Consequences of asbestos use in Great Britain

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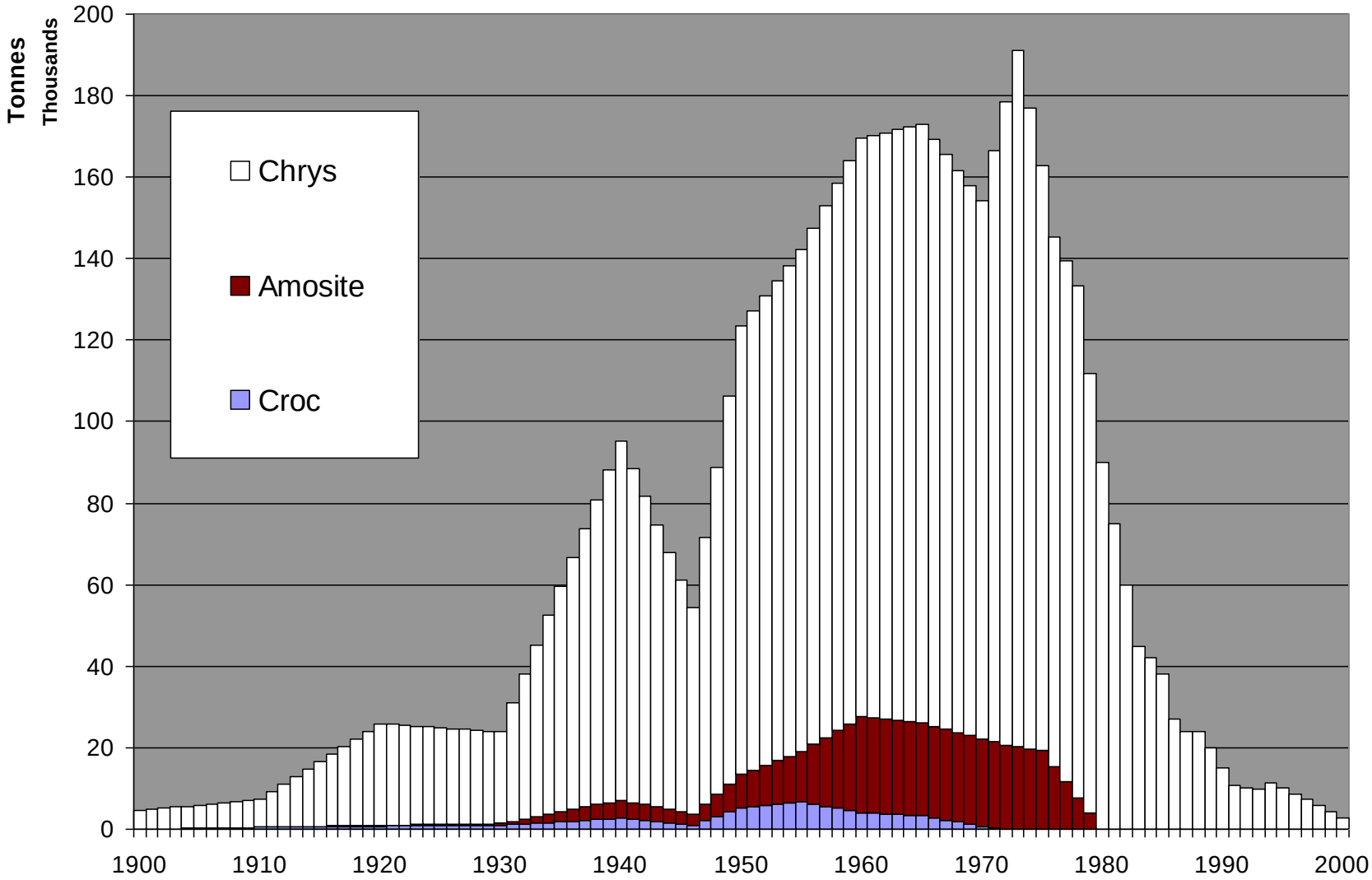
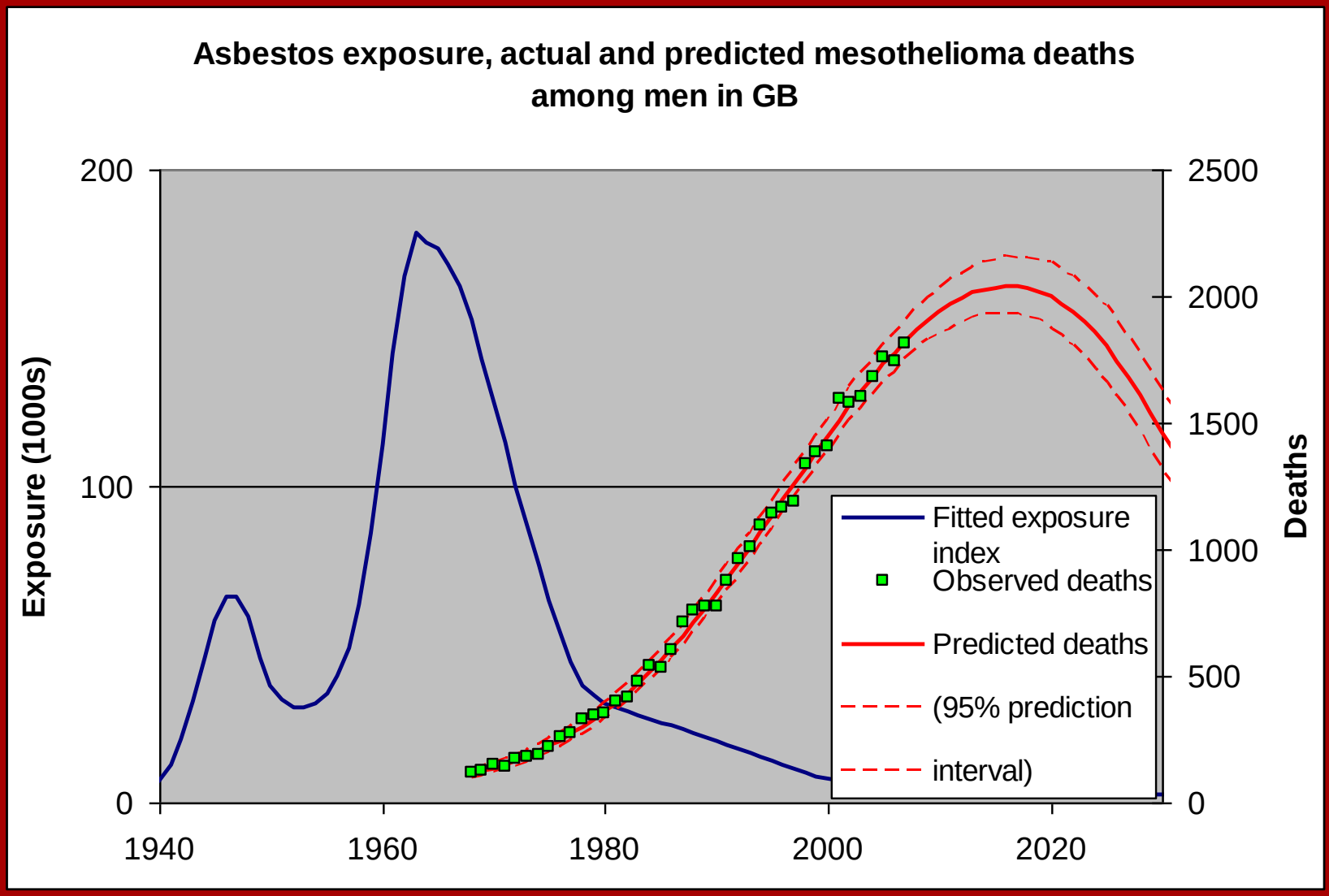
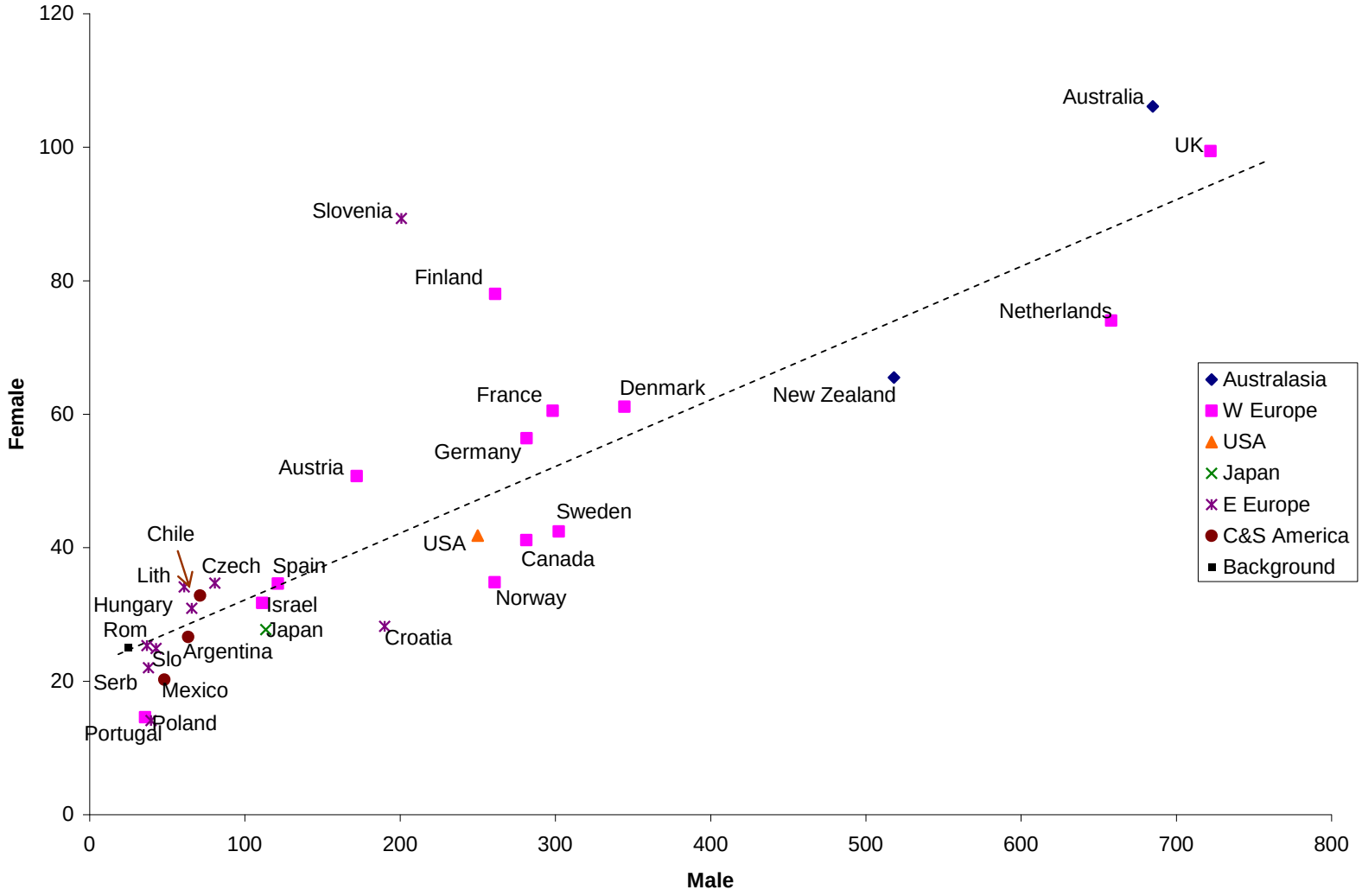
UK asbestos imports by main fibre type

