

# Groin Strain

## What is a groin strain?

A groin strain is a relatively common condition characterized by tearing of some or all of the adductor muscle group (groin muscles).

The muscles at the inner aspect of your thigh are known as the adductor muscles (groin). These muscles originate from the pelvis and insert into the inner aspect of the thigh (femur) and lower leg bones.

The groin muscles are responsible for stabilising the pelvis and moving the leg towards the midline of the body (adduction). They are particularly active during running (especially when changing direction) and kicking.

During contraction of the groin muscles, tension is placed through the groin. When this tension is excessive due to too much repetition or high force, one or more of the groin muscles can tear. This is known as a groin strain and can range from a small partial tear of the groin muscle(s) whereby there is minimal pain and minimal loss of function, to a complete rupture of one or more groin muscles resulting in severe pain and marked loss of function. Groin strains range from a grade 1 to a grade 3 strain and are classified as follows:

- **Grade 1:** a small number of muscle fibres are torn resulting in some pain but allowing full function.
- **Grade 2:** a significant number of muscle fibres are torn with moderate loss of function.
- **Grade 3:** all muscle fibres are ruptured resulting in major loss of function.

The majority of groin strains are grade 2. The most commonly affected muscle involved in a groin strain is the adductor longus muscle.

## Causes of a groin strain

A groin strain commonly occurs due to a sudden contraction of the groin muscles often when they are in a position of stretch. This typically occurs during rapid acceleration whilst running (particularly when changing direction) or when a footballer performs a long kick. They are commonly seen in running sports such as football, hockey and athletics (particularly sprinters, hurdlers, and long jumpers) as well as skiing, horse riding and gymnastics. Groin strains tend to occur more commonly in the older athlete and particularly following an inadequate warm-up.

## Signs and symptoms of a groin strain

Patients with this condition usually feel a sudden sharp pain or pulling sensation in the inner thigh or groin during the provocative activity. In minor cases, the patient may be able to continue the activity only to have an increase in symptoms upon cooling down. In more severe cases, the patient may be unable to continue the activity and will often limp or be unable to walk off the playing field.

Patients with a groin strain usually experience an increase in pain during activities which place load on the groin muscles. These activities may include: walking (especially on uneven surfaces or stairs), running (especially changing directions), twisting, jumping, and kicking. It is also common for patients with this condition to experience pain or stiffness after these activities with rest, especially upon waking in the morning. Squeezing the legs together may also cause pain in patients with a groin strain.

Patients with this condition may also experience swelling, muscle spasm, weakness, tightness, tenderness and bruising in the inner aspect of the thigh and groin.

### **Diagnosis of a groin strain**

A thorough subjective and objective examination from a physiotherapist is usually sufficient to diagnose a groin strain. Further investigations such as an MRI scan or Ultrasound may be required, in rare cases, to confirm diagnosis and assess the severity of injury.

### **Treatment for a groin strain**

Most patients with this condition heal well with appropriate physiotherapy. The success rate of treatment is largely dictated by patient compliance. One of the key components is that the patient rests sufficiently from ANY activity that increases their pain until they are symptom free. Activities placing large amounts of stress through the groin should also be minimized, these include: running (especially with change of directions), kicking and jumping. By avoiding these activities, the body can begin the healing process in the absence of further tissue damage. Once the patient can perform these activities pain-free a gradual return to these activities is indicated provided there is no increase in symptoms.

Ignoring symptoms or adopting a 'no pain, no gain' attitude is likely to lead to the condition becoming chronic. In these instances, the groin strain may develop into other groin conditions such as an adductor tendinopathy or osteitis pubis. Immediate, appropriate treatment in patients with a strained groin is therefore essential to ensure a speedy recovery. Once the condition is chronic, healing slows significantly resulting in markedly increased recovery times and an increased likelihood of future recurrence.

Diligently following the R.I.C.E. Regime in the initial phase of injury (first 72 hours) will greatly assist in improving recovery time. This involves rest from aggravating activities, regular icing, the use of a compression bandage, and keeping the affected leg elevated. Anti-inflammatory medication may also help to reduce inflammation, pain and swelling. The use of crutches when walking may be necessary to protect the groin from further damage and to hasten the healing process.

A graduated flexibility and strengthening program guided by a physiotherapist is essential to recondition the groin muscles and reduce the likelihood of injury recurrence following a groin strain. Careful assessment by the physiotherapist to determine which factors have contributed to the development of the injury, with subsequent correction of these factors is essential to ensure an optimal outcome. A graduated return to running program in the final stages of rehabilitation is required to recondition the muscle for running in a safe and effective manner. This should include the implementation of progressive acceleration and deceleration running drills, as well as change of direction drills.

