

# Knee pain

## A word of advice

Controlled physical activity/exercise has many health benefits and few dangers, and very few people are too old or infirm to benefit, but you need to remember the following:

- Always ensure you are **stable and safe** when doing any exercise.
- Start a new exercise **slowly and cautiously**.
- **Progress slowly**, gradually increasing the time, frequency and intensity of exercising and doing a little more each week.
- **Set yourself realistic, achievable goals**, deciding exactly *what* activity you will do and *when, where* and *for how long* you will do it, and then **focus on fulfilling these goals**. When you've reached your targets, set yourself a more challenging, but still achievable, goal. To help you reach your targets

make a 'public declaration' – tell your family and friends and get their support and encouragement.

- **Work hard** within your capabilities but near your maximum.
- **Exercise is not a cure** for knee pain. You are likely to continue to have (unexplainable) episodes of pain; during these times you should **rest** and reduce activity until the pain subsides.
- If an activity causes **prolonged pain, discomfort or swelling** lasting for more than a couple of days or that wakes you at night, rest for a couple of days. As the pain settles **resume exercising gently**, gradually building up the exercises as before but leaving out any specific activities that caused pain or adding them cautiously.
- **Blood, sweat and tears are NOT essential – or desirable.**

## Exercises

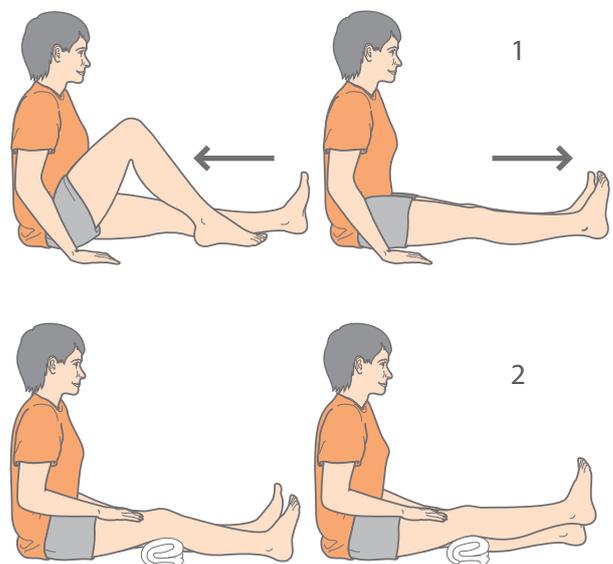
Start with 'low impact exercises' (non-weight-bearing, i.e. sitting or lying on the floor, sofa or bed) and build toward weight-bearing exercises and functional activities, e.g. walking.

### Simple exercises to increase movement or begin working the muscles

**1.** Sit on the floor, sofa or bed with your legs out-stretched. Keeping your foot on the floor (or sofa/bed), slowly bend one knee until you feel the knee being comfortably stretched without hurting; hold for 3–4 seconds. Straighten your leg as far as you can; hold for 5 seconds. Repeat until you have done 10 bends. Repeat the exercise with the other leg.

**2.** Sitting on the floor, sofa or bed with your legs out-stretched, place a rolled-up towel under one knee. Push down on the towel as if straightening your knee, then pull your toes and foot towards you so that you feel your calf muscles stretch and so that your heel lifts off the floor (or sofa/bed). Hold for 5 seconds, relax for 5 seconds, then repeat until you have done 10 contractions. Repeat the exercise with the other leg.

**3.** If you have a set of pedals or static exercise bike, adjust the pedals so that your knee is straight at the lowest position of a revolution. Cycle without any resistance at a comfortable pace for 2 minutes, increasing the time as you improve.



(continued overleaf)

### Exercises to strengthen your thigh muscles

Start by trying to do the following exercises twice a week, then build up gradually so you are doing them every other day and then finally every day.

**4.** Sitting on a chair, cross one leg behind the other. Push forward with the back leg as if to straighten it, but prevent this happening by pushing back with the front leg. Push as hard as possible for 5 seconds, then relax completely for 3 seconds, repeat, and after 6 contractions rest for 1 minute. Repeat this procedure until you have done 4 sets of 6 contractions (24 contractions in total). Repeat the exercise with the other leg in front.

**5.** Sitting on a chair, fold your arms, slowly stand up and then slowly sit down, ensuring each 'sit-stand' is slow and controlled. Do 'sit-stands' for 1 minute, count the number you do and write this in a notebook. Over a period of weeks try to increase the number of 'sit-stands' you can do in 1 minute. As you improve, try the 'sit-stands' from progressively lower chairs or the bottom two steps of a staircase.

**6.** Place your right foot on the bottom step of the stairs, using the banisters for support. Keeping this leg on the step, step up and down with the left leg. Count and record the number of step-ups you perform in 1 minute. Rest for 1 minute, then repeat the exercise keeping your left leg on the step. As the number of step-ups you can perform per minute increases, increase the height of the step (ensuring you are stable and safe) to a maximum of about 45 cm (18 inches).

**7.** If you have a static exercise bike with variable resistance, over a period of weeks increase the resistance you are pedalling against to improve your strength and stamina.

**8.** Holding onto a stable object (e.g. a chair or table), squat down slowly, keeping your back straight and bending both knees, then straighten your knees. Do not squat down too far for the first couple of weeks. As you feel improvement and the exercise gets easier you can squat a little further, but only until your knees are bent to 90° – never squat down fully.

**9.** Tie the elastic inner tube of a bicycle tyre (or a commercial product, e.g. the Thera-Band™ resistive exercise band) to an immovable object (e.g. the leg of your bed or the chair you will sit on) and loop it around your right foot with your knee bent. Sitting on the chair or the edge of your bed **slowly** straighten your knee, stretching out the band. Hold your leg straight for 5 seconds, then **control the band** as it slowly bends your knee back to the starting position. Do this for about 1–2 minutes. Repeat the exercise with the band around your left foot. As you improve, you can do the exercise for longer and/or the resistance can be increased by making the loop smaller or using a stiffer band.

### Walking

Most days try and get out for a walk, gradually increasing the distance you walk over several weeks. Don't be worried about using a stick or having frequent rests to relieve the stress on your joints.

