Sports Specific Safety

Rugby

Sports Medicine & Athletic Related Trauma
SMART Institute

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Objectives of Presentation

1. Identify the prevalence of injuries to rugby players
2. Discuss commonly seen injuries in rugby
3. Provide information regarding the management of injuries seen in rugby
4. Provide examples of venue and equipment safety measure
5. Provide conditioning tips for rugby players to reduce potential injuries
Injury Statistics

- Fractures, dislocations, and head injuries are common occurrences.
- 1997 NEISS estimates that there were 7,757 rugby injuries reported in ERs with 73% of those coming from athletes age 15-24.
- A New Zealand study reported a rate of 20.27 injuries per 1,000 participants in 2001 and 2002 and Australian and British studies reported rates of between 69 and 98 per 1,000 player hours of game play.
- Most commonly injured players are the flanker, inside center, number 8 and number 10.
- Most injuries are sustained in the second half of play.
WHAT IS ALREADY KNOWN ON THIS TOPIC

• Spinal cord injuries, although rare on the basis of exposure per player, are a major cause of serious morbidity and mortality in rugby.

WHAT THIS STUDY ADDS

• The number of permanently disabling spinal injuries in New Zealand rugby has markedly decreased following the introduction in 2001 of RugbySmart, a nationwide injury prevention program

• This study exemplifies the benefit of educational initiatives in injury prevention and the need for comprehensive injury surveillance systems for evaluating such initiatives in the sport.

BMJ 2007;334:1150-3
Commonly Seen Injuries

- Concussion
- Ligament sprains – Knee (ACL and MCL) and Ankle
- Lacerations and bruises
- Muscle strain
Concussion

- Mechanism – direct blow to the head or a severe whiplash-type movement
- Acute management – removal from activity; all concussions should be evaluated by a medical professional (ATC, MD, EMT) to determine when the athlete may return to activity.
- Prevention techniques – Headgear is available though studies are not conclusive as to whether it prevents concussive injury. The best prevention is to maintain proper strengthening and stretching of the neck and upper extremities.
Ligament Sprain

- Mechanism – Can be caused by a fall, contact with another player, or a misstep. Ligaments connect bone to bone so any movement that moves the bones away from each other can result in a sprain. The most commonly injured ligaments in rugby are of the knee (ACL, MCL), ankle, and thumb.
- Acute Management – RICE – rest, ice, compression, elevation. If swelling or pain is severe, physician evaluation is recommended to rule out the possibility of fracture.
- Prevention Techniques - Proper overall strengthening, stretching, and warm-up is important. Sport specific agility training can also be beneficial. Some athletes chose to use bracing and taping to help prevent ligament strains but it should be noted that there is no 100% foolproof way to prevent injury.
Lacerations and Bruises

• Mechanism – Contact with another player or playing surface.
• Acute Management – Control any bleeding using the appropriate precautions (gloves and gauze). Some lacerations (cuts) may require stitches. If the wound edges are pulling apart or if there is a significant amount of bleeding that cannot be stopped the athlete should be referred for further medical care. Bruises should be treated with ice (no heat!) and light stretching. Some severe bruises to the upper leg and thigh may require the athlete to be on crutches and should be referred to a physician.
• Prevention Techniques – There is no sure fire way to prevent these injuries from occurring. Proper use of equipment and fair play of the game can help to limit their occurrence.
Muscle Strain

• Mechanism – Commonly called a “pulled” or torn muscle, a strain generally occurs when the muscle becomes overstretched and tears due to a sudden increase in force on the muscle (ex. lifting a heavy object or increasing or decreasing speed quickly). Improper warm-up and poor flexibility contribute to muscle strains.

• Acute Management – Rest, Ice, Compression, Elevation. If severe pain, significant limitation of movement, or bruising occur, the athlete should seek medical attention.

• Prevention Techniques – Proper overall strengthening and stretching, maintain good flexibility, and participate in a good warm-up prior to activity.

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Field/Playing Area Safety

• The playing field should be inspected prior to games or practices for debris (ex. Glass, plastic), holes or divots, or any abnormalities of the field that may cause injury.

