

Anterior Cruciate Ligament (ACL) Reconstruction



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عضو في مؤسسة حمد الطبية
A Member of Hamad Medical Corporation

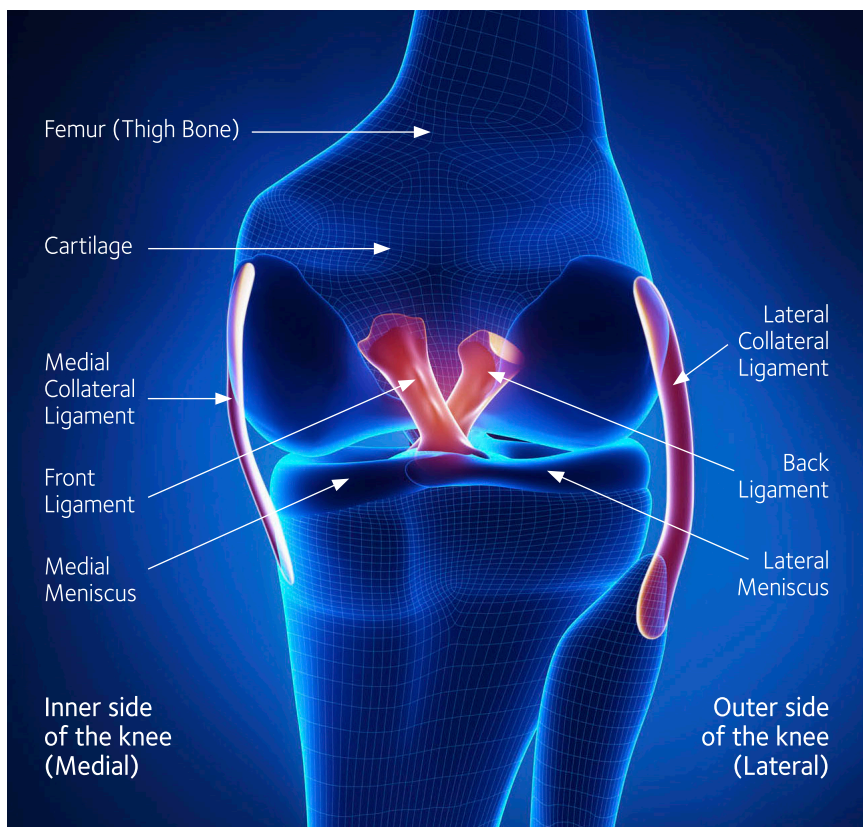


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What is ACL?

The knee has ligaments inside the joint that provides stability. The anterior cruciate ligament (ACL) is located at the front and the posterior cruciate ligament (PCL) at the back of knee. In addition, there are the medial collateral ligament (MCL), located on the inner side, and the lateral collateral ligament (LCL), located on the outer side of the knee. The menisci are two firm semilunar structures found between the knees joint.

Ligaments of the Knee:



Function of ACL:

- The ACL provides stability to the knee and prevents the tibia (Lower bone) from slipping on the femur (upper bone).
- The ACL controls the motion of the knee during twisting and turning.
- The ACL has sensors that provide feedback to the muscles so that motion is controlled and uniform.
- When the ACL is injured the knee becomes unstable. This would lead to excessive wear and tear of the meniscus which could ultimately damage the cartilage in the knee.

ACL Injury:

The most common injury to the ACL occurs during contact sports like football. It can also get injured due to motor vehicle accidents and falling from heights. Immediately after injury, you will have severe pain followed by swelling of the knee. This could last for a couple of weeks. Later you would experience instability and the knee might give way when running or climbing down stairs.

During the initial injury other structures in the knee like the meniscus and cartilage could also be damaged. In this case the outcome of the surgery, even after ACL reconstruction, is less than optimal.

Remember that however successful the surgery, it will not give you a fully normal knee, as it is difficult to replicate your original ACL anatomically and physiologically.

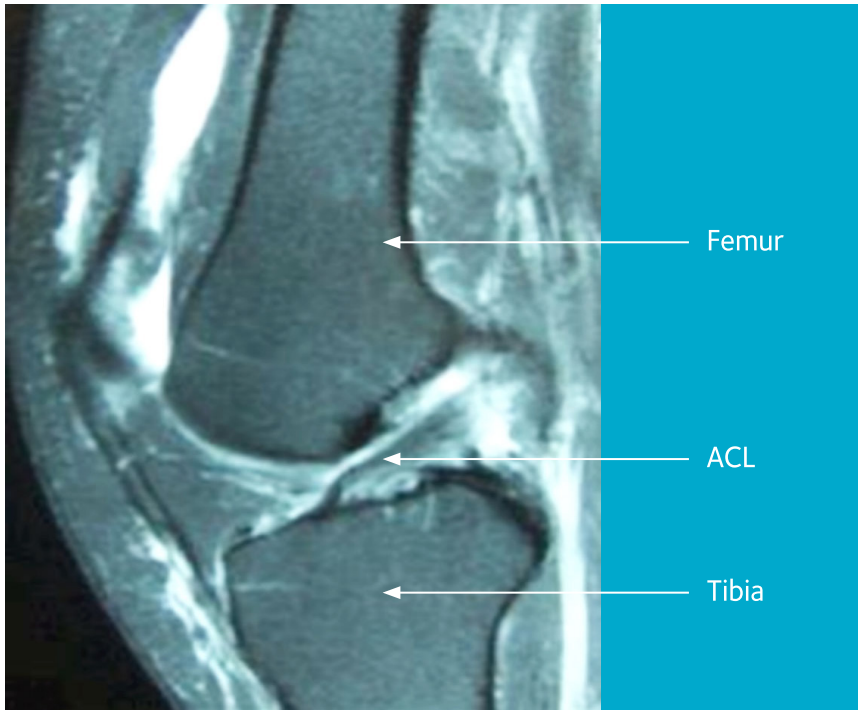
However reconstruction of ACL will provide you with a stable knee which will allow you to return to normal sporting activities and will prevent further damage to other structures in the knee.

