



### Soft Tissue Injuries

Soft tissues include ligaments, tendons, muscles, fascia connective tissue and to a lesser extent nerves. Often soft tissue injuries can be sustained via a direct blow (contusion or hematoma) usually to muscle or a sprain, strain or tear to ligaments, muscles or tendon. The body responds immediately to such injuries in a predictable manner. This response can be somewhat manipulated to improve healing times and reduce inflammation and pain. The length of time each phase of healing lasts is dependant to a large extent upon the severity of the injury\*.

### Soft tissue Injury Response

Key Phase	*Time after injury	Description
1. Inflammatory Phase	0-96hrs	<ul style="list-style-type: none"><li>• This phase is also called the acute phase</li><li>• When soft tissues are damaged, bleeding occurs and may continue for 48-72 hours depending on the severity of the injury</li><li>• Characterised by pain, heat, swelling, redness and dysfunction</li><li>• The bleeding combined with debris from the damaged tissue form a blood clot/ bruise known as a "hematoma"</li></ul>
2. Proliferative Phase	96 hours to several weeks	<ul style="list-style-type: none"><li>• Healing process commences by "organizing" the clot. This is when collagen fibres and other fibrous tissue are laid down (proliferate) to replace the damaged tissue. Organisation of the clot is the first stage of scar formation.</li><li>• The blood clot is broken down and the swelling starts to decrease. The length of time this takes depends on clot size and the amount of swelling.</li></ul>
3. Remodeling Phase	Several weeks to 6 months	<ul style="list-style-type: none"><li>• The scar tissue will start to strengthen and contract in size therefore shortening the length of the affected tissue, yet it will only ever regain approximately 80% of its original strength.</li><li>• Disorganized collagen fibres realign to better withstand the direction of force applied through the injured area.</li></ul>
4. Maturation Phase	6 months to 2 years	<ul style="list-style-type: none"><li>• The scar continues to increase in strength in response to normal activity stresses</li></ul>

## Treatment

The RICER routine and do no HARM contraindications outlined below are aimed at maximizing the bodies ability to efficiently respond to the injury as well as prevent any further damage beyond the initial trauma.

The aim of management for soft tissue injuries, particularly within the inflammatory phase is to restrict further tissue damage and bleeding. RICER and HARM are extremely important in minimizing swelling, pain and return to normal function as soon as possible.



## RICER Routine

	How	Why
Rest	The injured part should be immobilized and supported	Activity will promote bleeding by increasing blood flow
Ice	The conventional methods are: crushed ice in a plastic bag, wrapped in a wet towel, ice in a Velcro ice pack or frozen peas. Apply ice for 20mins every 2hrs for the first 3 days	Ice reduces: swelling, pain, muscle spasm, secondary damage to the injured area via restriction of surrounding blood vessels
Compression	Apply a firm wide compression bandage over a large area covering the injured part. Modern compression garments can also be useful.	Decreases bleeding, swelling and pain.
Elevation	Raise injured area above the level of the heart at all possible times	Decreases bleeding, swelling and pain.
Referral	Refer to a suitable qualified professional such as a doctor or a physiotherapist at the time of injury if possible for a definitive diagnosis and ongoing care. Return to sport too early or an incorrect diagnosis can cause further injury.	Early referral for a definitive diagnosis to ascertain the exact nature of the injury. Gain expert advice on the rehabilitation program required. Obtain Anti-inflammatory medication.

## No HARM

---

During this initial inflammatory phase (up to 96hrs post injury) it is essential that no HARM is done. This includes:

	Description	Why
Heat	Sauna, spa, hot water bottle, hot shower, deep heat rubs	Increases bleeding
Alcohol	Any alcoholic beverage	Increases swelling
Running	Any form of exercise involving the injured body part too soon	Can make the injury worse by further stressing already damaged tissues
Massage	Massage or the use of heat rubs in the first 48-72hrs	Increases swelling and bleeding

## Physiotherapy treatment

---

Specific treatment protocols following ankle sprain, low back injury, hamstring tear and more are available via subscription at [www.rehabonthenet.com](http://www.rehabonthenet.com). Hands on treatment and expert guidance following injury aims to:

- Prevent complications via protecting the injury and promote strong scar tissue formation
- Reduce inflammatory response and facilitate healing of the injured part
- Regain full range of motion, strength and flexibility
- Proprioceptive (balance) re-education
- Maintenance of cardiovascular fitness
- Progression through rehabilitation program for a safe return to sport
- Correction of predisposing factors such as muscle imbalances, joint/neural dysfunction, training error, environment, equipment, and other biomechanical factors.

**Please feel free to discuss any problems or queries with your physiotherapist or get up to date treatment options by subscribing online at [www.rehabonthenet.com](http://www.rehabonthenet.com).**