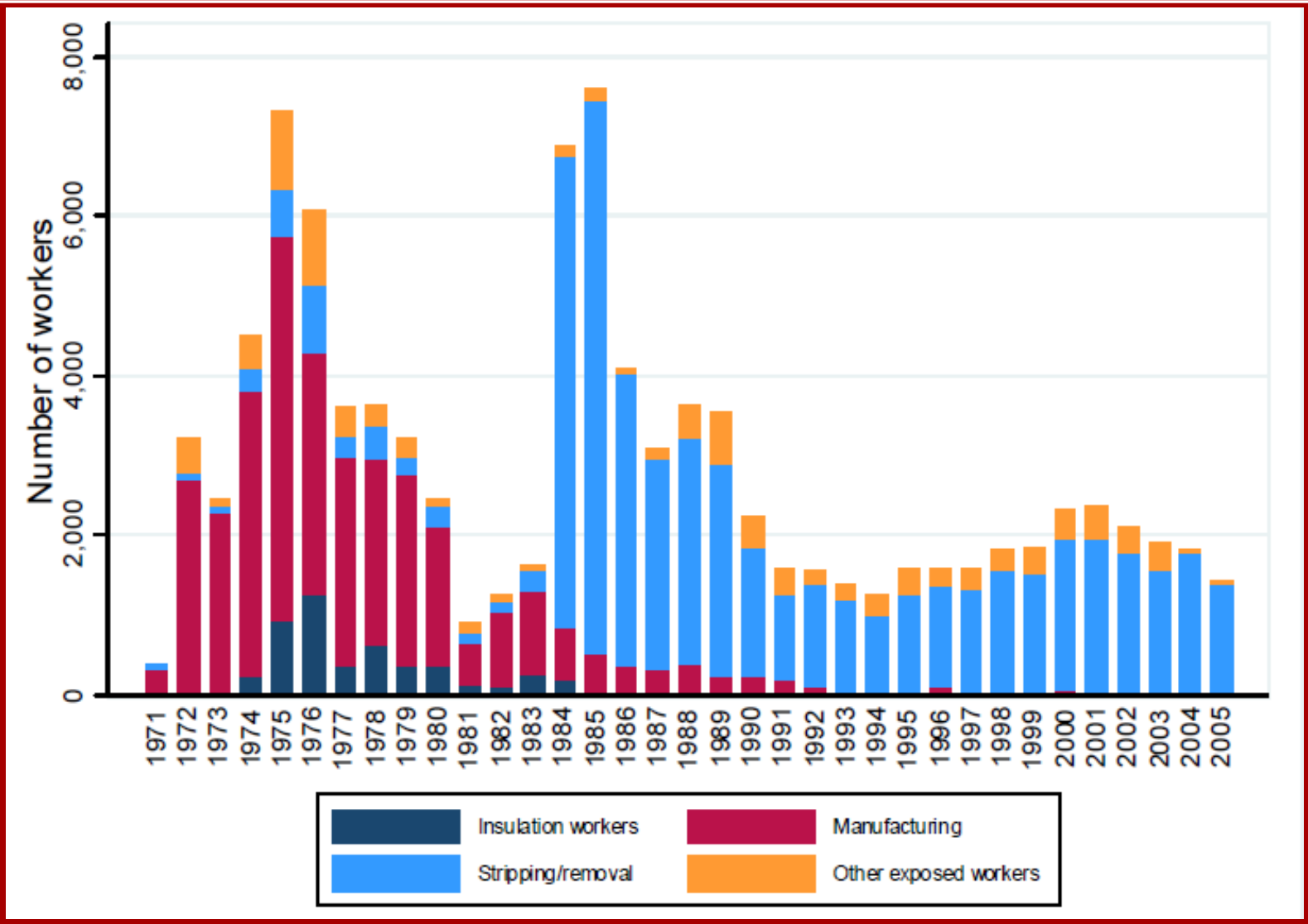



Asbestos exposure, actual and predicted mesothelioma deaths among men in GB
Exposure (1000s)
Deaths
200
100
0
2500
2000
1500
1000
500
0
1940
1960
1980
2000
2020
Fitted exposure index
Observed deaths
Predicted deaths
(95% prediction
interval)

Cumulative mesothelioma death rate to age 85



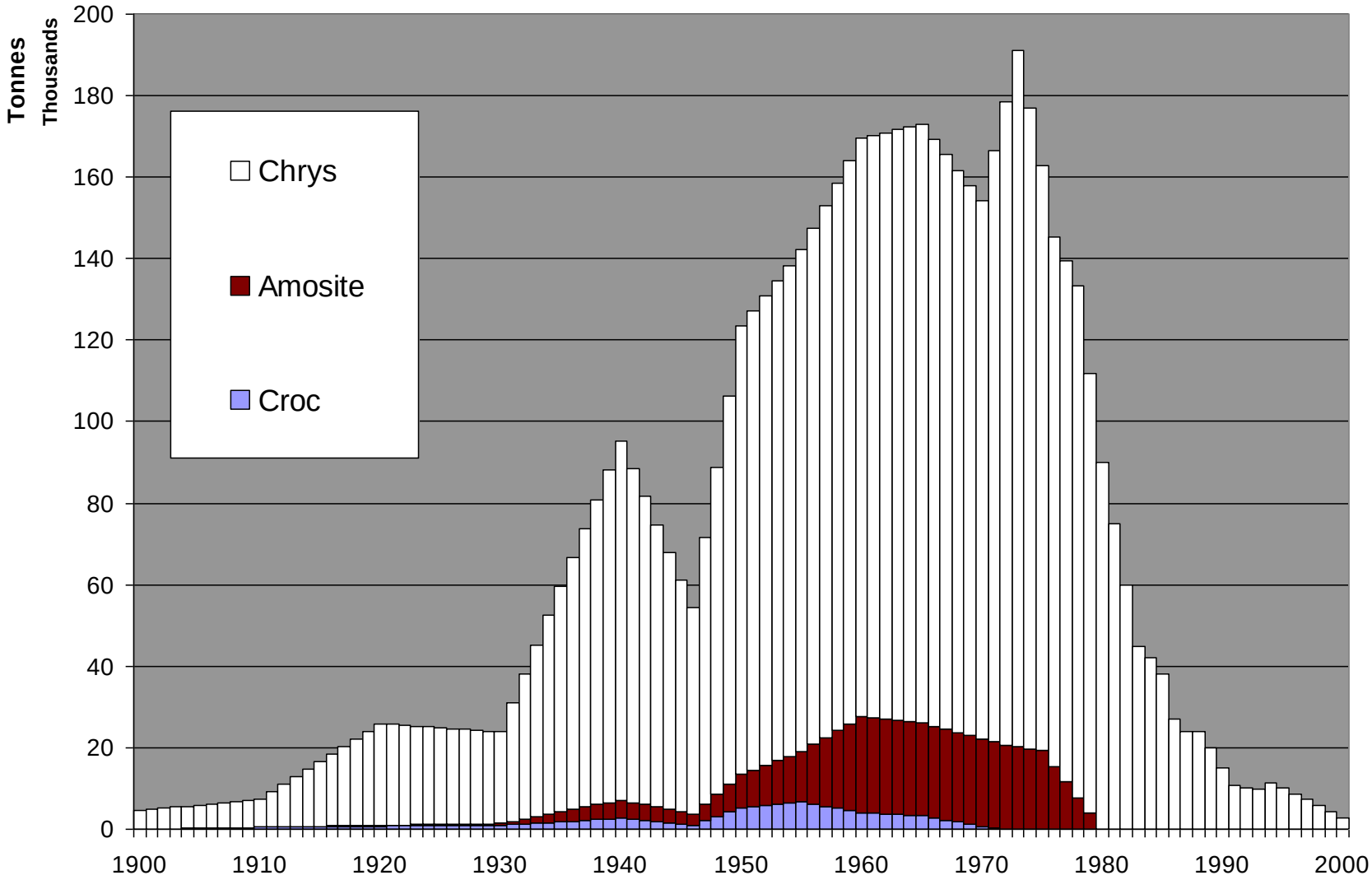
British Asbestos Survey: number of workers recruited each year by main industry



