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## **Facts and safety tips for rugby union players**

### **What is Rugby Union?**

- Rugby union is a popular football code, with approximately 120,000 Australians participating.
- The International Rugby Board (IRB) administers the sport and its laws in over 100 countries. In Australia, the game is governed by the Australian Rugby Union (ARU).
- Competitions are played across junior to adult community, from recreational to elite levels such as the national team, the Wallabies.
- The pinnacle event in professional rugby union is the 'Rugby World cup'. This has been held every 4 years since 1987. Australia has been victorious in 1991 and 1999. The last Rugby World cup was held in Australia in 2003 with 20 nations competing.
- Most players are male (90%), and people of most ages participate.
- A game involves two opposing teams, of either 15 players (8 forwards and 7 backs) plus reserves of Sevens (7 a side) and Tens (10 a side).
- Rugby union is a contact sport with repeated anaerobic bursts interspersed with short recovery periods.
- Players require strength, speed, agility, ball handling/kicking skills, and mental skills. Some playing positions require specific skills (e.g. jumping, precision, kicking).
- Carrying, passing, kicking and grounding the ball over the opposing team's try-line are the game's attacking features. Tackling is the main defensive feature.

## **Facts about rugby union injuries**

### **Players at risk of injury**

- There are five main groups of players at varying risk of sustaining an injury. Injury risk decreases through the following groups of players:
  - Professional/elite
  - Men's grades
  - Women's grades

- Schoolboy/schoolgirl grades and children/adolescents involved in organised competitions
- Recreational/social or non-competitive

Injury also varies according to player position.

### Common injuries in rugby union

- Most injuries are classified as “mild/minor” or “severe”.
- In men’s rugby, the lower limb is the most commonly injured site (34-48% of all injuries).
- The upper limb is also frequently injured (15-29% of all injuries).
- The head/face accounts for 14-27% of all injuries.
- Schoolboy rugby and women’s rugby have a higher incidence of injury to the head and face, including concussion, than do other levels of rugby union.
- A higher proportion (33-56%) of injuries occurs during the tackle phase of the game.
- Serious spinal injuries are rare in rugby union.

### Preventing rugby union injuries

- Effective injury prevention involves a host of measures such as:
  - physical preparation (e.g. conditioning, warming-up, stretching and cooling-down);
  - skill and technique development;
  - use of protective equipment;
  - enforcement of game laws;
  - rule/law changes;
  - and the management of general safety issues by administrators, coaches, referees and other personnel.
- The following safety tips apply to all players, irrespective of the level of play.

#### Physical preparation

- Players should undertake physical pre-season preparation during the off-season, and obtain advice on their conditioning program from either a coach or a fitness advisor.
- Players should develop their individual and team skills, with guidance from their coach, before playing in competitive situations.

- It should be kept in mind that mismatches in the areas of size, skill, fitness and experience may all contribute to injury. The greater the physical and skill preparation, the reduced risk of injury.

### Pre-participation screening

- Children, new players and those older than 35 years, should consider undergoing pre-participation medical screening, with a qualified and experienced practitioner (e.g. sports physician or a general practitioner with sports medicine interest).
- Players should be prepared to accept the advice of a sports medicine professional that they should not play if they have a condition that places them at risk of injury.

### Warm-up and cool-down procedures

- A standard warm-up (15-30min) should consist of aerobic activity, stretching and skills practice immediately before a game.
- Players should follow a regular stretching programme to increase and maintain flexibility.
- Players should use correct techniques for regular stretching. Regular checking by a coach or trainer is advised.

### Safety during the game

- Tackling should be the focus of the regular skills training and be progressively introduced to players.
- At the breakdown, players should try to remain on their feet. Training of team play for the breakdown is important, as is the prevention of foul play.
- Correct techniques for de-powering the scrum as specified by the ARU must be followed at all times.
- Mouthguards should be worn at all times during games and practices in which impacts to the teeth and jaw are possible. Players, especially those in more vulnerable positions and higher grades, should choose custom-fabricated mouthguards.
- Mouthguards should be checked every two years. Mouthguards should be replaced if damaged or broken. Replacement should be more frequent for growing children.

- Players should recognise that injuries to either themselves or other players can still occur with the use of protective equipment.
- Injured players should return the favour to play only after appropriate rehabilitation to regain their strength, fitness and mobility.
- Players should only wear correct footwear, as specified by Law 4, which is maintained to allow for optimal training and the rehabilitation of injuries.
- Players with a previous severe injury should consult their sports medicine practitioner about the value of using protective equipment in their individual case.

