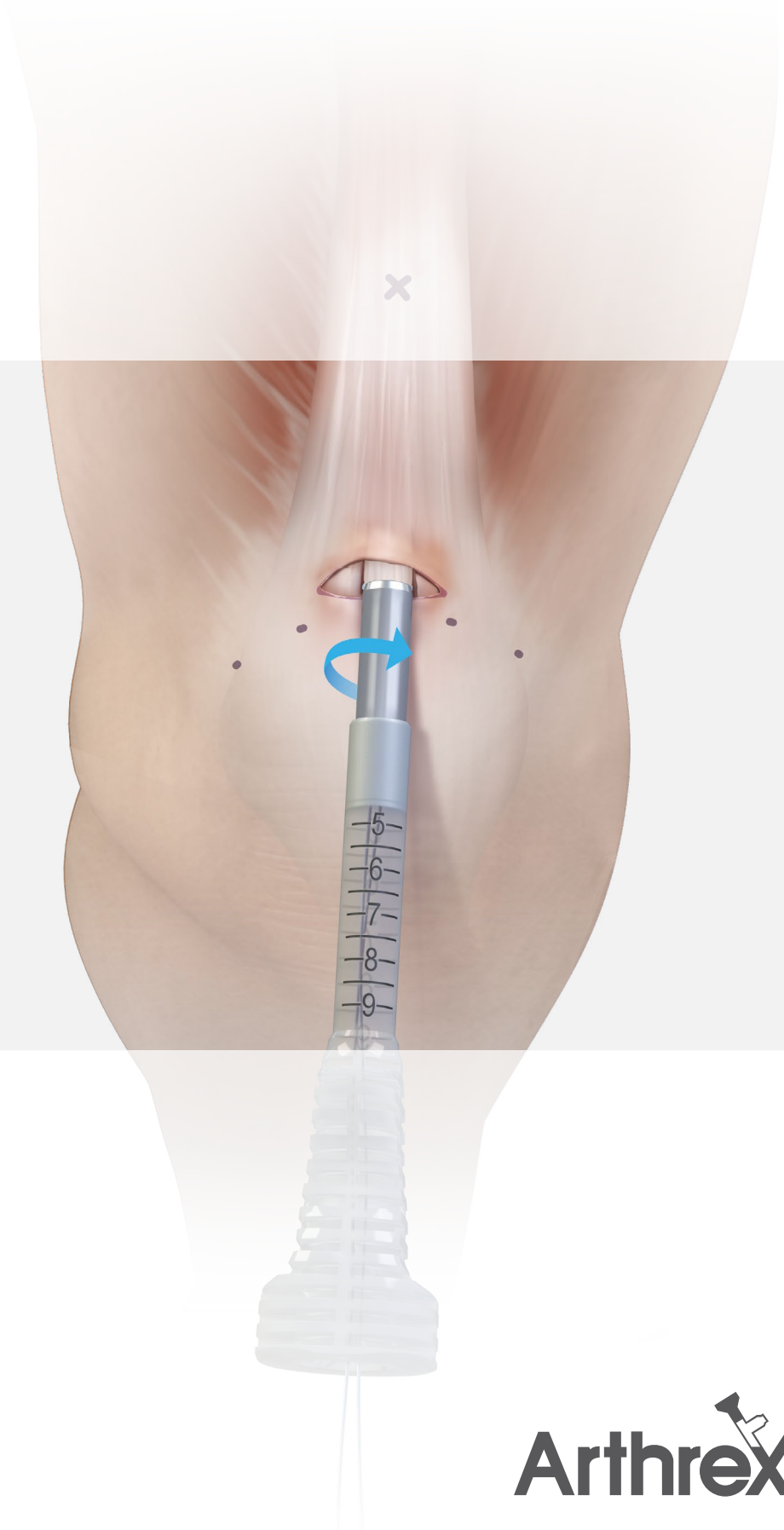
QuadCore™ Tendon Harvester

Surgical Technique



Arthrex®

QuadCore™ Tendon Harvester Introduction

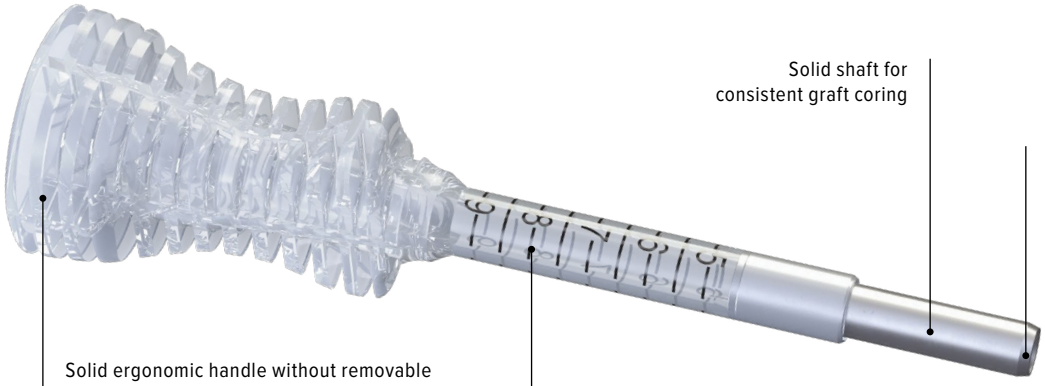
The QuadCore tendon harvester offers surgeons a cost-effective solution when operating in the ambulatory care settings or highly cost-conscious facilities. The QuadCore harvester features the same innovative technology as the QuadPro™ tendon harvester, differing only in the manner of graft amputation. To minimize costs, the QuadCore harvester was designed without a plunger or amputation window to accommodate graft amputation with the reusable quad tendon stripper/cutter.

