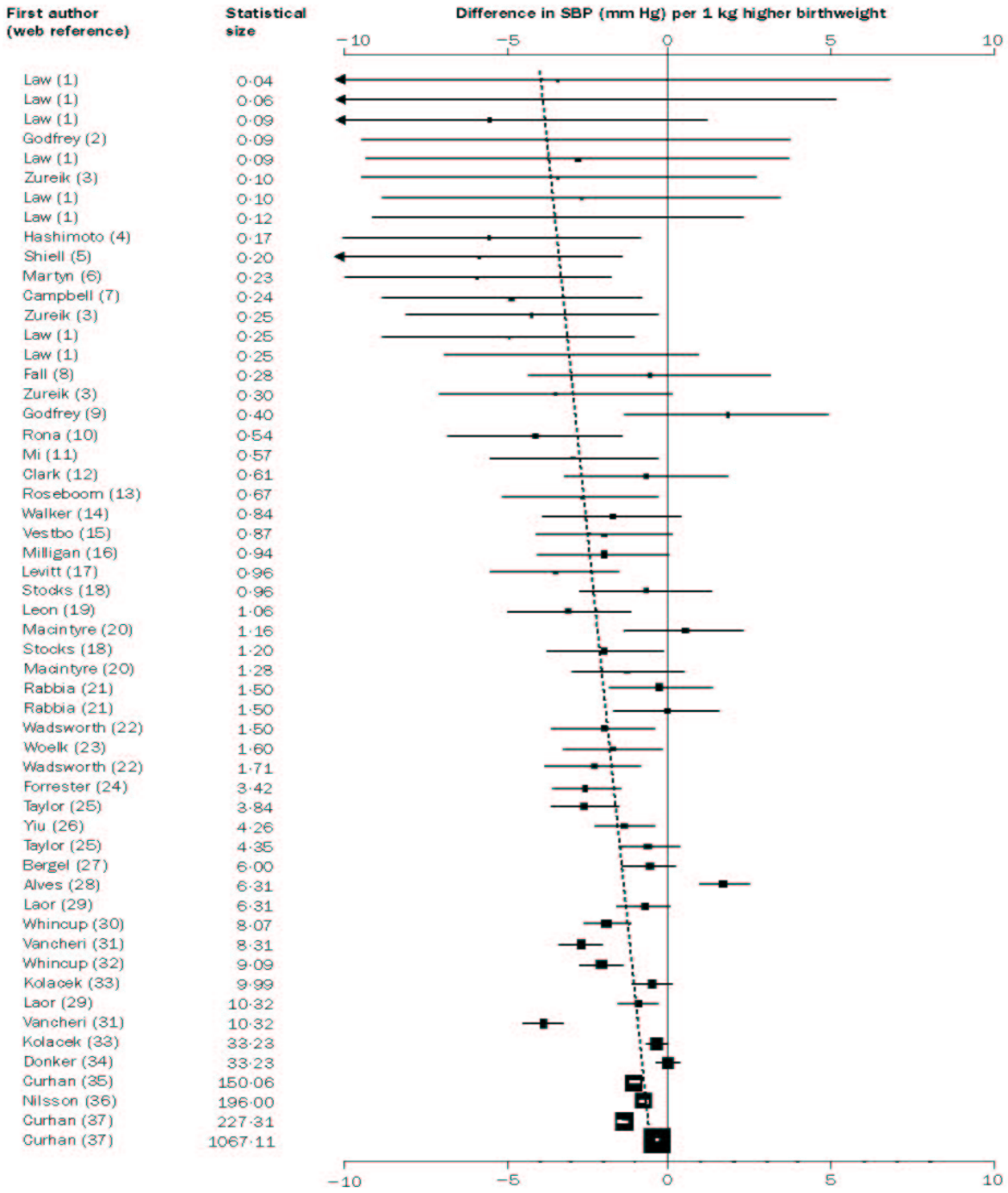


Figure 1: **Trend towards smaller differences in systolic blood pressure (SBP) per 1 kg difference in birthweight in larger studies that reported regression coefficients for the association (adjusted in most cases for current weight)**[45]

Statistical size of study is defined in terms of the inverse of the variance of the regression coefficient. Black square=point estimate (with area proportional to statistical "information", based on inverse of variance of regression coefficient provided by each study) and horizontal line=95% CI for observed effect in each study. Dotted line=inverse-variance-weighted regression line through point estimates.

