

# Quadriceps Cork / Contusion

## What is it?

A cork is the consequence of direct trauma to the muscle. It results in burst blood vessels and tissue trauma resulting in bleeding/bruising, swelling and inflammation. See figure 1.

## What are the symptoms?

Thigh pain and stiffness are the most common symptoms. Sometimes the knee will also appear swollen.

## How did I get it?

Corks result from direct trauma to the muscle. Note Figure 2

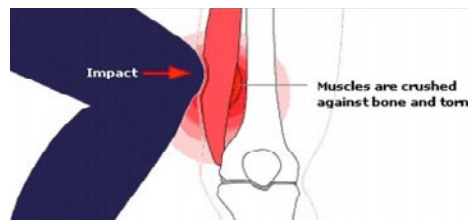


Figure 2



Figure 1 Note the obvious damage to the blood vessels and tissue causing very visible bruising swelling and inflammation

## How is a diagnosis made?

A diagnosis is made on the history of the injury and examination findings. X-Rays, ultrasounds, CT scans and MRI are usually not necessary.

## What should I do?

If the cork is mild then it is usually fine to just let it settle naturally. If there is significant pain or swelling it can predispose you to other problems - some of which are career threatening however preventable with appropriate management. If you cannot bend your knee fully it may be worth seeking medical attention.

Most corks need no specific management other than rest to allow the bruising and inflammation to settle. If the cork is severe though a common problem that develops is called heterotopic ossification (also known as myositis ossificans). This is a condition where bone grows where it should not - bone may develop in the muscle and make the muscle less functional. It occurs in 4% of mild quadriceps corks but 18% of moderate corks. Signs and symptoms that increase the likelihood of developing this abnormal bone growth are:

1. Inability to bend the knee past 120 degrees
2. previous quadriceps injury
3. delay in treatment greater than three days
4. associated knee swelling
5. being male

## What does rehab involve?

Initial treatment involves RICE (Rest, Ice, Compression, Elevation). **In the case of a quadriceps cork, rest and compression is extremely important.** Limit weight bearing until the knee can bend to 90 degrees without significant pain. Functional rehabilitation and non-impact sports are allowed when the arc has reached 120 degrees. Return to full activity is allowed when there

is normal strength and range of motion.

Taking an anti-inflammatory is also very useful in preventing abnormal bone formation. An anti-inflammatory should be taken if any of the criteria for moderate/severe injury are met unless there is any reason they may not be tolerated.

Sometimes when there is very significant bleeding and there is pooling of blood it is worth aspirating i.e. sucking out the blood.



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