Study pinpoints job role specific carcinogens

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The main exposures for men were solar radiation, environmental tobacco smoke and diesel. Credit: Matt McDaniel

A world-first study of occupational carcinogen exposure has revealed that 40 per cent of Australian workers could be exposed to chemicals that may increase their risk of developing cancer.

The results were published in *British Medical Journal*'s *Occupational Environmental Medicine*.

Lead researcher Professor Lin Fritschi from the Harry Perkins Institute of Medical Research says in past research, people have assumed all

individuals in the same occupation have the same exposures.

"This is the only study that has been able to look within jobs at what people are exposed to," Prof Fritschi says.

In order to accurately estimate exposures, the group developed OccIdeas; an online application using 58 occupation-specific questionnaires to estimate exposures.

"You can't assume that everyone in a job knows what they're exposed to—how we get around this is by asking people what they do in their job, allowing algorithms within OccIdeas to assign them to exposure or not," she says.

In collaboration with researchers from the University of Western Australia, as well as Sydney and Monash Universities, exposure data was collected for a random sample of 5023 Australian workers aged between 18 and 65.

"We were quite surprised at how much exposure there was; nearly 40 per cent of people exposed to at least one occupational carcinogen," Prof Fritschi says.

The main exposures for men were solar radiation, environmental tobacco smoke and diesel, with nearly one third of the workforce exposed to diesel engine exhaust at some time in their work.

"Our main occupations exposed to diesel engine exhaust were farmers, heavy vehicle drivers and miners," she says.

"Australia is lagging behind the rest of the world in putting regulations in place to limit diesel exhaust which is a real problem for us given how many people are exposed in WA."

Partnering with Safe Work Australia, the group now plan to identify occupations with high numbers of exposures, allowing the prioritisation of reforms to occupational health and safety regulations.

"Our part of the job isn't saying which cancers are caused by which job, but to say that by putting people in situations where they are exposed to a certain chemical that they are likely to be at an increased risk of a particular cancer.

"There isn't a magic bullet which stops everyone from being exposed to carcinogens; that's why a study like ours is really important as we're looking in much more detail at where the problem is so that we can put in tailored solutions."

More information: "Estimated prevalence of exposure to occupational carcinogens in Australia (2011-2012)." Carey RN, Driscoll TR, Peters S, Glass DC, Reid A, Benke G, Fritschi L. *Occup Environ Med*. 2014 Jan;71(1):55-62. DOI: 10.1136/oemed-2013-101651. Epub 2013 Oct 24.

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