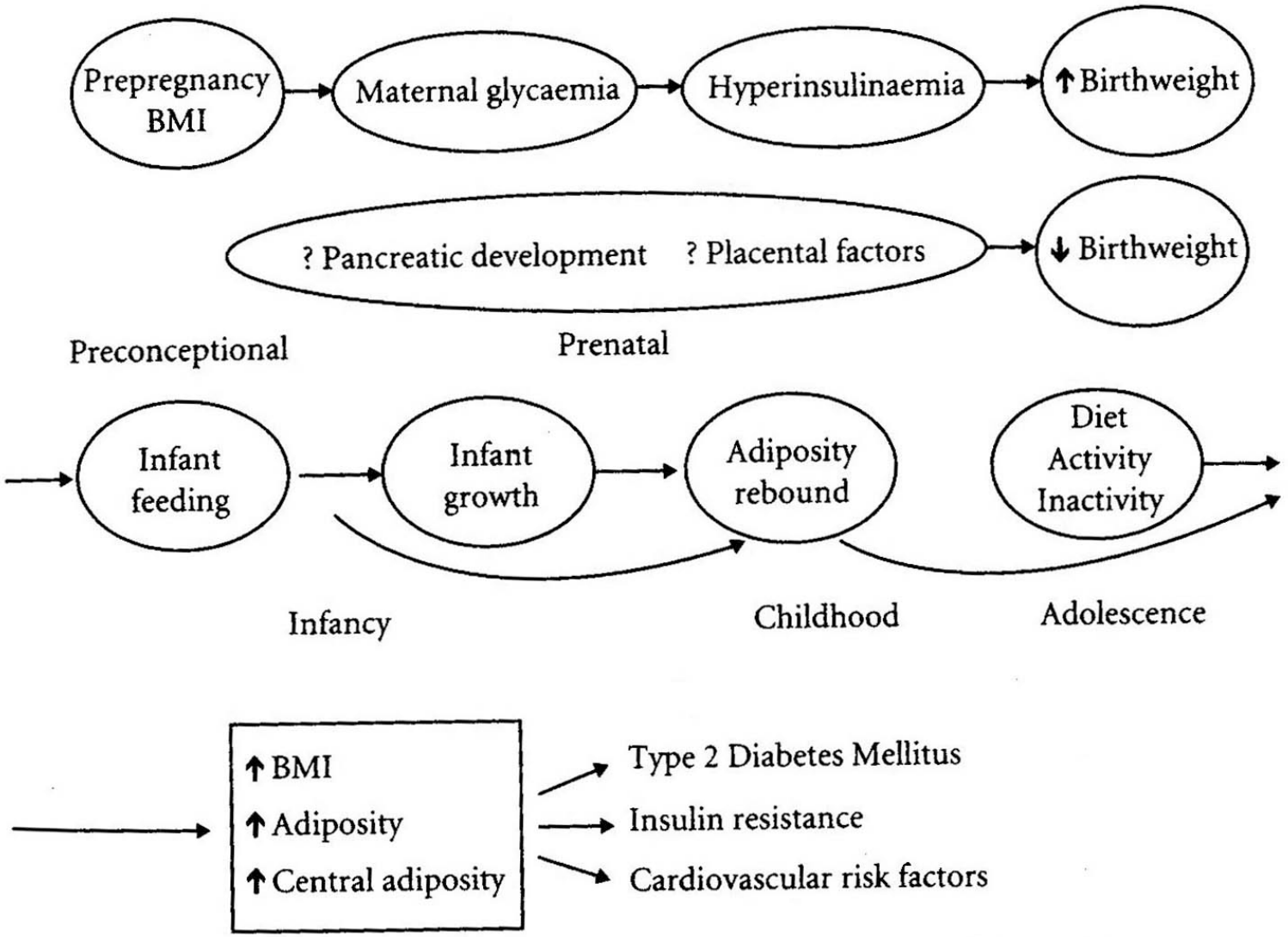


Fig. 8.5 Schematic of life course approach to obesity, showing selected determinants at various developmental stages and some hypothesized causal sequences among them.

