



# ACL prehabilitation guide

## What is the ACL?

The anterior cruciate ligament (ACL) is a 38mm long band of fibrous tissue that connects the femur (thigh bone) to the tibia (shin bone). Its function is to control knee stability when performing twisting and pivoting actions. The ACL is usually not required for normal daily living activities, however, it is essential in controlling the rotation forces in the knee developed during side stepping, pivoting and landing from a jump. Knees without an ACL may therefore be unable to perform activities involving speed and heights, but usually are fine with normal day-to-day activities and running straight lines.



# Prehabilitation

There is considerable evidence to demonstrate that rehabilitation before surgery is beneficial to recovery. ACL reconstruction should be performed once the knee has recovered from the acute injury, has a full range of motion, and is pain free in order to optimise the outcome and avoid complications such as knee stiffness.

For many this may only take a few weeks, but for some it can be several months. A recent study demonstrated that a 5 week program of preoperative rehabilitation supervised by a physiotherapist improved knee related function and strength following surgery and rate of return to sports at 2 years. Quadriceps strength deficits of more than 20% before surgery are associated with persistent strength differences 2 years after surgery. Thorough prehabilitation, restoring the knee to optimal function before surgery is beneficial on every level, and will lead to a faster recovery after surgery.



# Prehabilitation

## Goals of prehabilitation

1. Regain pain free full range movement
2. Optimise muscular strength and function.
3. Familiarise with basic post operative exercises
4. Prevention of episodes of knee instability which may cause further damage.

## Treatment guidelines

- Initial goal is to resolve knee impairments related to swelling and ROM deficits
- Regular icing to reduce effusion and pain
- Commence basic VMO strengthening with use of biofeedback and range exercises
- Once sufficient range of movement is achieved stationary exercise bike is encouraged++
- Once swelling and ROM is achieved then progress to restoration of muscle strength with intensive muscle strength training (increasing resistance, complexity and reps), and controlled plyometric exercises (eg balance board, progressing to squats on board)
- Running and jumping sports should be avoided due to risk of knee instability.

