Research of Injury Risks in Rugby Union

Injury Research

The ARU and IRB funded a series of research projects that investigated injury risks in rugby union:

- **Rugby Headgear Study 2002-2003**
- **Rugby Union Injury Surveillance Study (RUISS) 2000-2008**
- **Rugby Pathways Study 2009-2010**

These projects were conducted by an independent research team within the Faculty of Science at the University of New South Wales.

The purpose of injury research is to identify injury patterns within community rugby and understand more about such factors as the number of injuries occurring, the type of injuries, and how they occur. This information is valuable to inform possible intervention strategies and minimise injury for particularly common or severe injuries in rugby.

Rugby Union Injury Surveillance Study (RUISS)

The RUISS study was the major injury research project undertaken by the ARU for the following levels of play:

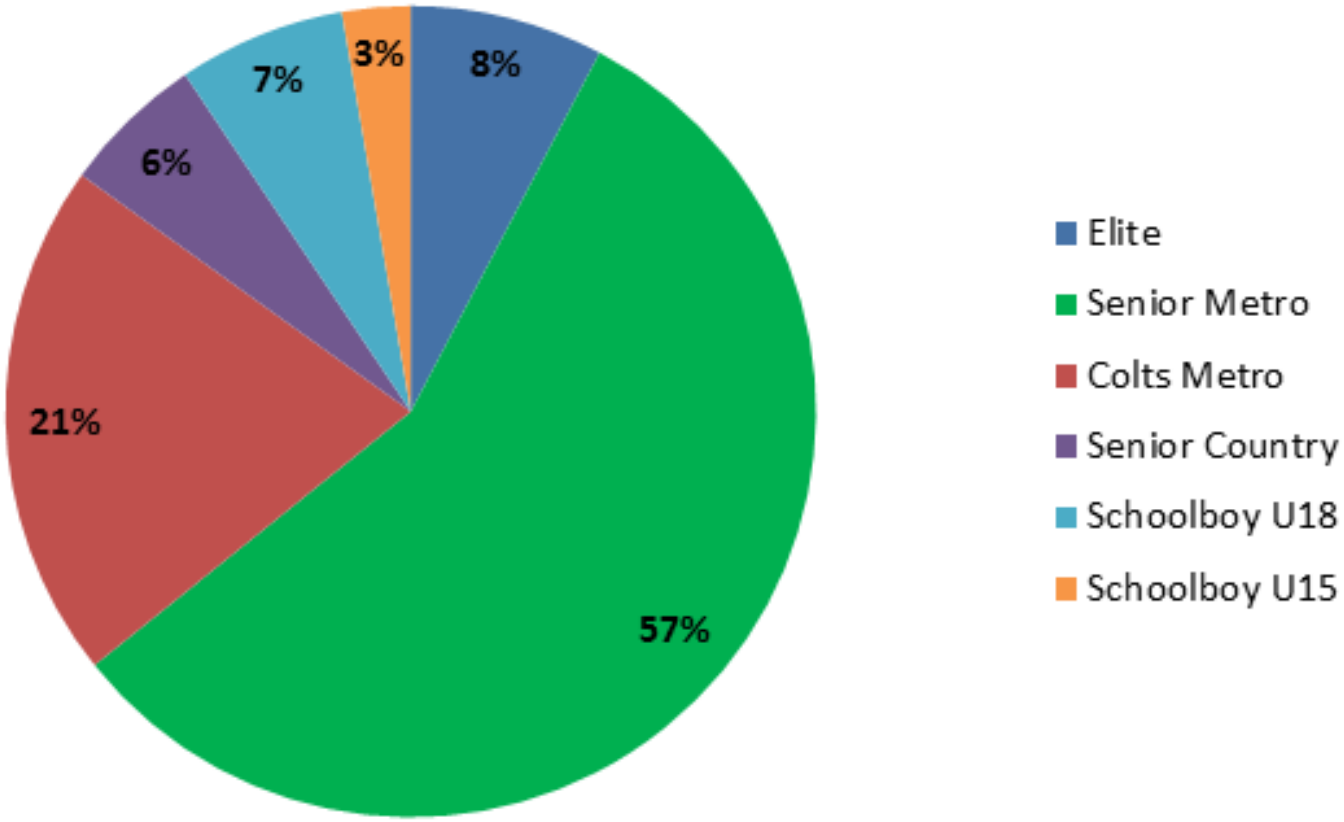

Figure 1: Level of play as a proportion of the RUISS cohort data consolidated for a 5 year period (2004-2008).