Figure 2: Infant mortality rates (1905-08), and female Ischaemic heart disease mortality age 65-74 in 1969-73 before control for measures of adult deprivation[10]

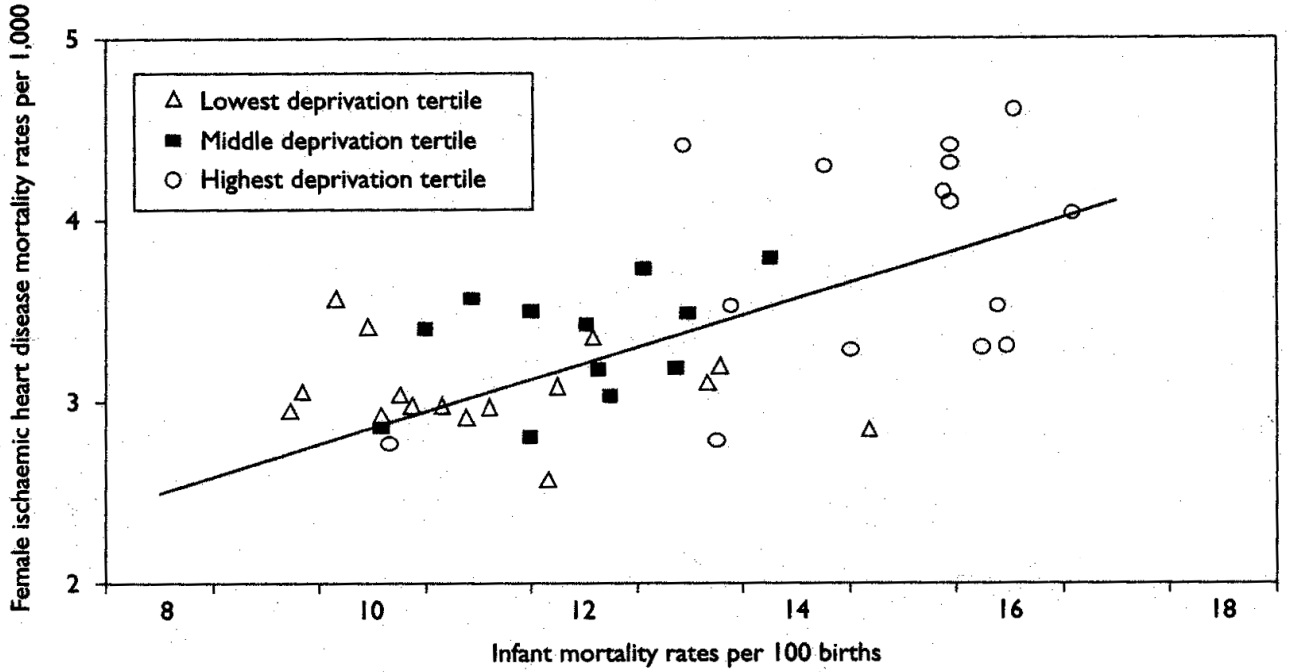
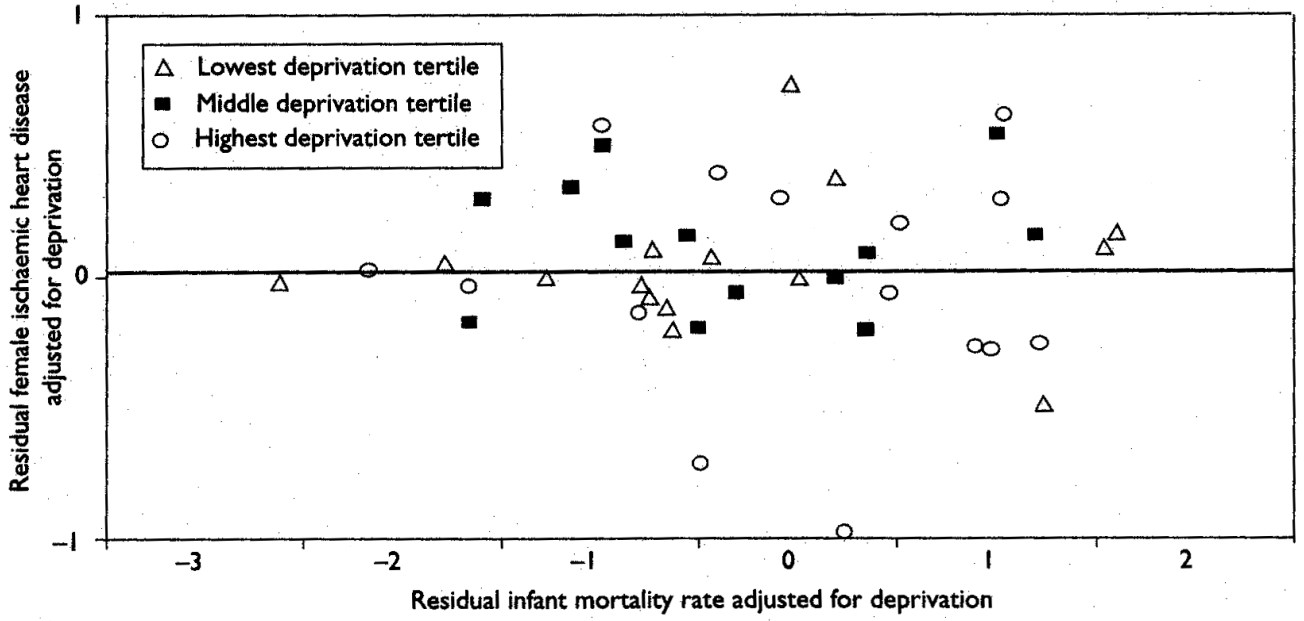
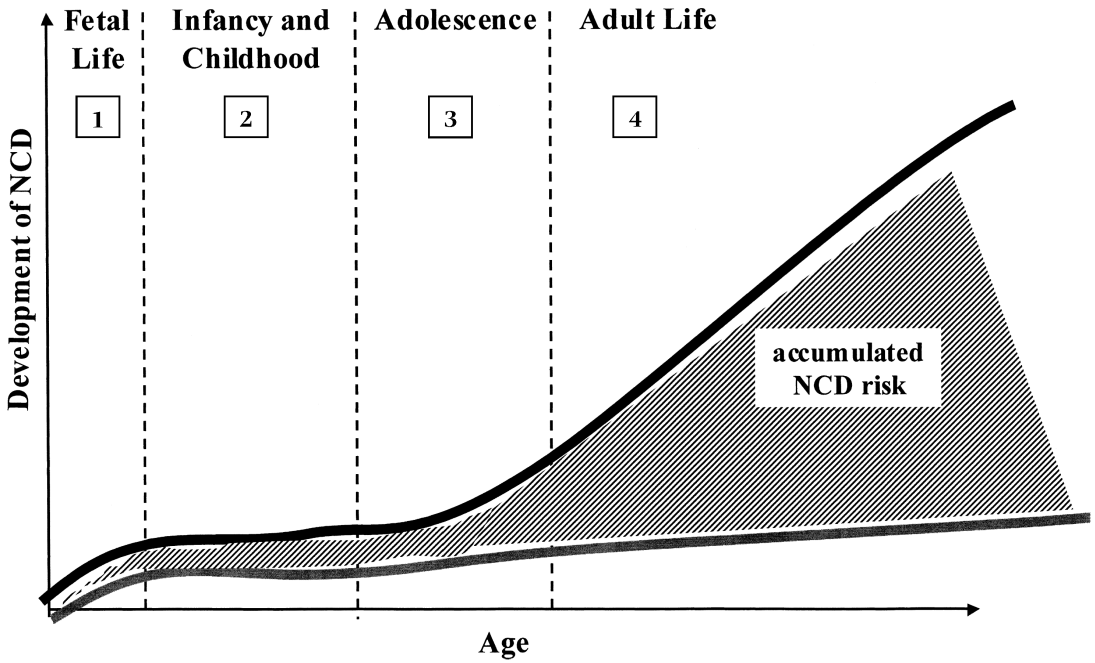


