AO Sports Course—
Principles of Sports Medicine: the Joint Is an Organ

K1.1: Suturing techniques

Learning objective

- Familiarize yourself with common sports medicine suturing techniques including the Krackow stitch and other whipstitch techniques

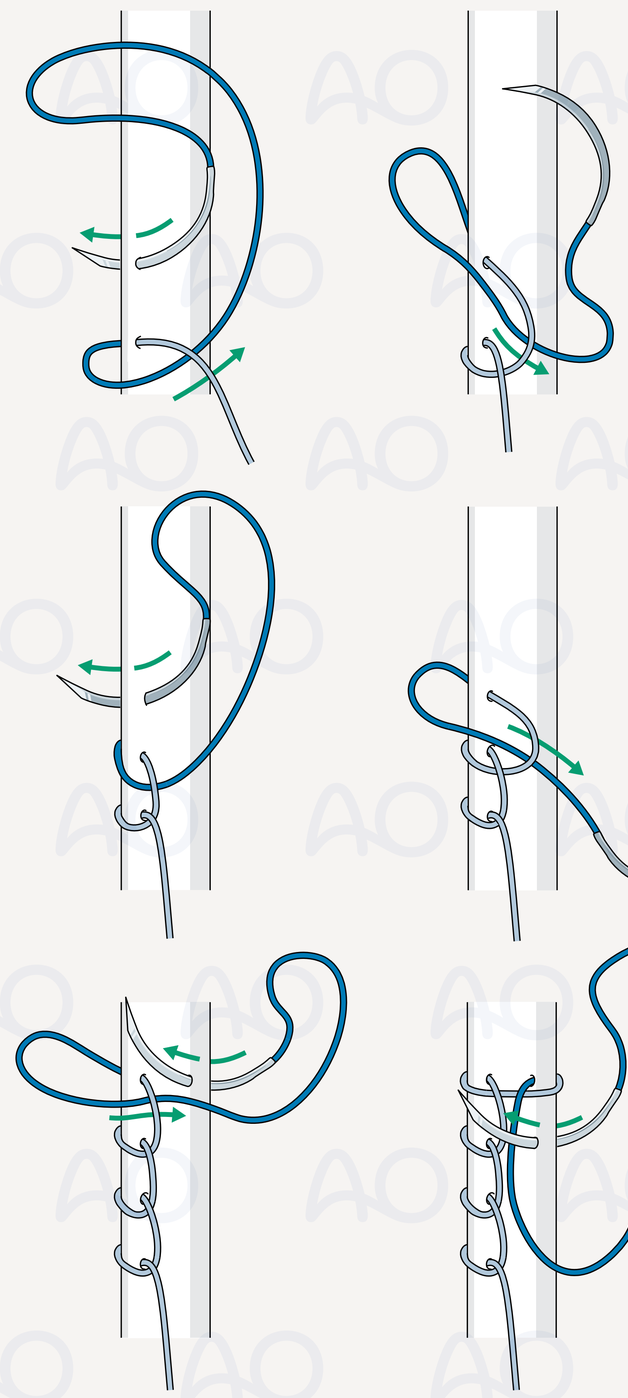
Task

- Practice the Krackow stitch and other whipstitch techniques using the graft preparation board as a graft holder

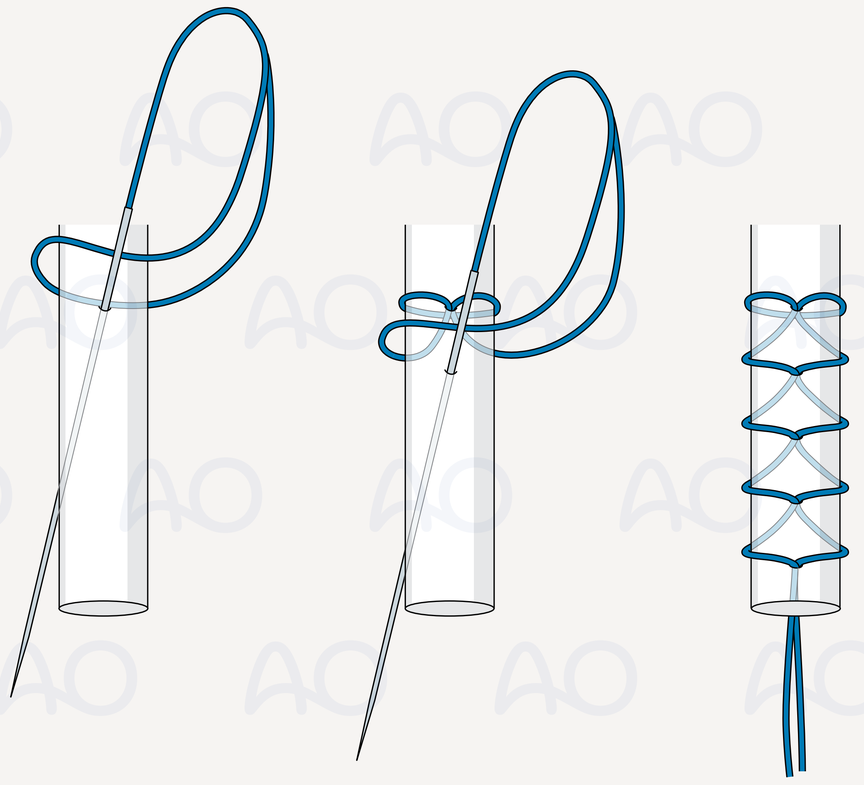
Take-home message

Whipstitch techniques, such as the Krackow stitch, are commonly used in sports medicine for a variety of applications including tendon repair and ligament reconstruction.