Game Event Leading to Injury

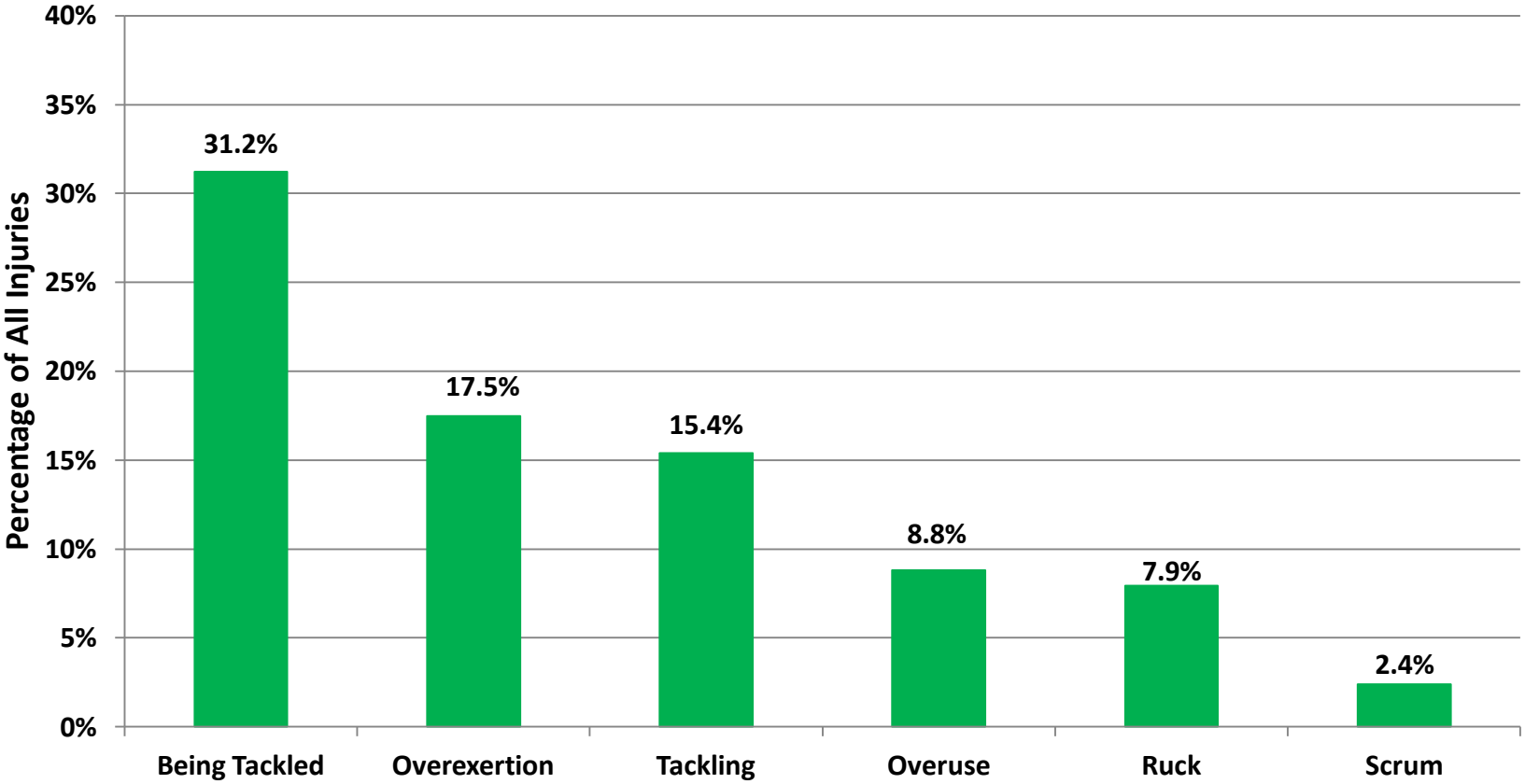

Figure 2: Game event leading to injury (consolidated RUISS data from 2004 to 2008 for all playing levels). Does not include injuries from unknown events (approximately one third).

Game Event Leading to Injury

Key findings and implications:

- **The TACKLE (BEING TACKLED and TACKLING another player, combined) is the single event that accounts for the largest proportion of injury (46.6%) across all levels of play.**
- **BEING TACKLED is the most common cause of injury across all levels of play.**
- **The BALL CARRIER is approximately twice more likely to be injured than the TACKLER.**
- **Teaching correct tackling technique for both the BALL CARRER (receiving a tackle) and the TACKLER is critical and a prime focus of coaching.**
- **OVEREXERTION injury (e.g. hamstring strains) is the leading cause of "non-contact" injury.**

