



Groin Strains

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A groin strain is a tearing injury to the adductor muscles of the hip. There are 5 muscles (adductor brevis, adductor longus, adductor magnus, gracilis and pectineus) that attach in the groin and also on the inner aspect of the long bone of the thigh (femur). These muscles may be injured when they are in a stretched position and then are forced to contract suddenly. For example, the muscles can be injured by starting to slightly slip out of control toward a “splits” position and reflexively protecting the leg from spreading during the slip. A misstep can occur in running. The muscles can simply be overstretched in an injury situation or the injury can be caused from improper over-stretching techniques.

Symptoms of a groin sprain are pain in the injured muscle, pain with using the muscle by bringing the leg inward (soccer kick motion), stretching the leg out to the side hurts, and standing on the injured leg hurts. There may be swelling in the groin and a feeling of weakness in the muscle. Groin strains are graded one, two and three and are based on severity of trauma to the muscle and tendon fibers.

In a **grade one strain** the symptoms may not be present until after the activity is completed. The feeling may be tightness with a slight feeling of pain with contraction or stretching of the muscles. A grade one strain will heal rapidly if it is not reinjured during its healing phase.

A **grade two groin strain** is characterized by immediate onset of pain at the time of injury. Pain is present with walking. It is sore to stretch and to contract the muscle. It usually is sore to touch. Sometimes a bruise will appear below the injury site after a few days. This bruise is due to bleeding of the muscle tissues. A grade two strain can take two to six weeks to heal if treated properly.

A **grade three strain** is luckily a rare occurrence in the groin. This involves a complete rupture of the muscle fibers. There is a stabbing or burning pain at the time of injury. The person is unable to walk without severe pain. A bruise generally appears after a few days. Grade three strains can take two months of healing and then an additional 2 to 3 months of rehabilitation.

Treatment of all groin strains should immediately include rest, ice, compression and elevation. Over the counter anti-inflammatory may be taken to reduce swelling and ease pain. Compression shorts or a bandage wrap are often helpful. If walking hurts, it is wise to use crutches for a day or more. Ice should be used for the first 5 days for 20

minutes out of every two hours in order to limit bleeding and reduce swelling in the muscle tissue. After 5 days of rest, rehabilitation is started with gentle and appropriate exercises to restore hip range of motion and strength. Obviously, the more serious the injury the more gentle the early exercise phase. Exercise is used to reform the healing scar tissues so that the healing fiber tears are aligned in the direction of movement.

Gradual return to activities and sports is determined by pain. Pain does not mean that you are going to reinjure the muscle; pain means that you HAVE reinjured the muscle. During rehabilitation the goal is to avoid pain by choosing pain free exercises, by limiting duration of exercise, and by limiting stretching and resistive forces to the healing muscle.

The cornerstone of prevention of injury to the groin is warming up to make the muscle more extensible. Exercise will increase the muscle internal temperatures by one or two degrees, which in turn increases muscle extensibility significantly. A good warm up lasts twenty minutes. It begins gently and is full pace at 20 minutes.

Other preventative measures include practicing sport specific activities to improve coordination before competition and to mentally practice the skills involved. For example, kickers need to kick; receivers in football need to run patterns; and hurdlers need to run hurdles. Muscles that are strong AND flexible are thought to be less susceptible to strains. Shoes should be appropriate for the surface. Diet is an important factor in groin injuries. An athlete needs to have a diet high in carbohydrates for the 48 hours prior to the event to provide an adequate supply of energy for muscle contractions. If the muscles become short of fuel, fatigue can set in. Muscle fatigue can be a factor at the time of injury. It is also necessary that fluids be replenished during the game, event or workout.