

Health risk from solvent use by lab technicians

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(Medical Xpress) -- Exposure to solvents by medical laboratory workers may be a health risk according to a new study from the University of Otago, Wellington just published in *The Journal of Rheumatology*.

“Our study of 341 medical laboratory workers indicates they are more likely to develop a condition called Raynaud’s phenomenon, if they are exposed to solvents such as toluene or xylene. This raises concerns they could then have further serious [health](#) complications later in life,” says lead researcher Gordon Purdie.

This is the first ever research to show an occupational health hazard involving solvent use and Raynaud’s phenomenon (RP). Other studies overseas have shown similar solvent associations, but not with people exposed to solvents at work.

Raynaud’s phenomenon is vasoconstriction, or the narrowing of blood vessels in the hands and other extremities, and is characterized by pain, colour changes and tautness or fullness of the fingers or toes. Raynaud’s phenomenon usually only occurs in cold conditions.

For some people it may be a symptom or precursor of scleroderma, a rare connective tissue disease affecting multiple systems in the body and mainly amongst women.

The mainly female laboratory workers (79%) who used solvents in this study had higher rates of severe RP. Those who had worked with xylene

or toluene doubled their risk of developing severe RP.

It appears that lab workers who worked with acetone or chlorinated solvents, combined with xylene or toluene, also doubled their risk of developing RP. Risk of developing severe RP was even greater, in fact nine times.

“I am concerned that 75% of those who worked with xylene or toluene handled wet sample slides without gloves. The majority had done so daily for over a decade,” says Purdie. “Absorption through the skin is a classic way for solvents to have a negative impact on health.”

Purdie says the study also found no difference in severe RP rates between the general population and those lab workers who had not used solvents in their work.

He says this study highlights the need to minimise exposure and be careful in handling solvents in medical laboratories and other workplaces.

Co-author and Senior Lecturer in Rheumatology at the University of Otago, Wellington, Dr Andrew Harrison, says: “This is the first study to demonstrate a link between laboratory worker [solvent](#) exposure and symptoms of autoimmune connective tissue disease and has important implications for workplace health and safety.”

Dr Harrison recently presented this study at the Australian Rheumatology Association Scientific Meeting in Brisbane.

Provided by University of Otago

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