

## Your job may cause cancer

Hairdressers, sewing machinists, vegetable growers, meat workers, truck drivers and cleaners are among the professions fingered in new research on links between occupation and cancer.

For hairdressers the issue is hair dye, for vegetable growers the culprit is chemicals.

Occupational cancers account for between 300 and 400 deaths in New Zealand each year. These figures were first published several years ago and came from applying foreign studies to New Zealand.

Research by Massey University's Centre for Public Health Research since then into bladder cancer and Non-Hodgkin's Lymphoma in New Zealand has confirmed them. The researchers continue to believe that only about 10 percent of cancers caused by occupations are reported as such.

Professor Neil Pearce said the new research in New Zealand was consistent with overseas studies.

"The thing that stood out was hair dressers and textile workers," he said.

They were an interesting group as they had dyes in common. It was known that dyes caused cancer in animals.

He said most general practitioners didn't know what patients did for a job and importantly what they did for a job 20 years ago.

The link with asbestos exposure in workplaces and illness was generally reported but the impact of other factors wasn't.

Dr Andrea 't Mannetje was lead author of a study on Non-Hodgkin's Lymphoma in New Zealand published 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 9 percent of cancer cases.

Dr 't Mannetje said 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 said. "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 Mannetje said, 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 through exposure to cleaning chemicals, heavy truck drivers through exposure to 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 percent 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 Mannetje said 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 Mannetje said, and bladder cancer is also linked to smoking.

A second phase of the bladder cancer study aims to look at specific exposure, Dr 't Mannetje said.

But it will be difficult for hairdressers or sewing machinists to identify what they were exposed to.

The second phase of the non-Hodgkin's study will look at exposure to specific products. Results are expected later this year.