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Titel des Beitrags: Change of exposure response over time and long-term risk of silicosis among a cohort of Chinese pottery workers.

Abstract: An analysis was conducted on a cohort of Chinese pottery workers to estimate the exposure-response relationship between respirable crystalline silica dust exposure and the incidence of radiographically diagnosed silicosis, and to estimate the long-term risk of developing silicosis until the age of 65. The cohort comprised 3,250 employees with a median follow-up duration of around 37 years. Incident cases of silicosis were identified via silicosis registries (Chinese X-ray stage I, similar to International Labor Organisation classification scheme profusion category 1/1). Individual exposure to respirable crystalline silica dust was estimated based on over 100,000 historical dust measurements. The association between dust exposure, incidence and long-time risk of silicosis was quantified by Poisson regression analysis adjusted for age and smoking. The risk of silicosis depended not only on the cumulative respirable crystalline silica dust exposures, but also on the time-dependent respirable crystalline silica dust exposure pattern (long-term average concentration, highest annual concentration ever experienced and time since first exposure). A long-term "excess" risk of silicosis of approximately 1.5/1,000 was estimated among workers with all annual respirable crystalline silica dust concentration estimates less than 0.1 mg/m(3), using the German
measurement strategy. This study indicates the importance of proper consideration of exposure information in risk quantification in epidemiological studies.