



BHF's funding of the Whitehall II study



30th Anniversary Celebration
25 November 2015

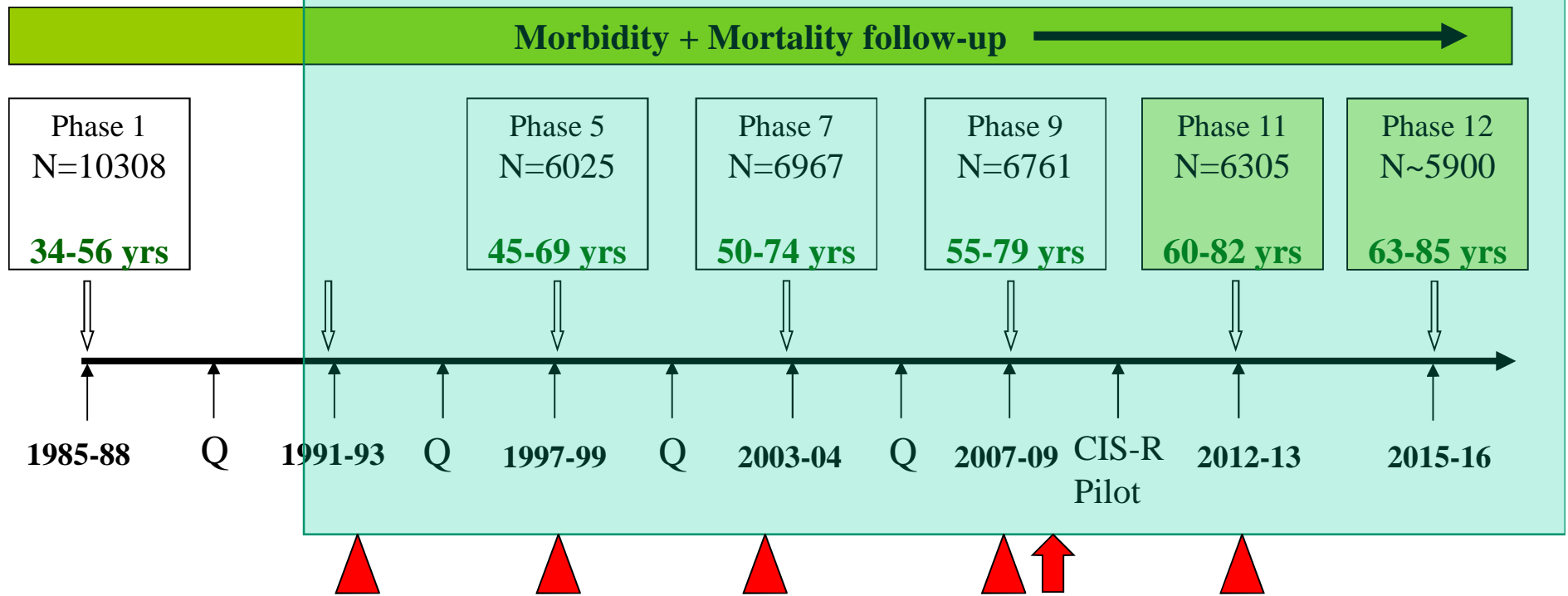
Jeremy Pearson



Whitehall II cohort: data collection waves



BHF funding has supported the study since 1992





BHF programme grant 1



1992 (£500k) [cohort age mostly 40-60]

“BHF Epidemiology Research Group at UCL (The Whitehall II Study)”