### **The Role of the Doctor**

- Professional and other representative rugby teams in Australia are generally serviced by doctors who are involved with the Australasian College of Sports Physicians (Sports Physicians). Many rugby doctors, particularly in rural areas, have a medical background in general practice.
- The type of doctor involved and the degree of involvement varies depending on the level of play and resources available.
- The team doctor or doctor on duty should be familiar with the sport of rugby union. The doctor should have a relationship with the coaching staff and other personnel such as the fitness trainer, sports trainer and physiotherapist.
- The doctor should be available to assess injuries. This allows for prompt diagnosis and arranging a management plan to allow safe return to play.
- The doctor is also available to assist with:
  - medical and physical pre-participation screening of players;
  - creation of injury prevention programs
  - input into performance programs for a team, club or school;
  - collection of injury data to assess injury trends and introduce injury prevention programs in the future

## A Summary of 10 Key Points

1. The International Rugby Board (IRB) administers the sport and its laws in over 100 countries. In Australia, the game is governed by the Australian Rugby Union (ARU).
2. Rugby union is a contact sport with repeated anaerobic bursts interspersed with short recovery periods. Players require strength, speed, agility, ball handling/kicking skills, and mental skills. Some playing positions require specific skills (e.g. the scrum, jumping).
3. A game involves two opposing teams, of either 15 players (8 forwards and 7 backs) plus reserves of Sevens (7 a side) and Tens (10 a side).
4. Carrying, passing, kicking and grounding the ball over the opposing team's try-line are the game's attacking features. Tackling is the main defensive feature.
5. Players should undertake physical pre-season preparation during the off-season, and obtain advice on their conditioning program from either a coach or a fitness advisor. Players should develop their individual and team skills, with guidance from their coach, before playing in competitive situations.
6. Most injuries are classified as "mild/minor" or "severe". In men's rugby, the lower limb is the most commonly injured site (34-48% of all injuries). The upper limb is also frequently injured (15-29% of all injuries). The head/face accounts for 14-27% of all injuries. A higher proportion (33-56%) of injuries occurs during the tackle phase of the game.
7. Schoolboy rugby and women's rugby have a higher incidence of injury to the head and face, including concussion, than do other levels of rugby union.
8. A standard warm-up (15-30min) should consist of aerobic activity, stretching and skills practice immediately before a game. Tackling should be the focus of the regular skills training and be progressively introduced to players.
9. Players with a previous severe injury should consult their sports medicine practitioner about the value of using protective equipment in their individual case.
10. Mouthguards should be worn at all times during games and practices in which impacts to the teeth and jaw are possible. Players should recognise that injuries to either themselves or other players can still occur with the use of protective equipment. The use of headgear does not eliminate the risk of concussion, but does reduce the rate of lacerations (cuts).

## Helpful websites

- Australian Rugby [www.rugby.com](http://www.rugby.com)
- International Rugby Board [www.irb.com](http://www.irb.com)
- School of Safety Science, University of New South Wales, Sydney  
[www.safesci.unsw.edu.au/research/biomechanics.html](http://www.safesci.unsw.edu.au/research/biomechanics.html)
- Department of Epidemiology and Preventive Medicine, Monash University, Melbourne  
[www.med.monash.edu.au/epidemiology/](http://www.med.monash.edu.au/epidemiology/)

## 7 Helpful references

- Finch C, Best J, McIntosh A, Chalmers D, Eime R. Research Report; Preventing Rugby Union Injuries, Department of Epidemiology and Preventive Medicine, Monash University. June 2002
- McIntosh A, McCrory P, Finch C, Best J, Chalmers D. Rugby Headgear Study – Final Report 2005. Biomechanics and Gait Laboratory, School of Safety Science, University of New South Wales, Sydney 2052, Australia.
- Chalmers DJ, Simpson JC and Depree R. Tackling Rugby Injury: lessons learned from the implementation of a five-year sports injury prevention program. Journal of Science and Medicine in Sport, 2004.7(1): p74-78.
- Bathgate A, Best J, Craig G, Jamieson M. A Prospective Study of Injuries to Elite Australian Rugby Union Players. Br J Sports Med, 2002; 36: 265-269.
- Best J, McIntosh A, Savage T. The Rugby World Cup 2003 Injury Surveillance Project. Br J Sports Med, 2005; 39:812-817.
- Durie RM, Munroe AD. A Prospective Survey of Injuries in a New Zealand Schoolboy Rugby Population. NZ J Sports Med 2000;28:84-90
- Quarrie KL, Cantu RC, Chalmers DJ. Rugby Union Injuries to the cervical spine and spinal cord, Sports Medicine, 2002; 32:633-653.

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