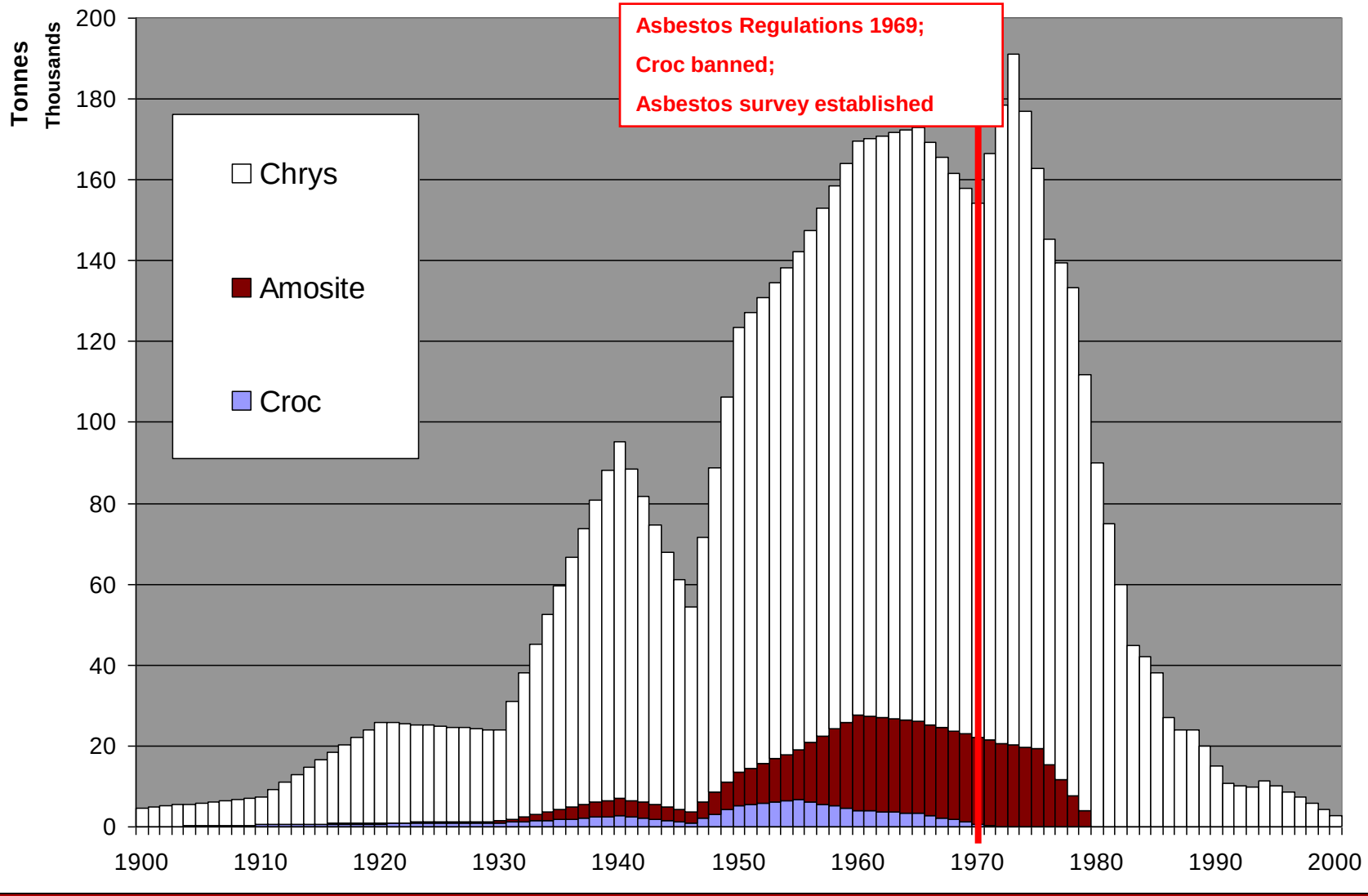
British mesothelioma case-control study

- Confirms the substantial contribution of “end-user” exposure in construction.
- LR among men born in 1940s who worked as a carpenter for 10 years before age 30 is worse than 1 in 10 (ie >10%)
- 62% of female cases not attributable to identifiable sources of exposure
- About 200 cases per year in women (and same in men) currently unexplained
- Background risk in men and women who did not do any work in high risk jobs is about 1 in 1250 (0.08%)