Krackow stitch



Whipstitch



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K1.2: Anterior cruciate ligament graft preparation

Learning objectives

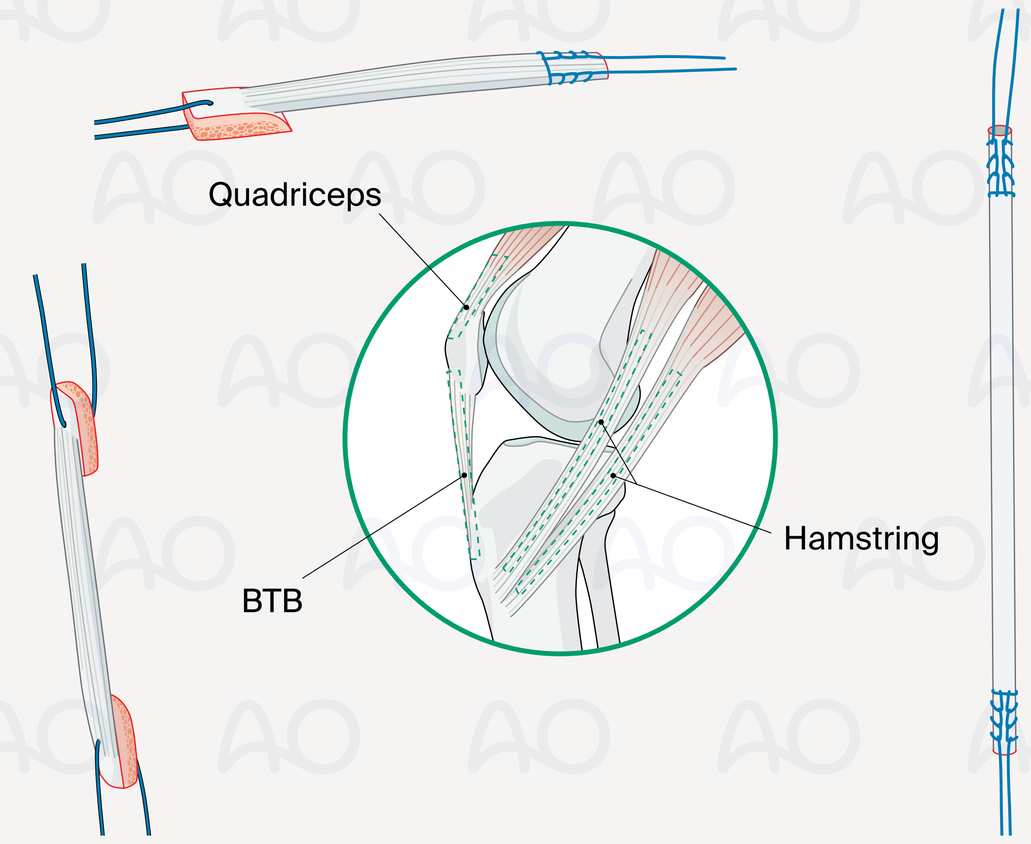
- Compare and contrast different options for anterior cruciate ligament (ACL) graft selection (ie, bone-to-bone (BTB), hamstring, quadriceps, and allograft)
- Familiarize yourself with common femoral and tibial options for ACL graft preparation

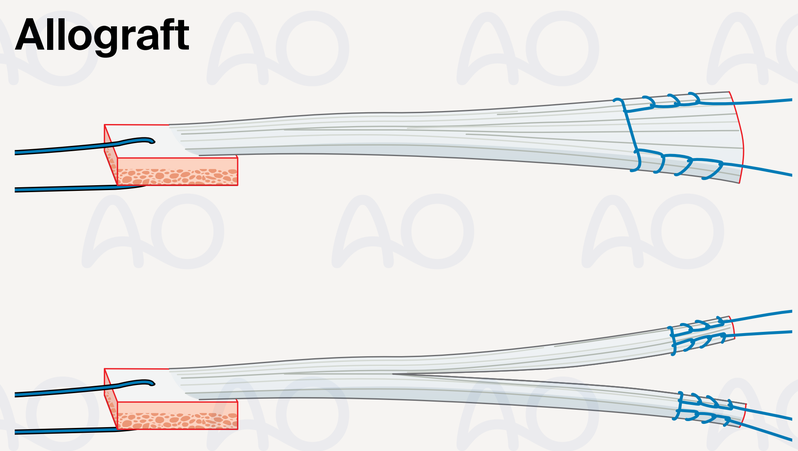
Tasks

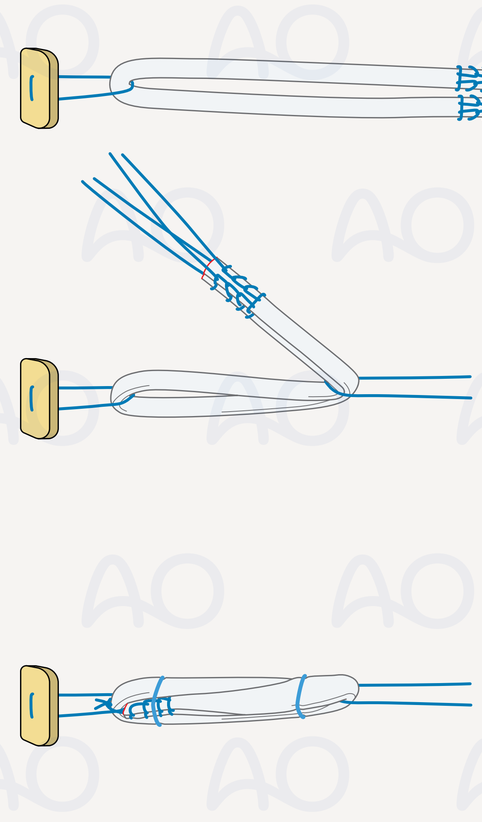
- Prepare an ACL graft to use for ACL reconstruction
- Utilize suspensory button fixation on the femoral side and whipstitch technique on the tibial side for screw fixation
- Measure the femoral and tibial graft diameter and graft length
- Store your graft in the plastic bags provided and write your name on the bag

