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ACL INJURY

مدينة دبي الطبية مبنى ٣٧
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How does an ACL lesion occur?

The function of the anterior cruciate ligament (ACL) is mainly as a stabiliser of the knee in frontal and backward directions, but also in rotation. Typically, the lesion happens during sudden twist manoeuvres such as pivot movements or torsion during sport activities. The patient mostly mentions that he/she heard or felt a 'crack' in the knee. In most cases the sport can not be continued and the knee swells. Later there is often an instability in the knee during short twisting movements. However, sometimes the complains are vague with only a slight pain and swelling of the knee.

Diagnosis

The diagnosis of a torn ACL is usually already known as the patient mentions a 'torsion trauma with a crack'. During the clinical examination the Lachman, the anterior drawer and the pivot shift test as well should be performed. An MRI of the knee is advised not only to comfirm the ACL rupture but also to show any additional cartilage or meniscus lesions (uptil 40%).

Treatment of ACL lesions

ACL ruptures in the young sportive patient is rarely treated conservatively. Only if no instability complaints are predominant can surgery be avoided. In these non-operative cases, sports with twist activities should be avoided. When the ACL is torn, reconstruction by surgery can be considered depending on the instability complaints, the age, associated meniscal or cartilage injuries, and level of (professional) activity. The reconstruction can be planned when there is no stiffness in the knee (should be avoided) – mostly the surgery can be performed in the first six weeks after the injury. Ideally the surgery should be done withing the first nine months to reduce the probability of stretching other ligaments, as the presence of additional meniscal tears significantly increases.

ACL reconstruction

The ruptured ACL will be replaced by a new one taken from the hamstring tendons, quadriceps tendon or patella tendon from your knee. The graft of choice will be discussed with you in advance. In rare cases a donor tendon or synthetic graft can be used.

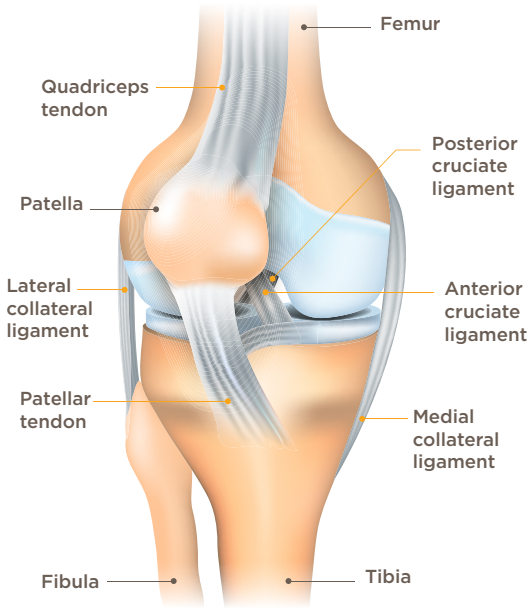
ACL GENERAL

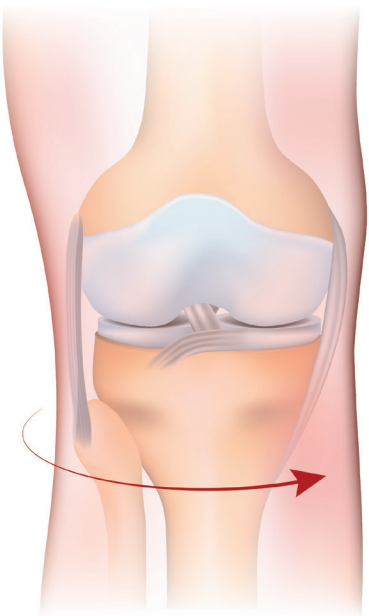
The knee joint is the largest and most complex joint of the human body. In addition to bending and stretching of the knee, other movements are possible such as rotation and translation. The knee consists of three bones: the thigh bone (femur), the shin bone (tibia) and the knee cap (patella). The knee is stabilised by belts consisting of collagen fibres and and is embedded in soft tissue, called ligaments. The sides of the knee joint are strengthened by the media land lateral collateral ligament. **In addition there are ligaments central to the knee called the anterior and posterior cruciate ligament because of their crossing course.**