Figure 3: Infant mortality rates (1905-08), and female Ischaemic heart disease mortality age 65-74 in 1969-73 after control for measures of adult deprivation[10]



from Davey-Smith & Ben-Shlomo 1991

A Life Course Approach to NCD Prevention



The risk of noncommunicable diseases accumulates with age and is influenced by factors acting at all stages of the life span. The main factors at different stages of life include the following:

1 Fetal Life

fetal growth, maternal nutritional status, socioeconomic position at birth

2 Infancy and Childhood

growth rate, breastfeeding infectious diseases, unhealthy diet, lack of physical activity, obesity socioeconomic position

3 Adolescence

unhealthy diet, lack of physical activity, obesity tobacco and alcohol use

4 Adult life

know adult behavioural and biological risk factors

Aboderin et al. 2001

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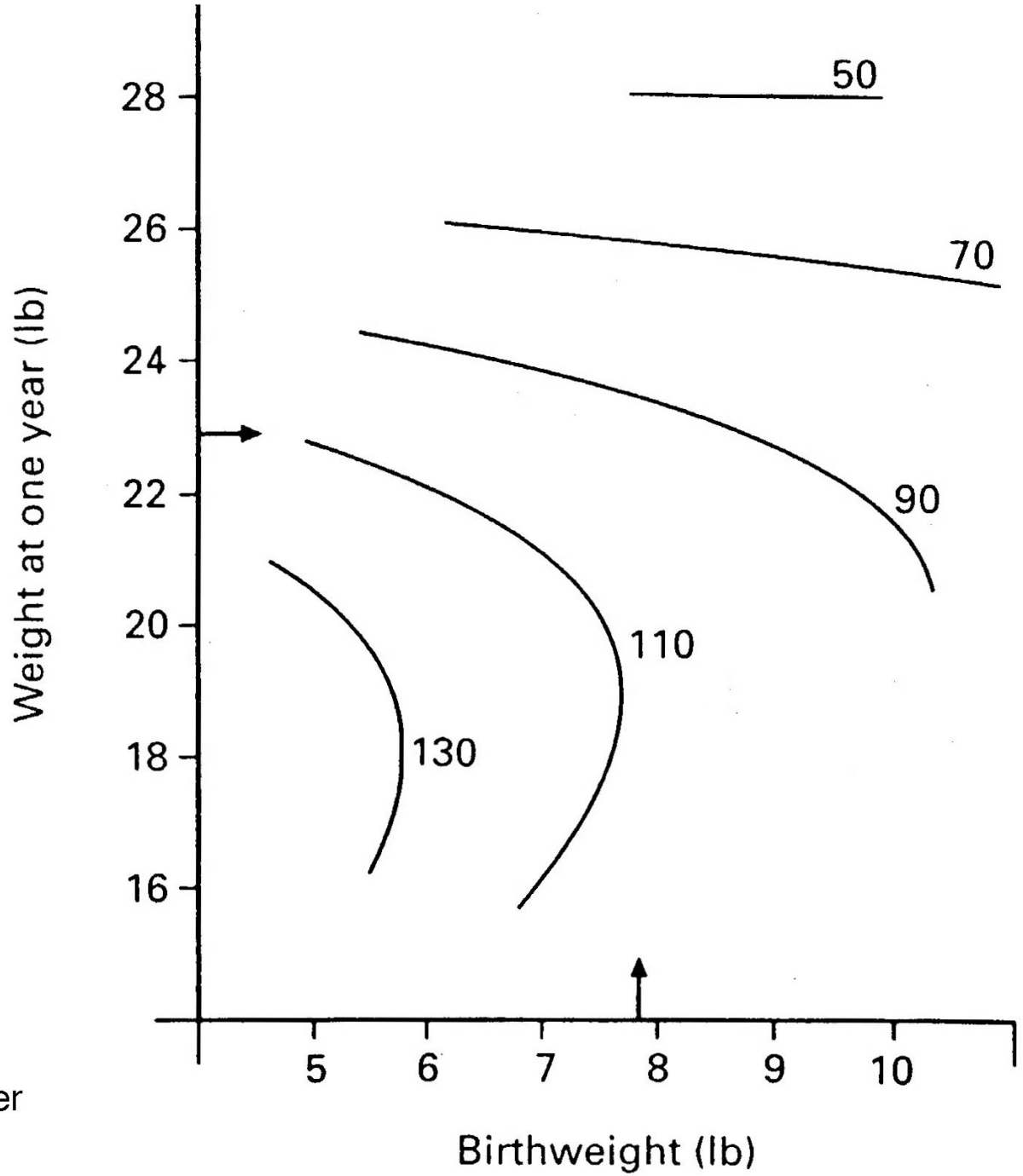