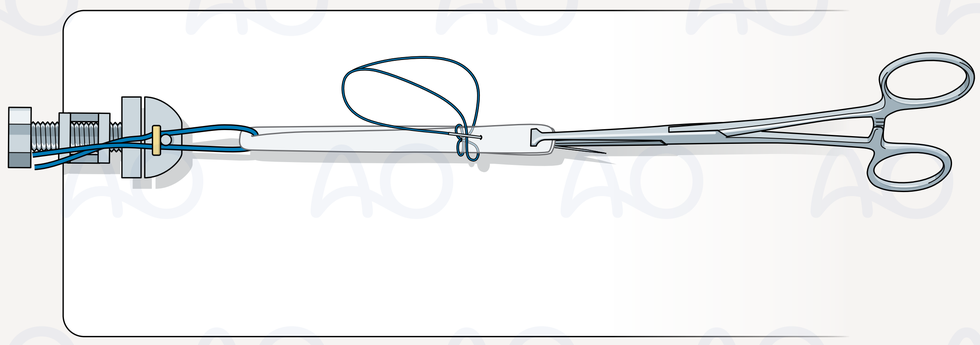
Take-home messages

- There are a variety of choices for ACL graft reconstruction (ie, autograft vs allograft, soft tissue vs bony fixation).
- Femoral and tibial graft preparation and fixation vary by graft type and surgeon preference (ie, suspensory cortical fixation, aperture screw fixation).
- There are pros and cons to each of the different graft choices and techniques.









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K1.3: Arthroscopic skills training

Learning objectives

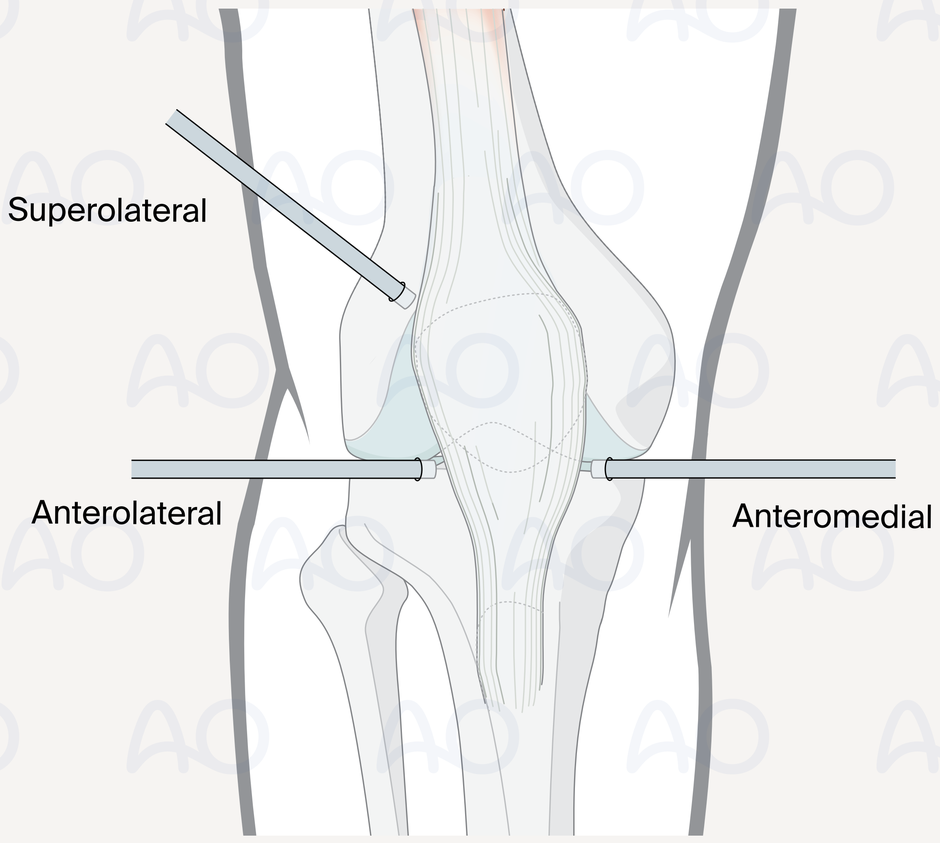
- Learn how to make common portals for knee arthroscopy
- Perform standard diagnostic arthroscopy of the knee joint
- Develop skillset in arthroscopic technique including triangulation and horizon control

