

# ACL Injury



## Early Treatment

Damage to the 'soft tissues' (ligaments, muscles, tendons, joint capsule etc) will cause inflammation, this is your body's natural response to injury and is the first phase of the healing process.

The inflammatory phase should start to settle approximately 5 days from injury however, this can be prolonged by inappropriate management. This phase prepares the area for healing but sometimes the body's response is excessive, leading to increased pain, heat, swelling and loss of movement. Correct management will ensure that this phase is not extended.

Regardless of how quickly an accurate diagnosis is made, early treatment to reduce swelling and inflammation and regain movement is imperative.

The principles of (P)RICE should be followed from the time of injury.

## PRICE

### Protection

Protection prevents further injury which would increase the inflammatory response and delay healing. Protection may mean using a walking aid or splint to limit weight bearing and prevent giving way.

### Rest

Relative rest is a more appropriate term to use – it is certainly important to completely rest the injured knee for the first 24 hours but limited activity is then possible by using crutches to relieve weight.

Gentle pain-free movement will prevent the knee becoming stiff and improve the alignment and ultimate strength of any healing tissue. A fine line exists between enough activity and too much activity, both of which can be detrimental to the healing process. Total inactivity can lead to a delay in healing, adhesion formation, muscle weakness and reduced sensory awareness (this is called 'proprioception' and is important for balance and co-ordination).

Too much activity can cause stress to healing structures and an increased and prolonged inflammatory phase.

As a general guide, movements should be kept within a pain-free range and repeated 'little and often'. Do not be tempted

to add resistance in the form of weights at this stage.

### Ice

Ice or cold therapy is effective in reducing excessive inflammation following injury. It should be applied as soon as possible - within 1 hour preferably. It is more effective at preventing swelling than reducing it once it has developed.

Applied immediately, ice will also help to decrease soft tissue damage, pain and muscle spasm.

Application:

BEWARE - Frost-bite can occur if the skin temperature drops to  $-3.9^{\circ}\text{C}$  or below. If you use a bag of frozen peas (a two pound bag is the right size and moulds nicely to the shape of the knee) wrap it in a **damp** towel before you apply it to the skin. Gel packs can reach very low temperatures in the freezer, so again be sure to protect the skin with a layer of **damp** towel.

Apply ice for a maximum of 15-20 minutes, every two hours. Continue until the tendency to swell stops - this is usually 12 - 72 hours after injury.

### Compression

Compression should be applied to the injured area as soon as possible to reduce internal bleeding and control swelling formation. If ice has been

applied then the compression should be administered immediately after the ice. Compression should be applied from below the injury site (just above the ankle), across it and continue for some way above (mid thigh). It will remain effective until swelling has dispersed.

## **Elevation**

Immediately following injury, ie. while ice is in situ, elevate your leg so that the knee is higher than your heart; this will limit the development of swelling.

Depending where you are when you become injured, it may be impractical to elevate the leg to this height – if this is the case then at least try to put your leg up on a chair so that it is horizontal. Keep the leg elevated as much as possible, certainly in the first 24 hours.

## **Summary**

- Apply ice - 2lb bag of peas or a gel pack wrapped in a **damp** towel.
- Elevate the leg 15-25 cm above heart level.
- Leave for 15 -20 minutes - remove ice - maintain elevation.
- Apply compression.
- Reapply ice up to 2 hourly.
- Use a stick or crutches for any unavoidable moving about.

During this phase simple exercises to maintain pain-free range of movement and some muscle function are useful. It is important to be able to straighten the knee fully as well as bend it.

Here are some simple exercises you can practise while resting.



Gently bend your knee up & down



Brace the muscle on the front of the thigh (Quads) to straighten the knee and hold for 10 secs. Relax and repeat approx 10X hourly.



An extension stretch – rest heel & allow knee to stretch back fully straight – do this for 5 minutes every hour, if possible.

As inflammation settles down exercises can be progressed. It is important at this stage to gradually increase movement in the joint and to begin graduated strengthening exercises – be careful not to push too hard or you may make the knee swell again. You should gradually wean off the crutches (if you have been using them), but only when you can walk safely and without a limp.

## **Please note:**

*All exercises are intended as examples. If you are unsure how to perform them or if they are unsuitable for you personally, please do not hesitate to contact us.*

For further information and advice please contact us