

## Silica

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### CANCER MORBIDITY AND QUARTZ EXPOSURE IN SWEDISH IRON FOUNDRIES

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**Objectives** The aim of this study was to determine cancer morbidity for Swedish iron foundry workers with special reference to quartz exposure.

**Methods** The cohort of 3 045 men employed between 1913 and 2005 and with >1 year of exposure was followed for cancer morbidity from 1958 to 2004. Standardised incidence ratios (SIRs) with 95% CIs were determined by comparing the observed number of incident cancers to the Swedish cancer register. Exposure measures were assessed from personal files and a quartz measurement database of 2 822 air samples.

**Results** Overall cancer morbidity was not increased (SIR 1.00; 95% CI 0.90 to 1.11), however lung cancer was significantly enhanced (SIR 1.61; 95 % CI 1.20 to 2.12). Dose response for lung cancer was determined for duration of employment, duration of exposures and cumulative quartz for latency periods >20 years. Significant findings for lung cancer and cumulative quartz were determined for quartz doses of 1–2 mg/m<sup>3</sup>.year, SIR 2.88 (95% CI 1.44 to 5.16), and for >2 mg/m<sup>3</sup>.year a SIR of 1.68 (95% CI 1.07 to 2.52). For cancer sites with at least 5 observed cases and a SIR>1.25, non-significant risks were determined for liver, larynx, testis, the urinary organs, muscle of the connective tissue and lymphatic leukemia.

**Conclusions** An increased lung cancer risk for Swedish foundry workers related to quartz exposure was determined.