

## Immediate treatment of inflammation using PRICE;

The treatment should be used directly after the injury has been sustained and carried out for 3-5 days.

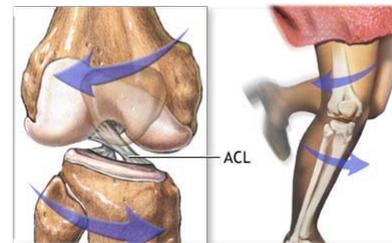
Tissue injury involves damage to small blood vessels, which in turn results in bleeding at the sight of injury. There are 5 main signs of inflammation that can be recognized; Heat, redness, swelling, pain and loss of function. Inflammation is a necessary bodily response for the healing process of the damaged area. However we can use PRICE as the body tends to over react to injury, to minimize the symptoms and reduce discomfort.

- **P - PROTECT** - protecting the injured tissue from further damage, whilst allowing swelling to accumulate.
- **R - REST** - reducing the energy requirements of the area as well as avoiding any excess blood traveling to the area.
- **I - ICE** - which causes vasoconstriction, allowing the blood vessels to reduce blood flow to the area. Crushed ice in a damp towel works best, and should be put on immediately after injury for 20 minutes, then every 3-4 hours at 5 - 10 minutes duration.
- **C - COMPRESSION** - Simple bandages will do, whilst making sure the bandages are not too tight.
- **E - ELEVATION** - The injured area should be placed higher than the heart level, in turn helping to reduce blood pressure, limit bleeding as well as encouraging removal of fluid through the lymphatic system.

## ACL Rehabilitation

### About ACL and its injuries;

The anterior cruciate ligament (ACL) is quite possibly the most important ligament of the knee. Its main role is to control locking of the knee, as well as controlling excessive movement of the tibia and femur in both forward/backward and rotational directions. Without the ACL carrying out its stabilizing role, the knee can become unstable during exercise and can cause further trauma throughout the knee.

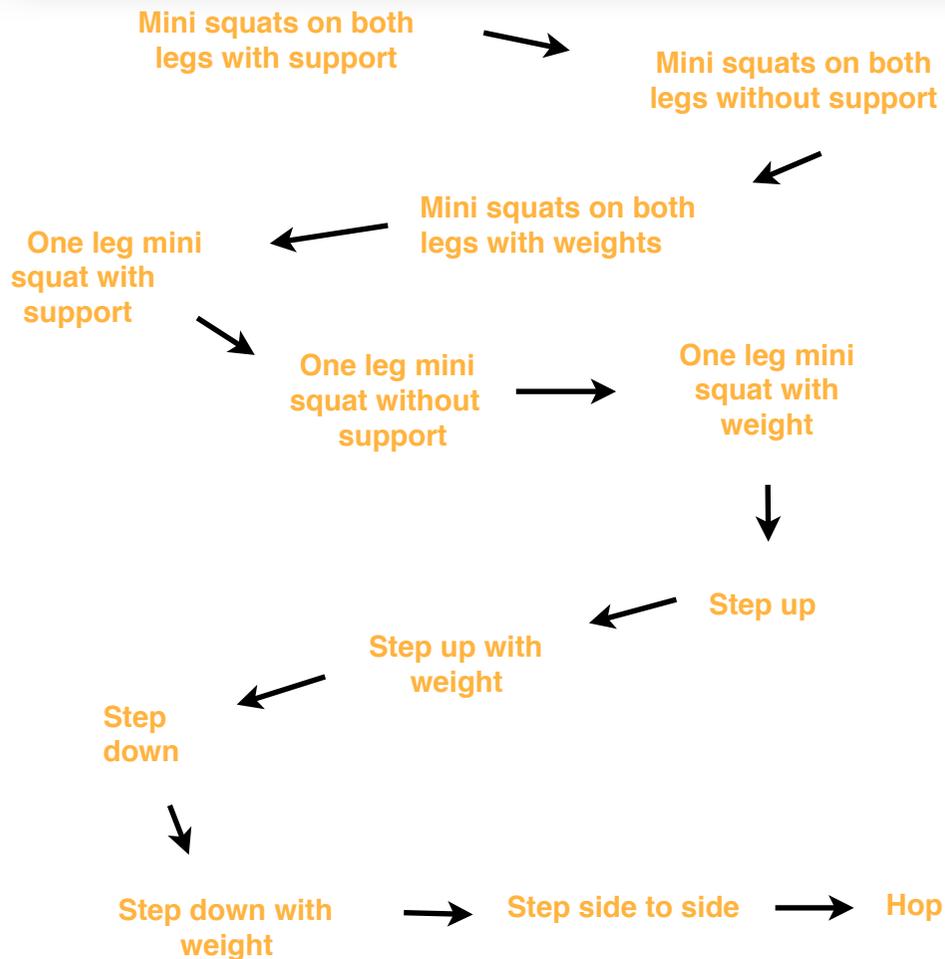


### Warm up and warm downs;

When carrying an injury it is especially important to make sure there is sufficient blood flow to the area in question as well as warming the muscles. This must be carried out before any stretches, and is usually done so by having a light jog for up to 5 minutes. Upon finishing an activity a warm down must also be carried out, which allows for the removal of lactic acid as well as a gradual decrease to heart rate and blood pressure. This should be carried out with a light jog decreasing to walking pace.

## Strengthening Exercises

The exercise programme described has specific routines to strengthen the muscles surrounding the knee, as well as improving the dynamic control of the knee and its positional sense. When performing these exercises it is important to remember that lower limb alignment is crucial, to decrease rotational stress on your knee. It is important to tense your hamstring throughout the stretch to restrict your shin from sliding forward. The exercises below are used to strengthen your quadriceps.



## Proprioceptive exercises

The proprioception exercises are aimed to improved your sense of knee positioning. It is vital that they are carried out maintaining limb alignment and as little upper body movement as possible.

<p><b>START</b></p> <p>Weight shifts from foot to foot.</p>	<p>Balance on injured leg on a hard surface. Start with your eyes open and the progress them so they are shut.</p>	<p>Balance on the injured leg on a soft surface. Progression - eyes open to closed.</p>
<p><b>FINNISH</b></p> <p>Take a step forward and then jump onto the injured leg. Progression - eyes open to closed.</p>	<p>Balance on both legs on a soft surface and bend your knees slightly. Progression - eyes open to closed.</p>	<p>Balance on injured leg on a soft surface and bend your knee slightly. Progression - eyes open to closed.</p>

### Progression speed -

Your therapist should advise you on the speed that you should progress on the strengthening and proprioception exercises. It is important to remember that progression is not only about capability to perform the exercise, but to perform it safely and correctly to remove any risk of injury.

