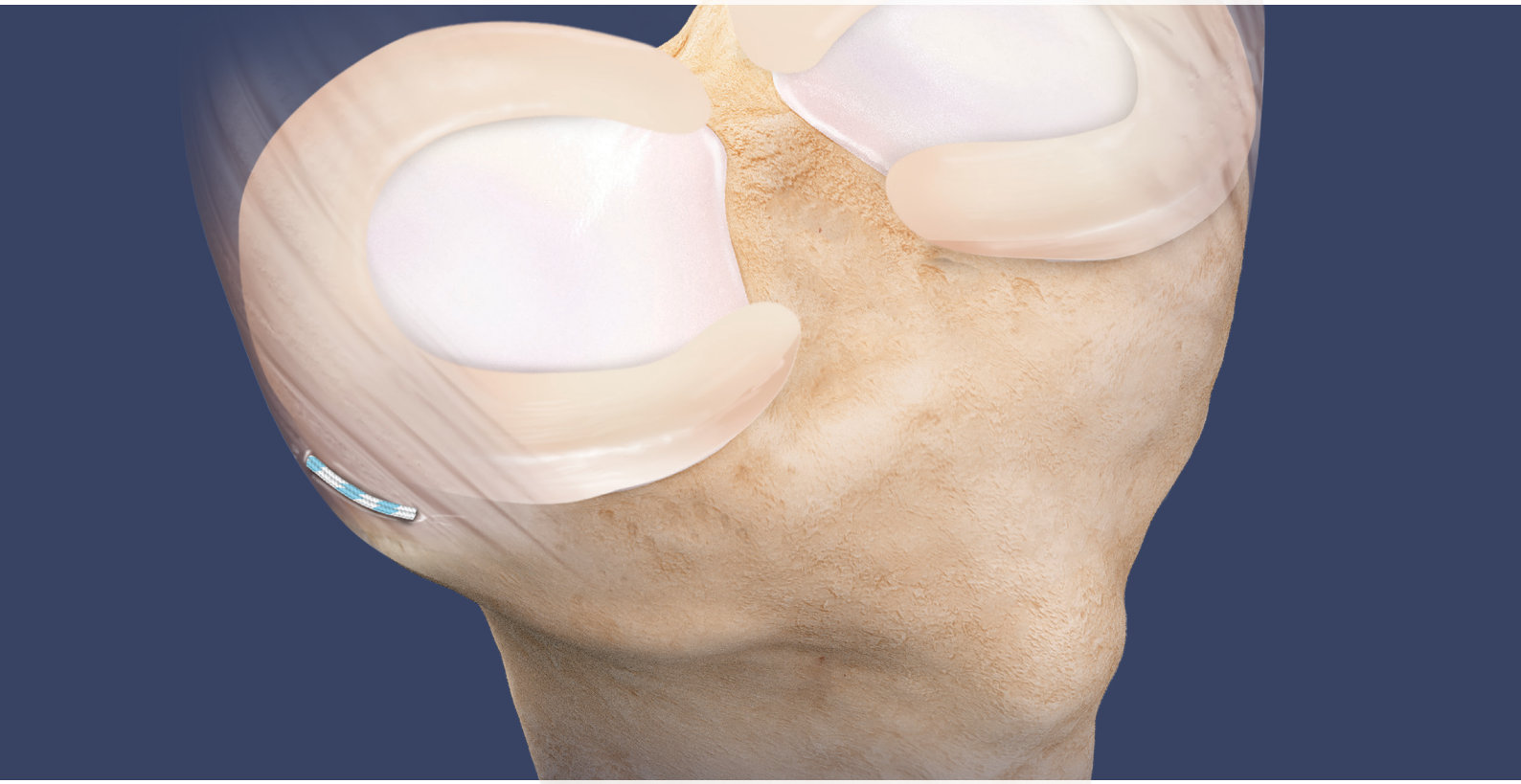
Knee Capsule Repair

Surgical Technique



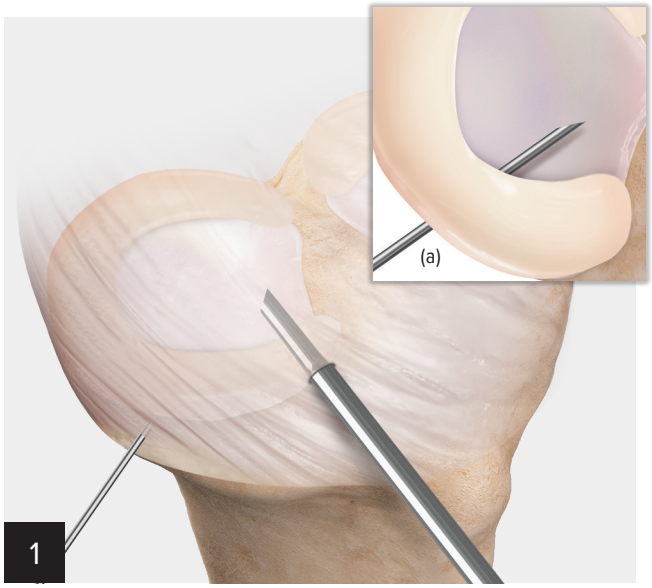
Arthrex®

Introduction

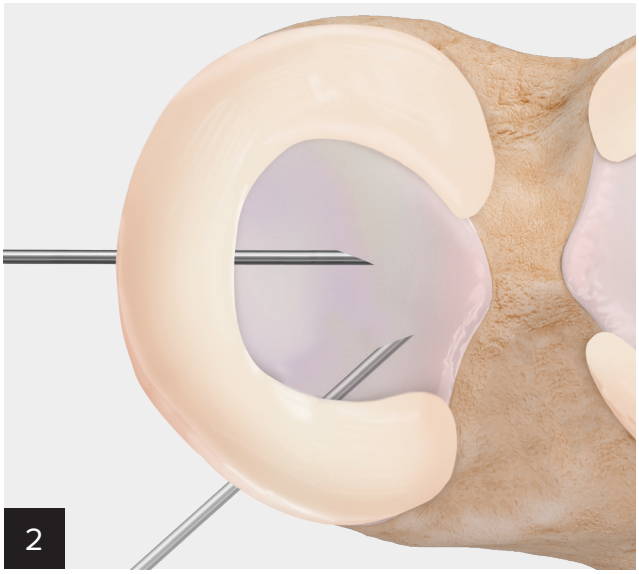
Meniscal extrusion, which results in compromised load-bearing function of the medial meniscus, is increasingly being recognized as clinically significant.[1] One cause of medial meniscal extrusion is insufficiency of the medial capsule and meniscotibial ligaments (MTL). Knee capsule repair is effective in reducing meniscal extrusion resulting from MTL insufficiency and thereby restoring the potential for improved load sharing across the medial compartment. The Knee Capsule Implant System was designed to facilitate reproducible repair of the medial capsule.

The degree of meniscal extrusion can be diagnosed clinically using dynamic ultrasound. When surgical intervention is indicated, perform an ultrasound immediately before diagnostic arthroscopy. Confirm meniscal extrusion and note the presence of meniscotibial ligament insufficiency, meniscal reducibility, and the anterior and posterior extents of the lesion.