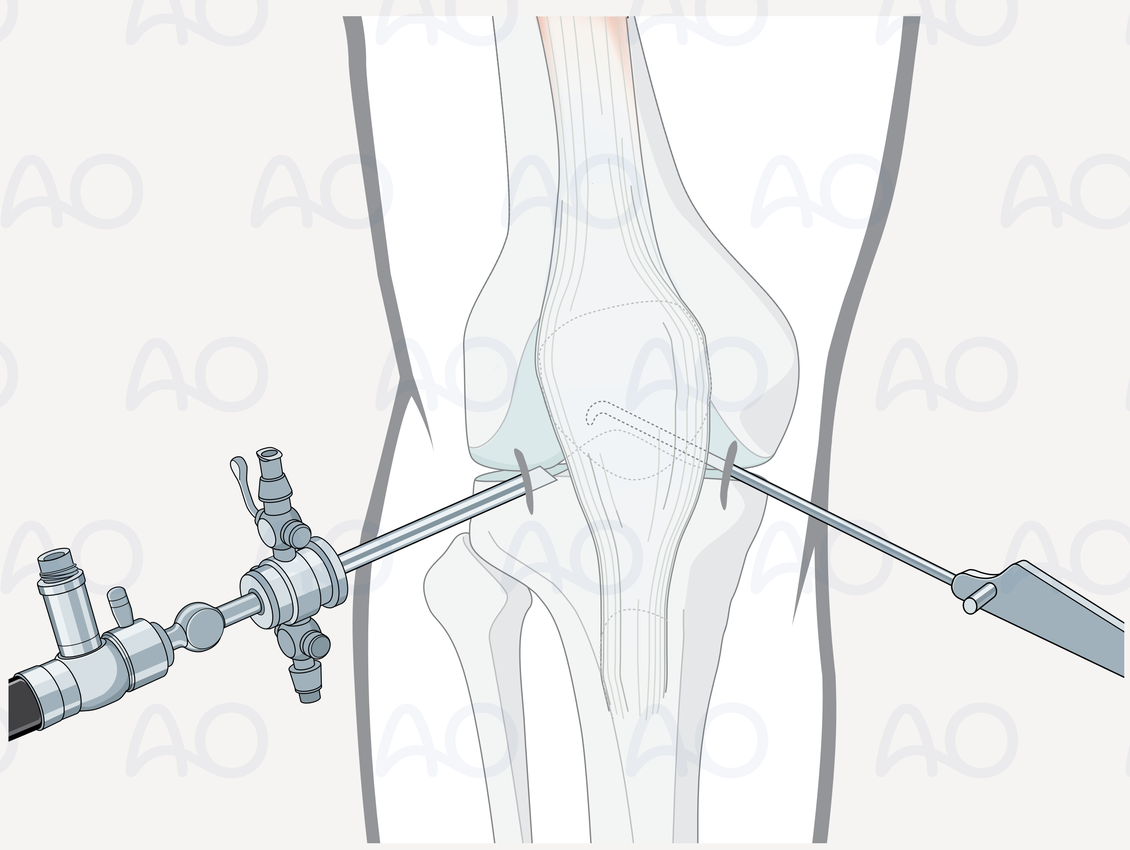
Tasks

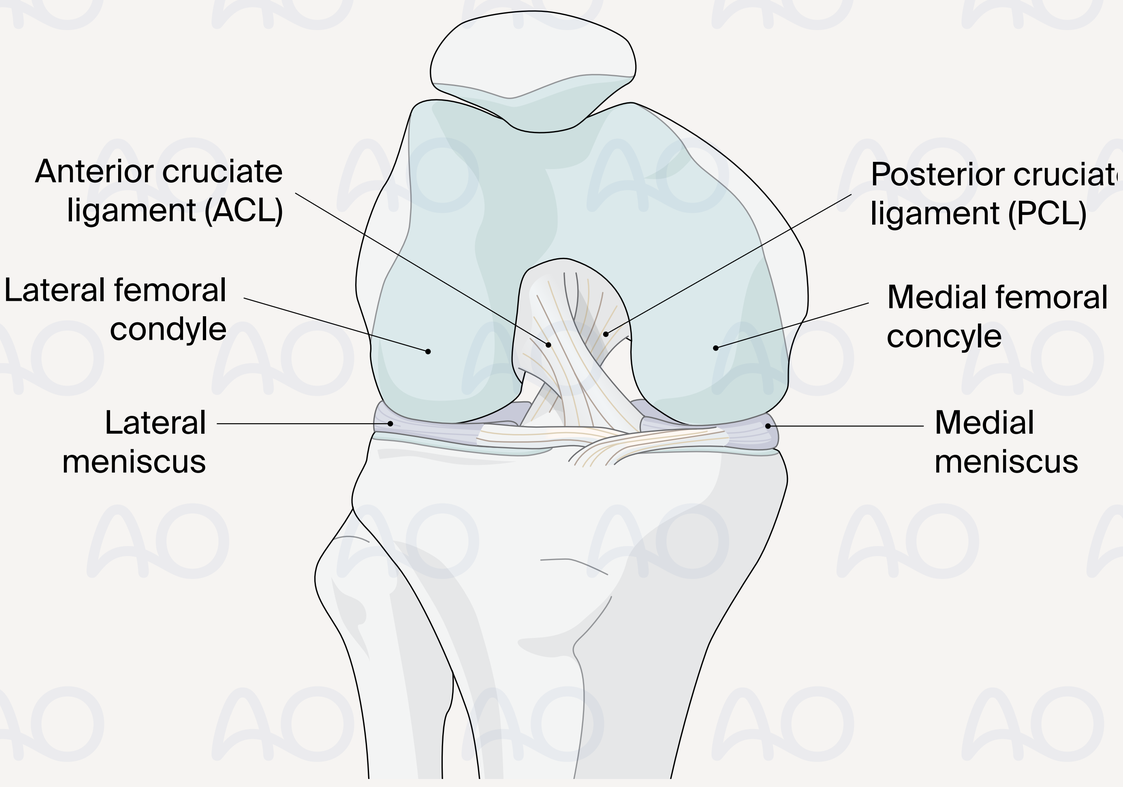
- Demarcate anatomical landmarks for arthroscopic portal placement
- Perform diagnostic arthroscopy of the knee joint identifying and palpating all critical structures
- Practice basic tasks in knee arthroscopy including probing and loose body removal
- Write your name on the skin sleeve. You will use the same sleeve for exercises on day 2

Take-home messages

- Diagnostic and therapeutic knee arthroscopy requires an understanding of surface and joint anatomy.
- Establishing proper portal placement is essential for successful knee arthroscopy.
- Triangulation and probing skills are critical tools for arthroscopic procedures.







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K2.1: Anterior cruciate ligament reconstruction

Learning objectives

- Identify the anatomical origin and insertion of the ACL footprint on the femur and tibia
- Learn different techniques for creation of tunnels and sockets for ACL reconstruction
- Explore a variety of fixation techniques for ACL reconstruction

