

NOCCA - the Nordic Occupational Cancer Study

Elisabete Weiderpass^{1,2*}, Kristina Kjaerheim¹, Jan-Ivar Martinsen¹, Elsebeth Lyng³, Hólmfríður Gunnarsdóttir⁴, Pär Sparén², Laufey Tryggvadóttir⁵, Eero Pukkala⁶.

¹Cancer Registry of Norway, ²Karolinska Institute, Sweden, ³University of Copenhagen, Denmark, ⁴Research Center for Occupational Health & Working Life, Iceland, ⁵Icelandic Cancer Registry, ⁶Finnish Cancer Registry,

* on behalf of the Nordic Cancer Registries

Aim: The aim of the study was to assess cancer risk by occupation in the Nordic countries (1).

Materials and methods: Census information on occupation on 15 million inhabitants of the Nordic countries aged 30 to 64 was collected in 1960, 1970, 1980 or 1990. Follow-up was obtained through linkages with national death and cancer registries through 2002-2005. Near three million incident cancer cases were identified. Occupational information was categorized into 53 occupational groups and one group of economically inactive persons. Cancer data were grouped into 48 main cancer sites and 27 histological or anatomical subgroups. Results will be presented as standardized incidence ratios (SIRs), defined as the ratio of the observed to the expected number.

Results: For all cancers combined a wide variation in risk was observed among men, from an SIR of 0.79 (95% confidence intervals 0.66-0.95) in home-helpers to 1.48 (1.43-1.54) in waiters. The occupations with the highest SIRs also include workers in beverage and tobacco industry, as well as seamen and chimney sweeps. Among women the SIRs varied between 0.58 (0.37-0.87) in seamen and 1.27 (1.19-1.35) in tobacco workers. Farmers, forestry workers, gardeners and wood workers belong to occupations with low-risk profiles for most cancer sites in both genders. Most of established associations between occupations and site specific cancers were also demonstrated in this study.

Conclusions: Based on the results we can conclude that risk of cancer is highly depending on the persons' position in society. Direct occupational hazards seem to explain only a small fraction of the observed variation while indirect factors such as need for longer education and decreasing physical activity become more important.

Reference:

1. Andersen A, Barlow L, Engeland A, Kjaerheim K, Lyng E, Pukkala E. Work-related cancer in the Nordic countries. *Scand J Work Environ Health* 1999; 25 Suppl 2: 1-116.