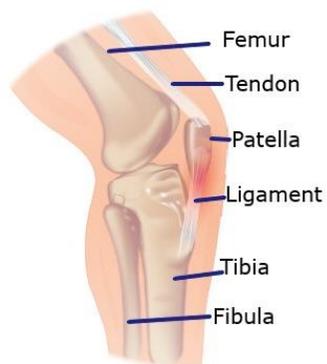


## The Knee

The knee joint comprises many structures that over time can be damaged due to over usage, traumatic injury, weight gain, arthritis and disease. It is a synovial type joint that is made up of which connects the Thigh bone (Femur) to the shin bone (Tibia). There are 2 joints in the knee. 1) Tibiofemoral joint where the shin meets the thigh bone and 2) the patellofemoral joint where the kneecap (patella) meets the thigh bone (Femur). These joints work together to form a modified hinge joint which allows for bending and straightening and also slight rotation from side to side.



The knee joint is the largest joint in our body. It is vulnerable to injury as it bears an enormous amount of pressure while providing flexible movement. Once injury occurs to ligaments that attach bones together or tendons which attach muscle to bone or cartilage that acts as shock absorbers, it is important to regain strength and range of motion.

### Exercise Tip:

- If exercise causes pain and stiffness:

Use a bean bag or soak the muscle in warm water for about five to 10 minutes. Be Careful not to burn.

- If swelling and pain occurs:

Apply an ice pack (in cloth to prevent damage to skin) over the area for 10-20 minutes and elevate leg with pillows and perform foot pump exercises throughout the day.

**Disclaimer: Information given in this brochure is purely to make people aware of general knee exercises to increase range of motion and strength. Consult your doctor or physiotherapist if you feel an increase in knee pain.**

### Attribution Credits:

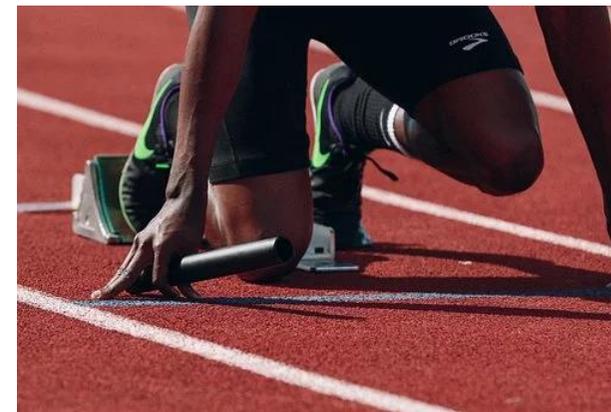
Anatomy: <ahref="https://www.injurymap.com/diagnoses/jumpers-knee">Pain in the soft tissue of your knee</a> Modifications: Labelling License: Creative Commons 4.0

Exercises: Deirdre MacMaster and Anke Cloete

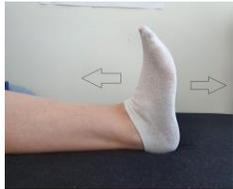
**Contact us:** For any information regarding exercises

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## Knee Exercises



The Exercises below are for the intent of increasing muscle strength and stability of the joint. It will be adjusted to your specific needs by your physiotherapist, but these are a guideline to what types of exercises will be in place.



Ankle Pumps - stimulate blood circulation and decrease swelling.

Sets: \_\_\_\_ Repetitions: \_\_\_\_

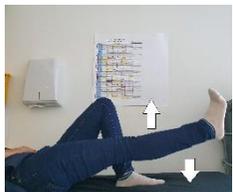


Quadricep sets - aid in strengthening the quadricep and getting the knee to straighten. Squeeze thigh muscles and push the leg flat onto bed or floor and hold for 10 seconds then relax.

Sets: \_\_\_\_ Repetitions: \_\_\_\_

Heel Slides - aid in increasing active Range of motion in knee. Slide your heel on bed or floor in order to bend the knee until you feel comfortable

Sets: \_\_\_\_ Repetitions: \_\_\_\_



Straight legs raises - aid in increasing strength in the thigh muscles that's attached to your knee joint. Laying down, lift your leg to 40-45 degrees from the bed off the floor and return.

Sets: \_\_\_\_ Repetitions: \_\_\_\_



Knee flexion - Sitting on a chair. Lightly place your unaffected sides foot over the affected leg and push back/ bend knee as far as possible. Hold for 10 seconds and relax.

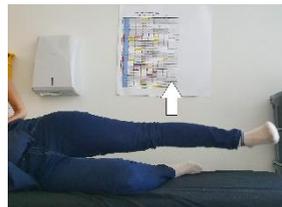
Sets \_\_\_\_ Repetitions \_\_\_\_



Knee extension - in a seated position tighten your thigh muscles and slowly straighten and raise your affected leg as high as possible. Squeeze your thigh muscles and hold this position for 5-10 seconds.

Relax and bring your foot to the floor.

Sets \_\_\_\_ Repetitions \_\_\_\_



Abduction - Lie on your side with your injured leg on top and the bottom leg bent to provide support.

Straighten your top leg and slowly raise it to 40-45 degrees, keeping your knee straight, but not locked.

Sets \_\_\_\_ Repetitions \_\_\_\_



Calf Raises- Stand with your weight evenly distributed over both feet. Hold onto the back of a chair or a wall for balance and raise your heels off the ground.

Resistive Band Exercises are a progression from the exercise sets in this brochure. The resistance of the band is normally applied in the opposite direction to the joint's movement. This should be demonstrated by your Physiotherapist and assessed if your joint meets the strength requirements for the exercise.

**Stretches:**

Quadriceps Muscle (Front of the Thigh bone) – This can be done in standing or laying on your stomach. Bend the knee and bring the heel towards your buttocks, holding the ankle with your hand or a towel, if you are unable to reach. Hold for 10-15 seconds and then release.

Sets \_\_\_\_ Repetitions \_\_\_\_

Hamstring Muscle (Back of the Thigh bone) – This can be done while laying on your back, or when sitting in a chair. Straighten the leg (do not lock the knee), using a towel around the bottom of the foot, pull the toes towards your chest Hold for 10-15 seconds and then slowly release.

Sets \_\_\_\_ Repetitions \_\_\_\_