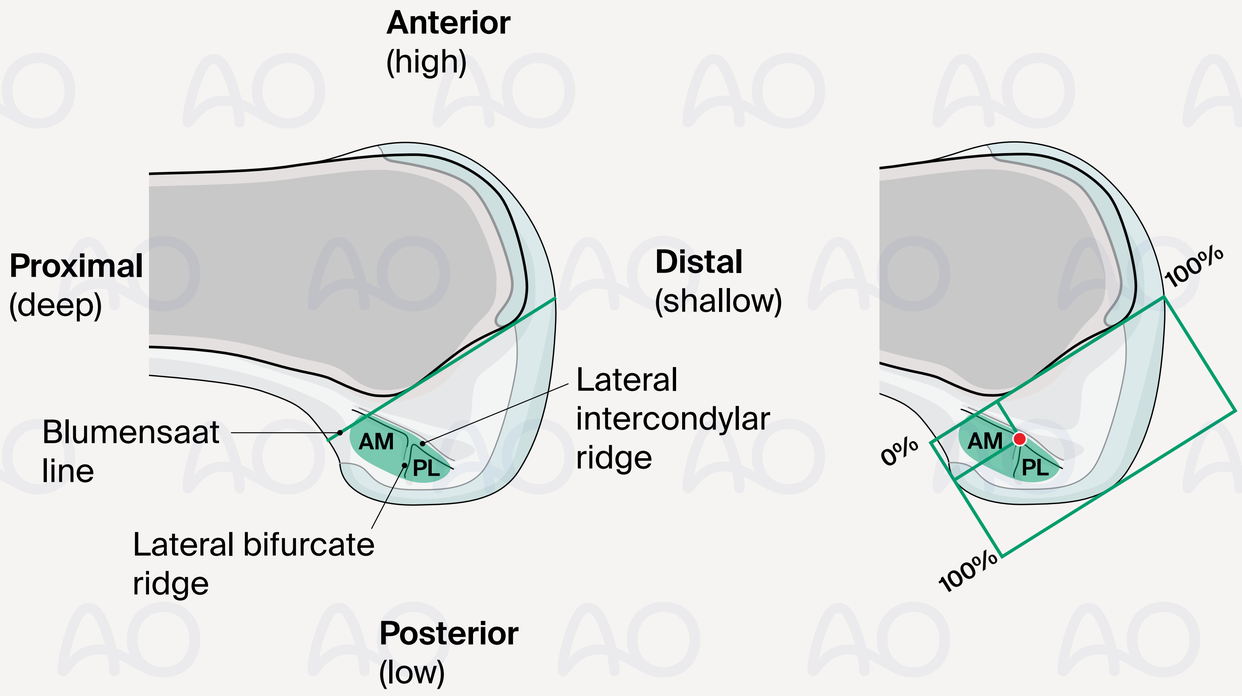
Tasks

- Prepare the ACL femoral socket using a retrocutting device
- Prepare the tibial ACL tunnel using a cannulated reamer
- Fixate the ACL reconstruction using suspensory cortical fixation on the femur (suture button) and interference screw fixation on the tibia

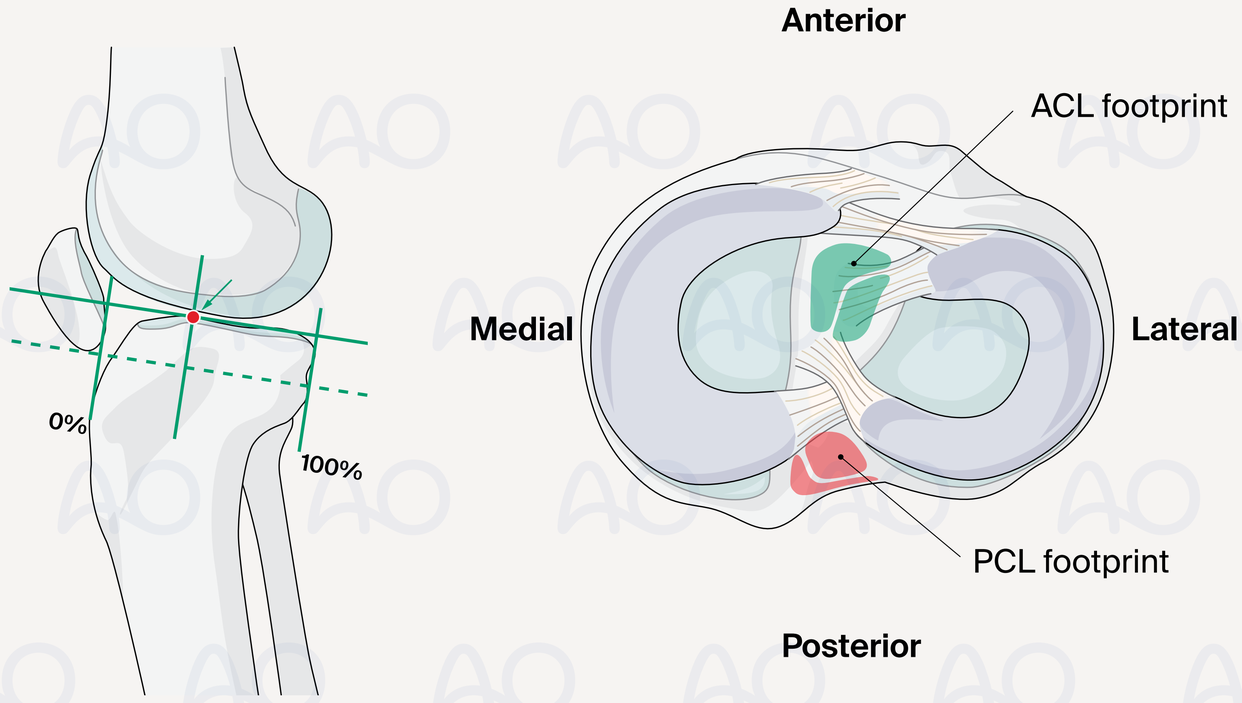
Take-home messages

- Reconstruction of the ACL is one of the most common knee surgical procedures.
- Successful reconstruction requires an understanding of the surgical anatomy and fixation principles allowing for anatomical graft placement and biomechanical time zero strength.

