

New Zealand's Injury Prevention Research Unit: reducing sport and recreational injury

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The Injury Prevention Research Unit was established in 1990 to reduce the incidence, severity and consequences of injury. Research into sport and recreational injury is one of five major areas of research being undertaken. National data sources have been used to estimate the overall size of the problem and to describe the nature and circumstances of injury associated with a variety of sport and recreational activities. Analytical studies are now being undertaken to identify significant risk and protective factors. Research activity is being directed toward the development, implementation and evaluation of preventive measures.

Keywords: Epidemiology, prevention, recreation

The recognition that injury was a leading contributor to mortality and morbidity in New Zealand¹ led to the establishment, in 1990, of the Injury Prevention Research Unit (IPRU) at the University of Otago. It is funded jointly by the Health Research Council of New Zealand and the Accident Rehabilitation and Compensation Insurance Corporation (ACC), administrator of New Zealand's compulsory 'accident' compensation and rehabilitation scheme². Its primary aim is to undertake research that will contribute toward reducing the incidence, severity and consequences of injury in New Zealand. Research on sport and recreational injury is one of five major areas of research being undertaken by the IPRU³.

Initially the IPRU was involved with describing the nature and extent of the injury problem, using existing data sources. New Zealand is comparatively well placed in this regard, in that – in addition to maintaining a national record of injury fatalities⁴ – it is the only country which maintains a national record of all hospital admissions for injury⁵ and also a national record of compensated claims for medical expenses, rehabilitation, loss of earnings and other costs to individuals sustaining injury⁶. Nevertheless it remains difficult to identify the full extent of injury associated with sport and recreational activity. However, the available data sources suggest that there are on average seven fatalities, approximately 4500 hospitalizations and 92500 emergency depart-

ment attendances each year⁷. In its 1992 financial year, the ACC⁶ paid out over NZ\$98 million in compensation for sports-associated injuries, including NZ\$33 million on 26 183 new claims made in that year.

In addition to estimating the overall size of the problem, attention has been paid to describing the nature and circumstances of injury associated with several specific sporting and recreational activities including injuries from playground equipment^{8,9}, trampoline-related injuries¹⁰, and ankle injuries in sport (particularly netball)¹¹. Other research, not confined to sport and recreational activities, has examined cycling¹², motorcycling¹³, horse-riding¹⁴, injuries at school¹⁵, facial fractures¹⁶ and spinal cord injuries¹⁷.

The IPRU is also undertaking a number of analytical studies aimed at identifying risk and protective factors for a variety of sport and recreational activities. An investigation of fall-height and impact-surface as risk factors for injury in falls from playground equipment, using a case-control design, is nearing completion¹⁸. The current major analytical study, known as the Rugby Injury and Performance Project (RIPP)¹⁹, is using a prospective cohort design, involving 356 players, to identify risk factors and protective mechanisms for injury in rugby. As well as being New Zealand's 'national' sport, rugby (union) has the highest injury incidence of any sport in the country⁷. Finally, while the role of lifestyle factors in disease aetiology has received considerable attention, this has been less the case for injury. The IPRU is undertaking research aimed at determining the significance of lifestyle factors for a variety of injury outcomes, including sport and recreational injury, as part of two major cohort studies known respectively as the Dunedin Multidisciplinary Health and Development Study (DMHDS)²⁰ and the Auckland Blood Donor Study (ABDS). The DMHDS involves a cohort of 1037 young adults born in Dunedin in 1972–1973, who have been assessed at regular intervals since the age of 3 years and have provided much valuable information on injury experience^{21,22} and exposure to risk^{23–25} during the formative years. The use of protective behaviours in high-risk sports will also be investigated in this study. Although only at the pilot stage, the ABDS is expected to involve approximately 50 000 participants recruited through blood donor services in Auckland, New Zealand's most populous region.

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While most of the research described above has used epidemiological methods, the scope of the IPRU's research is expanding to include other disciplines such as health economics, biomechanics, rehabilitation and health promotion. Collaboration with other agencies is also playing an increasing role in the IPRU's activities. The IPRU is well placed in this regard, with Dunedin being home to New Zealand's only school of physical education and to the national secretariat of the New Zealand Federation of Sports Medicine.

Finally, it is important to note that the IPRU's research activity is directed toward the development, implementation and evaluation of measures that will bring about a reduction in the incidence and severity of injury in New Zealand. In some cases, such as the research on playground and trampoline injuries, this involves input into the development of safety standards. In others, such as the study of rugby injuries, it involves close collaboration with the sport in interpreting the research findings and in developing preventive measures that will be acceptable to players, coaches and officials.

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