from Barker 1998

FIG 3.6—*Relative risks for coronary heart disease in men according to birthweight and weight at one year. Lines join points with equal risk. Arrows = mean weights.*

TABLE I. DISTRIBUTION OF CASES BY AGE, SEX, AND SITE OF LESION ON BODY.

Site of lesion	*Below 5*		*5 - 9*		*10 - 14*		*15 and over*		*All ages*	
	M	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*
Arms	2 (50)	5 (50)	3 (23)	5 (36)	2 (25)	3 (60)	3 (33)	7 (37)	10 (29)	20 (42)
Body and head	0 (–)	4 (40)	3 (23)	3 (21)	0 (–)	0 (–)	2 (22)	3 (16)	5 (15)	10 (21)
Legs	2 (50)	1 (10)	7 (54)	6 (43)	6 (75)	2 (40)	4 (44)	9 (47)	19 (56)	18 (38)
All sites	4	10	13	14	8	5	9	19	34	48

The figures in parentheses are the percentages of lesions at a given site out of all lesions within each age and sex group.

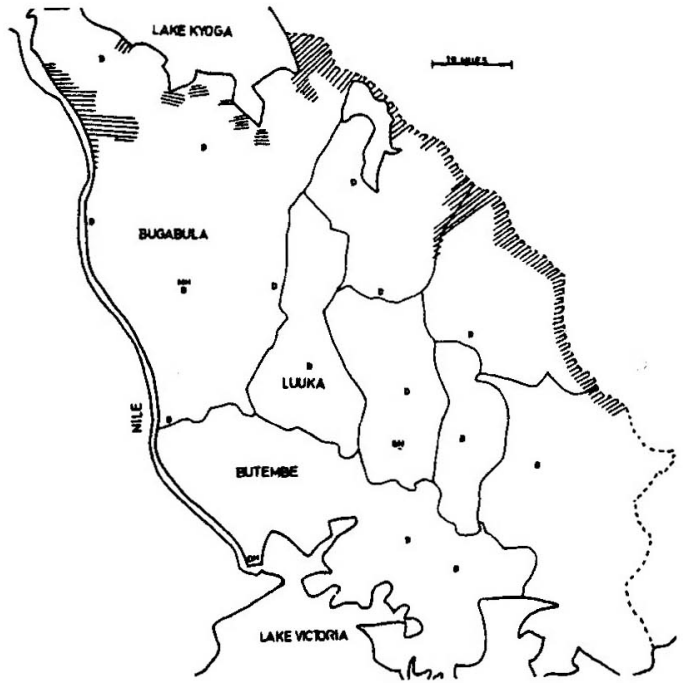


Figure 1.