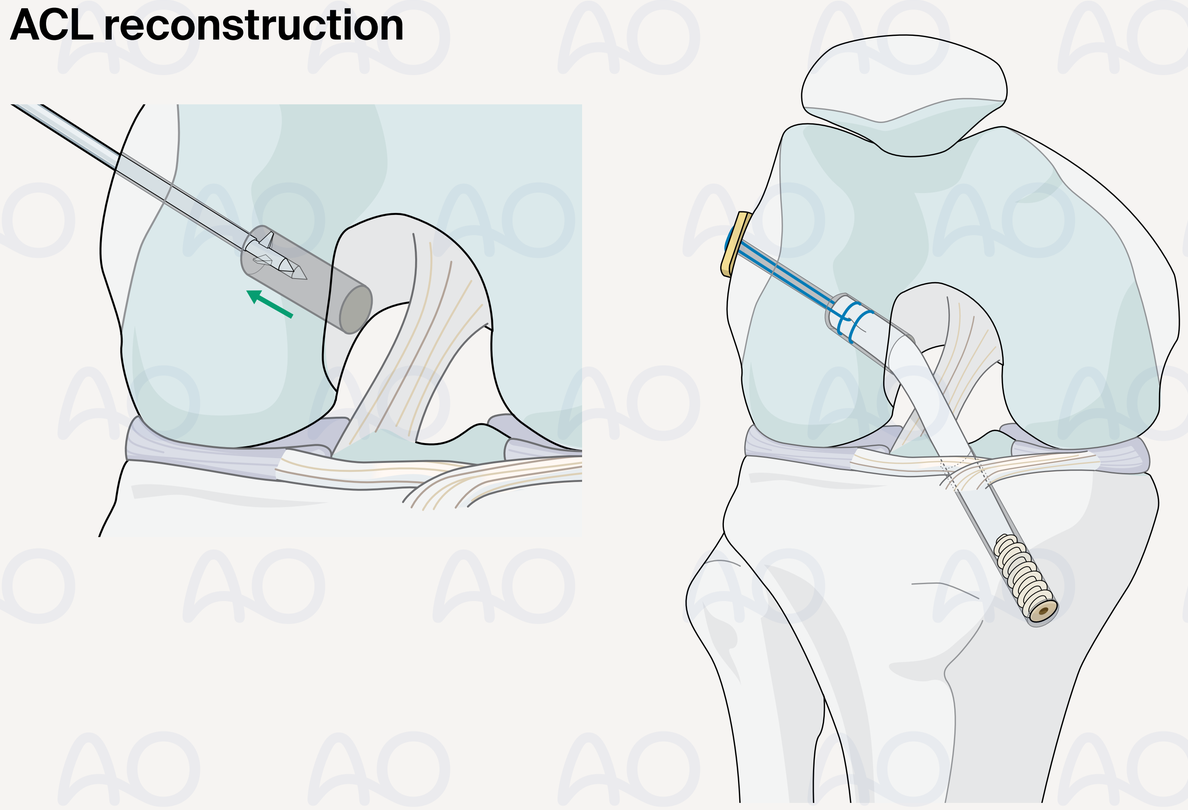
ACL footprint tibia



ACL footprint tibia



ACL reconstruction



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K2.2: Meniscus repair

Learning objectives

- Describe meniscal tear patterns based on tear location, configuration, and proximity to blood supply
- Learn indications and contraindications for meniscus repair
- Explore various types of meniscus repair options including all-inside, inside-out, outside-in, and root repair

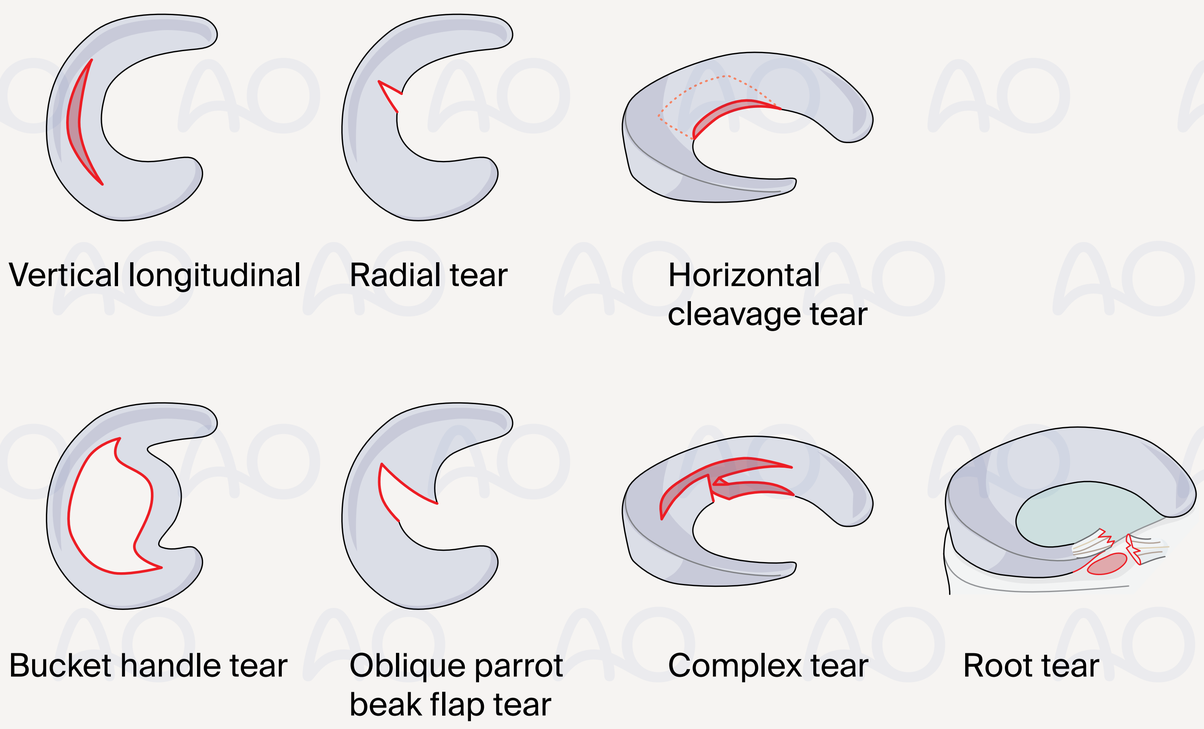
Tasks

- Perform the horizontal and vertical mattress all-inside meniscus repair
- Perform the inside-out meniscus repair and discuss safe zones for meniscal needle passage on medial and lateral side of the knee
- Perform the outside-in meniscus repair technique

