

World-first study proves low-cost home modifications prevent falls

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(Medical Xpress)—Falls in the home could be reduced by a quarter according to the results of a new study just published online in top international medical journal *The Lancet*.

A community trial conducted by the University of Otago, Wellington's He Kainga Oranga/Housing and Health Research Programme in the Taranaki region has shown that low-cost [home](#) repair and modifications effectively reduce home hazards.

Lead author Associate Professor Michael Keall says that with more than a million medically-treated injuries happening annually in and around homes in New Zealand – most of them falls - the results of this study are important for efforts to reduce injuries here and internationally.

Between 2009 and 2013, He Kainga Oranga employed a local builder to carry out minor housing repairs, typically costing \$300 to \$600. Work was initially carried out on 436 houses in a randomly selected intervention group. After the trial was over, 406 control houses received similar repairs so all study participants benefited from the intervention, Keall says.

All participants in the study lived in owner-occupied houses in Taranaki which had been constructed before 1980 and had recently received government-subsidised home insulation retro-fitted by Better Homes. At least one person in each household was a holder of a community services card.

The research team looked at whether the intervention reduced ACC claims for injuries from home falls. Results showed an estimated 26% reduction in the rate of injuries caused by falls at home per year in those houses where modifications had been made.

For injuries judged to be most relevant to the modifications, a 39% annual reduction in injuries was found.

Previously there has been sparse evidence showing the safety benefits of home modifications, Keall says.

"In view of the large injury burden posed by falls at home, the results of the study have important implications for the design of effective prevention programmes focused on the home environment," he says.

"Our findings suggest that an environmental health approach to injury prevention – focusing on making changes to the home environment rather than trying directly to change behaviour – will prevent an important proportion of deaths, suffering and cost from [injury](#) in New Zealand."

The study shows that a national programme of government-funded safety modifications to houses would be feasible and would save the taxpayer money, Keall says.

"Injuries from falls pose a major burden to individuals and whanau, and impede productivity and economic growth. Our study shows that home modifications at an average cost of \$564 per house can prevent falls. This provides the basis for a package of repairs and suggests we need to invest nationally to improve home standards."

Modifications in the trial included: handrails for outside steps and internal stairs; minor repairs and high-visibility slip-resistant edging for outside steps; repairs to window catches; grab rails for bathrooms and toilets; adequate outside lighting; fixing lifted edges of carpets and mats; non-slip bathmats; and slip-resistant surfacing for outside surfaces such as decks.

Co-author Professor Philippa Howden-Chapman points out that New Zealand and Sweden are the only countries to have a no-fault accident compensation scheme that creates incentives to prevent injuries, rather than waiting until people injure themselves.

"The ACC claims system also enables us to be sure that we have an accurate record of the injuries that occur, whether they're in the home or occur in another setting. So we can be very sure that the relatively modest repairs and preventive measures we've made to the participants' homes are very effective in stopping people falling and hurting themselves in their homes. It's certainly an effective way of saving tax payers' money."

The trial was called the Home Injury Prevention Intervention (HIPI) study. It was funded by the Health Research Council and has been published online in *The Lancet*.

Provided by University of Otago

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