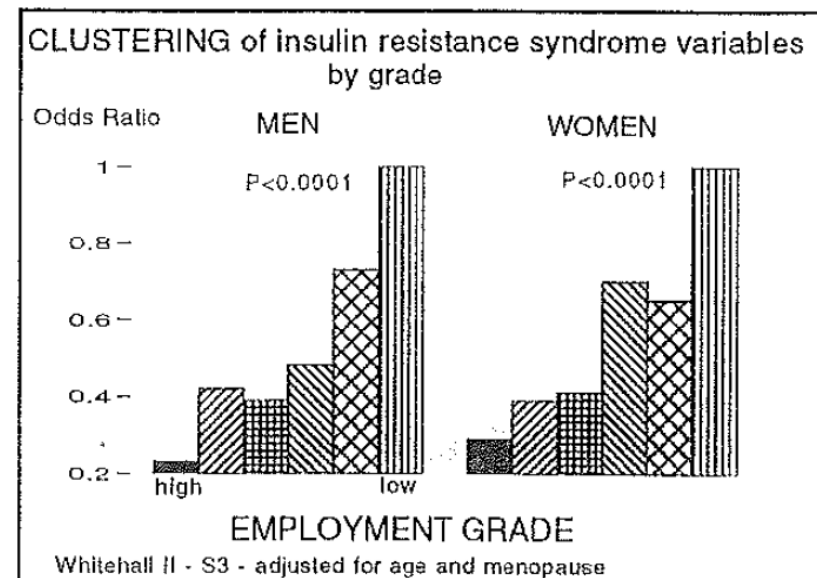
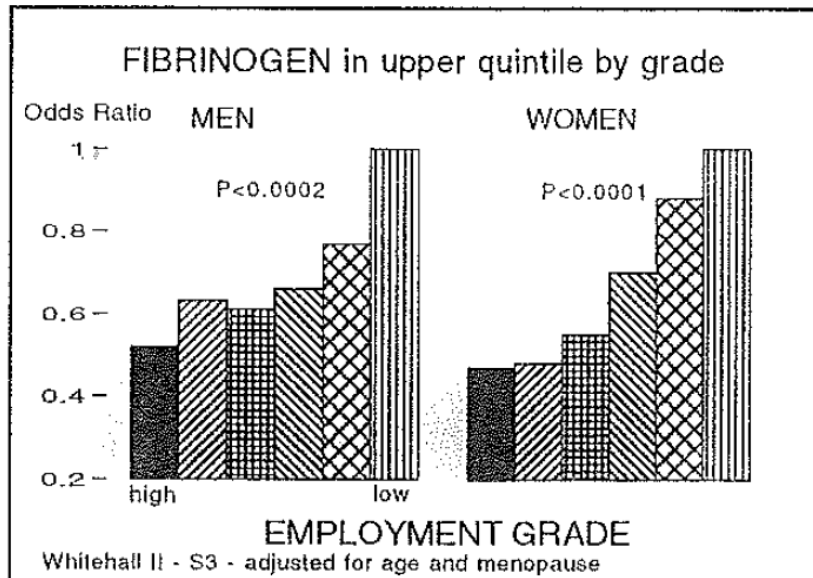
Psychosocial and biological hypotheses in relation to CHD

Work stress as a CHD risk factor

Haemostatic and behavioural measures including dietary pathways

Central adiposity and glucose metabolism

2-hour OGTT added to screening protocol



BHF programme grant 2

A prototype view of the “causes of the causes” thinking:

Psychosocial pathway

Behavioural pathway

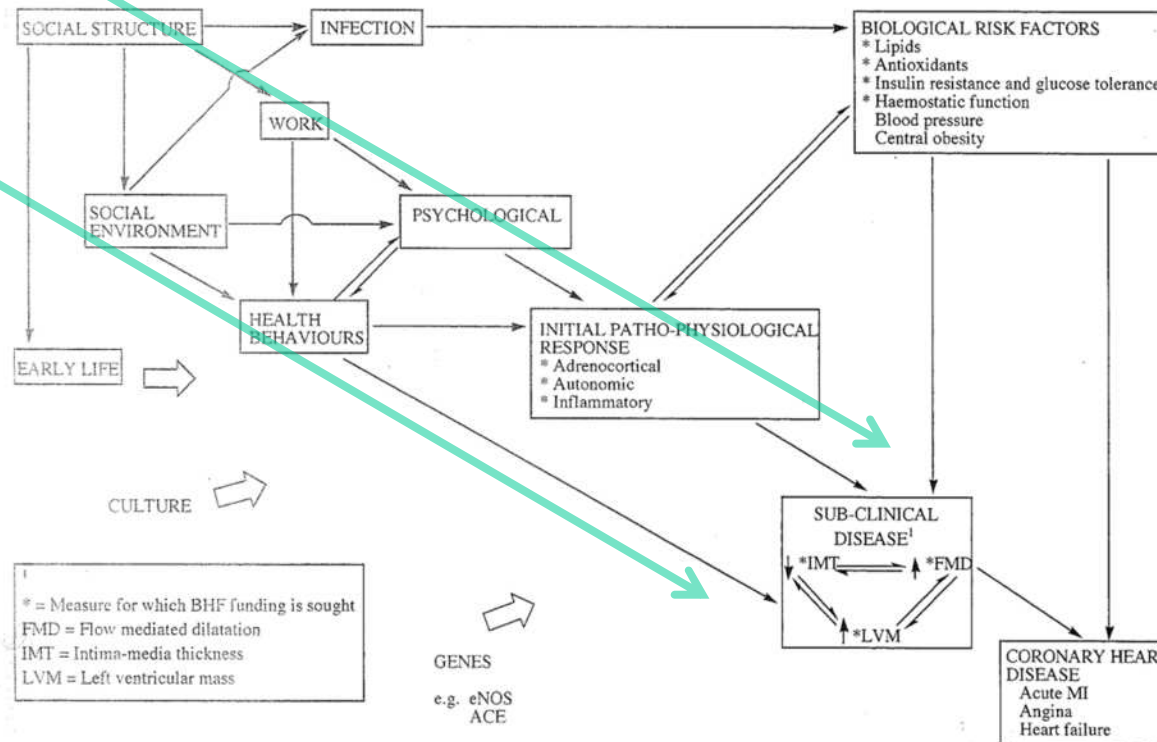


Figure 4. Relationships between Social Position and Coronary Heart Disease : The Whitehall II Study



BHF programme grant 2



1997 (£1.0m) [cohort age 45-69]

“Psychosocial and biological factors in the occurrence of cardiovascular disease: The Whitehall II Study”

Social inequalities in CHD

Role of psychosocial factors in the social gradient in CHD incidence

Stress biology: *autonomic function by heart rate variability (long ECG)*

Sub-studies:

(1) cortisol-adrenaline-metabolic syndrome

(2) endothelial dysfunction

Table 2 Association between exposure to overtime work at baseline and incident coronary heart disease, as indicated by coronary death, incident non-fatal myocardial infarction, or incident definite angina pectoris: the Whitehall II study

Exposure: overtime work/day	Fatal CHD, non-fatal myocardial infarction, or definite angina pectoris													
	No. of events	No. of Participants	Person-years	Rate/1000 person-years	Model A, HR (95% CI) ^a	P-value	Model B, HR (95% CI) ^b	P-value	Model C, HR (95% CI) ^c	P-value	Model D, HR (95% CI) ^d	P-value	Model E, HR (95% CI) ^e	P-value
All	369	6014	67543.9	5.46										
No overtime	189	3256	36331.7	5.20	1.00	Ref.	1.00	Ref.	1.00	Ref.	1.00	Ref.	1.00	Ref.
1 h	69	1247	14185.4	4.86	1.01 (0.76–1.34)	0.94	1.06 (0.79–1.40)	0.71	1.04 (0.78–1.39)	0.78	1.06 (0.79–1.41)	0.71	1.04 (0.78–1.38)	0.81
2 h	60	894	10115.8	5.93	1.28 (0.95–1.74)	0.11	1.32 (0.98–1.79)	0.07	1.24 (0.92–1.69)	0.16	1.29 (0.95–1.76)	0.11	1.23 (0.90–1.69)	0.19
3–4 h	51	617	6911.0	7.38	1.60 (1.15–2.23)	0.005	1.67 (1.20–2.32)	0.002	1.56 (1.12–2.17)	0.009	1.63 (1.16–2.28)	0.005	1.56 (1.11–2.19)	0.011



