

Overview



- Study Aims
- Methods
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- Summary

Study Aims

- Some evidence in the literature of an association between asbestos exposure and cardiovascular disease
- Detailed analysis of cerebrovascular disease and ischaemic heart disease mortality among British asbestos workers
- In particular, investigate associations between markers of asbestos exposure and mortality

The GB Asbestos Survey

- Survey began recruiting in 1971
- Workers covered by regulations to control occupational exposure to asbestos
 - 1969 Asbestos Regulations
 - 1984 Asbestos Licensing Regulations
 - 1987 Control of Asbestos at Work Regulations
- Survey questionnaire completed during medical

Methods: follow-up

- Questionnaire information was updated for returning participants
- Participants were flagged with the NHSCR or GROS for notification of cancer and death registrations

Methods: analysis

- Analysed deaths occurring to end of 2005
- Inclusion criteria
 - Age at first medical 15/16 to 85 years
 - Information on date of birth, sex, date of medical
 - Traced for follow-up with NHSCR or GROS
- Statistical methods employed
 - Descriptive statistics
 - Standardised mortality ratios (SMRs)
 - Poisson regression analysis

Descriptive statistics



	Men	Women
Number	94,403 (95%)	4,509 (5%)
Person years follow-up	1,677,102	103,392
Mean age at first exam (sd)	35.4 (12.0)	36.1 (13.1)
Current smokers (last exam)	55%	49%
Main job category:		
Manufacturing workers	28%	64%
Stripping/removal workers	54%	14%
“Other exposed” workers	13%	18%
Insulation workers	5%	4%
Cerebrovascular disease*	956 (91%)	97 (9%)
Ischaemic heart disease*	3,998 (96%)	187 (4%)

* Deaths occurring 1971-2005

Standardised mortality ratios

Standardised mortality ratios				
	Unadjusted		Smoking adjusted	
Cerebrovascular disease				
Men	1.63	(1.52-1.73) ^{***}	1.50	(1.42-1.60) ^{***}
Women	2.11	(1.71-2.58) ^{***}	1.78	(1.43-2.19) ^{***}
Ischaemic heart disease				
Men	1.39	(1.35-1.43) ^{***}	1.27	(1.23-1.31) ^{***}
Women	1.89	(1.62-2.19) ^{***}	1.52	(1.30-1.76) ^{***}