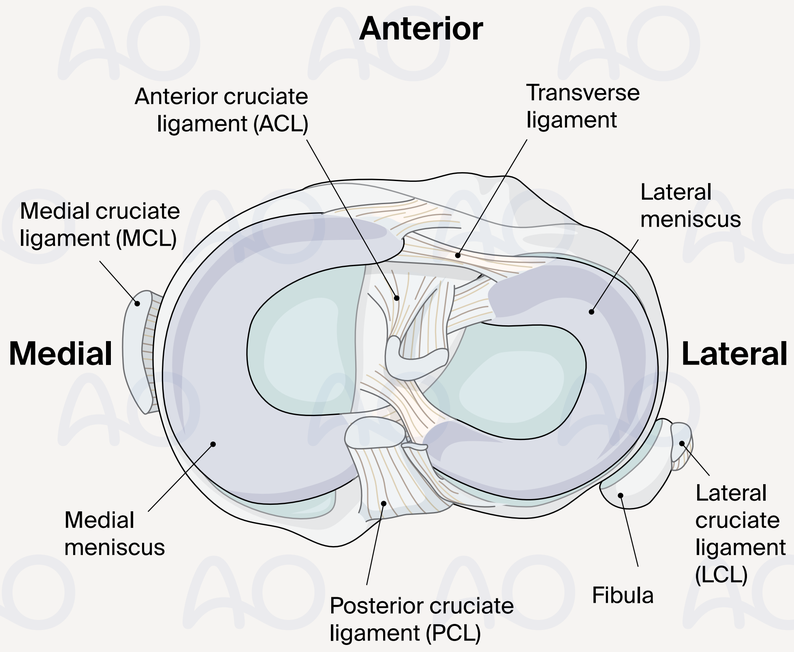
Take-home messages

- The medial and lateral meniscus play important roles in the knee joint and should be preserved whenever possible.
- There is a variety of surgical techniques and fixation strategies that are utilized for meniscus repair.

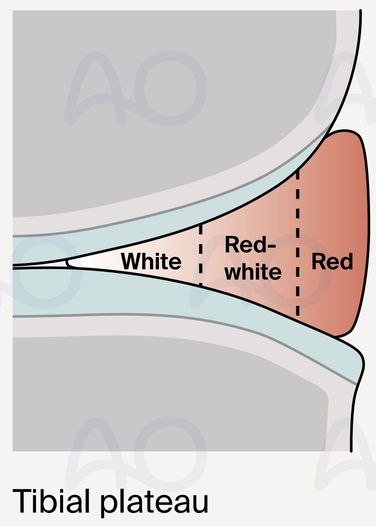
Tear patterns



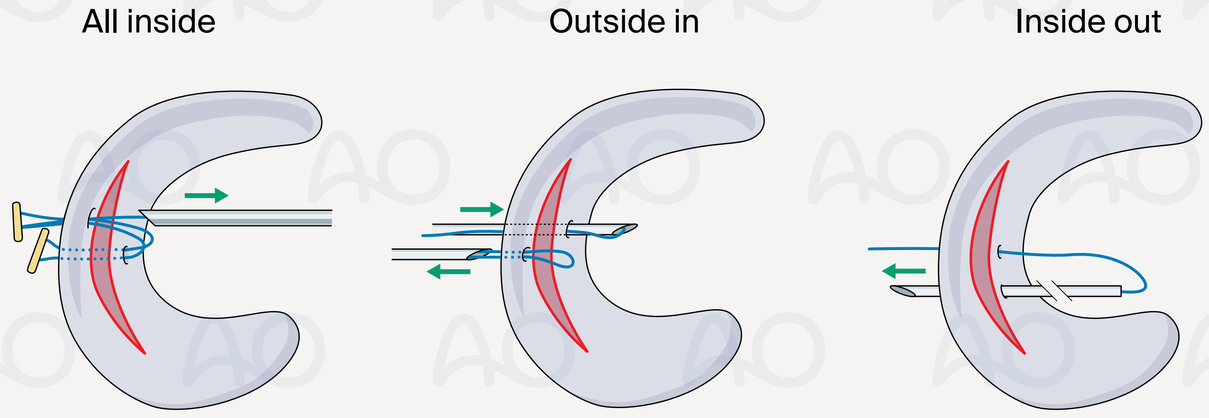
Anatomy



Blood supply



Repair techniques



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K2.3: Knee arthroscopic meniscal procedures

Learning objectives

- Learn how to systematically evaluate for meniscus tears in an arthroscopic model
- Review the indications for meniscus repair versus meniscectomy based on tear characteristics
- Explore techniques for meniscectomy and meniscus repair including all-inside, outside-in, and root repair

