10 INJURY MANAGEMENT

Injury management involves identifying, treating and recovering from injury. It includes emergency procedures, sports first aid and injury rehabilitation. Correct injury management speeds up players' recovery and reduces the likelihood of ongoing problems.

The Aims and Benefits of Good Injury Management

Good injury management aims to prevent additional pain or discomfort to the individual and minimise the consequences of the injury.[1] The benefits include reduced acute symptoms (pain, swelling, etc) and a faster recovery. Where possible, and much of this will depend on the nature of the sport, a person specifically trained in sports injury management (not necessarily a doctor or physiotherapist) should be part of the management team for this purpose. Clear communication between players, coaches and health care providers is required.

Effective injury management is especially important for children. Children's bodies are still growing and developing. Injuries that are not investigated thoroughly can lead to problems in later life. With proper treatment and supervision however, injuries in children tend to heal quickly. The early, accurate diagnosis by a medical professional* of any injuries such as fractures that may involve active bony growth plates or joints is of specific importance. Failure to detect these injuries may lead to permanent deformity.[2]

Best Practice for the Good Injury Management Process

An injury needs to be evaluated as soon as possible using D.R.A.B.C. (Danger, Response, Airway, Breathing, Circulation) to determine its severity. If emergency treatment is not needed, T.O.T.A.P.S. (Talk, Observe, Touch, Active Movement, Passive Movement, Skill Test) is an effective tool for further assessment. The R.I.C.E.D. procedure (Rest, Ice, Compression, Elevation, Diagnosis) should be followed for soft tissue injuries (sprains, strains and bruises – the most common sports injuries), consumption of alcohol should be avoided and the injury should be medically assessed. Players should only return to their sport when they have been completely rehabilitated. If possible, people trained and experienced in providing sports first aid and advice if severe injury occurs should be available during training and competition. Procedures should be in place to deal with injuries (e.g. allow access to facilities/grounds for ambulances), to record injuries and to follow up injured players.

Assessment of Injury

Use T.O.T.A.P.S. (Talk, Observe, Touch, Active Movement, Passive Movement, Skill Test) to remember the steps in effective injury assessment:

- **Talk:** Ask the player what happened. Where does it hurt? What kind of pain is it?
- **Observe:** Look at the affected area for signs of injury: redness, swelling or other abnormalities compared with the opposite side
- **Touch:** Lightly touch the area and feel if it is warm or if pain is induced
- **Active Movement:** Ask the player to move the injured part without assistance
- **Passive Movement:** If the player is able to move the injured part, attempt to move the injured area through a full range of motion
- **Skill Test:** If none of the above procedures has resulted in pain the player should stand and show they have the ability to perform the game's skill(s). If an injury is identified the player should be removed from the activity and treated.

The above guidelines do not apply for assessment of head injuries/concussion or suspected spinal injury. In the case of suspected spinal injury, the player must be kept lying flat and immobile until professional assistance is available. For information on how to assess concussion, refer to the injury prevention part of the ACC website at www.acc.co.nz/sportsmart.

* such as a doctor or physiotherapist

Acute Injury Management

Injuries lead to damage to soft tissues (muscle, tendons, ligaments, capsules, fascia and skin). This results in an abnormal fluid build-up, which is visible as swelling. The increased pressure caused by swelling can inhibit healing and cause pain and muscle spasm. An effective way of reducing the amount of bleeding at the site of injuries such as muscle strains, ligament sprains and bruises is to apply the R.I.C.E.D. procedure and avoid H.A.R.M-ful factors.

- **Rest** minimises further damage. Avoid as much movement of the injured part as possible.
- **Ice** is an effective way to reduce pain and spasm and minimise the swelling caused by bleeding.[3] Table 5 outlines guidelines for the use of ice. Wrap ice in a damp towel – do not place ice directly onto bare skin.
- **Compression** helps to reduce bleeding and swelling. It decreases the blood flow by applying pressure to the blood vessels close to the injury site. Care must be taken to ensure bandaging is not so tight that it cuts off circulation.