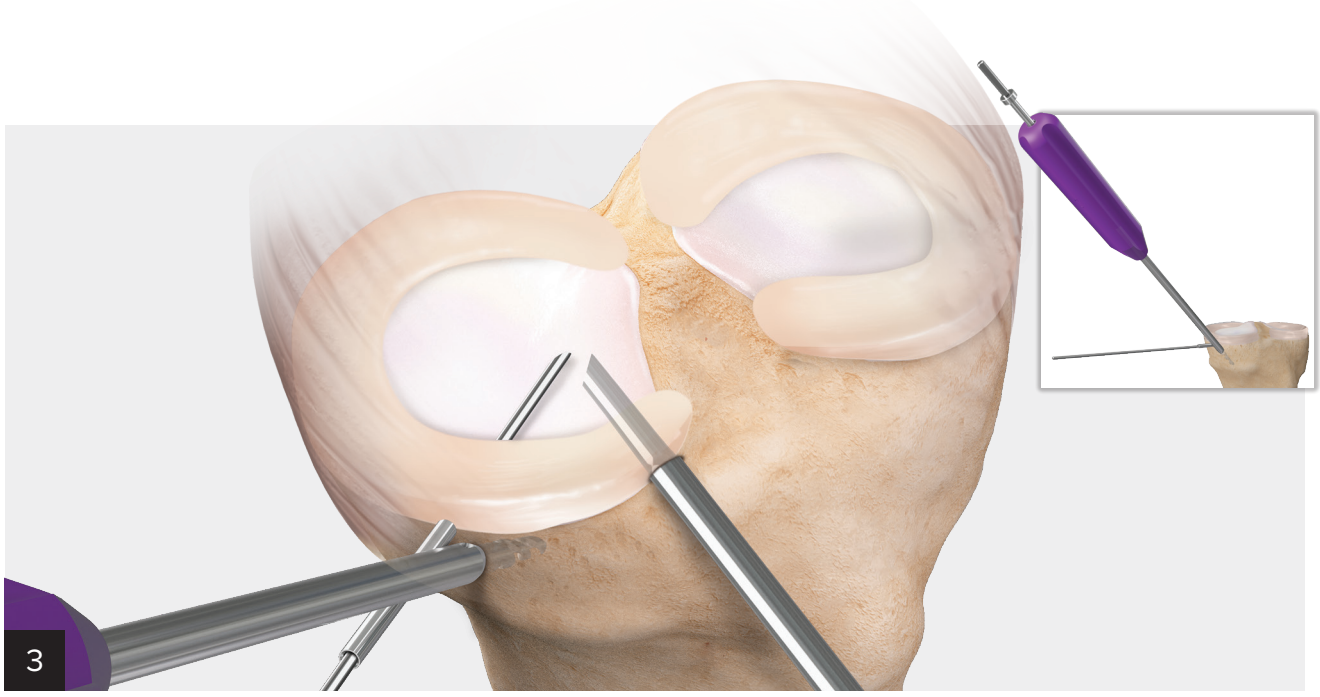
Included in the Knee Capsule Repair Implant System are 2 knotless SutureTak® percutaneous insertion anchors, the GAP™ (Guided Arthroscopic Placement) drill guide and three percutaneous K-wires. The GAP guide allows reproducible placement of the implants at a distance 3 mm below the medial tibial joint line.