Nature of Injury

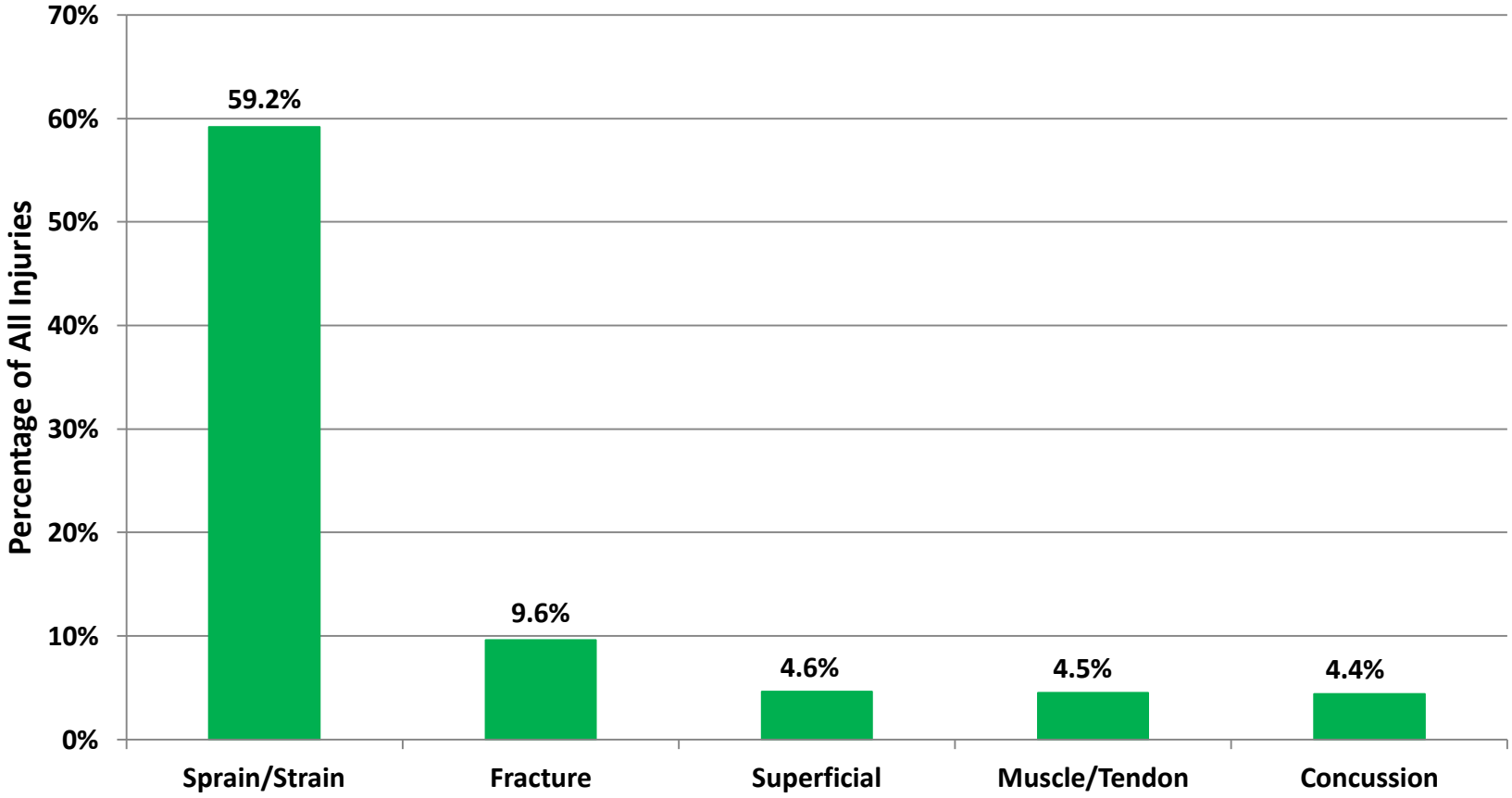

Figure 3: Nature of injury (consolidated RUISS data from 2004 to 2008 for all playing levels).

Nature of Injury

Key findings and implications:

- **Prevention of SPRAINS and STRAINS remain a priority.**
- **Warm-up and cool-down: critical for both training and matches.**
- **Compliance with IRB Concussion Guidelines for return-to-play following a CONCUSSION is crucial.**
- **Cases of SPINAL CORD INJURY occurring in rugby union are rare.**

