



Knee Strengthening Exercises

[Exercises](#) > [Strength \(Joints\)](#) > [Knee Strengthening Exercises](#)

The following knee strengthening exercises are designed to improve strength of the muscles of the knee. You should discuss the suitability of these exercises with your physiotherapist prior to beginning them. Generally, they should only be performed provided they do not cause or increase pain. Begin with the basic knee strengthening exercises. Once these are too easy, they can be replaced with the intermediate knee exercises and eventually, the advanced exercises.

Knee Strengthening - Basic Exercises

To begin with, the following basic knee strengthening exercises should be performed approximately 10 times, 3 times daily. As your knee strength improves, the exercises can be progressed by gradually increasing the repetitions and strength of contraction provided they do not cause or increase pain.

Static Inner Quadriceps Contraction

Tighten the muscle at the front of your thigh (quadriceps) by pushing your knee down into a towel (figure 1). Put your fingers on your inner quadriceps (VMO - vastus medialis obliquus) to feel the muscle tighten during contraction. Hold for 5 seconds and repeat 10 times as hard as possible pain free.

Figure 1 – Static Inner Quadriceps Contraction



Quads Over Fulcrum

Begin this exercise lying on your back with a rolled towel or foam roll under your knee and your knee relaxed (figure 2). Slowly straighten your knee as far as possible tightening the front of your thigh (quadriceps). Hold for 5 seconds and repeat 10 times as hard as possible pain free.

Figure 2 – Quads Over Fulcrum



Static Hamstring Contraction

Begin this exercise in sitting with your knee bent to about 45 degrees (figure 3). Press your heel into the floor tightening the back of your thigh (hamstrings). Hold for 5 seconds and repeat 10 times as hard as possible pain free.

Figure 3 – Static Hamstring Contraction



Knee Strengthening - Intermediate Exercises

The following intermediate knee strengthening exercises should generally be performed 1 - 3 times per week provided they do not cause or increase pain. Ideally they should not be performed on consecutive days, to allow muscle recovery. As your knee strength improves, the exercises can be progressed by gradually increasing the repetitions, number of sets or resistance of the exercises provided they do not cause or increase pain.

Resistance Band Knee Extension in Sitting

Begin this exercise in sitting with your knee bent and a resistance band tied around your ankle as shown (figure 4). Keeping your back straight, slowly straighten your knee tightening the front of your thigh (quadriceps). Perform 3 sets of 10 repetitions provided it is pain free.

Figure 4 – Resistance Band Knee Extension in Sitting



Resistance Band Hamstring Curl

Begin this exercise lying on your stomach with a resistance band tied around your ankle as shown (figure 5). Slowly bend your knee tightening the back of your thigh (hamstrings). Perform 3 sets of 10 repetitions provided the exercise is pain free.

Figure 5 – Resistance Band Hamstring Curl



Squat with Swiss Ball

Begin this exercise in standing with your feet shoulder width apart, your feet facing forwards and a Swiss ball placed between a wall and your lower back (figure 6). Slowly perform a squat, keeping your back straight. Your knees should be in line with your middle toes and should not move forward past your toes. Perform 3 sets of 10 repetitions provided the exercise is pain free.

Figure 6 – Squat with Swiss Ball



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