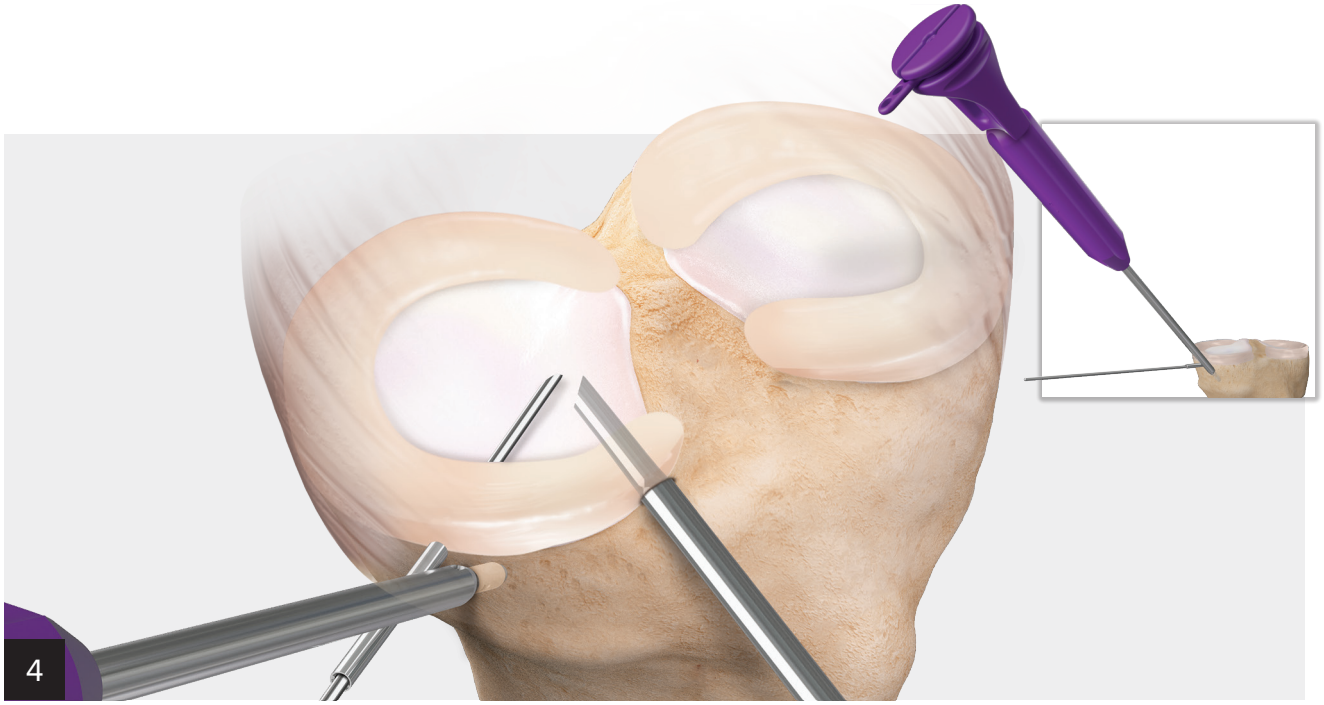
Under direct arthroscopic visualization, insert the K-wire at the anterior location of the identified extrusion. Position the K-wire under the meniscus and parallel to the tibial plateau. Direct the K-wire towards the center of the intercondylar eminence of the tibia (a).



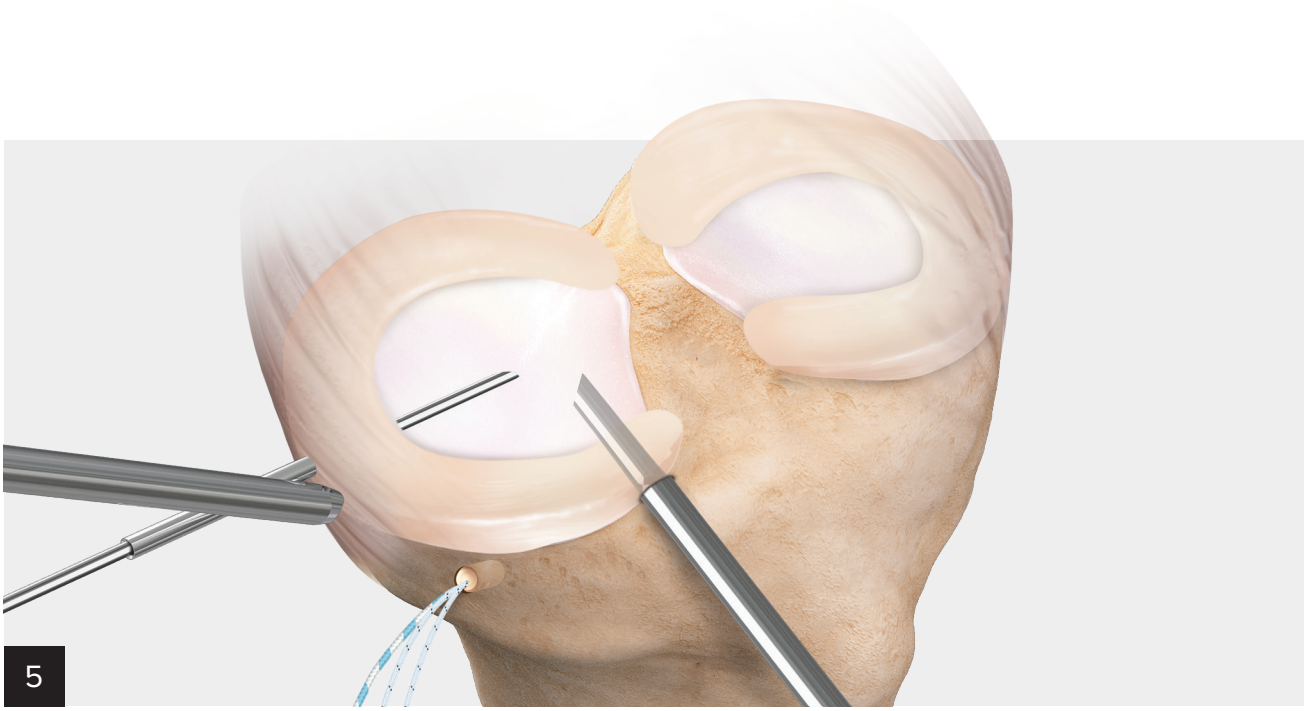
In a similar manner, insert a second K-wire to indicate the posterior extrusion point. Use a small rasp under the inferior aspect of the meniscus to prepare the tibial metaphysis and meniscotibial ligament just off the edge of the joint surface. Rasping extends from the anterior extent of the lesion to the posterior extent. **Note: If the distance between the anterior and posterior K-wire is greater than 1 cm, insert additional K-wires to reduce the maximum distance between K-wires to 1 cm.**