Prevention of ACL lesions

Don't do the twist: prevention programme phases

- Dynamic warm up/cool down
- Plyometrics/neuro-muscular re-ed
- Proprioception/balance





ACL repair or reconstruction?
Recently more scientific interest has been focused on repair of the ACL with sutures and augmentation instead of the classical ACL reconstruction where it is be replaced by a tendon graft. The ruptured ligament will not be replaced but stitched together and strengthened (augmentation). Approximately 10% of the ACL ruptures can be treated by repair, if the lesion of the ligament is at the attachment on the femur. However, research on this method is still ongoing.

Revision ACL surgery
This is often a more complex surgery where attention is paid not only to the ACL, but also to the position of the previous bony tunnels, the bony anatomy, the status of the menisci and possible additional instability of the media land lateral ligament. The different options wil be discussed with you such as which tendon graft, and if extra surgery will be needed.

Frequently asked questions
- When can I drive a car? This depends on the strength and coordination of your knee. Your physiotherapist can advise you when this is possible. Mostly this will be after two to four weeks.
- When can I resume work? Obviously this depends on the kind of work you do and varies from four days to up to four months.
- When can I take a shower? When the wound is dry or when it is covered by a waterproof dressing.
- Post-operative problems? In approximately 5% of cases , three months after ACL surgery no full extension of the knee can be achieved. This is mostly due to scar tissue building up around the new ligament. If problematic, this scar tissue can easily be removed by an arthroscopy (normally between three to six weeks).
- How long do I have to stay in the hospital? Most often one night.
Complications? Blood clot and phlebitis can occur. When these blood clots become loose they can migrate to the lungs creating a lung embolism. Painful swollen hard calf muscles and breathing problems can be a **red flag** when this happens. Infection is rare and can be located in the wound or deeper around the ligament. Superficial wound infections mostly can be treated by oral antibiotics. Deep infection mostly require an arthroscopical cleaning and debridement. To minimise the chance of infection you will get antibiotics during the surgery.

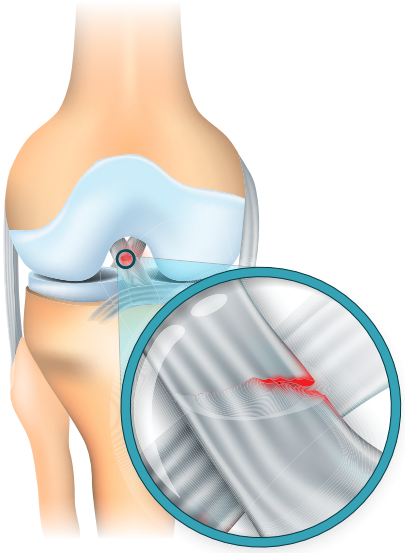
During the arthroscopy the remnants of the torn ligament are removed and two tunnels are drilled: one in the thigh bone and one in the shin bone. Both tunnels should come out in the knee in the place of your original ACL. The prepared tendon is brought in the knee through the bony tunnels at the original site of the ACL **(anatomical ACL reconstruction)**.

