

Prevention of Contusions

Prevention of quadriceps contusions involves use of protective padding over the thigh. Adverse effects of contusions may be diminished through the appropriate treatment of the injury.

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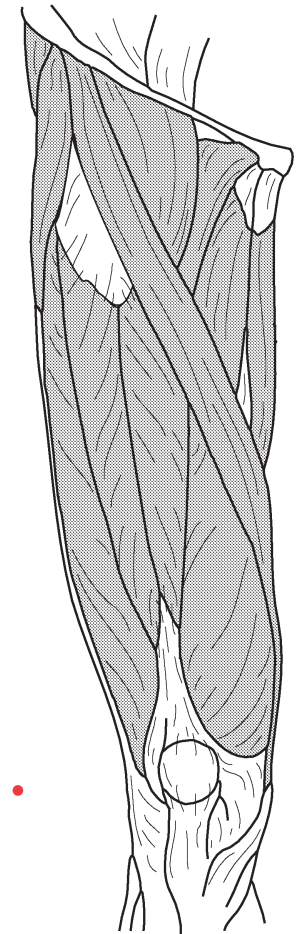
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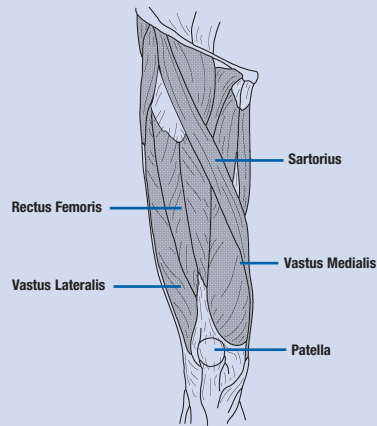
Quadriceps Contusion (Cork Thigh)



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Introduction

Quadriceps contusion or cork thigh is most commonly experienced in contact sports such as Australian Rules football and rugby, or sports such as cricket, hockey or lacrosse where a hard ball or object may strike the thigh of a player.



Quadricep Contusion

A contusion (or bruise) of the thigh, often known as a 'cork thigh' is a commonly experienced sports injury. This injury is the result of a severe impact to the thigh which consequently compresses against the hard surface of the femur (thigh bone). This often causes deep rupture to the muscle tissue and haemorrhage occurs, which is followed by inflammation. Such an injury can also occur in other body regions such as the calf or upper arm, however these are less common than in the thigh region.

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Signs & Symptoms

At the time of this type of trauma a player may experience varying levels of pain and reduced range of motion. The extent of pain and loss of movement will be dependent on the amount of force and the impact of the force at the time of trauma. The traumatised area will become swollen and painful to touch.

Contusions are classified according to their severity. They may be classified mild, moderate or severe.

Grade	Symptoms	Average time to return to sport
Mild	A player experiencing a mild contusion will usually be able to continue playing however, may feel some soreness after cooling down or the following day. The affected area may be tender to touch, and the ability to stretch the muscle may be diminished slightly, and the strength of the muscle may also be adversely affected.	2-3 weeks*
Moderate	A moderate contusion may prevent a player from continuing, however stiffening/swelling may be experienced with rest. The player may experience some pain and the affected area will be tender to touch. A player with a moderate contusion of the quadriceps will often walk with a limp and range of motion will be diminished by up to 50%.	4-6 weeks minimum*
Severe	A severe contusion will be characterised by rapid onset of swelling and obvious bleeding. Both swelling and bleeding may not be able to be controlled. Movement loss will be severe and difficulty bearing full weight on the affected leg will be apparent. The affected area will be very tender and muscle strength will be diminished.	8 weeks minimum*

* The return to sport period from all grades of contusion injury may be significantly reduced with good early management and assessment by a sports medicine professional.

Initial Treatment

The immediate treatment of any soft tissue injury consists of the RICER protocol - rest, ice, compression, elevation and referral. The RICER protocol should be followed for 48 - 72 hours. The aim is to reduce the bleeding and damage in the muscle. The thigh should be rested in an elevated position with an ice pack applied for 20 minutes every two hours (never apply ice directly to the skin). A compression bandage should be applied to limit bleeding and swelling in the injured area.

The No HARM protocol should also be applied - no heat, no alcohol, no running or activity, and no massage. All these will lead to increased swelling and bleeding in the injured area.

Gentle, gradual, pain free stretching of the muscle will assist in restoring full range of motion in mild muscle contusion injuries. Moderate to severe contusions may require the use of crutches to ensure complete rest, particularly if full weight bearing on the affected leg is painful.

Treatment

Following RICER protocols, mild contusions may be treated using a combination of soft tissue massage and stretching. More severe contusions will require treatment by a physiotherapist.

Myositis Ossificans

The more severe a contusion, the greater the risk of the development of Myositis Ossificans. In this condition calcification occurs in the healing hematoma. The healing hematoma forms small bone within layers of the affected muscle. Symptoms include overnight and morning pain, as well as pain on muscle contraction. It may be possible to feel a hard bump or 'woody' feel within the muscle. Stiffness and loss of knee range of movement are also common. Poor treatment of a contusion may also lead to the development of Myositis Ossificans.

Bone formation associated with Myositis Ossificans usually ceases after 6-7 weeks, at which time the formed bone begins to break down and be re-absorbed by the body. Complete recovery can however take up to 12 months in more severe cases. Little can be done to accelerate the re-absorption process of Myositis Ossificans and care should be taken in the treatment of the condition to avoid its long-term effects. Assessment by an experienced sports medicine professional may help with pain control and assist the recovery process with supervision of the rehabilitation process.