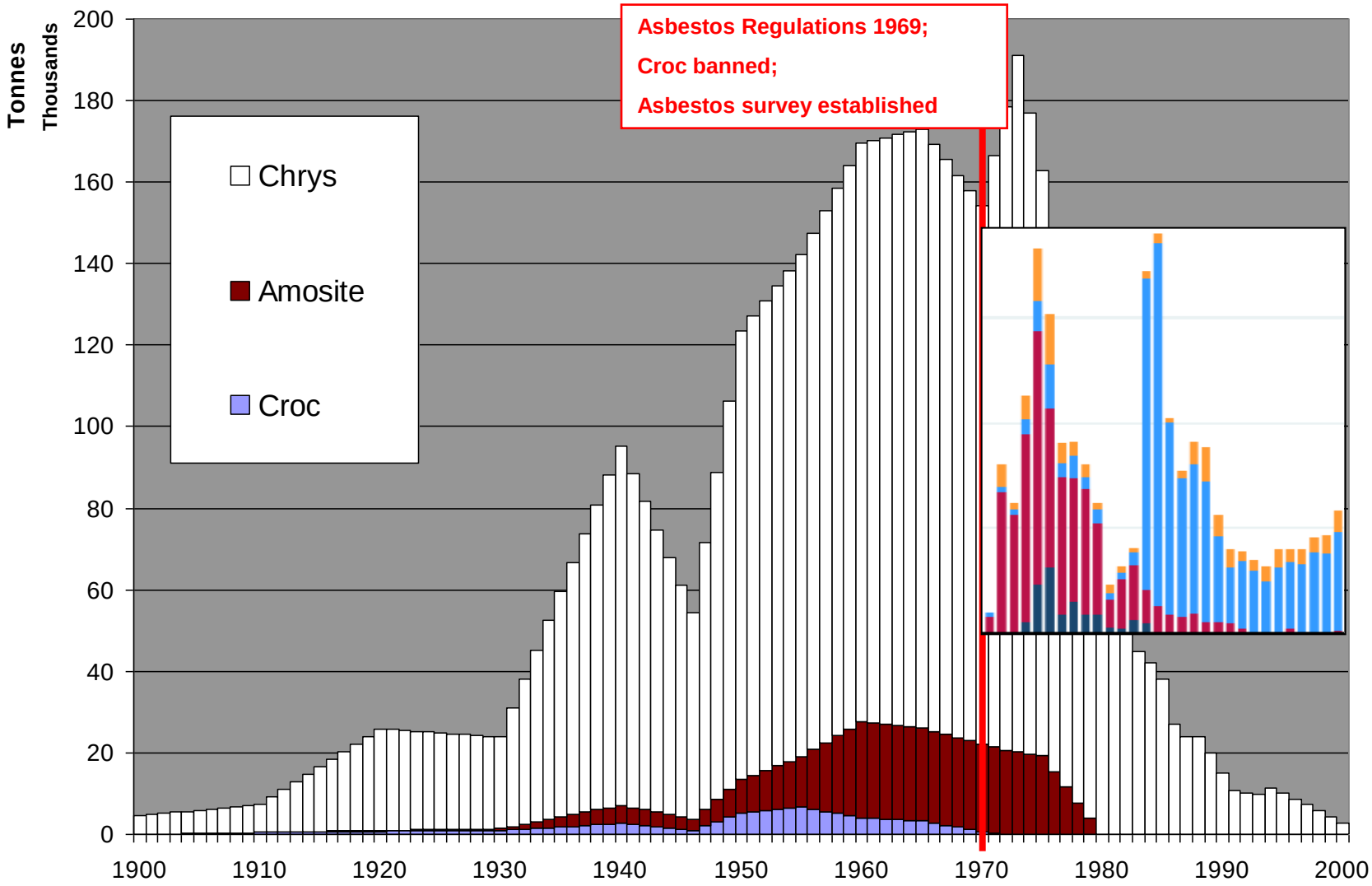
Regulatory and epidemiological history



Regulatory history



Regulatory history



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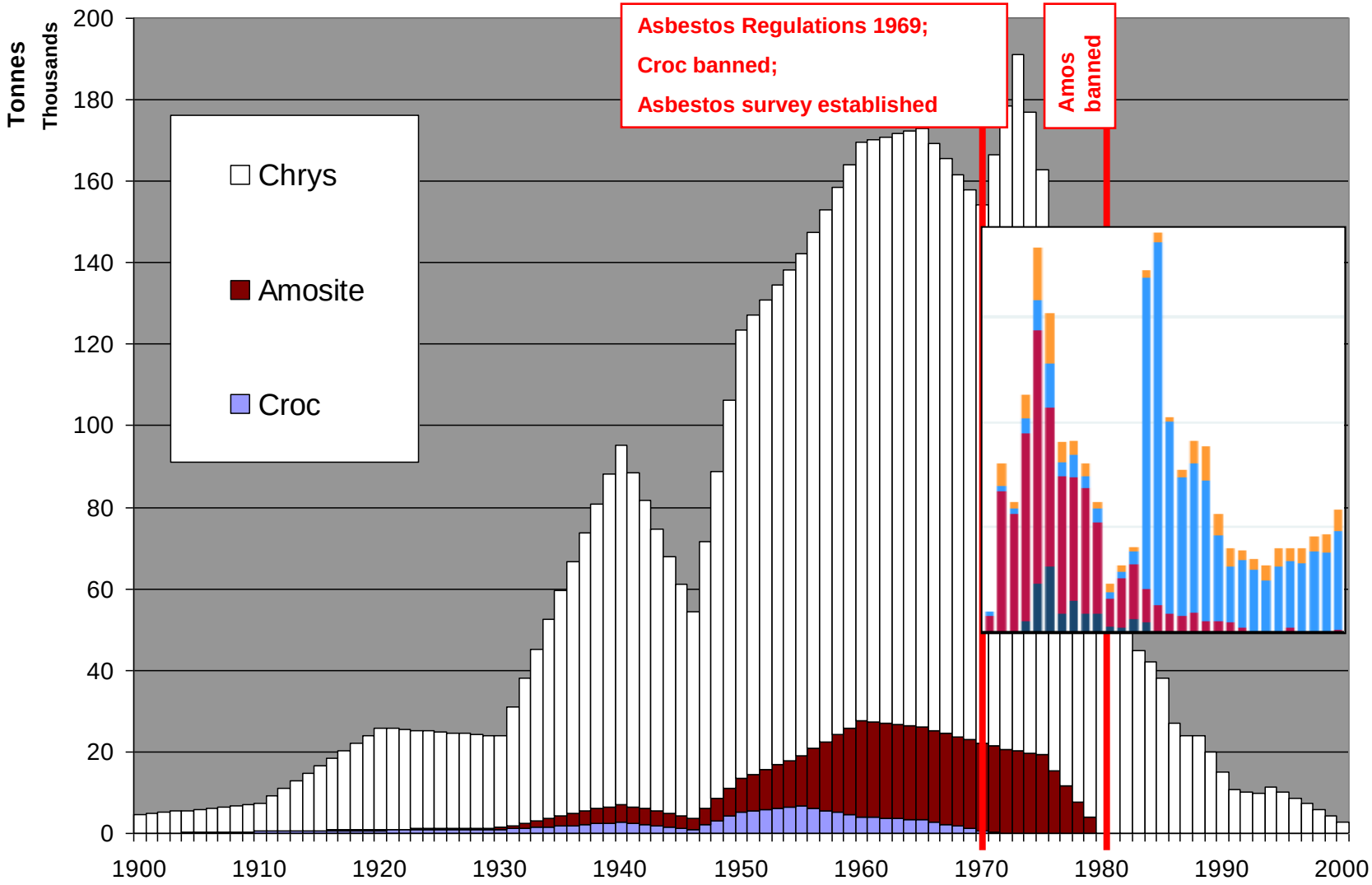

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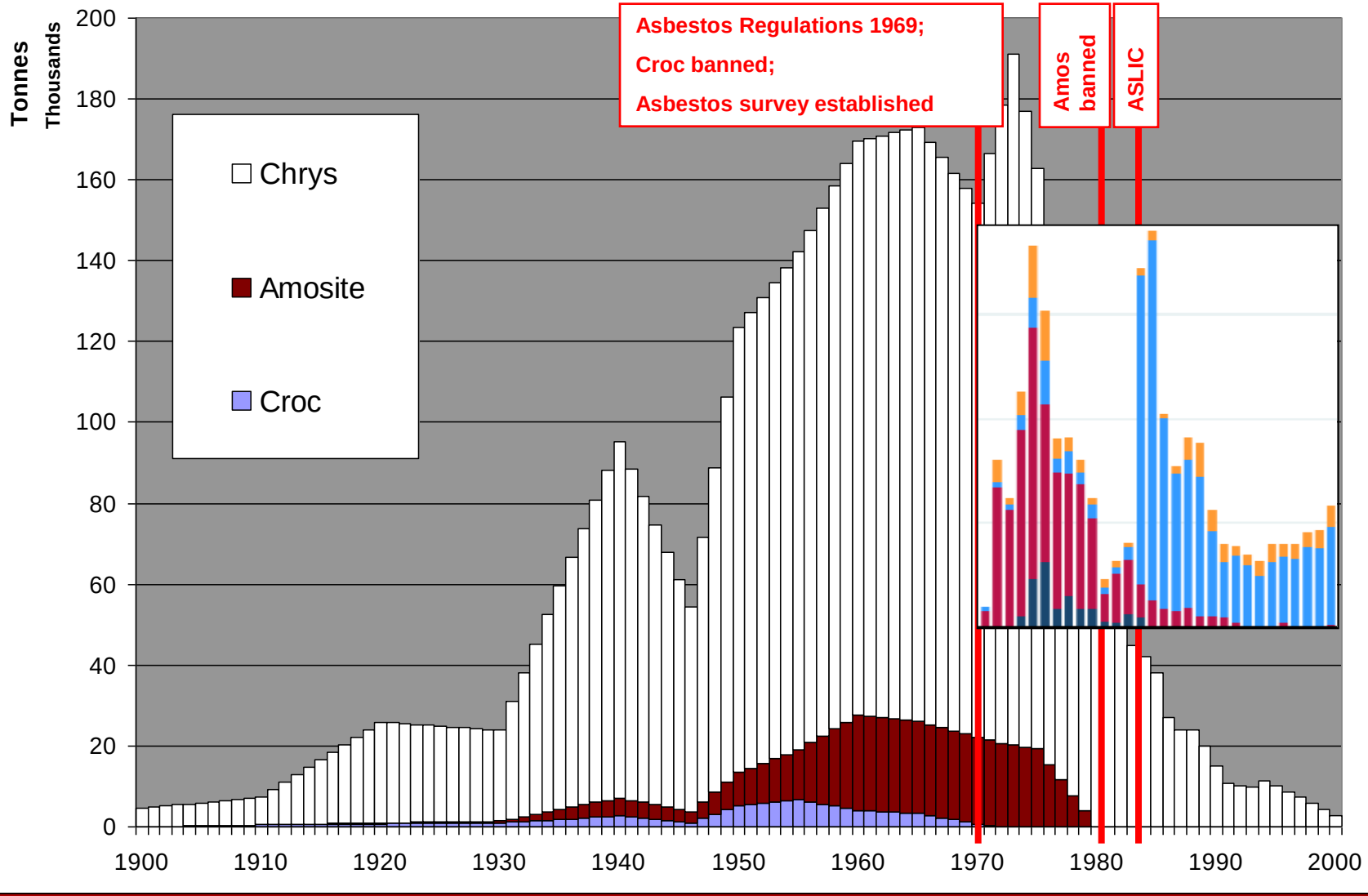

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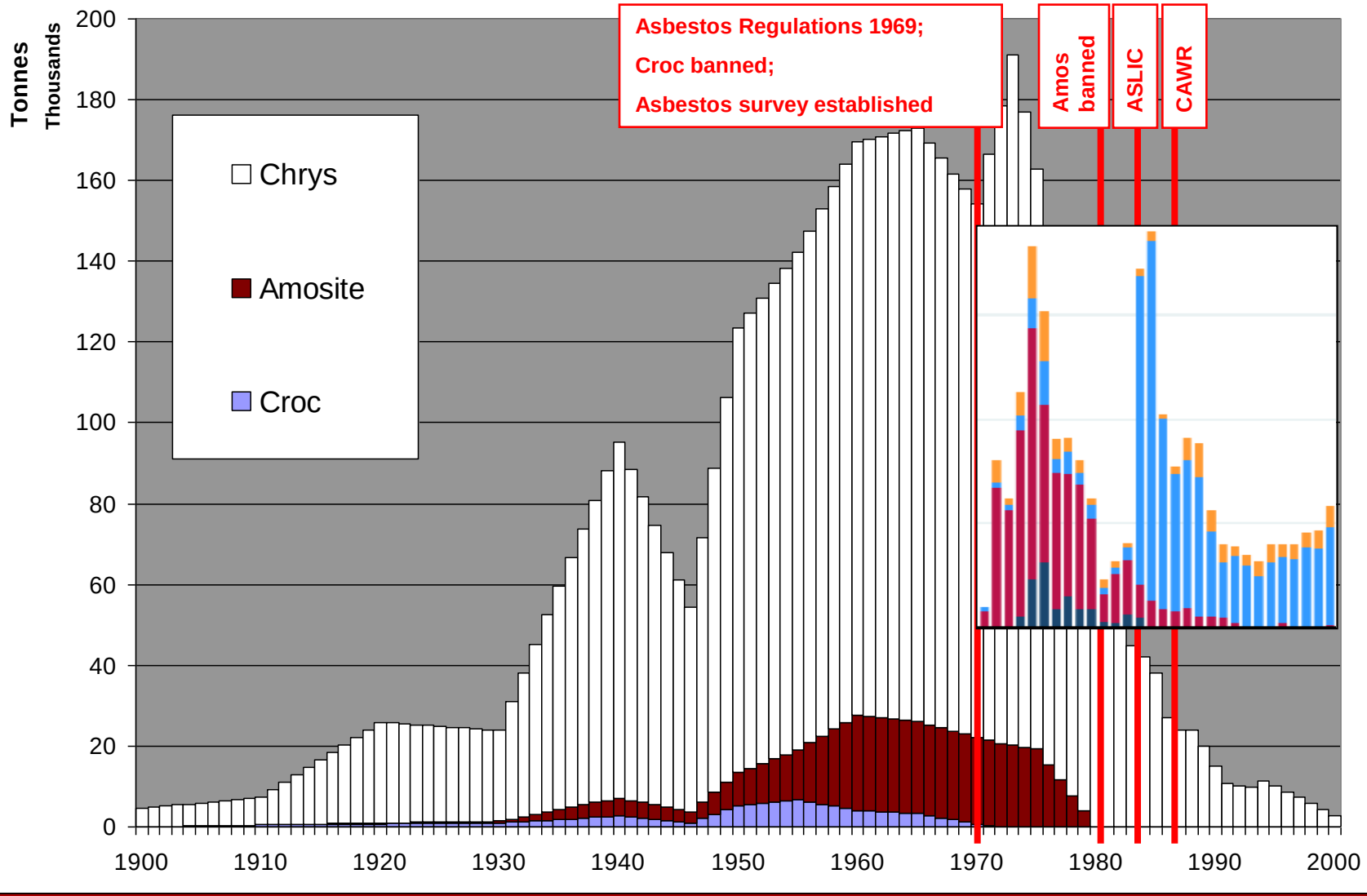