BHF programme grant 3



2002 (£1.1m) [cohort age 50-74]

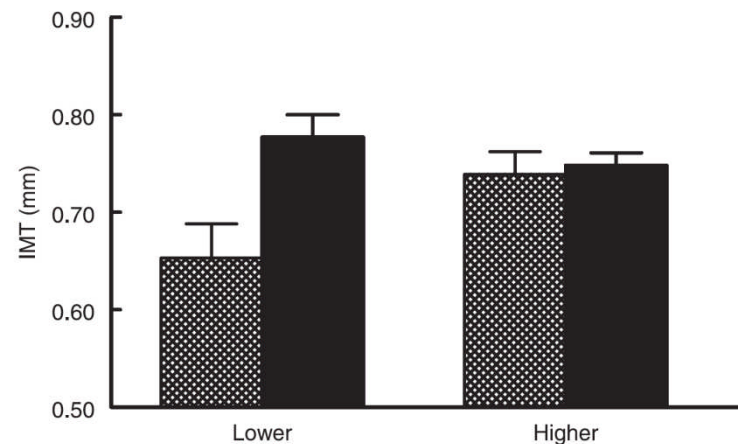
"Psychosocial and biological factors in the occurrence of cardiovascular disease: The Whitehall II Study"

SES and psychosocial influences on pathophysiological responses and sub-clinical disease: importance of health behaviours

Psychosocial explanations for SES differences in CHD in an occupational cohort moving out of work

Relationships between SES, development of CHD and health functioning and disability with ageing

First carotid ultrasound measurement (whole cohort)





BHF programme grant 4 and a project grant



2007 (£1.0m) [cohort age 60-82]

"Psychosocial and biological factors in the occurrence of cardiovascular disease: The Whitehall II Study"

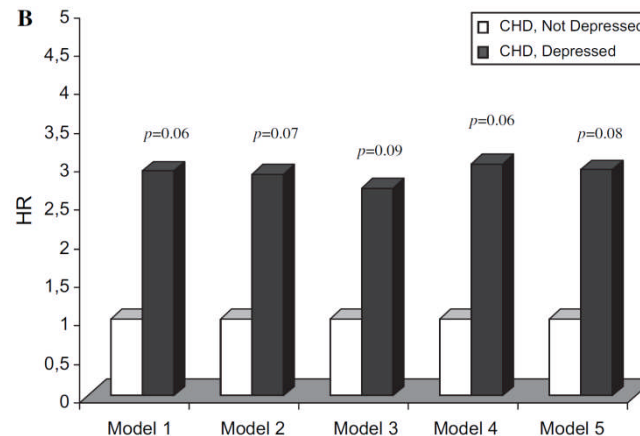
Causes of CHD and social inequalities in CHD at older ages

Living with CHD

First measurement of aortic stiffness

2008 (£200k)

"Utilising genetic tools to dissect causal pathways in cardiovascular disease: deployment of a 50K high density SNP array in the Whitehall II prospective study"





BHF programme grant 5



2013-17 (£1.1m) [cohort age 60-80+]

"Vascular risk and functional decline in old age"

Determinants of functional decline in older people

Contextual influences on the ageing process

Population impacts of changes in the modifiable determinants of functional decline (with IMPACT public health modelling team, University of Liverpool)

Third measurement of aortic stiffness

A major 25 (+4) year contribution to Whitehall II funding for cardiovascular screening, novel clinical measures, events follow-up, data systems, statistical and epidemiological expertise, and research reporting