### **Prognosis of a groin strain**

With appropriate management, patients with minor groin strains can usually recover in one to three weeks. With larger tears, recovery may take four to six weeks or longer, depending on the severity. In cases of a complete rupture of the groin, long term weakness and reduced function may occur

### **Contributing factors to the development of a groin strain**

There are several factors which can predispose patients to developing a groin strain. These need to be assessed and corrected with direction from a physiotherapist. Some of these factors include:

- poor groin flexibility
- muscle weakness (especially of the groin or gluteals)
- inadequate conditioning of the groin muscles
- muscle tightness
- inappropriate training or technique
- poor biomechanics
- poor posture
- decreased fitness
- fatigue
- inadequate warm up
- joint stiffness (particularly the lower back, hip and knee)
- poor pelvic and core stability
- inadequate rehabilitation following a previous groin injury
- neural tightness
- muscle imbalances
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### **Physiotherapy for a groin strain**

Physiotherapy for patients with this condition is vital to hasten the healing process, ensure an optimal outcome and reduce the likelihood of future recurrence. Treatment may comprise:

- soft tissue massage
- electrotherapy (e.g. ultrasound)
- stretches
- muscle energy techniques
- joint mobilization
- ice or heat treatment
- the use of a compression bandage or strapping
- education
- biomechanical correction
- the use of crutches
- dry needling
- progressive exercises to improve strength, flexibility, core stability, pelvic stability and balance
- activity modification advice
- technique correction
- anti-inflammatory advice
- prescription of orthotics
- devising and monitoring a return to sport or activity plan
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### **Other intervention for a groin strain**

Despite appropriate physiotherapy management, some patients with a groin strain do not improve adequately. When this occurs, the treating physiotherapist or doctor can advise on the best course of management. This may include investigations such as an X-ray, ultrasound, CT scan or MRI, or referral to appropriate medical authorities who can advise on any intervention that may be appropriate to improve the condition. In very rare cases, of complete groin rupture, surgical intervention may be considered.

### **Exercises for a groin strain**

The following exercises are commonly prescribed to patients with this condition. You should discuss the suitability of these exercises with your physiotherapist prior to beginning them. Generally, they should be performed 3 times daily and only provided they do not cause or increase symptoms.

### **Groin Stretch**

Begin this exercise by standing tall with your back straight and your feet approximately twice shoulder width apart. Gently lunge to one side, keeping the other knee straight, until you feel a stretch in the groin (figure 2). Hold for 15 seconds, 4 times at a mild to moderate stretch pain-free.



**Figure 2** – Groin Stretch (left leg)

### **Groin squeezes**

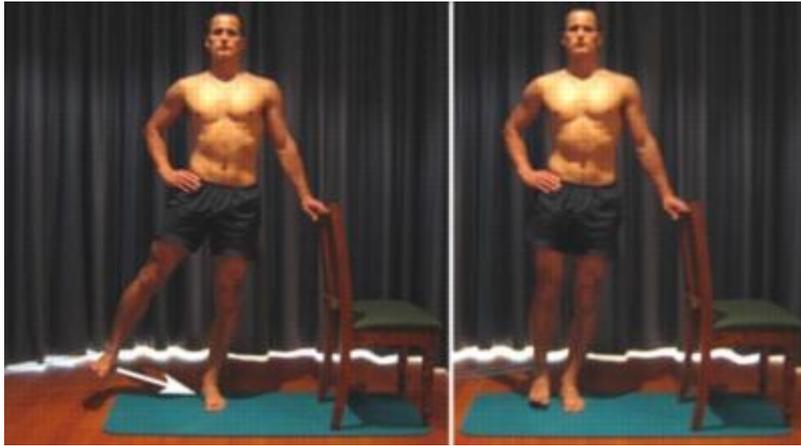
Begin this exercise by lying in the position demonstrated with a rolled towel or ball between your knees (figure 3). Slowly squeeze the ball between your knees tightening your groin muscles (adductors). Hold for 5 seconds and repeat 10 times as hard as possible pain free.



**Figure 3** – Groin squeezes

### **Groin Strengthening with Resistance Band**

Begin this exercise by standing at a bench or chair for balance, with a resistance band around your ankle as demonstrated (figure 4). Keeping your back and knee straight, slowly take your leg inwards tightening the groin muscles (adductors). Perform 10 – 20 repetitions as far as possible provided it is pain free.



**Figure 4** – Groin Strengthening with Resistance Band (right leg)

If you have sustained groin strain, or have unexplained groin pain, please contact me on +442866328200 or email [info@lindaburke.co.uk](mailto:info@lindaburke.co.uk) for help.