Diagnosis:

Detailed history and clinical examination is enough for your doctor to make a diagnosis of ACL injury. MRI is not essential for this. However, MRI will let the surgeon know if there are other any associated injuries to the knee, like injuries to other ligaments, meniscus or cartilage.

At times, the final diagnosis is made during arthroscopy or key-hole surgery when the surgeon can visualize the full knee using arthroscopy.

ACL Surgery:



Once ACL is torn it cannot be repaired and hence has to be replaced. This is done through key-hole surgery (arthroscopic surgery).

Replacement is done using either:

1. The patient's own tissue (Auto graft) or
2. Another patient's tissue (Allograft)

Al Khor Hospital mainly use auto grafts, including:

1. Hamstring graft (Tendon from the side of knee)
2. Patella tendon graft (Tendon with bone from knee cap)
3. Quadriceps graft (Tendon above the knee cap)

ACL in its original form consist of two bundles. However, the doctor usually replaces it as a single bundle. With the newer techniques available, the surgeon may do a double bundle reconstruction depending on the case.

After surgery the patient may experience knee draining. Knee braces are usually used especially if other structures, like the meniscus, are repaired. The surgery is performed under general anesthesia or spinal anesthesia. Nerve block is also given to prevent post operative pain. The anesthetist will discuss with you the type of anesthesia best suited for you.

Timing of Surgery:

ACL surgery is best performed 4-6 weeks after injury. During this time the knee should go through a period of rehabilitation to strengthen the muscles around the knee and reduce swelling from the initial injury.

Day of Surgery:

You will be admitted a day prior to surgery, or on the same day if it is done as a day care procedure. You should fast for at least eight hours before surgery.

The attending physician will take your history and do a clinical examination on you. The physician and the nurse will explain and answer any questions you have about surgery. The correct limb to be operated will be marked. The area to be operated will be clipped just before you go to the Operating Theatre.

Immediately after surgery you will be in the recovery room where your operated leg may have a brace to reduce knee rotation and take pressure off your joint. Ice or a Cryo/Cuff will be applied over the knee to reduce the swelling.

You will be in the hospital for 1-2 days. The physiotherapist will assist you with the exercises and teach you how to walk with crutches. Weight bearing can be done as tolerated. If present, the drain is removed within 24 hours after surgery and the knee will be put through a range of motion.

On discharge:

The physiotherapist will give you instructions on the exercises you have to do at home. Application of ice in a bag is also important to reduce swelling. It is important that you do the exercises as instructed to get the best possible result.

- Do not change or tamper with the dressing.
- You should also make appointment with the physiotherapist as an outpatient to continue with the exercises under his supervision.
- An appointment will be made in a week's time with your surgeon at which time the bandage will be opened and sutures will be removed.
- A prescription for pain medication will be provided.

It is common to see bruising around the knee and the side of the thigh, which may look alarming. This will disappear with time. You may also experience numbness in the front of the knee which should disappear after a few months. Do not sleep with a pillow under the knee with your knee bent as it can heal in this position and cause stiffness.

Return to work and sporting activities:

Ideally, you will be able to walk with crutches one day after surgery. As soon as you are able to bend the knee and sit comfortably on a chair, you can return to work, if it is an office job. This would take around 3–4 weeks after surgery. Protected movement should be done for 6–8 weeks till the graft incorporates into the tunnel created in the bone. Non-contact sport training can start in six months and you can only make a full return to sports after a one whole year has passed. However, this protocol will change if there are other repairs done to the knee at the time of ACL surgery. Your surgeon will give you instructions as to what is best suitable for you.

The physiotherapist who attended you at the hospital will give you a detailed instruction as the type of exercises you should do at home after surgery.



Risk and complications of ACL surgery:

No surgery is risk free. Even though the success rate of ACL surgery is good the following are the main complications that occur.

1. **Stiffness of knee:** Post-operative stiffness usually occurs if the patient does not follow the physiotherapist's instructions. Rehabilitation before surgery and physiotherapy afterward will prevent this.
2. **Numbness around the knee:** This is usually at the site where the graft is taken, which usually recovers after few months.
3. **Pain inside the knee:** Usually this occurs in patients who had cartilage damage. Meniscal tears which were repaired may also lead to persistent pain which should disappear with time.
4. **Persistent swelling:** Ice application and physiotherapy will relieve this.
5. **Deep Vein Thrombosis:** Female patients who are on oral contraceptives should stop the medication six weeks before surgery as they are prone to deep vein thrombosis. It usually presents with calf pain and calf swelling. These patients should immediately consult the Emergency Department or their surgeon as they need urgent investigation and treatment.
6. **Infection:** This is a rare complication. Usually all cases are given prophylactic antibiotic to minimize the risk.
7. **Graft failure:** This may occur immediately after surgery or after a long period of time. It is import that the knee is protected in the first 4-6 weeks and the patient should be careful that he does not slip and fall, especially on slippery floors.

Contact the Surgeon or the Hospital at: 44745661 if you feel there is any problem. The Emergency Department has an Orthopedic Surgeon on call 24 hours a day to see you if required.



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