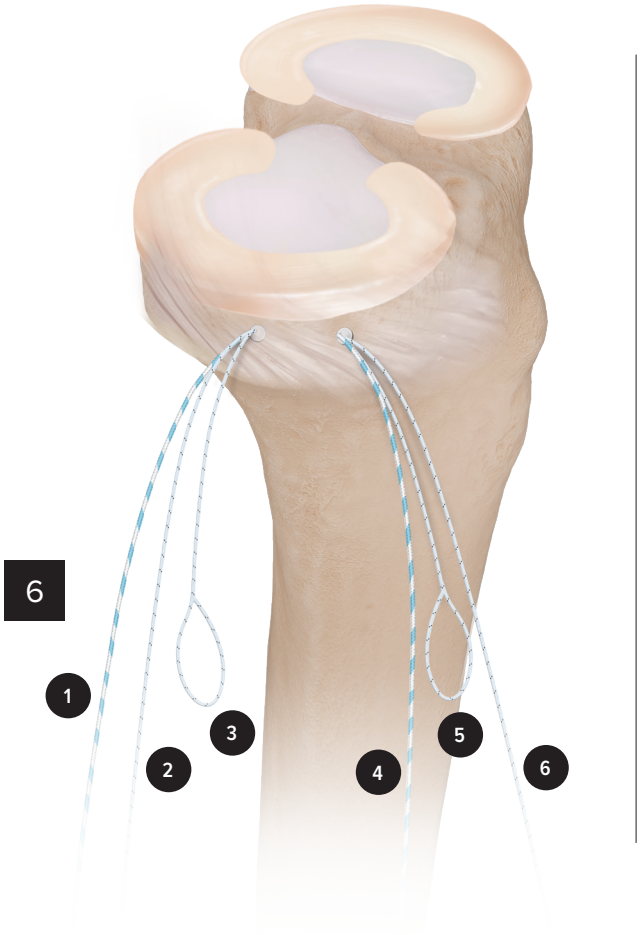
Create a small longitudinal incision distally at each K-wire. Cautiously expose the second layer using blunt dissection. Place the drill guide alignment indicator over the K-wire, advancing the drill guide to be flush with the tibia. The spear orientation should allow anchor insertion distal to the tibial plateau. Verify that the K-wire is parallel to the tibial plateau and pointing toward the center of the tibial eminence. Advance the drill through the spear to prepare a bone socket for anchor insertion. The socket is completed when the drill collar is flush with the top of the spear's handle. **Note: Cycle the drill 2-3 times in hard bone to allow the drill flutes to clear bone debris from the bottom of the socket.**



Insert the anchor through the spear and into bone by gentle impaction until the inserter handle is flush with the back of the spear (inset). Remove the suture release tab, pull out the inserter, and remove the drill spear.