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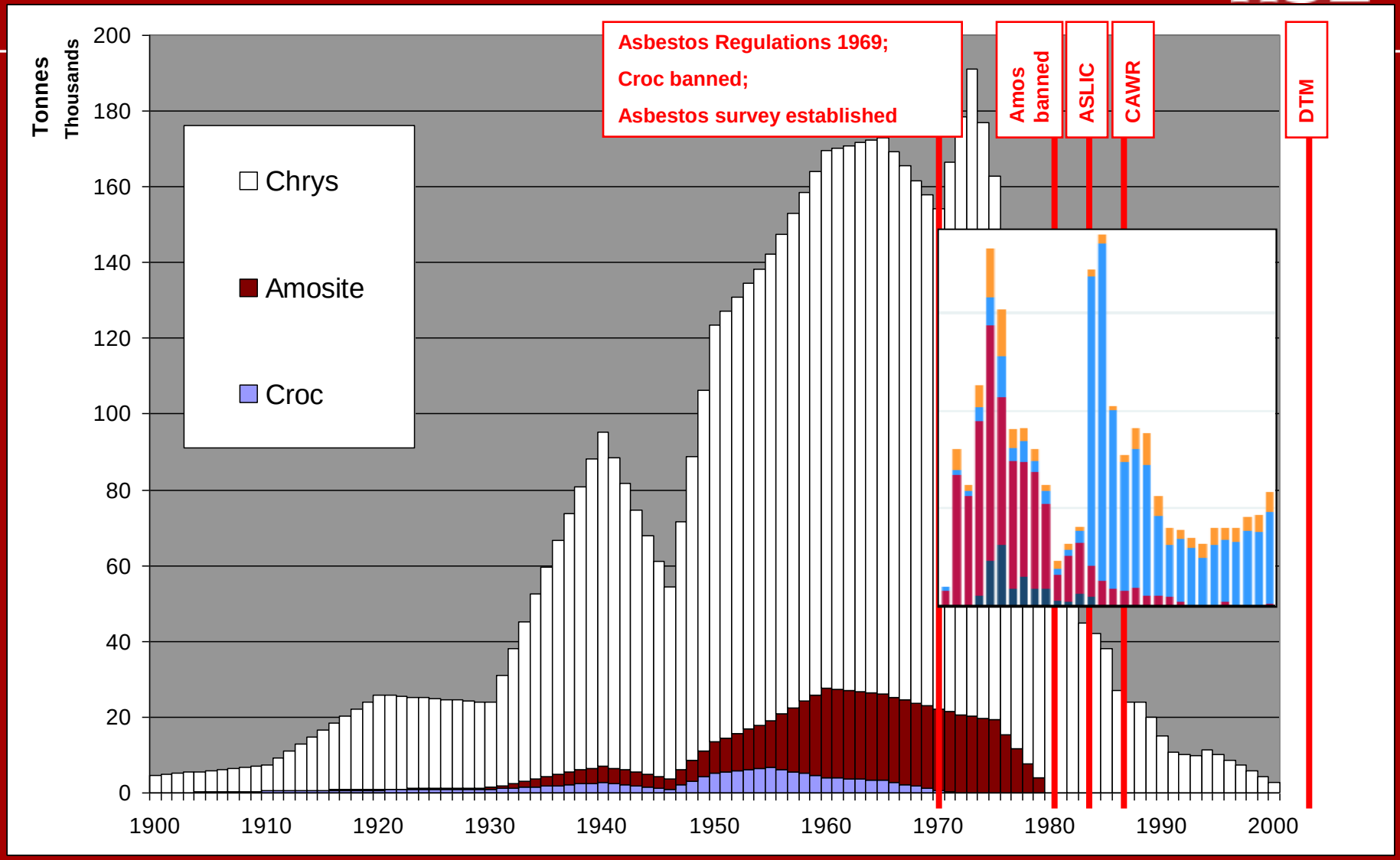
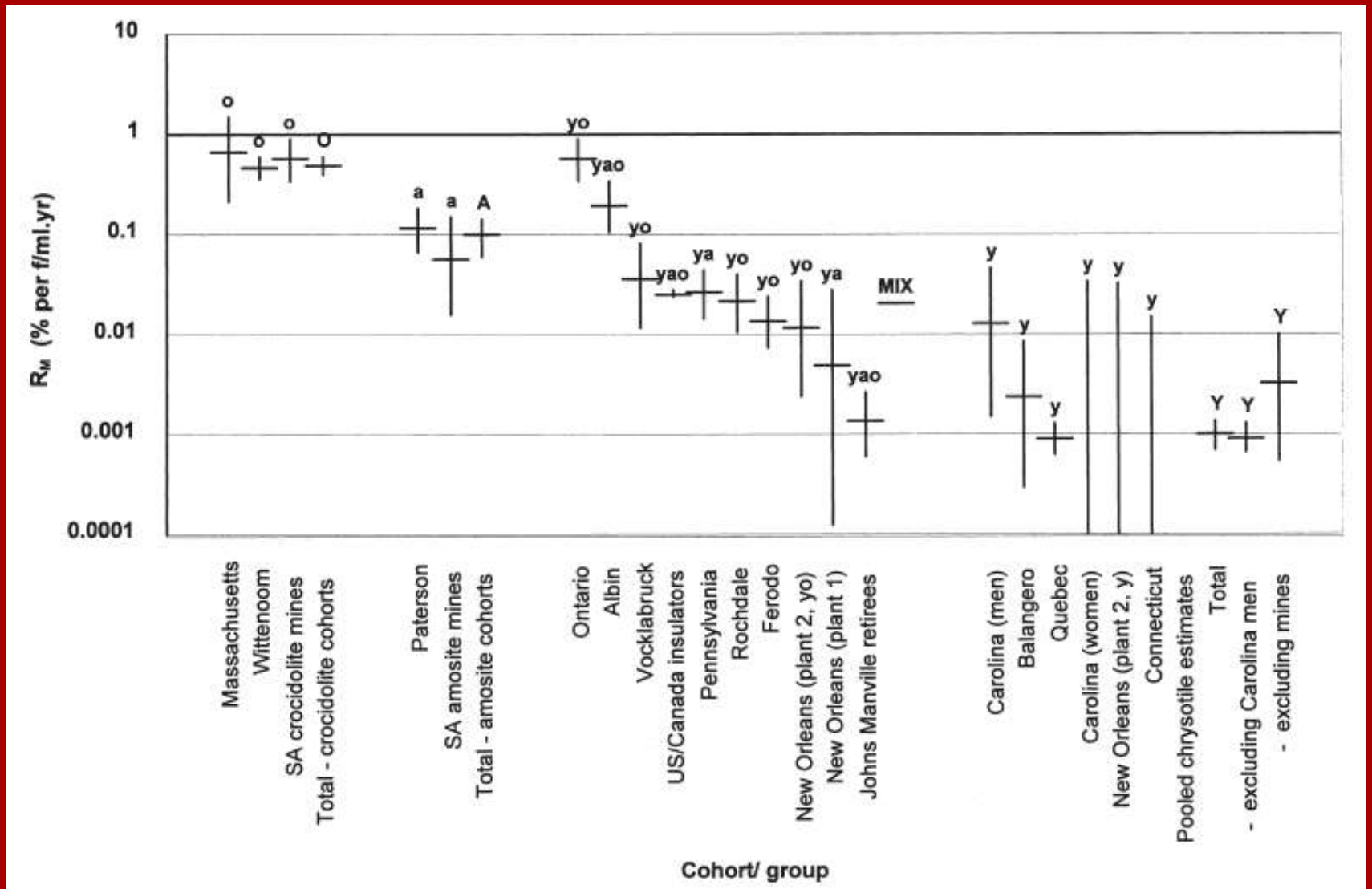


Where are we now?

- What are the risks arising from exposures today?
- What are the risks to building maintenance workers?
- What is the background rate due to environmental exposures today?

Use quantitative risk models to make an assessment?



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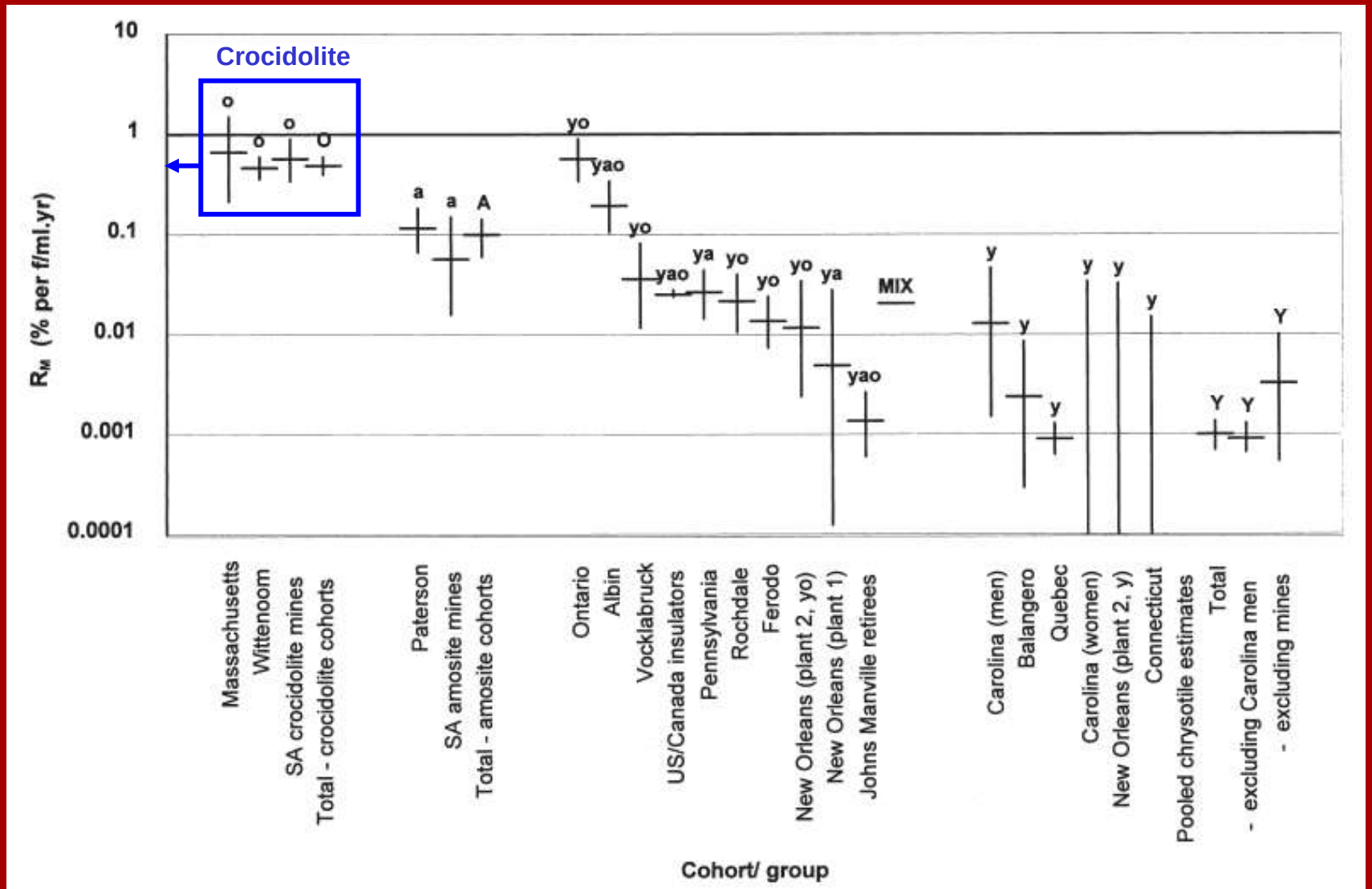

