58 CONSTRUCTION OF THE SWEDISH JOB EXPOSURE MATRIX FOR A NORDIC OCCUPATIONAL CANCER STUDY, NOCCA

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Objectives The Nordic Occupational Cancer Study (NOCCA) is a large cohort study including 15 million people, based on the working population in one or more country specific census (FoB) in Sweden, Denmark, Finland, Norway and Iceland. The purpose of this study was to develop country specific job exposure matrices (JEMs) for each of the five countries to study increased risk of cancer from occupational exposure. This study presents the Swedish NOCCA-JEM.

Methods The Swedish NOCCA-JEM was constructed on the basis of a Finnish matrix (FINJEM). The structure of the JEM is three-dimensional. It includes 17 chemical substances, more than 300 occupations and four time periods. The exposure has been characterised on the prevalence, P (%) and exposure level, L (eg, mg/m³) by a Nordic team of experts with the help of national exposure data files.

Results Significant differences between the Nordic countries were observed for many exposures. For example, respirable silica dust-exposed foundry workers in Sweden had seven times higher exposure than in Denmark in the 1970s. In the 1990s, the Swedish exposure was reduced to 1/10 of levels of the 1970s.

Conclusions The effort of the JEM construction process was very time consuming but it will now be utilised in numerous studies to translate the occupational title histories to cumulative exposure estimates. Occupational-specific cancer risk from NOCCA cohort have been published for 53 occupational categories in about 80 diagnostic cancer categories, altogether about 3 million cases. NOCCA-JEM now offers a tool to assess dose-response risk patterns of the studied cancers.