Busoga District

MH=Mission Hospital.
GH =Government Hospital.
D =Dispensary.

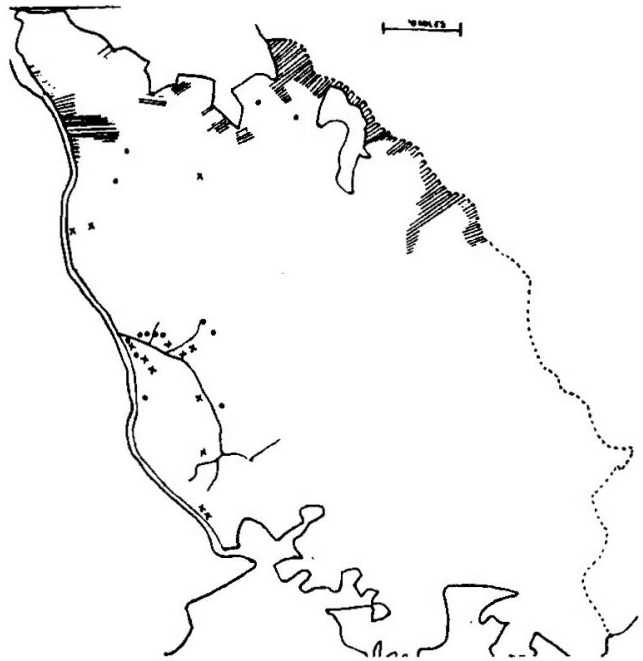


Figure 2.

Distribution of patients with Buruli disease treated during 1965 - 68.

0 cases in 1965 - 66.
x cases in 1967 - 68.