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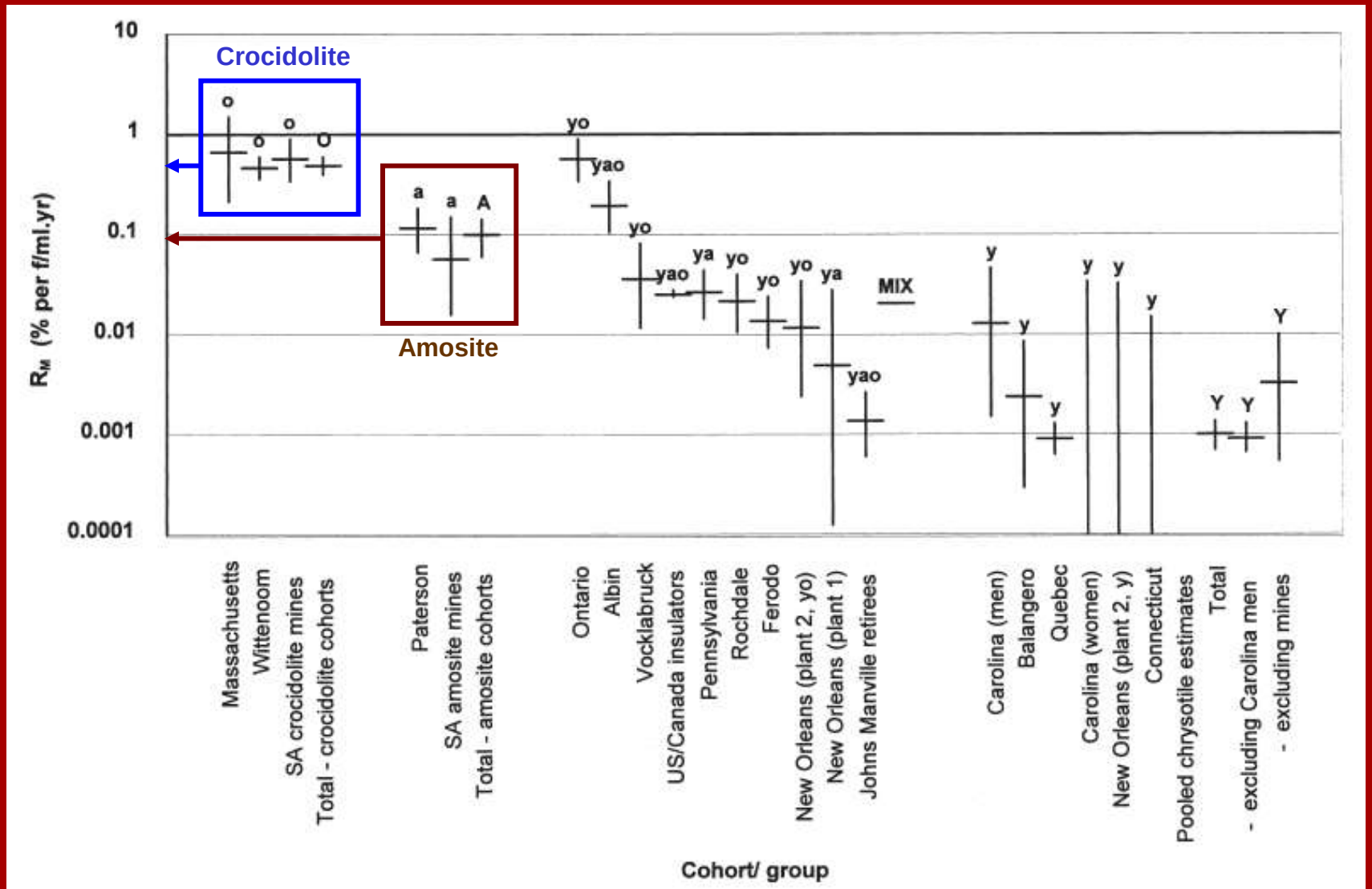

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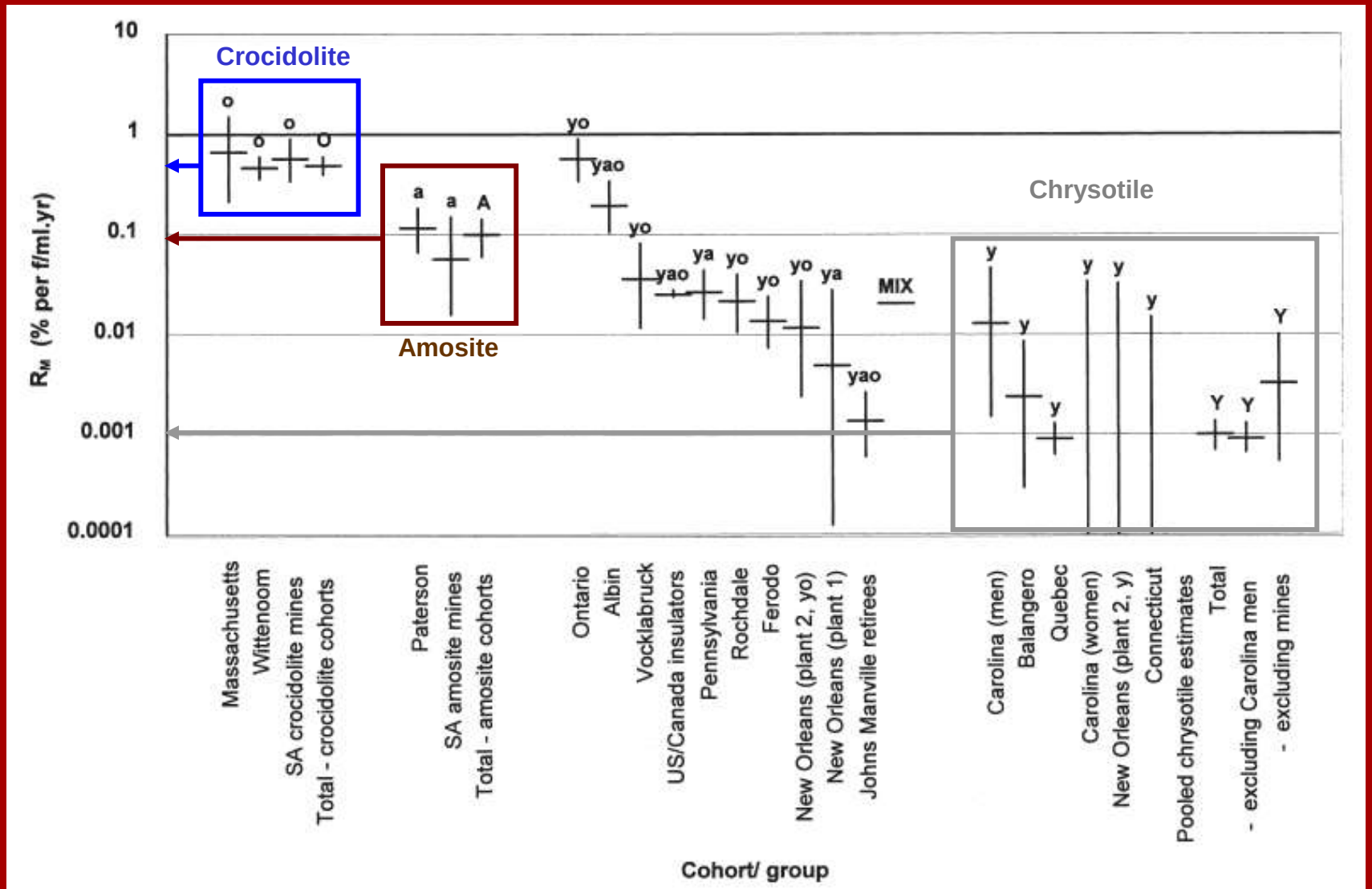
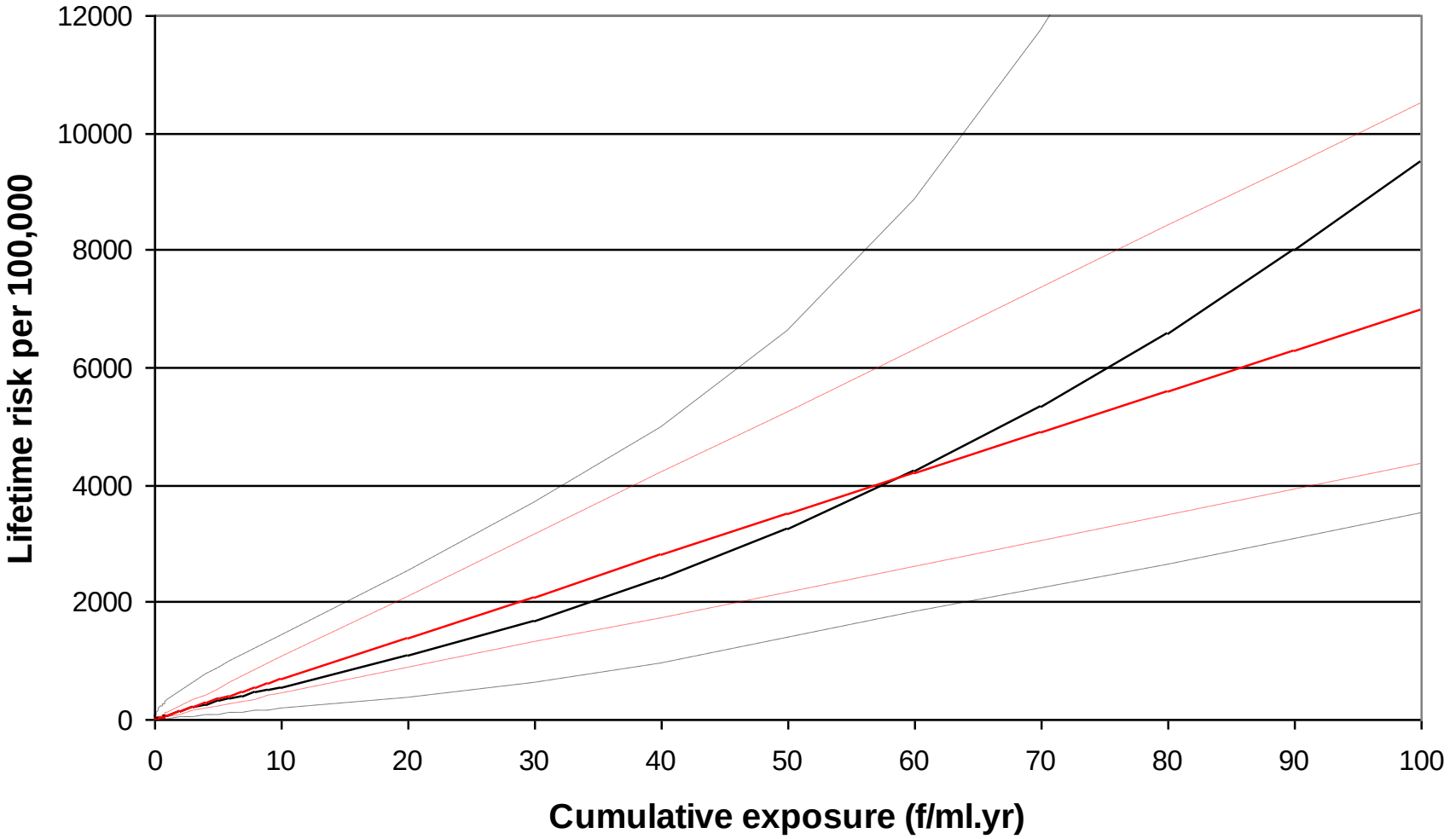


