

Press release
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Study finds wide variation in cancer risks between different professions
- even shift work can carry risks

A new Nordic research study has identified variations in the cancer risks associated with different professions. Cancer is particularly common among male serving staff. The vast study, which covered 15 million people, has yielded fresh information especially on the impact of professions on the predisposition to rare forms of cancer.

Professor Eero Pukkala, Director of Statistics at the Finnish Cancer Registry, led the Nordic research team in collecting the data on 15 million people by profession. Some 2.8 million cases of cancer were recorded from this group. Information on occupations was amassed from censuses carried out from the 1960s to the 1990s in Finland, Sweden, Norway, Denmark and Iceland. The follow up extended to 2005. The study findings are being published in the June number of Acta Oncologica, the official journal of the five Nordic oncological societies.

The study found that there is a great discrepancy between professions when it comes to some forms of cancer. Mesothelioma, which is caused by exposure to asbestos, is 20 times more common among plumbers than among farmers. Joiners are more likely than other people to suffer from rare nasal cancer. Fishermen, who are often exposed to ultraviolet solar radiation, fairly often suffer from lip cancer, whereas it is more unusual among people who mainly work indoors.

Waiters at risk

The greatest risks of cancer in Nordic men are found among male serving staff. They have of the highest relative risk of several forms of cancer – affecting the larynx, mouth, liver, tongue, lungs, bladder and rectum.

On the other hand, agricultural workers are the least affected by lung, liver, mouth and tongue cancers.

Lung cancer among women is six times more prevalent among machine operators than among agricultural workers. Women working in the chemicals industry are more prone than other women to cancer of the tongue and vagina.

Both men and women who work in the print industry have a higher risk of contracting melanoma and other forms of skin cancer, and breast cancer.

The editorial column in Acta Oncologica argues that further research should be conducted on the main findings of the study for which there are no ready explanations. They include the increased disposition of journalists and drivers to penile cancer, and of female farmers to thyroid cancer.

“Cancer of the bladder is traditionally considered to be a disease most likely caused by exposure in workplace environments. The risk is greater among serving staff and workers in the tobacco industry, but it has clearly increased among chimneysweepers and hairdressers,” says Professor Pukkala.

Chimneysweepers are exposed to Polycyclic Aromatic Hydrocarbons (PAH's), which are listed as carcinogens.

Farmers less at risk, priests too

“The professions that carry the least at risk of cancer are farming, gardening, fishing and forestry. Clergy, teachers and doctors are also less at risk,” says Pukkala.

“Professions where it has been acceptable to smoke and drink alcohol carry an increased cancer risk. It is easier for a waiter to smoke than for a priest or teacher. If your place of work is a bar or restaurant, it is easier to consume alcohol than if it is a church or classroom.

At the top of the list of the most dangerous professions when it comes to liver cancer are those of waiters, cooks, beverage industry workers, journalists and sailors. This indicates heavy alcohol consumption.

The risk of lung cancer is greatest for waiters, whose working environments were not made smoke-free until the 2000s. Tobacco industry workers also have a bigger risk of getting lung cancer, apparently because the industry gives them free cigarettes as part of the job.

The team of author speculates that shift work may be a factor in rare incidences of breast cancer among men. Those in greatest danger are journalists and others in high-risk professions involving night work. Night work was recently added by the International Agency for Research on Cancer (IARC) to the list of working environments that probably increase the risk of cancer.

“Physically demanding jobs done by women offer better protection from breast cancer. The danger of breast cancer among women is highest among dentists and other professions that require prolonged training.

“In the Finnish data the profession with the highest cancer risk is mining. Life-style factors and workplace exposure may explain these risks. People in mines are exposed to stone dust.”

The study also encountered cancers that did not appear to have an important link to types of profession. Colorectal cancer and cerebral tumors vary little across the professions. The most common form of cancer in this bracket was prostate cancer, numbering some 340,000. Profession-related factors did not appear to influence the incidence of prostate cancer.

The Nordic countries have high standards of living and are generally considered to be relatively equal societies.

“We can nevertheless conclude that, based on this data, there is a strong connection between illness from cancer and people’s place in society,” says Pukkala.

But it’s not always a matter of low social position. The schoolteacher who spends the whole summer out in the sun and the high flying doctor who’s constantly in the tropics are more likely than other people to contract melanomas.

Reference:

Pukkala E, Martinsen JI, Lynge E, Gunnarsdottir HK, Sørensen P, Tryggvadottir L, Weiderpass E, Kjaerheim K. Occupation and cancer – follow-up of 15 million people in five Nordic countries. Acta Oncol. 2009; 48: 646-790

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All result tables are available: <http://astra.cancer.fi/NOCCA> with downloadable (PDF, Word) result tables by occupational category or by cancer site.