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Assessment of the cumulative exposure to asbestos necessary to cause either asbestosis or double the risk of developing lung cancer

Abstract \*

Helsinki (1997, 2015) require for diagnosis of asbestosis or lung cancer that cumulative exposures to asbestos have either exceeded 25 fibres/ml.years or the identification of diffuse interstitial fibrosis *plus* the presence of either 2 or more asbestos bodies per cm<sup>2</sup>section area or a count of uncoated fibres that falls into the range recorded for asbestosis by the same laboratory. Helsinki assumes that a cumulative exposure of 25 fibres/ml.years will double the risk of developing lung cancer compared with the background level of such disease in the general population.

The Helsinki criteria take no account of the increased lung cancer risk in smokers who were exposed to asbestos, of asbestos fibre clearance from the lung or of the fact that over the past 20-30 years lung cancer deaths in the general population has fallen markedly in many first-world countries. Few laboratories carrying lung residue analysis have published detailed data on the cases on which their fibre counts for asbestotics are based or of the time between last recorded exposure to asbestos and death. In Scotland the male lung cancer death rate per 100,000 has fallen from 111 in 1990/92 to 82 in 2013. That is, the male lung cancer death rate has fallen by about 25% over the past 25 years, RGoS (2014).

In assessing causation in asbestosis or lung cancer cases today it is therefore necessary to take account of smoking history, lung clearance and the reduction in lung cancer death rates in current populations.

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