Non-linear (black lines) and linear risk (red) models from Hodgson and Darnton 2000



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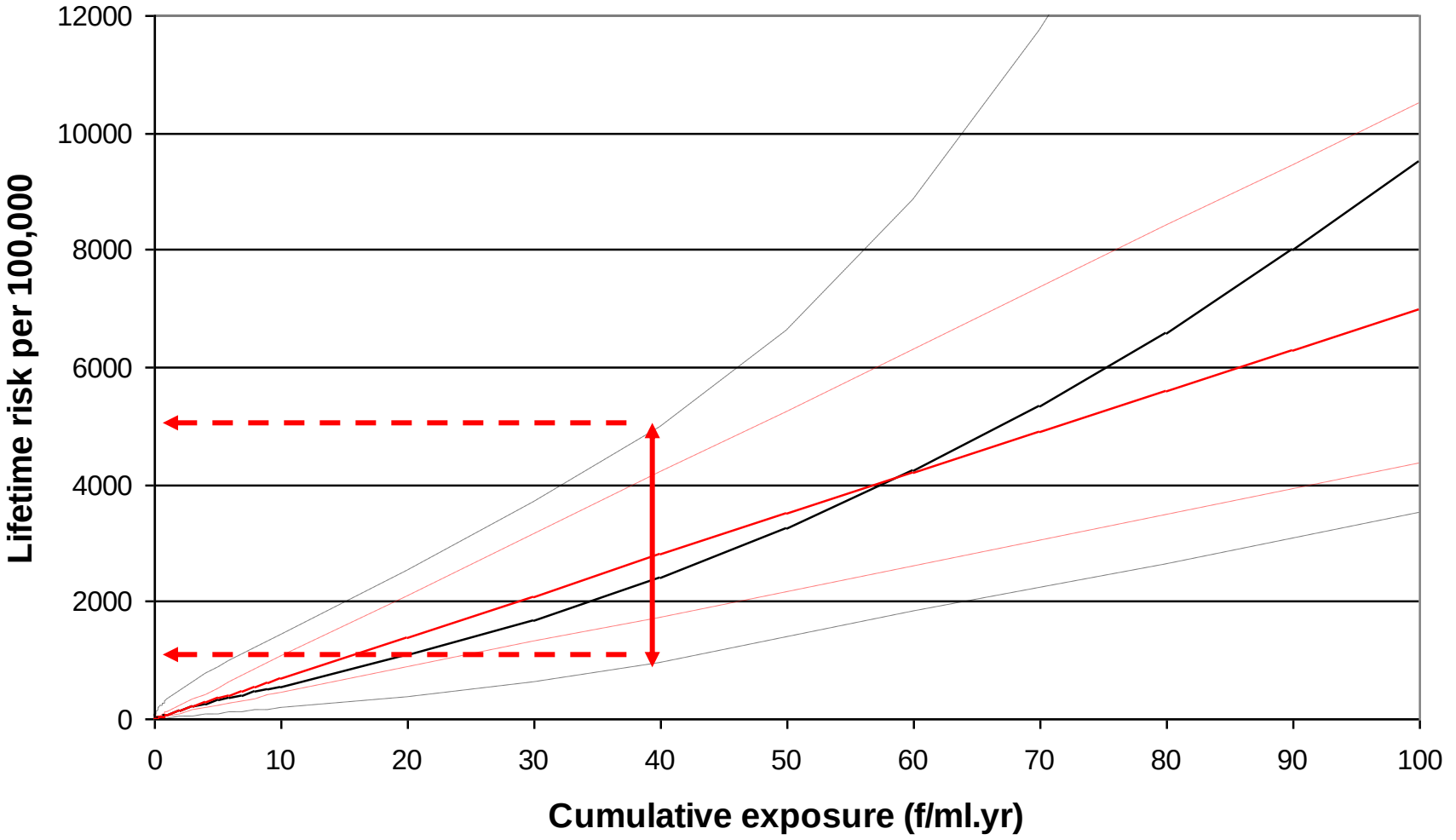
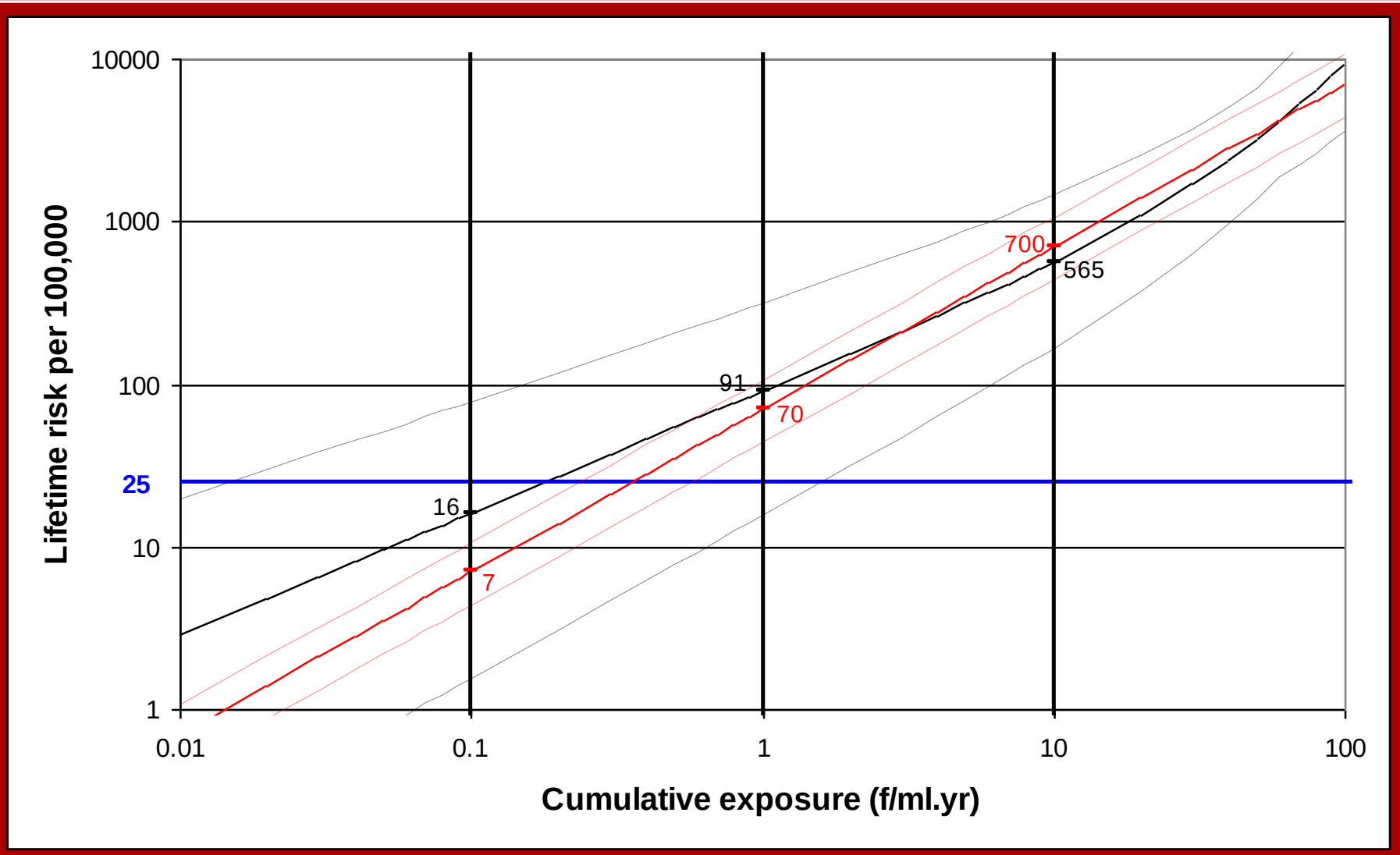