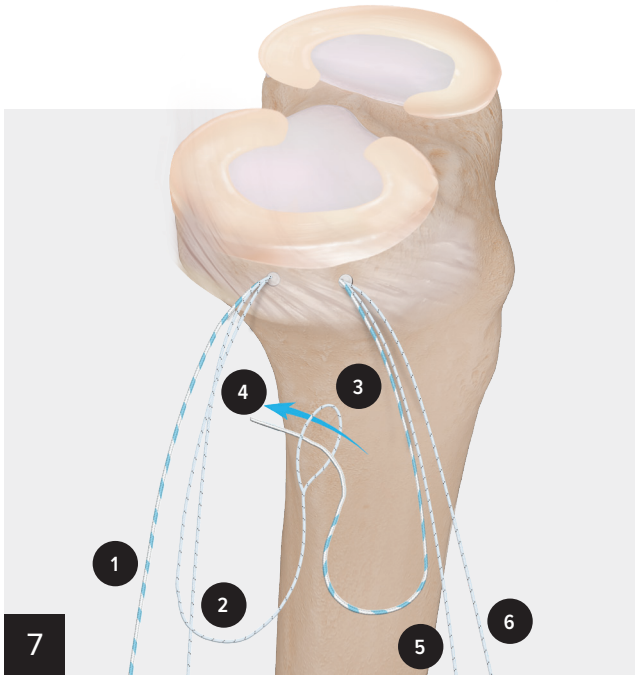


Repeat bone socket creation and anchor placement for the posterior K-wire. A maximum distance between anchors should not exceed 1 cm. Place intermediary anchors as necessary.

