Abstract:

BACKGROUND: Workers compensated for silicosis outside the mining industry are at an increased risk of developing lung cancer. In the meta-analyses no data from Germany are involved. Furthermore, exposure data are necessary if a threshold value is to be assessed in order to reduce the risk for silicosis and also for lung cancer. METHOD: A cohort study among workers compensated for silicosis between 1988 and 2000 from the stone and quarry industry in Germany has been initiated. The cohort was followed up until the end of 2001. From all workers a detailed description of their jobs was assessed.

RESULTS: Four hundred and forty workers were enrolled in the study. During the follow-up 144 workers died, compared with 74.35 expected cases based on the mortality rates of the general population from Germany, leading to a standard mortality ratio (SMR) of 1.94 (95% CI 1.63-2.28). Lung cancer was the cause of death in 16 cases (SMR 2.40; 95% CI 1.37-3.90). All workers had a peak exposure above 0.15 mg/m3, the current threshold value. The cumulative exposure was above 2 mg/m3.years and the average exposure was 0.10 mg/m3 or larger. No association between the exposure and the risk of developing lung cancer could be observed. CONCLUSIONS: Workers from the stone and quarry industry compensated for silicosis are at an increased risk of developing lung cancer. In order to reduce that risk, the exposure has to be lowered, with a
peak exposure below 0.15 mg/m³ and an average exposure below 0.10 mg/m³.

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