Non-linear (black lines) and linear risk (red) models from Hodgson and Darnton 2000 – extrapolation



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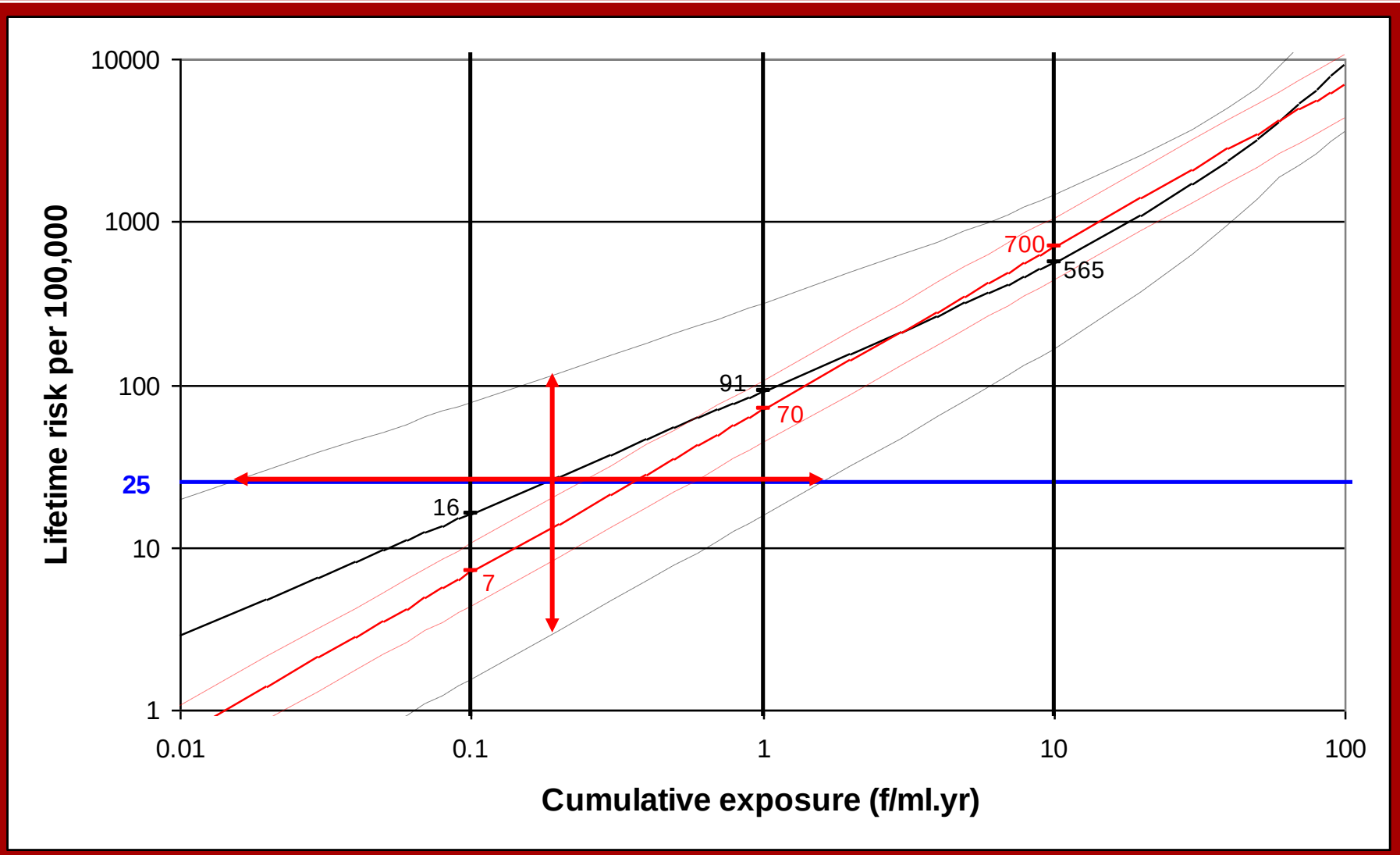
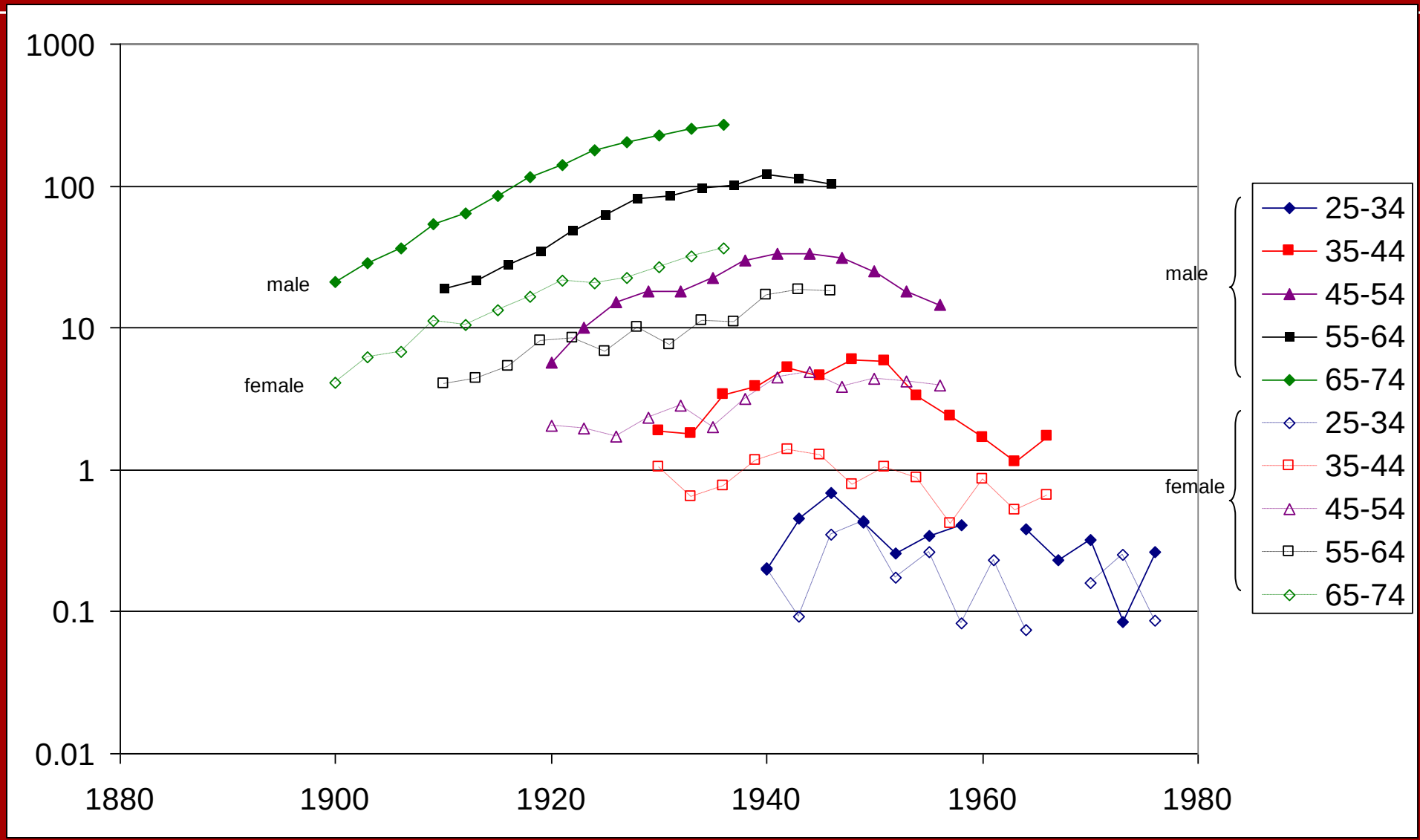


Better population based models?



Lung burden studies of younger more recent workers

- Interviewed mesothelioma cases: where possible lung tissue is obtained from post-mortem samples for measurement of asbestos fibres by optical and transmission electron microscopy.
- Occupational histories and lung samples from lung cancer patients, and from younger men and women treated surgically for pneumothorax.
- Aim to relate lung burden to mesothelioma risk, and determine the amount and type of asbestos in the lungs of those who began work since the 1980s, particularly building workers but also those working in low risk jobs.
- Estimate future risks from current and recent asbestos exposure.
- Provide direct evidence on the contribution of the expansion of amosite use to the 50,000 or more mesotheliomas expected in the UK over the next 40 years in men and women born before 1960.