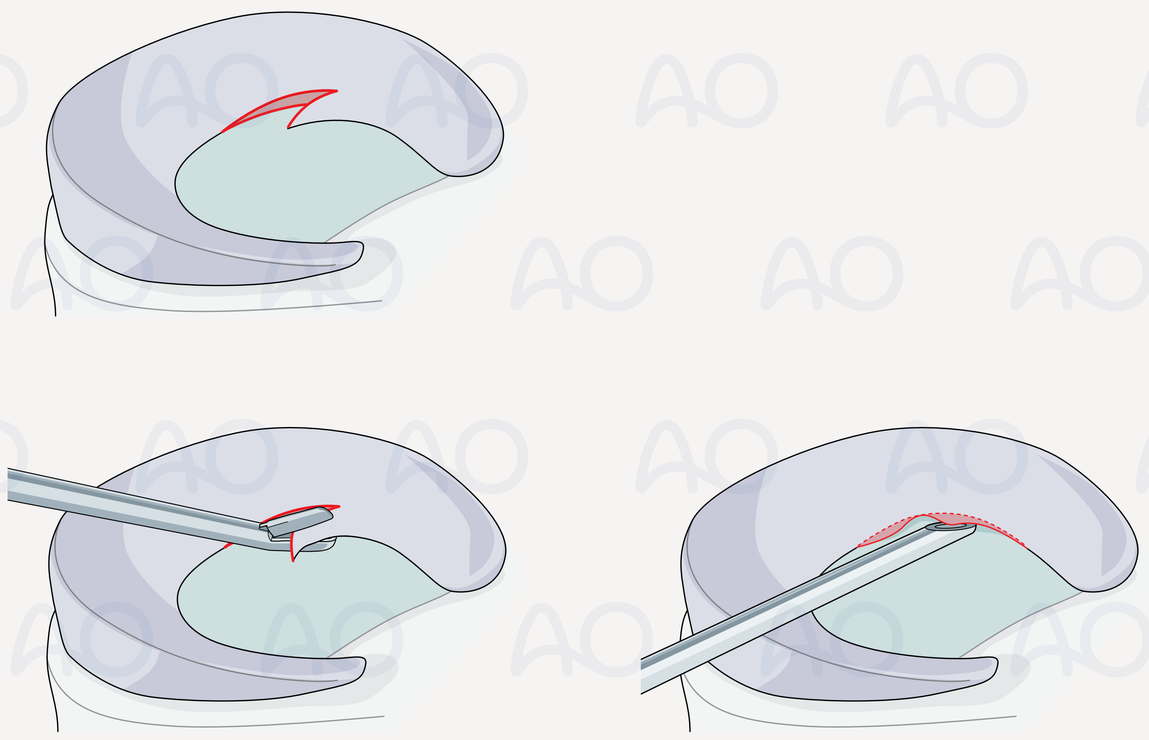
Tasks

- Practice techniques to improve meniscus visualization including trephination
- Practice techniques for partial medial and lateral meniscectomy using biters and shavers
- Perform all-inside and outside-in meniscus repair in an arthroscopic setting. Perform meniscus root repair (optional)

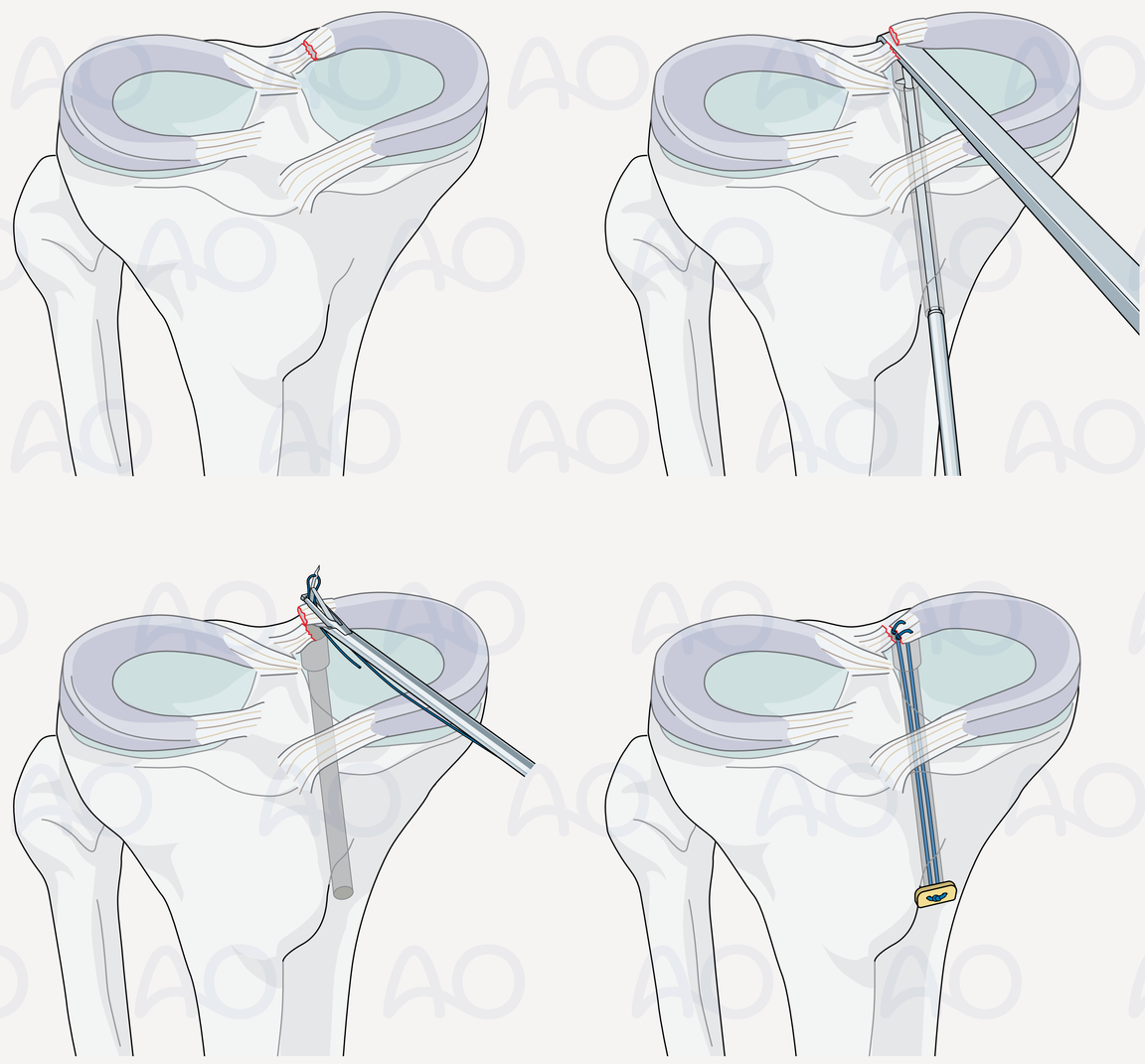
Take-home messages

- While meniscus preservation should be attempted whenever possible, surgeons must be facile in techniques for partial meniscectomy.
- Surgeons should have a variety of techniques available for meniscus repair. Choice of repair strategy is based on tear pattern, location, tissue quality, and surgeon preference.

Meniscectomy



Root repair



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