• Weather conditions should be monitored. If lightning strikes within 5 miles (30 “one one thousand” counts), the field should be cleared and athletes and spectators should seek appropriate shelter.
Field/Playing Area Safety

• Lightning
  – Flash to Bang or 30-30 Rule
    • If there is 30 seconds or less between the time that you see lightening and hear thunder then seek shelter immediately.
    • Wait at least 30 minutes after the last thunder is heard before resuming play. If you see further thunderstorm clouds building, you should wait at least another 30 minutes.
    – Seek shelter in an enclosed vehicle, restroom, or other nearby building. Golf carts, trees, or other “shaded” locations are not safe.

• Sun
  – Don’t forget sunscreen.

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Equipment Safety

- Athletes and coaches should take care to make sure that all personal and team equipment is properly maintained and meets the appropriate safety guidelines.
- Personal equipment can include cleats, lightweight shoulder protectors, lightweight protective headgear, shin guards, mouth guard, and mitts (fingerless gloves).
- Any clothing or equipment that has been soiled with blood must be removed or properly sanitized before the player may return to the field.
- Jewelry should not be worn at any time.
- Equipment will be inspected by the referee prior to the start of the game and any items not meeting the proper safety standards cannot be used.

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Conditioning Tips to Avoid Injury

• Rugby is a very physical game so proper conditioning is vital.
• Cardiovascular fitness should be maintained with distance running or fast paced play during practices.
• A good overall strengthening program should be maintained.
• A proper warm-up (meaning the heart rate should be elevated and the athlete begins to break a sweat) should then be followed by stretching with the focus being on the hamstrings, quadriceps, calves, back, and shoulders. Stretching is also beneficial at the end of a practice or game.
• Sport specific drills can be used to increase performance as well as decrease the risk of some injuries. These can include plyometrics, agility training, and drills designed to mimic rugby specific moves such as those seen in a line-out or scrum.

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Heat Illness
Prevention of Heat Illnesses (NCAA)

• Allow for 7-10 days to acclimatize
  – 80% acclimatization

• 2 months for full acclimatization
General Information

- White → Reflects 30% of the heat
- Dark → Reflects 18% of the heat
  (skin or clothing)
- Male: Lower % body fat
- Female: Higher % body fat
  - Core temperature must get higher before sweating occurs

- Core temperature: for every one degree of increased core temperature – there is an increase in heart rate (about 10 beats/1 degree)

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General Information
Body Temperature

- Sweat increases
- Blood is pushed towards the skin
- Respiration increases
- Desire for food decreases
- Desire for fluids increases
- Desire for salt increases
- Muscle contraction decreases (willingness)
Heat Illnesses - Causes

• Dehydration
  – 60+ % of total body water
  – Sugar in the stomach prevents rehydration
  – Observe until urination occurs (key)

• Electrolyte Imbalance
  – Depletion occurs over a period of 2-5 days
  – Ion-chemical charge
Types of Heat Illnesses

- Heat rash
- Heat syncope
- Heat cramps
- Heat exhaustion
- Heatstroke

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Fluid Replacement

• **Before exercise:** drink 17-20 oz. 2-3 hrs prior.
  
  17-20 oz 10-20 min. prior to exercise.

• **During exercise:** 7-10 oz. every 10-20 min.

• **After exercise:** within 2 hrs, drink enough to replace weight loss from exercise.
MRSA
Methicillin-resistant Staphylococcus aureus

*The Silent Killer*

Ways to combat MRSA:
• Keep hands clean
• Shower immediately after exercise
• Keep cuts and scrapes covered
• Wear clean exercise clothes
• Don’t share razors or other personal items
• Notify the athletic trainer of any unusual sores

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If you remember nothing else….

• Rugby is an intense and physical game and preparing your body properly will give you the best chance of success as well as limiting your risk of injury.
Summary

• Practice! It is the only way to really improve all those rugby specific drills.
• Engage consistently in a good strengthening and stretching program.
• Make sure your equipment meets the appropriate safety standards for your league.
• RICE(R)! Hopefully you won’t need it but Rest, Ice, Compression, Elevation, (Refer to a Doctor if you have severe pain or swelling).
• The better you take care of yourself, the sooner you will be able to return to the game!