Injured Body Region

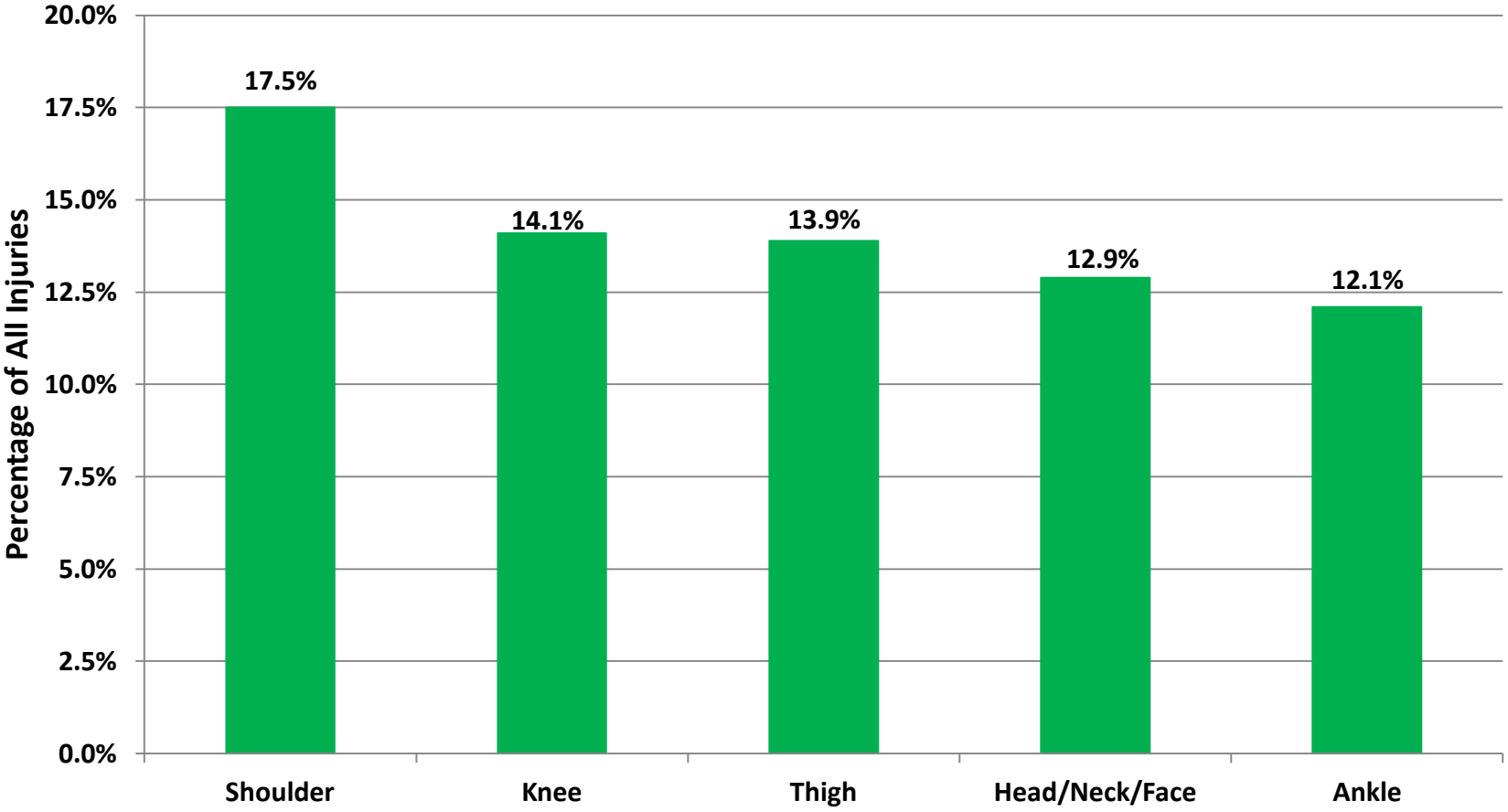

Figure 3: Injured body region (consolidated RUISS data from 2004 to 2008 for all playing levels).

Injured Body Region

Key findings and implications:

- **The SHOULDER, LOWER LEG and HEAD/NECK/FACE regions are the most commonly injured body regions.**
- **SHOULDER INJURIES are mainly sustained during the TACKLE (both BEING TACKLED and TACKLING another player).**
  - **Shoulder pads are unlikely to protect the SHOULDER during a TACKLE.**
- **LOWER LEG INJURIES are mainly sustained whilst BEING TACKLED.**
- **HEAD/FACE/NECK INJURIES are mainly sustained during the TACKLE (both BEING TACKLED and TACKLING another player).**
- **Head placement and body height are critical in avoiding HEAD/FACE/NECK INJURY during the TACKLE (BEING TACKLED and TACKLING another player).**

