

In some sports it is advisable to use protective equipment to protect players against injury. Forms of protective equipment include foam padding around goal posts (e.g. in rugby union, rugby league and netball) and practice equipment such as tackle suits, tackle bags and crash pads in the rugby codes as well as personal protective equipment such as mouthguards.

The Aims and Benefits of Protective Equipment

Protective equipment is designed to protect against injury. To be beneficial to players, personal protective equipment must provide the protection intended, fit well, be comfortable and not interfere with the activities in the particular sport i.e. it should not restrict movement. Personal protective equipment must also be worn consistently to gain maximum benefit. For example, mouthguards in rugby need to be used during practice games as well as competition games. Reinforcement by parents and coaches is an important way of ensuring that young players wear the appropriate safety gear.

An outcome of wearing protective equipment may be feeling more confident and secure.^[1] This can change techniques and lead to more aggressive play that changes the nature of the game and can offset some of the protective gains.^[2] Protective equipment should aim to reduce the risk of injury to the wearer without creating other injury hazards to either the player or the opponents, and without altering the nature of the sporting activity.

Best Practice for the Protective Equipment Process

When selecting protective equipment it is advisable to:^[1,3,4]

- Purchase equipment of reputable quality (New Zealand Standards approved if possible)
- Not use worn-out, damaged or defective equipment (check condition regularly)

- Avoid radical customisation as this may reduce the effectiveness
- Avoid sharing equipment between different-sized players
- Ensure you comply with the laws of the sport.

MOUTHGUARDS

Mouthguards should be worn during activities where there is a risk of collision with a person or object. A properly fitted mouthguard can absorb force from an impact, cushion contact between the upper and lower teeth and keep the upper lip away from the sharp edges of the teeth. These actions can reduce dental and oral soft tissue injuries such as dislocations of the jaw.^[5] Complaints about mouthguards such as nausea, breathing difficulties and hindrance of speech can generally be overcome through correct fitting and a period of adaptation.^[5] Customised mouthguards have been shown to absorb greater impacts than “boil and bite” mouthguards, however both will provide adequate levels of protection.^[5] Ensure mouthguards are not shared as there may be a risk of transmission of diseases such as hepatitis.

HEADGEAR

Different types of headgear protect against different injuries. In general, headgear has been shown to reduce the force magnitude and increase the time of impact, reducing the risk of injury. Current headgear models for rugby union and rugby league will not reduce the incidence and severity of concussion injuries.^[6] They do however prevent lacerations and abrasions to the scalp and ears. Hard headgear used in other sports, such as cycle helmets, motor cycle helmets, and horse riding helmets, have been reported to reduce the risk of head injury. For example, cycle helmet use was shown to reduce the risk of head injury by 85%, brain injury by 88% and severe brain injury by at least 75% in one study.^[7] Headgear should be well fitting and comfortable to wear.

FOOTWEAR

Footwear should be suitable for the activity and fit the player well. Shoes should provide cushioning and support and be constructed from materials suitable for the demands of the sport. Good footwear will provide increased protection from impact and improve traction. Boots will also provide protection against rolled ankles during rapid changes of direction.^[8]

BRACING AND TAPING

Bracing and taping (strapping) are used to support joints by providing external mechanical restriction to large ranges of joint motion and by providing increased proprioceptive feedback to the muscles and ligaments. Tape has limited effectiveness in providing protection as the support it provides is reduced after approximately 20 minutes of exercise owing to sweating and stretching of the tape. Tape needs to be applied correctly to be effective and can lead to skin irritations and discomfort on removal.^[9] Specially designed braces, with appropriate mechanical support, should be considered as an alternative to tape. Braces are reusable, easy to apply and remove, cause little or no skin irritation, provide more mechanical support than tape and are more cost effective in the long term compared with taping. A player whose joint does not have the strength required for the rigours of the game should not be encouraged to play using only strapping tape to compensate for the joint insufficiency. Taping should never be used to allow a player to participate while injured.

PADDING

Padding is any material with impact absorption qualities that is applied to vulnerable body parts to minimise the effects of direct contact on soft tissues.^[10] Padding should only be used for injury prevention, not to gain advantage e.g. to allow more aggressive play and a higher impact speed. There is little evidence that shoulder pads, common in the rugby codes, decrease the incidence of severe shoulder injuries such as dislocation, but good fitting and well designed padding appears to reduce the effect of soft tissue bruising from direct impact.^[10] Shin guards, common in soccer, rugby and hockey, are effective in reducing the impact of forces directed at the shin region and therefore reduce the risk of bruising injuries.^[10] In some sports it is

advisable to wear protective equipment appropriate to the player's gender. For example chest protection for women in contact sports such as rugby and boxing, or "boxes" for men in sports such as cricket.

EYEWEAR

Where practical, protective eyewear should be worn to reduce the risk of impact injuries from fast-moving objects such as balls and racquets. Protective eyewear is available that does not detrimentally affect the visual field.

Further guidelines on protective equipment can be found in the "Protective Equipment" section of the ACC *SportSmart Coaches' Kit*.

References

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