

Anterior cruciate ligament tear

Knee anatomy

In general, joints are made up of all the elements that help bones join together. The knee is the largest joint in the human body and it consists of:

- Joint surfaces covered in cartilage: the distal head of the femur (epiphysis); the proximal head of the tibia and the posterior surface of the patella (knee cap);
- Means of joining: the capsule and the ligaments (medial and lateral, collateral, anterior and posterior cruciate, patellar etc.);
- Medial and lateral menisci located between joint surfaces.

The knee joint is one of the largest joints in the body and it consists of 3 bones: femur, tibia and patella. These bones are joined together by 4 main ligaments. One of the most important ligaments is the anterior cruciate ligament (ACL) which is located between the femoral condyles and has an oblique direction starting from the anterior intercondylar fossa of the tibia and ending on the lateral femoral condyle.

The main role of ACL is to stabilise the knee by opposing the anterior translation of the tibia relative to the femur, thus preventing the anterior drawer sign of the tibia relative to the femur. Once torn, this ligament narrows the range of movement and daily activities.

Anterior cruciate ligament tear

The tear occurs after traumas caused by sports activities, falling or tripping, when the knee joint is flexed or after rough contact.

The sports that usually cause such tears are those that involve quick changes of direction, stops and repeated running or landings, such as: football, rugby, basketball, ski, gymnastics and martial arts.

With age, the resistance of the anterior cruciate ligament diminishes, thus ligament tears are more frequent in elderly people.

Symptoms

In case of an acute tear of the anterior cruciate ligament, the symptoms are:

- A cracking sound in the knee during the accident;
- Knee tumefaction (swelling);
- Pain that limits the movements of the knee;
- Instability.

In a few weeks these symptoms disappear, but the knee instability persists during torsion movements, change of direction or walking on an unlevelled field.

The diagnosis is determined by the orthopaedic consultant based on the clinical exam and with the help of a MRI that enables him to see the affected ligaments, tendons, muscles or joint cartilage.

Treatment

The method of treatment is chosen by the doctor based on the degree of ligament tear, the integrity of the other structures of the knee, the patient's degree of activity, his/her age, the general state of health and the time elapsed since the accident.

If these tears require a ligament reconstruction, we recommend undergoing a ligamentoplasty, which is a minimally invasive arthroscopic surgical intervention.