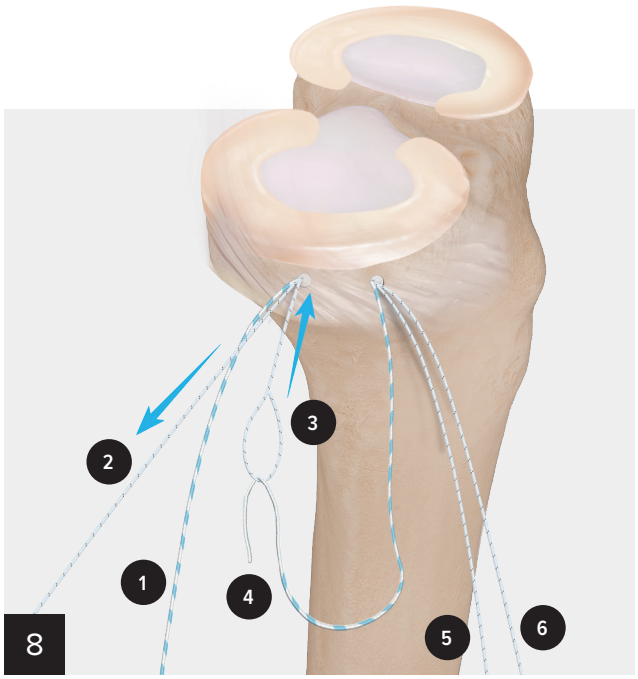


Suture Orientation

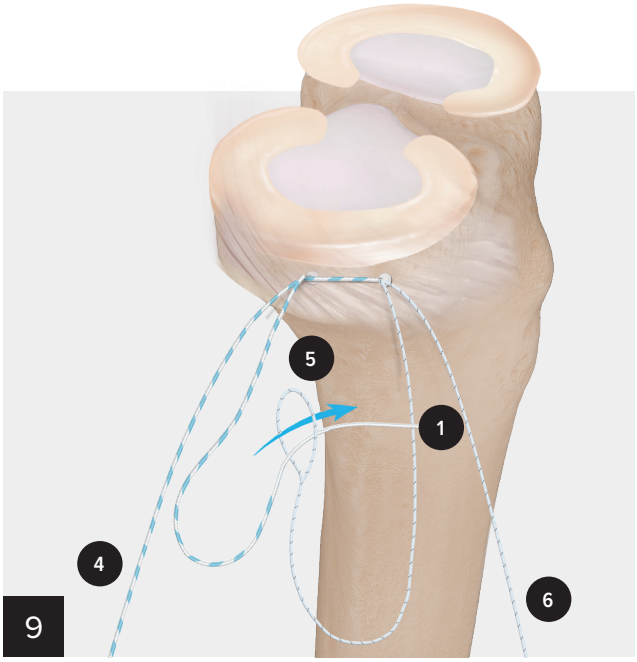
Orientate sutures so that they are easily identified with the associated anchor. Bluntly dissect a small subcutaneous space between anchors. Be certain not to violate the second soft-tissue layer. Retrieve the repair suture (4) from the anterior anchor through the posterior incision. **Note: If more than 2 anchors are required, begin with the most anterior anchor and link to the next posterior anchor. The final posterior anchor will be linked back to the most anterior anchor.**



Insert the anterior anchor repair suture (4) into the shuttle suture loop (3). Fold the white portion of the repair suture in half in the shuttle suture loop of the next posterior anchor.



Gently pull the shuttling suture (2) to pass the repair suture through the anchor. **Note: If more than 2 anchors are required, repeat as necessary to interlink each anchor to the next posterior anchor.**



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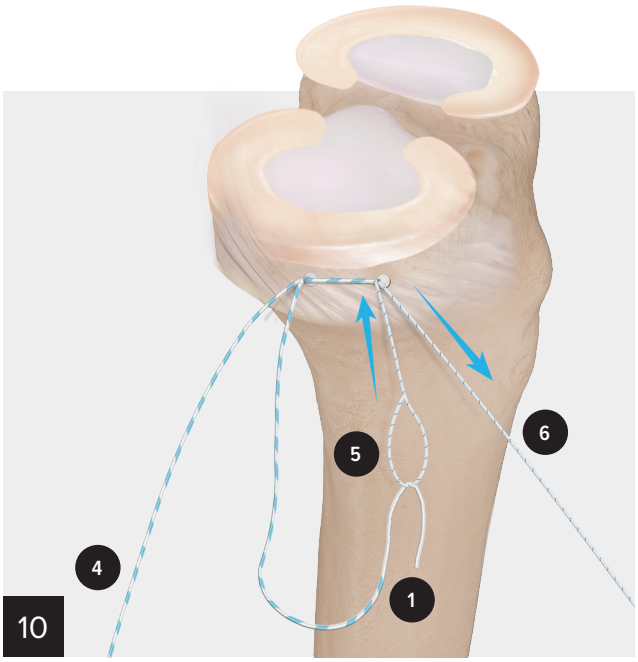
Retrieve the posterior anchor repair suture (1) through the anterior incision and load the white portion of the repair suture into the shuttling suture loop (5).