PRINCIPLES OF ICE TREATMENT

- Apply ice as soon as possible after injury.
- Apply ice for 20 minutes every two hours.
- Continue this frequency for the first 48 hours.
- Re-use ice during rehabilitation if any swelling or pain occurs.

table 5: GUIDELINES FOR THE USE OF ICE

- **Elevation** of the injured area above the level of the heart will reduce the blood supply that it receives and swelling will be reduced.
- **Diagnosis** Consult a medical professional, especially if you are worried about the injury, or if the pain or swelling gets worse. If the pain or swelling has not gone down significantly within 48 hours, also seek treatment.

Avoid the following H.A.R.M-ful factors within the first 72 hours after an injury:[4]

- **Heat** increases the bleeding within the injured tissues. Hot baths and showers, saunas, hot water bottles, heat packs and liniments should be avoided
- **Alcohol** should not be consumed as it increases the bleeding and swelling around soft tissue injuries. Repair and regeneration of tissues and rehabilitation of injuries can only begin after the swelling has disappeared. Increased bleeding and swelling consequently lengthens recovery time. Alcohol masks the pain of an injury (an important indicator of injury severity) and can delay players in seeking treatment
- **Running** or exercise of the injured part can cause further damage and increase the severity of acute injury. Activity should not be resumed within 72 hours unless approved by a medical professional
- **Massage** causes an increase in bleeding and swelling and should be avoided in the initial stages of an injury.

Professional Advice and Rehabilitation

Advice from medical professionals on the effective treatment and rehabilitation of injuries is beneficial and should be used. Doctors, physiotherapists and rehabilitation experts are skilled and experienced in sports injury and care and can help make the recovery process as effective as possible. Any limitations on specific sports training required for rehabilitation should be discussed, along with suitable training alternatives.

Rehabilitation is the restoration of an injured person to the level of physical function they had before the injury. A thorough rehabilitation process is important because it decreases the risk of future/recurrent injury. Rehabilitation aims to first restore the functional abilities (strength, flexibility, endurance, speed, proprioception) and then restore the sport-specific abilities (e.g. jumping, kicking, throwing). Regaining confidence to return to play should also be part of the rehabilitation process. These psychological factors may need to be addressed specifically.

10. INJURY MANAGEMENT cont.

Return to Play

Only when rehabilitation has been successful and confidence returned should players consider returning to training. In some cases, a player will have a difficult time coming to terms with their injury, and will deny that they are unfit to play. This needs to be managed carefully to ensure that players only return to training when they are absolutely ready to.

A graded return to activity provides the ideal means for this. If the following criteria are satisfied players should be able to return to competition safely:

- No pain, swelling and stiffness of the injured part
- 90-100% pain-free range of motion
- 90-100% of the pre-injury strength
- 90-100% of the muscular and cardiovascular endurance
- 90-100% balance and proprioception
- The ability to perform all the skills and movements of the sport
- Adequate confidence to face the mental demands of the sport.

These variables can be assessed by comparing the results of simple tests such as the beep test with pre-season screening test data or by consulting professionals such as sport scientists and physiotherapists who can give specific tests. A score within 10% of that achieved when fit is acceptable for return to competition.

Note: There is a natural sensation of discomfort associated with damage to muscle, ligament, tendon or bone. Failure to observe this important message, or to mask it with drugs (such as painkillers) in order to return to play sooner, is likely to result in further damage and an even longer, complicated period of rehabilitation. Painkillers should never be used to enable an injured player to return to play before they are ready to do so.

Practical guidelines on injury management can be found in the "Injury Management" section of the *ACC SportSmart Coaches' Kit*.

References

1. **Anderson, M.K. and Hall, S.J. *Sports Injury Management*. Williams and Wilkins: Philadelphia, 1995.**
2. **Gerrard, D. The young athlete: children and physical activity. *Sports Medicine NZ*, Dunedin 1999.**
3. **LeBlanc, K.E. To ice or to heat? *Running and Fitness*, 1992, 10(1): 5.**
4. **Sports Medicine New Zealand. *Sports Medic Course Manual*. Sports Medicine New Zealand (Inc): Dunedin, 1998.**