

GROIN INJURY

Diagnosis

A groin injury is a strain or (partial) tear of one of the adductors, the inner thigh muscles (Figure 1). The injury usually occurs at the junction between the muscle and tendon or at the tendon attachment to the pelvic bone.



Fig 1. Groin injury

The adductor langus is the muscle which is most frequently affected. Groin injuries often occur when playing tennis, as the side to side movements and sudden stops and changes of direction require a strong contraction of the adductors. One of the main causes is losing one's step when reaching out for a ball on a surface which is too slippery, which can result in a player performing the 'splits' and over-extending the groin muscles.

A sudden sharp pain may be felt in the groin area or inner thigh. There may be tightening and hardening of the groin muscles. The adductor tendons or the pubic bone feel tender upon palpation. Contracting the groin muscles (pressing the legs against one another) is also painful. There may be bruising or swelling, although this might not occur until a couple of days after the initial injury. With a severe injury, a small dip may be visible or felt.

Muscle tears are classified according to their severity as grade 1, 2 or 3. A grade 1 tear is a mild muscle tear. There is a slight tear without being obviously visible (its size is microscopically small).

There is usually no significant loss of strength. A grade 2 muscle tear is a moderate muscle tear. There is clear tearing of some of the muscle fibres and a loss of strength.

A grade 3 tear is when the entire muscle has been torn. Fortunately this is not very common. Healing may take between two and 20 or more weeks, depending on the severity of the injury and the player's age. In the case of players over 30 years of age, tissue quality diminishes and the healing process often takes longer. Tendon attachment injuries in particular may sometimes be very persistent.

What should you do? First aid!

Do the following as soon as possible, for 48 hours:

- Ice - cool the painful area directly with ice or a cold pack for 10 to 15 minutes and repeat this several times a day. Do not place ice on bare skin, but place a towel between the skin and the cold pack. Men should take care not to freeze the scrotum.
- Immobilisation - stop playing any kind of sport and avoid putting weight on the leg.
- Compression - apply a compression bandage. This will help deter minor bleeding caused by the muscle tear in the thigh. Remove the bandage if it starts feeling too tight or if the calf starts swelling.

Immediate and effective first aid is essential for a rapid recovery. Have a (sports) physician examine the injury if it seems serious or if in doubt. In some cases the player will be referred to a (sports) physiotherapist.

How to Ensure the Best Recovery

As soon as the worst of the pain and swelling have subsided (between several days and a week) you can start building up strength. If you feel pain during the build-up, this is a warning sign to stop and rest. Be careful: do not exceed your pain threshold, as this will only delay the healing process! The build-up consists of three stages, ranging from light to demanding. Here are the exercises, along with some tips.

Stage 1. Improvement of Normal Function

- Carefully put weight on the leg, as long as it is not painful. If necessary, use an elbow crutch for the first few days.
- When the leg stops hurting in the course of your daily activities, you can become more active, for example by cycling. This stimulates circulation in the thigh muscles and will assist the healing process.
- Muscle strengthening (short adductors): Lie down on your back with your knees bent and feet flat on the ground. Squeeze a ball between your knees. Press the ball with your legs for five seconds, release and repeat. Do one set of 10 repetitions.
- Muscle strengthening (long adductors): Lie down with your legs extended in front of you; squeeze a ball between your ankles. Press the ball with your ankles for 30 seconds, release and repeat. Do one set of 10 repetitions.
- Muscle strengthening (short adductors): Lie down on your back with your knees bent and your feet flat on the ground. Slowly move one knee outwards towards the ground and slowly bring it back up again.

- Stretching the inner thigh muscles (short adductors, figure 2). Sit cross-legged on the ground. Place the soles of your feet together. Sit up straight and gently push your knees towards the ground with your elbows until you feel a stretch. Hold this position for 20 to 30 seconds, followed by a 20 to 30 second rest. Repeat this three times.



Fig 2. Stretching the inner thigh muscles (short adductors)

- Stretching the inner thigh muscles (long adductors, figure 3). Stand up straight and take a long step sideways with your right leg. Bend the right knee and shift your body weight above this knee, thereby stretching the left knee. Bend the knee until you feel the stretch in the left groin. Hold this position for 20 to 30 seconds, followed by a 20-30 second rest, and repeat three times. Repeat this exercise for the other leg.

