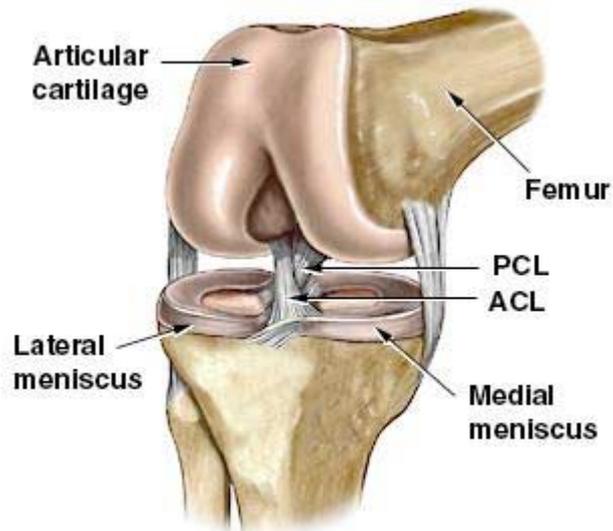


ARTHROSCOPIC ACL (SURGERY) RECONSTRUCTION

SUMMARY



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Figure 1: Right Knee - Frontal View with Patella Removed

The anterior cruciate ligament (ACL) is the major stabilizing ligament of the knee. The ACL is located in the center of the knee joint and runs from the femur (thigh bone) to the tibia (shin bone), through the center of the knee. In this position, it functions to prevent a buckling type of instability of the knee. (For more information on the ACL: [KNEE JOINT - ANATOMY & FUNCTION.](#))

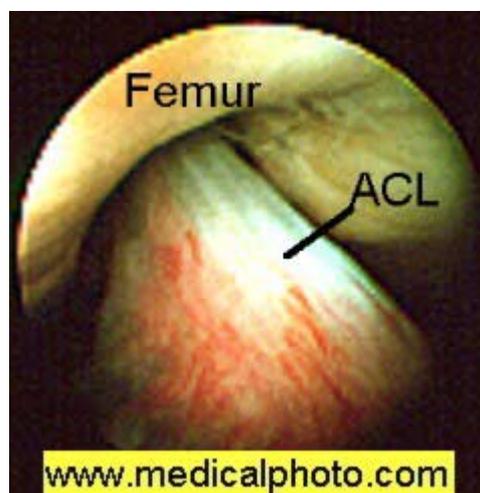


Figure 2: Right Knee - Arthroscopic View of Intact Anterior Cruciate Ligament

Usually the tearing of the ACL occurs with a sudden direction change or when a deceleration force crosses the knee. The patient often feels or hears a popping sensation, has the rapid onset of swelling, and develops a buckling sensation in the knee when attempting to change direction. (Click [HERE](#) for an animation of an ACL tear.)

DIAGNOSIS AND TREATMENT

The diagnosis of an ACL injury is usually arrived at by determining the mechanism of injury, examining the knee, determining the presence or absence of blood within the joint, and performing diagnostic studies. These may include x-rays, MRI scans and stress tests of the ligament.

The initial treatment of an acute ACL injury often includes ice, anti-inflammatory medication, and physical therapy which is directed at restoring the range of motion of the injured knee.

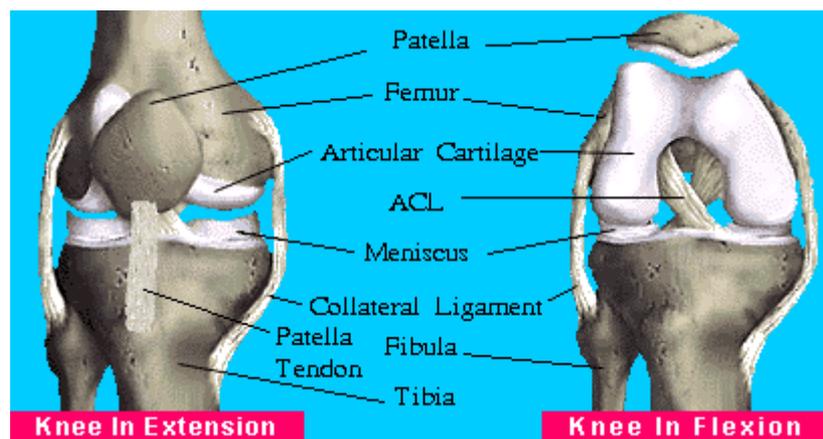


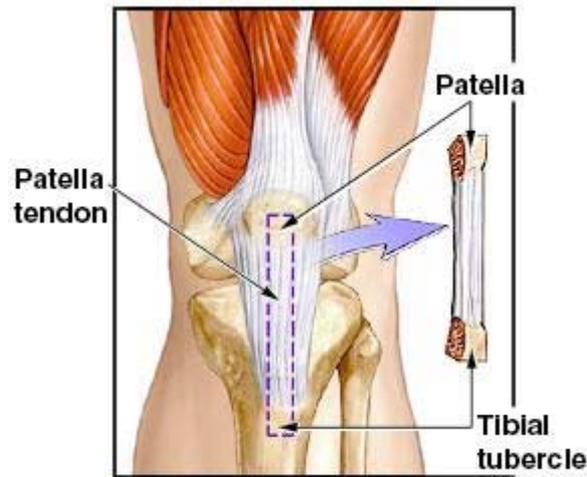
Figure 3: Right Knee

Surgical treatment of the torn ACL usually involves an arthroscopic surgical reconstruction of the injured ligament.



