

New evidence of occupational cancers: fruit and veg growers, hairdressers among those at risk

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New research by staff at the University's Centre for Public Health Research show increased risk of cancer for occupational groups including hairdressers, sewing machinists, field crop and fruit and vegetable growers. Occupational cancers account for 330 deaths in New Zealand each year, about five per cent.

Dr Andrea 't Mannelje is lead author of a study on Non-Hodgkin's Lymphoma in New Zealand, now published online in the *Journal of Occupational and Environmental Medicine*, and second author of a study of high risk occupations for bladder cancer in New Zealand, published in the *International Journal of Cancer*.

The Non-Hodgkin's findings include that workers in plant nurseries are four times more likely to develop the disease, with apple and pear growing associated with a five-fold risk. Vegetable producers and those in general horticulture production have more than a two-fold risk of developing Non-Hodgkin's Lymphoma. Non-Hodgkin's Lymphoma is understood to account for about nine per cent of cancer cases,

Dr 't Mannelje says that overseas studies have indicated that dairy and beef farmers had an increased risk of developing non-Hodgkin's, which is a group of cancers arising from lymphocytes, a type of white blood cell. In New Zealand this was not the case. "Farming in other countries can be very different from what is done here," she says. "Animal

farming, for example, in the Netherlands where I come from is very intensive because they don't have a lot of space. In New Zealand the sheep and dairy farming is spread out and there are not many farmers using barns."

The hypothesis behind farming exposure was that the risk emerged from exposure to agents from animals, including viruses. In horticulture however, the risk is from pesticides. Overseas the findings were not always replicated because, Dr 't Mannelje says, overseas crop farming is much larger in scale with more spraying and processing done by machine. "Vegetable and fruit products here are applied by farmers and often they have close contact with sprayed fruit and veg."

Other occupations with increased non-Hodgkin's risk include meat workers, possibly through exposure to animal viruses, cleaners (cleaning chemicals), heavy truck drivers (petrochemicals or agents being carted) and metal product manufacturing through exposure to trace metals and lubricants.

Occupations identified as higher risk for bladder cancer, which comprises around 12 per cent of cancers, were hairdressers and sewing machinists. In both cases the likely cause was exposure through skin to a group of known carcinogens named aromatic amines, including benzidine. Dr 't Mannelje says that although several of these aromatic amines have been banned for some time, chemicals structurally similar to benzidine are still used in dyes. Sewing machinists are exposed to the dyes through fabrics, she says, while hairdressers are exposed using hair dye. Aromatic amines are also found in tobacco smoke, Dr 't Mannelje says, and bladder cancer is also linked to smoking.

A second phase of the bladder cancer study aims to look at specific exposure, Dr 't Mannelje says, although it will be very difficult for hairdressers or sewing machinists to identify what they were exposed to.

The second phase of the Non-Hodgkin's study will now look at exposure to specific products, with data already collected including the study participant's place and duration of employment, duration of work, and recollection of which products were used. Results are expected later this year.

Source: Massey University

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