from Barker 1971

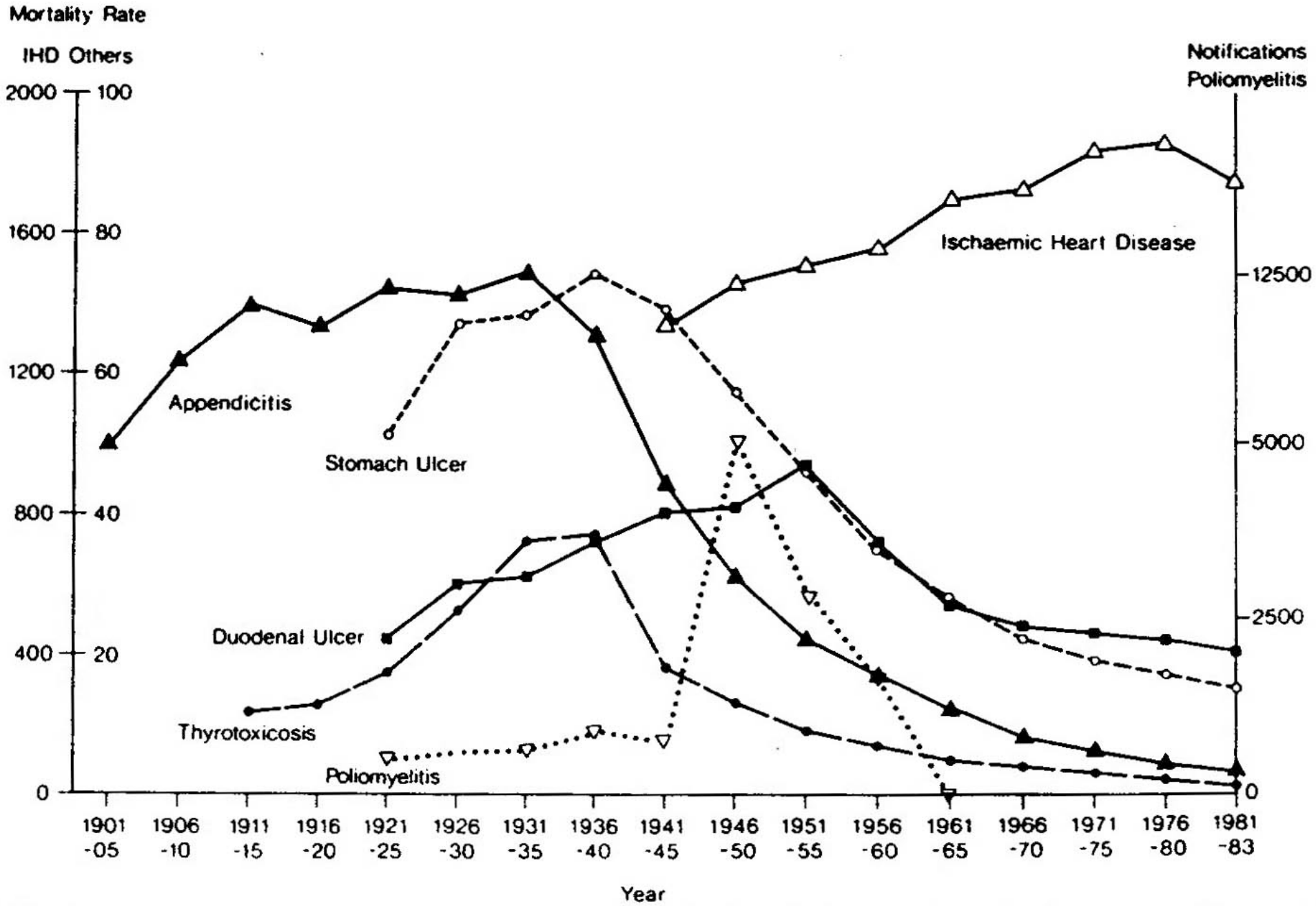
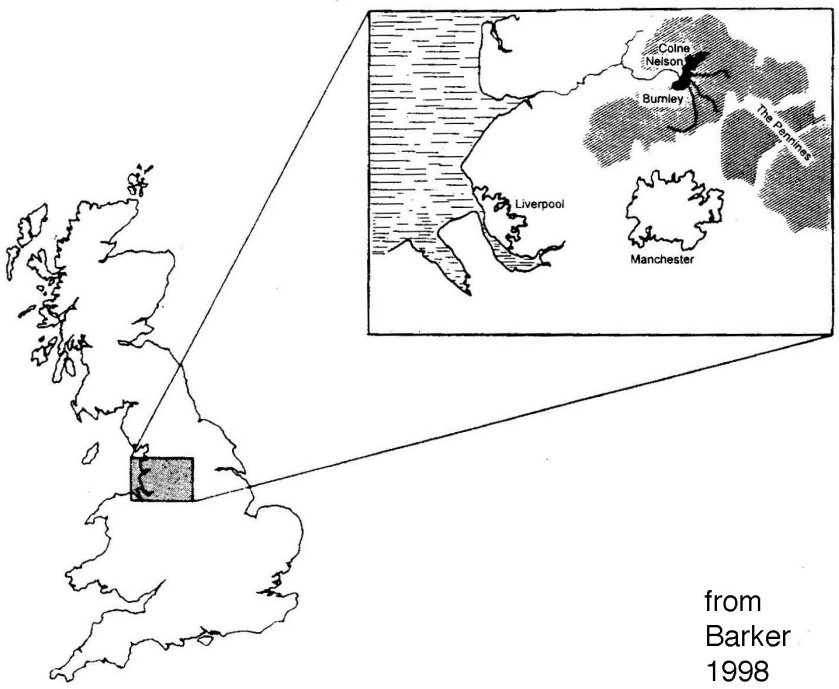


FIG. 1 Average annual mortality from selected diseases in England and Wales from 1901, and numbers of notifications of poliomyelitis in five-year periods[3].

from Barker 1989

Fig. 10.1 Women weavers at Tulketh Mill about 1917.



from
Barker
1998

Fig. 10.2 Map of Great Britain showing the location of Burnley, Nelson and Colne.

from Barker 1998

How to reconcile developmental origins and adult risk factors for diseases of later life: A sociologist's perspectives (and questions)

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