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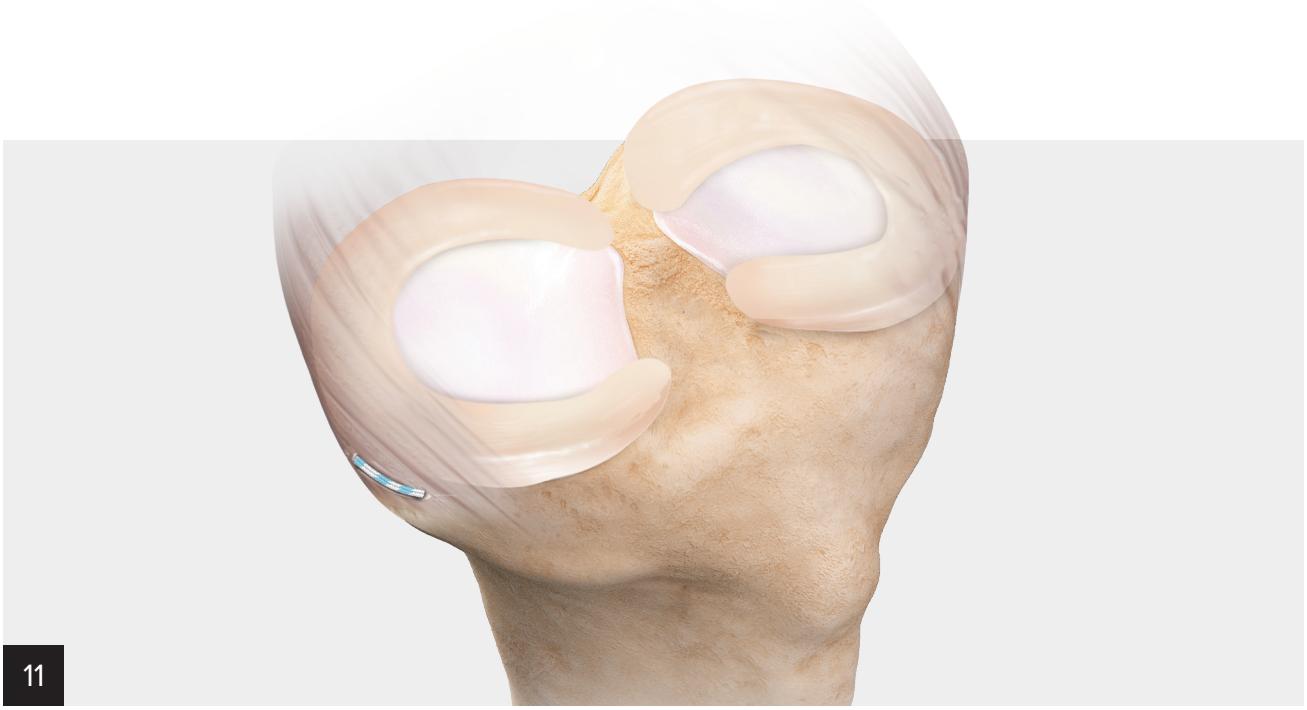
Gently pull the shuttling suture (6) to load the repair suture into the anterior anchor. Position the knee in extension and apply valgus load to aid with meniscus reduction. Then tighten the repair sutures to complete the repair.



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Cut the excess suture once the desired tension is achieved.

Ordering Information

Knee Capsule Repair

Product Description	Item Number
Knee Capsule Repair Implant System With GAP™ (Guided Arthroscopic Placement) Drill Guide	AR-**5875-2**
3.0 mm PEEK Knotless SutureTak® Anchors (2) GAP Drill Guide GAP Drill Guide K-wires (3) Drill for 3.0 mm PEEK Knotless SutureTak Anchors	

Implants

Product Description	Item Number
3.0 mm PEEK Knotless SutureTak Anchor	AR-**1938PS**

Accessories

Product Description	Item Number
GAP Drill Guide	AR-**5875G**
GAP Drill Guide Needle	AR-**5875N**
Meniscal Repair Rasp	AR-**4130**
2.6 mm Drill, hard bone	AR-**1938D**

Products may not be available in all markets because product availability is subject to the regulatory approvals and medical practices in individual markets. Please contact Arthrex if you have questions about the availability of products in your area.

Reference

1. Berthiaume MJ, Raynauld JP, Martel-Pelletier J, et al. Meniscal tear and extrusion are strongly associated with progression of symptomatic knee osteoarthritis as assessed by quantitative magnetic resonance imaging. *Ann Rheum Dis.* 2005;64(4):556-563. doi:10.1136/ard.2004.023796.