Level of Play

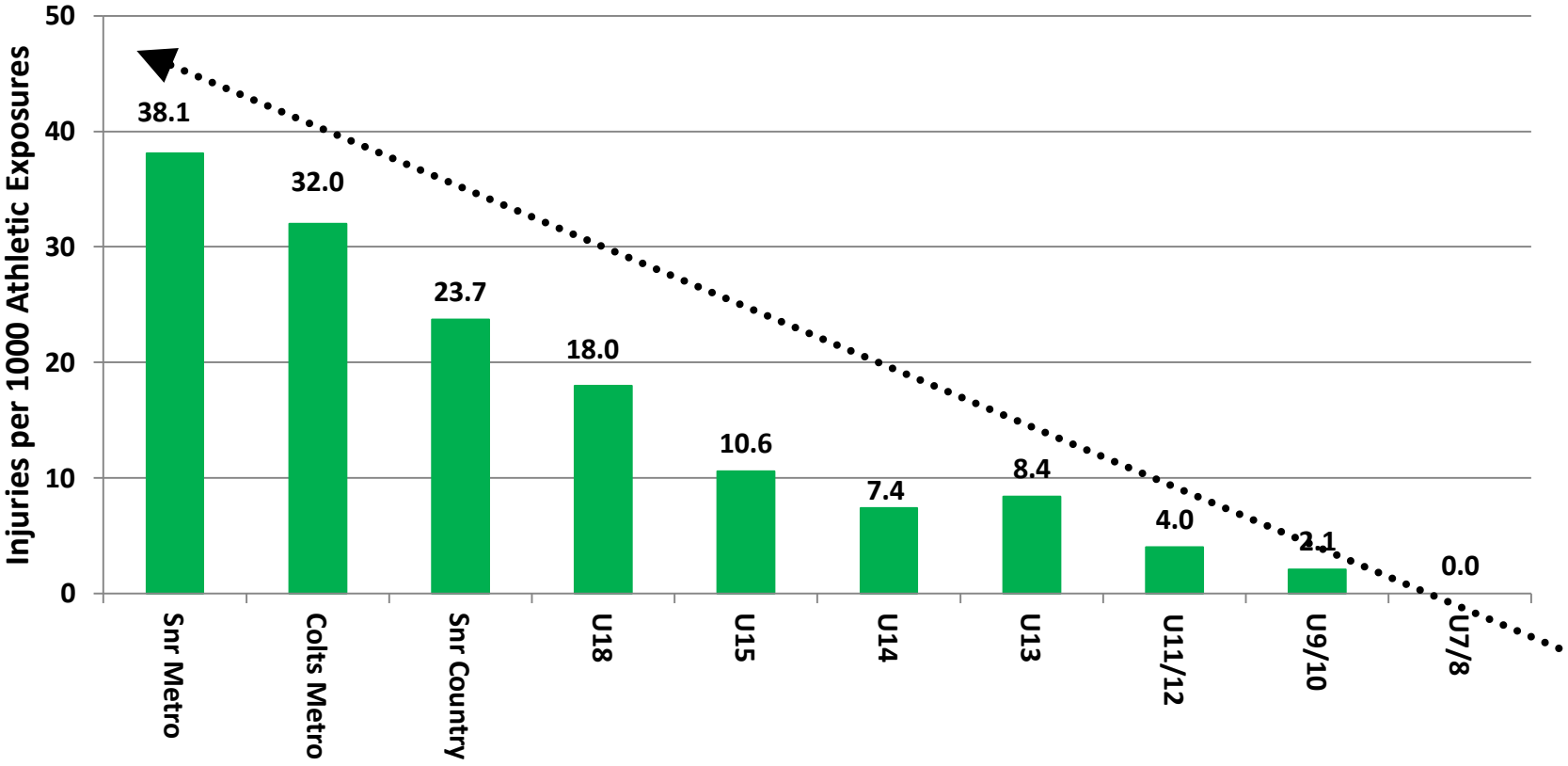

Figure 3: Injury incidence for levels of play, presented as "injuries per 1000 athletic exposures", combined RUISS 2004-2008, Rugby Headgear Study, Rugby Pathways Study.

Level of Play

Key findings and implications:

- **Injury incidence increases with age and level of play.**
- **There are very few injuries in the U7/8, U9/10 and U11/12 age groups.**

The SmartRugby Solution

Key findings and implications:

- **The major underlying features of most rugby injuries are poor body positioning and control, which can both be improved by smart training.**
- **The SmartRugby program, therefore, focuses on correct body positioning and technique when performing skills in a range of contact situations.**

  These include: Tackle, Ruck and Maul, Scrum, Lineout and Restart.

Other Research Projects

Rugby Headgear Study (2002-2003)

The effectiveness of headgear in reducing injury in rugby union was investigated by using a randomised controlled trial involving players wearing no headgear, IRB standard headgear or modified headgear with increased thickness and foam density.

It was found that:

- No statistically significant differences in rates of head injury or concussion were found between the three groups.
- No significant protective effects for headgear were observed.

Rugby Pathways Study (2009-2010)

The incidence of injury was investigated for junior and youth rugby union players in the U7 to U14 age groups.

It was found that:

- Most injuries were of minor severity and/or typical childhood injuries;
- Injuries were typically caused by an impact (fall, tackle, scrum);
- The injury rate increased with the age group.

For more information visit

www.rugby.com.au/smartrugby

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