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Exercise plan: Anterior Knee Pain Patient: Patient Exercises





# Inner Range VMO Quadriceps Lying

First, identify your VMO - it's the inside part of the front of your thigh, and makes up part of the quadriceps muscles. Lie flat on your back, and place a rolled up towel under your knee. Contract and isolate your VMO by squeezing your inside thigh muscle. You should be pressing your knee against the towel. As your leg straightens, it does not fully lift off the floor. Slowly return to the start position. Your leg should be slightly rotated outwardsSo that the left would be pointing toTen o'clock and the right at 2 o'clock.

Sets: 3 | Repetitions: 15 | Time: hold contraction for 3 seconds



# Split Squat with VMO

Take a step forwards (as if you were going into a lunge). Make sure your knee is directly over the second ray of your foot and in good alignment (your knee should never drop inwards). Contract your VMO (the inside of the front of your thigh muscle group) and your gluteal (buttock) muscles of your front leg and slowly drop your back knee towards the ground. Your front knee stays at 90 degrees, but does not go forwards of that point. Return to the start position.

Sets: 3 | Repetitions: 15

## **Hip Abduction Gluteus Medius Side-Lying**

Lie on your side, and lift your leg upwards. You can hold this position, or move your leg up and down. This exercise predominantly strengthens your outer hip and gluteal (buttock) muscles, but also mobilises a stiff hip joint.



Sets: 3 | Repetitions: 15 | Time: hold for 3 seconds



# Single Leg Balance Standing Unsupported

Stand on one leg, and try to keep your balance. Be careful and hold on to a wall or table for support when you first start this exercise, but as you feel more confident you can reduce contact and support from the wall or table. A single leg balance exercise such as this is an enormously valuable exercise, and its benefits including strengthening the muscles and ligaments around the ankles and knees, and improving balance.

### Sets: 2-3 | Time: hold for 20-60 seconds | Both sides



# **Hip Flexor and Quad Stretch**

Stand up with good posture, and bend your knee so your foot goes towards your butt. Extend your hip behind you, to create a stretch to the front and top of your thigh. You may need to hold on to a table for support. This exercise will help to stretch your hip flexor (psoas and rectus femoris muscles), and quadricep muscle group.

### Sets: 3 | Time: hold 30 seconds



### **Hip Flexor Stretch**

In a kneeling lunge position, move your body forwards to create a stretch to the front of your thigh and groin. If you want to make the stretch stronger, tilt your pelvis backwards as shown. Use a pillow under your knee if you find you need the padding.

#### Sets: 3 | Time: hold for 30 seconds



### **Sitting Forward Hamstring and Spine Stretch**

Sitting down, keep your legs straight in front of you, and reach forwards to touch your toes. Go as far as feels comfortable. You should feel a stretch in the back of the thighs/Hamstrings. Hold the stretch, and return to the start position.

#### Sets: 3 | Time: hold for 30 seconds

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## **Heel Drop Gastrocnemius Stretch**

Stand with your toes on the edge of a step or a box. Hold onto something stable for support if required. Drop your heels downwards. You should feel a stretch just below the back of your knee, in the calf (this part of the calf is known as the gastrocnemius).

### Sets: 3 | Time: hold for 30 seconds

- 1. Discontinue any exercise that causes you pain or discomfort
- 2. Pace yourself. These are gentle exercises try not to strain
- 3. Breathe slowly and deeply and don't hold your breath
- 4. Stretch slowly and gently instead of bouncing
- 5. Muscle soreness usually only lasts for the first 3-4 days