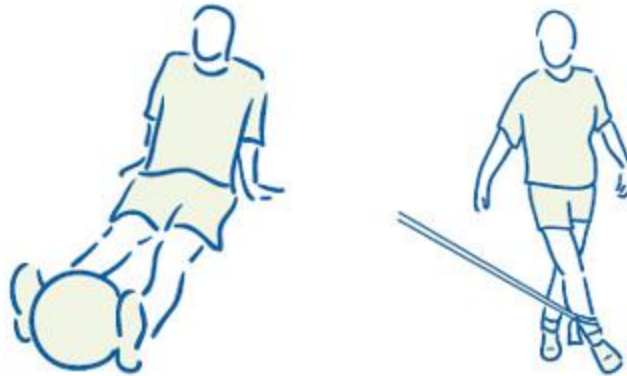


Fig 3. Strengthening the calf muscles (long adductors)

Stage 2. Return to Training

As soon as all of the above exercises can be performed confidently and free of pain, you may consider returning to sport.

- Take small, quick steps on the spot, alternating the left and right leg.
- Muscle strengthening (long adductors, figure 4): Lie down with your legs extended in front of you; squeeze a ball between your ankles. Press the ball with your ankles for 30 seconds, release and repeat. Do one set of 10 repetitions.



Figures 4 and 5. Muscle strengthening exercises (long adductors)

- Muscle strengthening (Long adductors, figure 5): Attach one end of an exercise band to a secure object and tie the other end around your ankle. Stand in a position whereby the outer side of the leg which requires strengthening is facing the secure object and move the leg against the resistance of the exercise band across the front of your body. Do five sets of 10 repetitions, and then change legs. You can make this exercise harder by gradually increasing the number of repetitions and/or by stretching or folding the exercise band.
- Muscle strengthening (Abductors, figure 6): Turn around so that your inner leg is now facing the secured end of the exercise band. Move the leg slowly outwards against the resistance of the band. Do five sets of 10 to 15 repetitions. Repeat the exercise with the other leg. The exercise can be made more difficult by gradually increasing the number of repetitions and/or stretching or folding the exercise band.



Fig 6. Muscle strengthening (abductors)

- Lunges. Place your feet shoulder width apart. Take a long step sideways with one leg, whereby you bend your knee at a 90° angle, and it does not protrude beyond your foot. Keep your back straight. Lower yourself gently, release and come back to standing. This exercise can be made more difficult by holding a small weight or by doing the exercise at a quicker pace. Start off with two to three sets of 10 repetitions.

- The next step is to start jogging. Start off at a slow pace, followed by sideways hops. Once you have practised this several times, you can step up the pace, adding pivots, turns and short sprints.
- Finally you can start doing jumping exercises, such as leaps, side steps, hops and lunges.

Stage 3. Return to Play

You are now ready to go back to the tennis court. Start off by playing against a practice wall or with a game of mini-tennis, which will allow you to move backwards slowly

- Start off by playing against the practice wall or with a game of mini-tennis, which will allow moving backwards slowly.
- At this stage you can also practice volleys.
- Proceed by gradually doing more exercises (over one or two weeks), whereby you have to move greater distances to reach the ball (tennis drills from corner to corner).
- The next step is to include lower volleys and smashes.
- When you are able to perform smashes and the combined volley smash confidently, you can start playing practice sets.
- Once the practice sets have been going well for two weeks, you are ready to start playing matches again.

Preventing Re-injury

Unfortunately groin injuries cannot always be avoided. However, you can minimise the risk by observing the following guidelines:

- Do a thorough warming-up before, and cooling-down after a training session or a match for about 10 to 15 minutes each. Make sure the stretching exercises are performed correctly. In particular, the stretching exercises for the adductors are important.

- Make sure you have properly fitting tennis shoes which have good lateral support and an appropriate sole for the court surface you are playing on.
- Avoid being insufficiently prepared for a tennis match or game, resulting in playing too many games in too short a period. Fatigue plays an important role in the occurrence of this kind of injury. Regular games of tennis, jogging, on-line skating, fitness or cycling can reduce your chance of sustaining an injury.
- Adapt your clothing to the weather. Especially at the beginning of the season, or when there is a strong wind, it is advisable to wear a track suit – at least during the warm-up. An elastic bandage can be worn to protect the thighs and keep them warm. Muscles and tendons that have been warmed up properly are more resistant to stretching and pulling than cold muscles.
- When you return to play after an injury consider taping your thigh for the first few games, as a preventative measure.