Figure 4: Arthroscopic Knee Surgery with Instruments in Place

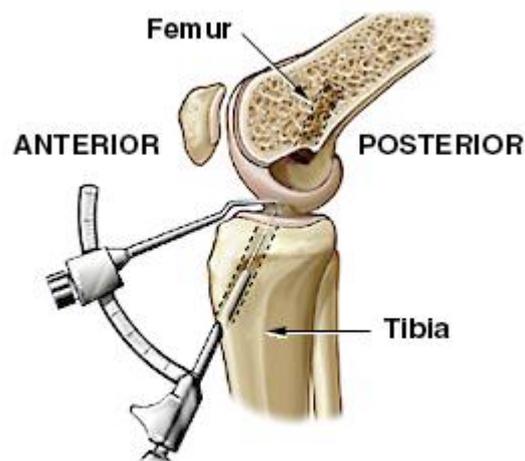
Although a number of different types of tissue have been utilized to reconstruct the ACL, the most common type of ACL reconstruction involves harvesting the central third of the patellar tendon with a bone block at each end of the tendon graft. After performing a diagnostic arthroscopic examination of the knee, the central third of the patellar tendon is harvested. (Click [HERE](#) for a computer animation of tendon harvesting (mpg file) courtesy of Rob Kroeger.)



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Figure 5: Left Knee - Graft Harvest

The remaining tendon is then repaired. After harvesting the tissue, drill guides are used to place holes into the tibia (bone below the knee)



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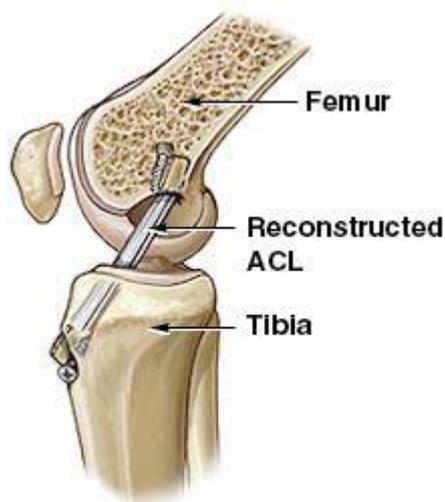
Figure 6: Left Knee



Figure 7: Intraoperative photo of drill hole in femur for ACL

and femur (bone above the knee). By placing the drill holes at the attachment sites of the original ligament, when the graft is pulled through the drill hole and into the knee, it will be placed in the same position as the original ACL. (Click [HERE](#) for a computer animation of drilling the holes (mpg file) courtesy of Rob Kroeger.)

After pulling the graft through the drill holes and into the joint to replace the torn ACL, the graft is then held in place with bioabsorbable screws or metallic screws.



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Figure 8: Left Knee

Fastening the graft in this manner allows new blood vessels to grow into the transferred graft and for healing to occur. Typically, the procedure is performed on an outpatient basis.

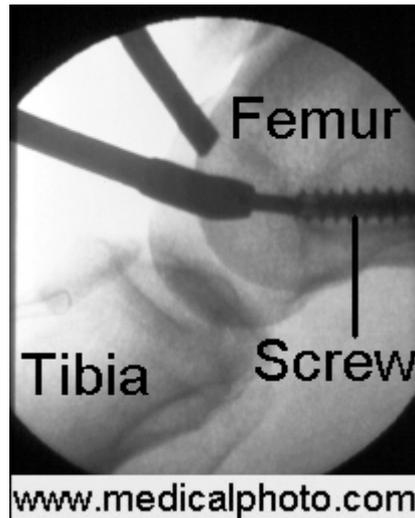


Figure 9: Lateral Intraoperative X-Ray demonstrating Placement of Metallic Screw for ACL Graft Fixation in the Femur

POST-OPERATIVE PERIOD

Postoperatively, it is possible to bear weight (partial weight bearing) on the surgically treated leg by using crutches for the first 7 - 10 days after surgery. Patients may stop using crutches when comfortable. Supervised physical therapy often is started by the second to third day after surgery.



Figure 10: CONTINUOUS PASSIVE MOTION - ORTHOLOGIC

In addition, a continuous passive motion device is applied to the injured leg post-operatively. Most patients use this device while sleeping for the first two weeks. This device very slowly moves the knee, thereby decreasing the risk of stiffness and loss of motion. Following an initial 6-10 week period of supervised physical therapy, most patients will progress to a self-directed program that is done in a health club. Typically, it takes the reconstructed ligament approximately 9 months

to heal. Until released by your physician, contact sports, racquet sports, skiing, tennis, martial arts, and sports that require rapid direction changes must be avoided.