Nigel Donnachie
Consultant Hip & Knee Surgeon

ANTERIOR CRUCIATE LIGAMENT (ACL) RECONSTRUCTION USING HAMSTRING GRAFT

Why is an anterior cruciate ligament reconstruction necessary?

Rupture of the anterior cruciate ligament (ACL) is a major injury to the knee. The ACL acts as a central pivot, which the knee moves around. ACL ruptures are often associated with other injuries such as a torn cartilage or damage to other ligaments such as the collateral (side ligaments) or posterior cruciate ligaments. A knee with a complete rupture of the ACL is often unstable. The patient complains that the knee is “not strong” and “gives way”. If a patient has had a course of good quality physiotherapy and is still having problems getting back to full activity, then an ACL reconstruction may be needed.

What does the operation involve?

There are several methods used for ACL reconstruction, the two most commonly performed are:

1) Using the central third of the patella (kneecap) tendon with a segment of bone from the patella and tibia (shin bone).

2) Using one or two of the hamstring tendons.

Mr Donnachie will use a graft from your hamstrings to reconstruct your anterior cruciate ligament. This type of graft takes longer to heal than the patella tendon type but offers the advantage of reduced likelihood of experiencing discomfort when kneeling.

This technique is performed using an arthroscope (commonly known as keyhole surgery). The operation involves making tunnels in the tibia (shin bone) and femur (thigh bone). The substitute tendon is then threaded into place and fixed with a screw, rod or suture (stitch).

The operation is usually performed under a general anaesthetic. You will be in hospital overnight. The rehabilitation starts immediately post operatively. The rehabilitation program takes nine to 12 months and is supervised by an experienced physiotherapist.

The graft has to develop its own fresh blood supply. This takes time and the graft is weak until this occurs. Therefore, it is 8-12 months before contact sports can be undertaken.

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What are the benefits of ligament reconstruction?

Successful ACL reconstruction surgery tightens your knee and restores its stability. It also helps you avoid further injury and get back to playing sports

What are the possible complications?

Depending on the condition of your knee prior to surgery, a good result can be expected in approximately 85-90% of cases. However, some patients face a higher complication rate than others, which will reduce the chances of a good result. Mr Donnachie will warn you if this is the case with your knee.

The following risk factors exist for any patient undergoing ligament reconstruction:

• Medical risks E.G. Heart attack, stroke, clots in the leg (deep vein thrombosis) or lung (pulmonary embolism)

• Infection in the wound, or in the knee joint itself

• Failure of the graft

• Nerve Damage

• Excessive bleeding

• Stiffness/reduced movement in the knee

High risk groups

There are some people who come under the category of high risk and these include people who:

• Have had multiple operations or injuries to the affected knee

• Have had previous infection within the knee

• Have inflammatory arthritis, rheumatoid arthritis or psoriasis

• Have major medical problems

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• Take certain drugs such as steroids or immunosuppressant medication

• Fail to commit fully to the rehabilitation program

What are the alternatives to anterior cruciate ligament reconstruction?

Not all patients who have an ACL rupture wish to undergo ACL reconstruction surgery. However, this decision is largely based upon the degree to which your symptoms are impacting upon your lifestyle. Without surgery your knee is likely to remain unstable and this may affect your ability to take part in certain sporting activities. It is also possible that due to ongoing instability in your knee that you may experience problems in the future, such as cartilage injuries or osteoarthritis.

Recovery
Rehabilitation exercises must be performed in order to return your knee to full flexibility and stability. These exercises may be painful at first but they are an essential part of you post-operative recovery and if they are not performed you face a high probability that your ACL reconstruction will not be as successful as you had hoped.

You play an important part in your recovery. Whilst the physiotherapy, nursing and medical staff provide important advice and support, it is up to you to build the strength in your thigh and calf muscles in order to help support the reconstructed ligament. It is therefore vital that you are well motivated and committed to working hard both in hospital and following discharge.

Full recovery takes between nine and 12 months and during this time it will be necessary for you to avoid sporting activities. Sometimes recovery can feel slow and this can be a little frustrating. However, it is vital that you comply fully with the rehabilitation program, otherwise there is a significant possibility that your graft will fail.

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