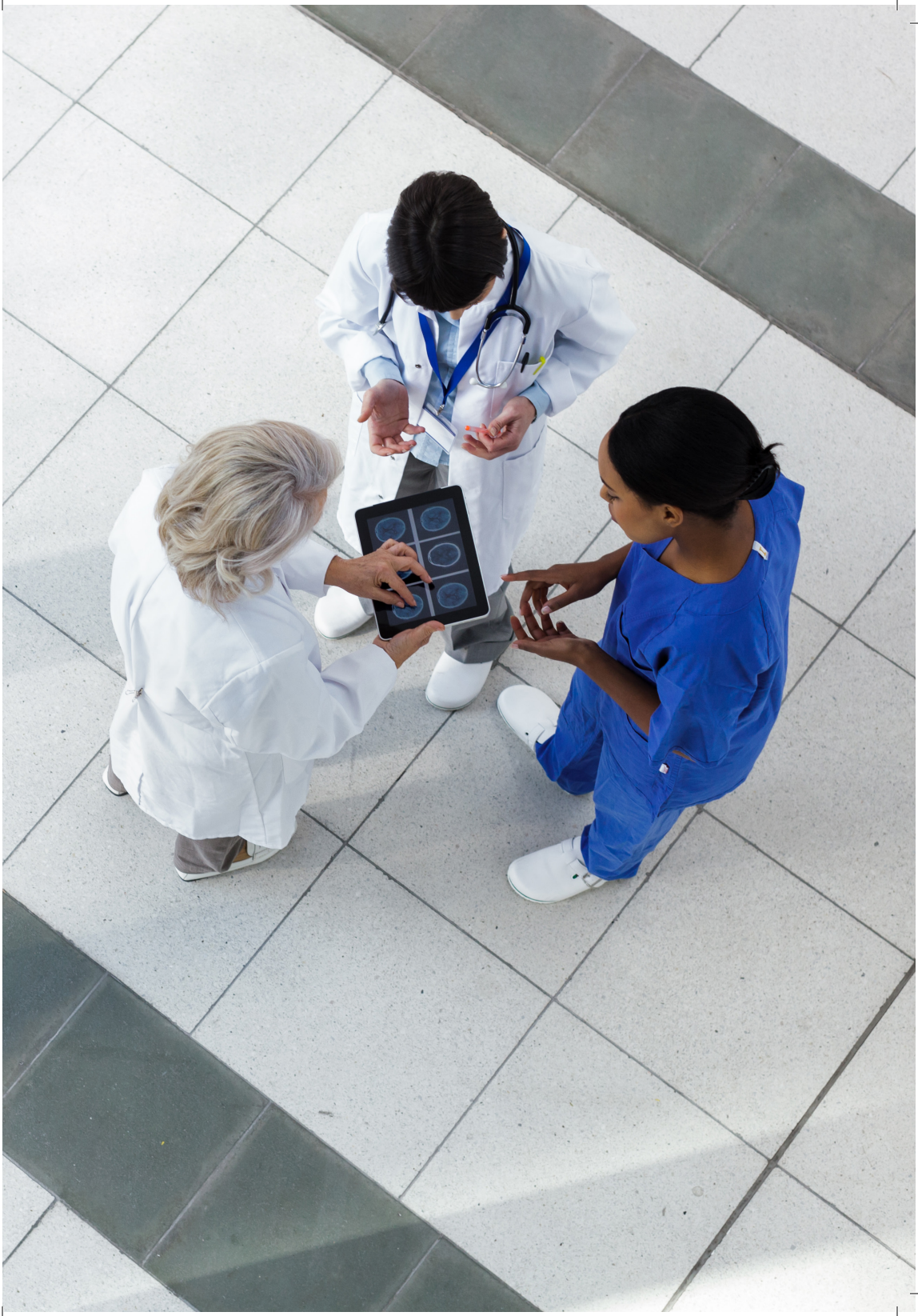
The tendon replacing the torn ACL will be stabilised by a special fixation system. This system is of most importance as it will provide firmness until the graft is fully grown together. In normal circumstances this takes three to six months after the surgery.
In selected cases, in addition to the ACL surgery, the anterolateral complex will be reconstructed.

During the arthroscopy the rest of the knee is checked, and any present cartilage and/or meniscal lesions can be treated in the same time.

Anterolateral instability

It is known that when the ACL is ruptured the anterolateral capsule can be injured as well. This anterolateral capsule is an important stabiliser in the pivot movement. A repair of this ligament at the outside of the knee will increase the resistance during rotational movements.





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