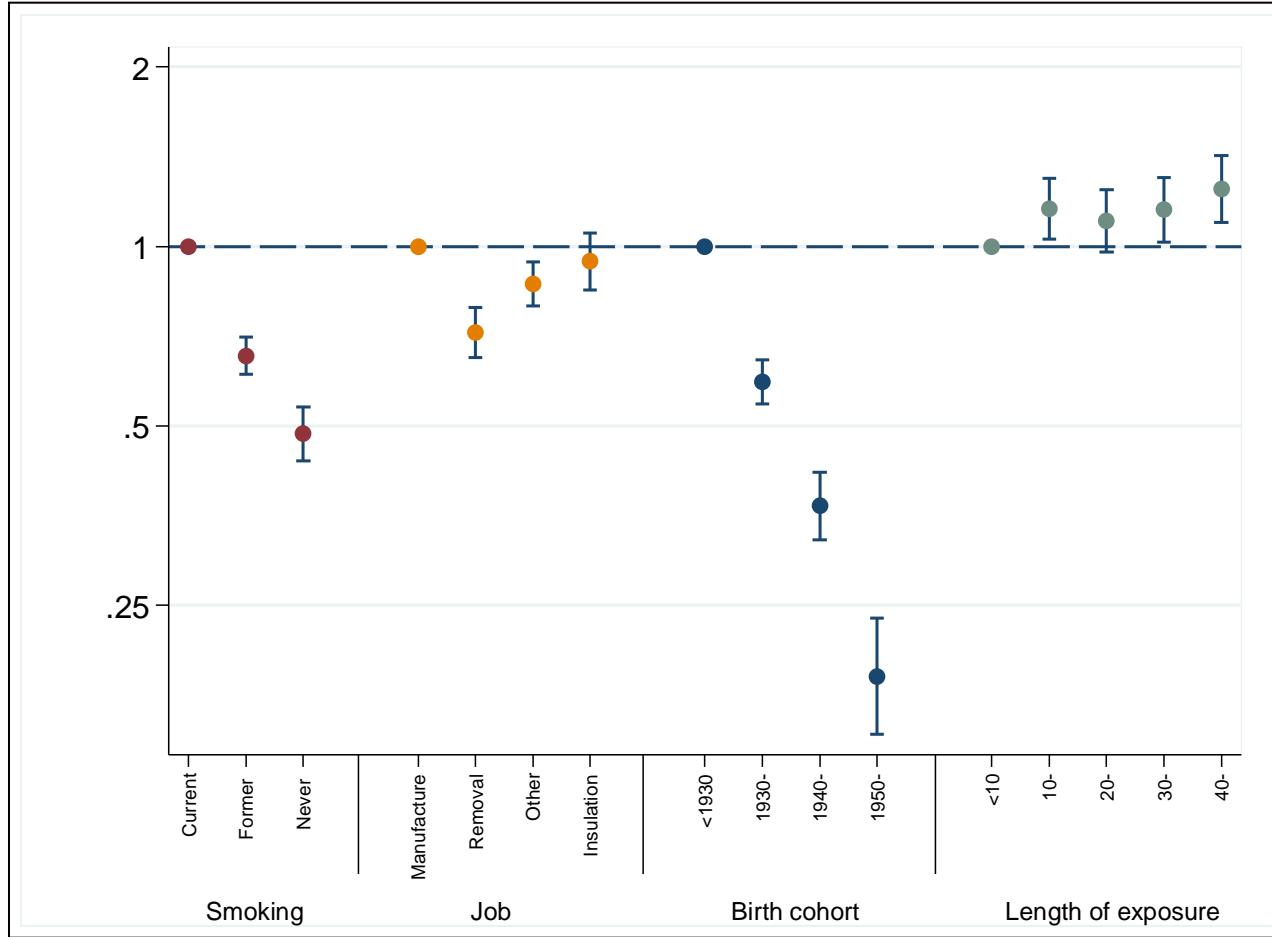
95% confidence interval in parentheses

^{***} p-value < 0.001

Poisson regression analysis

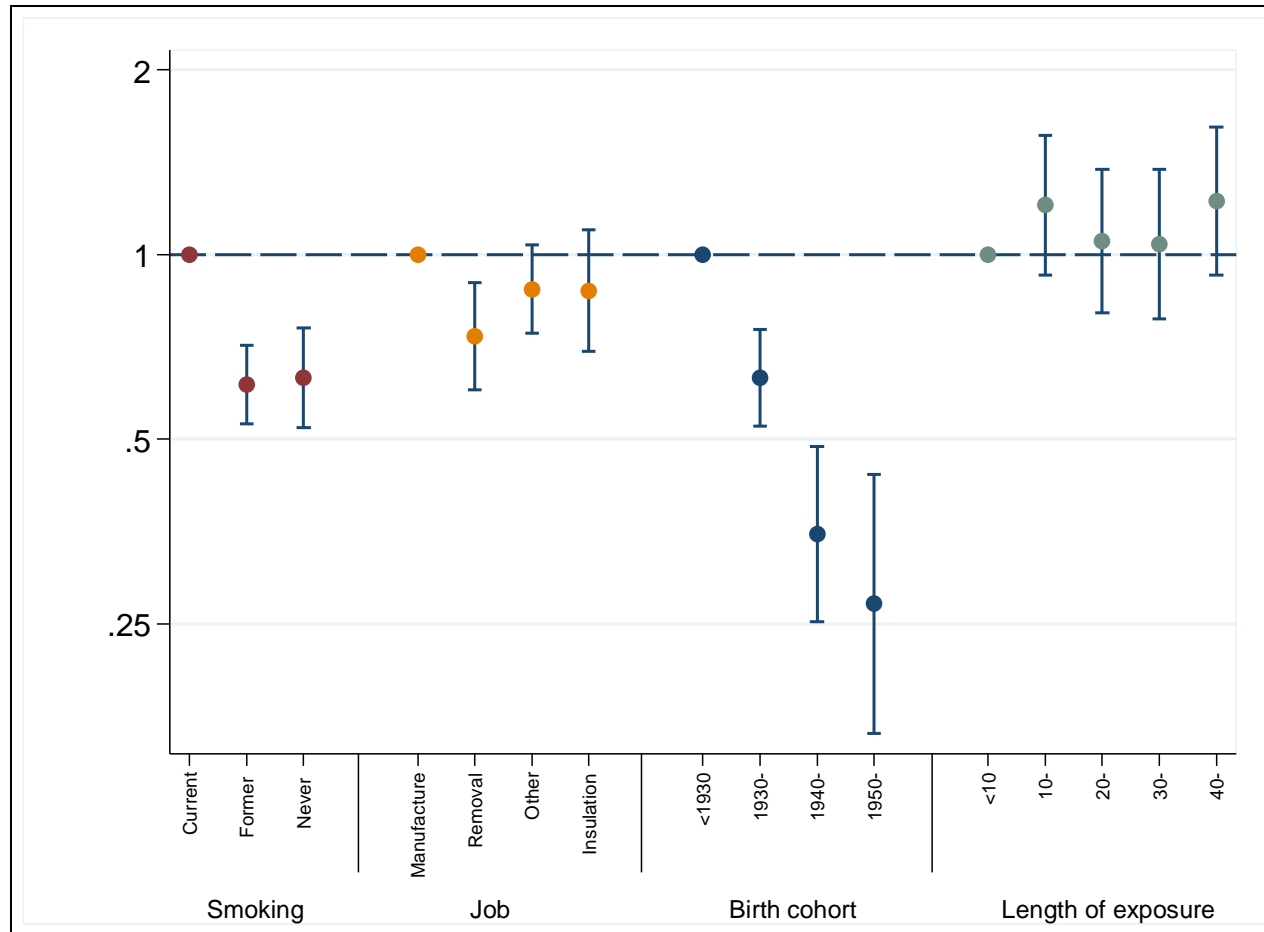
- Investigated factors affecting risk of cardiovascular disease mortality
- Terms included in regression model:
 - Age
 - Sex
 - Smoking statusplus possible markers of exposure:
 - Job
 - Birth cohort
 - Length of exposure

