This study substantiated the widely held notion that those who smoke and have asbestos exposure incurred risk of lung cancer to an extent greater than the risk for those who only smoke or those who only have asbestos exposure.

To investigate the interaction between asbestos exposure and smoking on lung cancer, 1,878 deaths from lung cancer were examined using the Synergy (S) and Multiplicativity (V) indices, which test the hypotheses of additive and multiplicative interaction, respectively. The combined effect was greater than additive and multiplicativity could not be rejected.

Regular medical examinations, SMR, PMR, Asbestosis, lung cancer, mesothelioma, asbestos workers

Objectives: The Great Britain Asbestos Survey was established to monitor mortality among workers covered by regulations to control occupational exposure to asbestos. This study updates the estimated burden of asbestos-related mortality in the cohort, and identifies risk factors associated with mortality.

Methods: From 1971, workers were recruited during initially voluntary and later statutory medical examinations. A brief questionnaire was completed during the medical, and participants were flagged for death registrations. Standardized mortality ratios (SMRs) and proportional mortality ratios (PMRs) were calculated for deaths occurring before 2006. Poisson regression analyses were undertaken for diseases with significant excess mortality.

Results: There were 15,496 deaths among 98,117 workers followed-up for 1,779,580 person-years. The SMR for all cause mortality was 141 (95% CI 139 to 143) and for all malignant neoplasms 163 (95% CI 159 to 167). The SMRs for cancers of the stomach (166), lung (187), peritoneum (3,730) and pleura (968), mesothelioma (513), cerebrovascular disease (164) and asbestosis (5,594) were statistically significantly elevated, as were the corresponding PMRs. In age and sex adjusted analysis, birth cohort, age at first exposure, year of first exposure, duration of exposure, latency and job type were associated with the relative risk of lung, pleural and peritoneal cancers, asbestosis and mesothelioma mortality.

Conclusions: Known associations between asbestos exposure and mortality from lung, peritoneal and pleural cancers, mesothelioma and asbestosis were confirmed, and evidence of associations with stroke and stomach cancer mortality was observed. Limited evidence suggested that asbestos-related disease risk may be lower among those first exposed in more recent times.
Fact 1
In a cohort study of former asbestos workers undergoing regular medical examinations, the relative risk of mesothelioma increased with latency: reaching a maximum 50-59 years after first exposure (Relative Risk for 50-59 years’ latency compared with < 20 years’ latency; 28.1; 12.2-64.6).

Fact 2
Removal workers and insulation workers had the highest relative risk of mesothelioma during 1971-2005 among the Great Britain asbestos workers (Relative Risk 3.19; 2.16 -4.72 compared with manufacturing workers in the final model, and RR 2.65; 1.64 -4.30, respectively).

Fact 3
Insulation workers had the highest risk of asbestosis: RR 5.98 (3.84-9.31) compared to manufacturing workers, followed by removal workers (RR 2.21; 1.24-3.93).

Fact 4
Insulation workers and removal workers had significantly higher risks of lung cancer than manufacturing workers (RR 1.84; 1.60-2.10, and RR 1.30; 1.12-1.50, respectively).

Fact 5
There was a statistically significant excess of deaths from all causes (SMR 141; 139 -143), mesothelioma (SMR 513; 435-601), asbestosis (SMR 5,594; 4,634-6,694) among the Great Britain asbestos workers.