Relative risk of ischaemic heart disease*



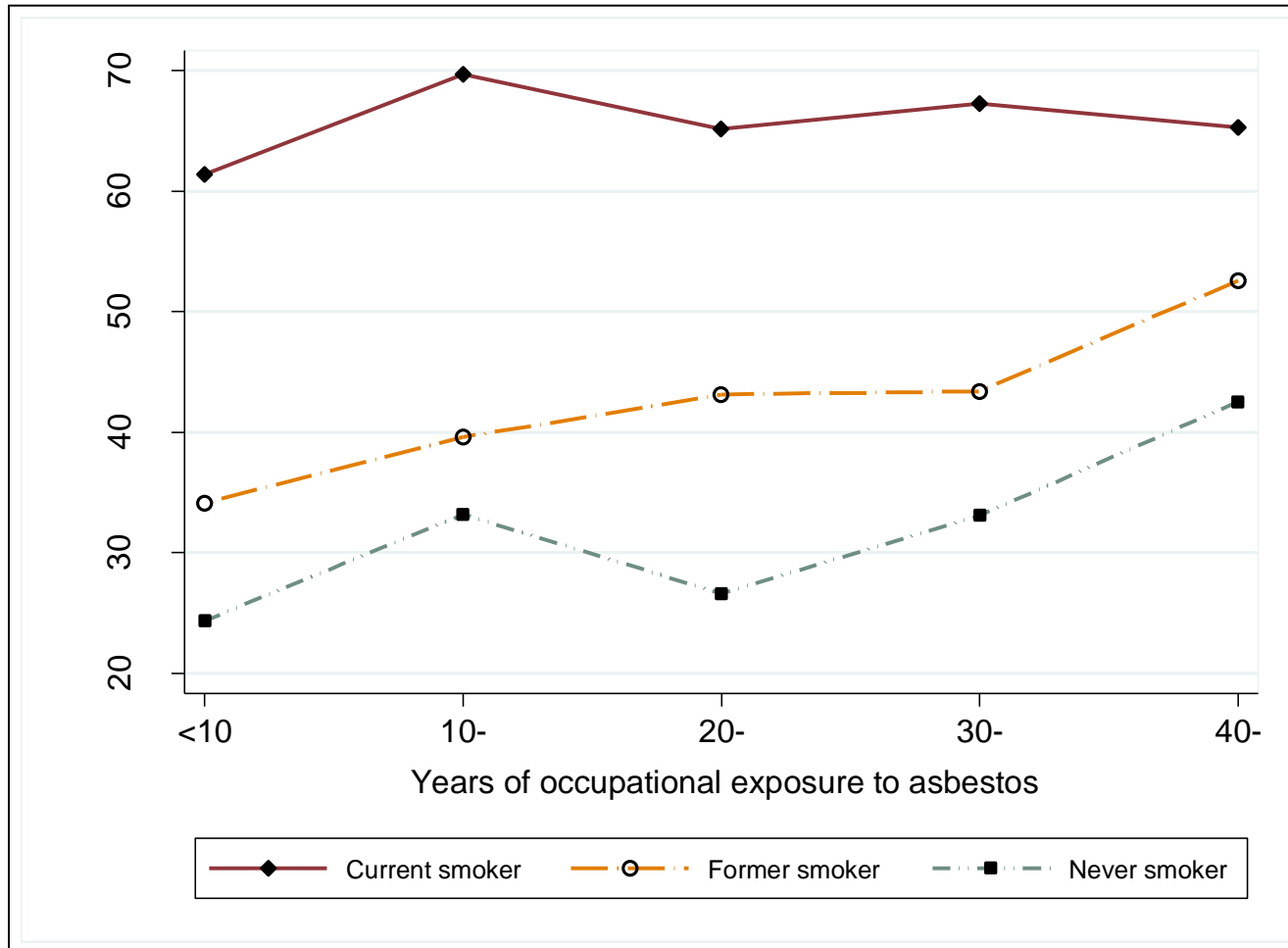
*Results from a model including age, sex, job, smoking, cohort and length of exposure

Relative risk of cerebrovascular disease*



*Results from a model including age, sex, job, smoking, cohort and length of exposure

Ischaemic heart disease mortality by smoking status and duration of exposure*



*Adjusted for age, sex, job, and cohort

Summary

- Increased cardiovascular disease mortality compared with GB population
- Mortality related to ‘markers’ of exposure
 - Birth cohort
 - Job
 - Duration of exposure
- Evidence of an association between occupational exposure to asbestos and CVD mortality in these workers

Acknowledgements

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- Staff at the NHSCR and GROS
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