Quadriceps tendon ACL reconstruction (ACLR) continues to be one of the fastest-growing ACLR techniques performed worldwide. The clinical benefits of quadriceps tendon grafts–including robust and predictable graft sizing, superior biomechanics, equivalent or superior clinical outcomes to other grafts, low morbidity, and improved cosmesis–are now supported in a number of clinical and biomechanical studies and systematic reviews.[1] The Quad Tendon ACL Reconstruction scientific update discusses the clinical benefits of quadriceps tendon grafts in greater detail.

"Quadriceps tendon grafts offer unique benefits for cruciate ligament reconstruction, such as a predictably large diameter, low morbidity, and a preferable stiffness profile for knee ligament reconstruction. The system has the versatility to create grafts, including all-soft-tissue, all-inside, or transtibial grafts or grafts with a bone block. The single-use design ensures sharpness, sterility, and convenience for every case."

- John W. Xerogeanes, MD

QuadCore Tendon Harvester Overview



Like the QuadPro™ tendon harvester, the QuadCore™ tendon harvester was developed to further Arthrex's commitment to Helping Surgeons Treat Their Patients Better®. The QuadCore tendon harvester is a "lite" version of the QuadPro tendon harvester and was specifically designed to offer a cost-effective option without compromising safety or efficacy.

Reproducible Graft Sizing:

- Available in various sizes for appropriate graft diameter (8 mm, 9 mm, 10 mm, and 11 mm)
- Sharp, cylindrical tip harvests a round, true-to-size graft
- Clear handle with graduations to determine graft length

As part of the minimally invasive Quad Tendon Harvest System, the quad tendon stripper/cutter allows surgeons to efficiently harvest a graft of a desired length and diameter through a small incision.

Minimally Invasive Technique

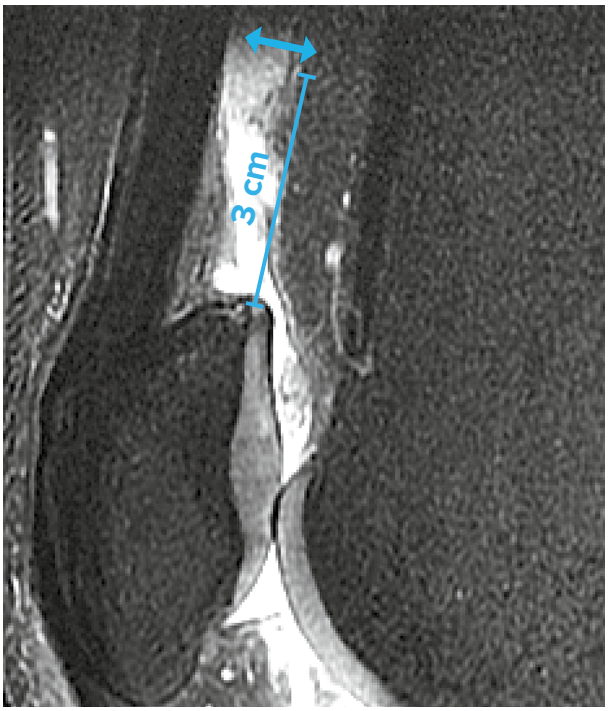
- Minimal incision and dissection required
- Reduces procedure time and graft-site morbidity

Graft Amputation

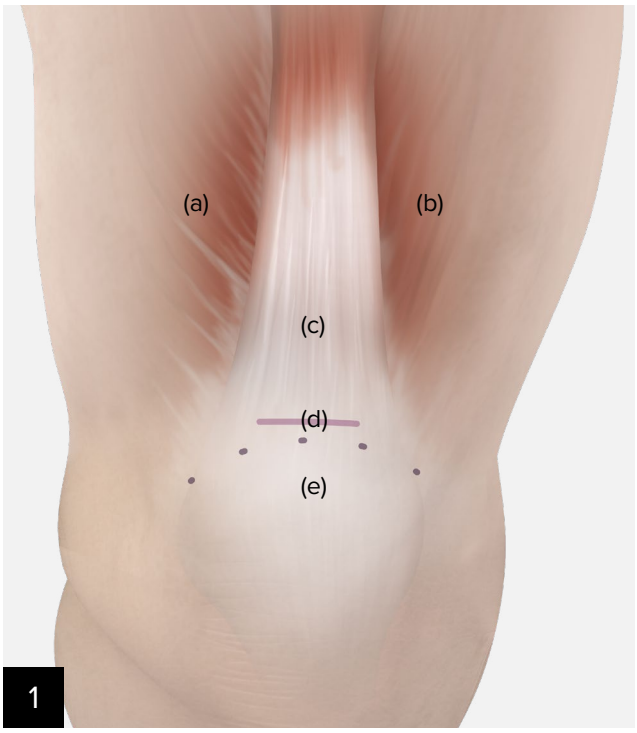
- The QuadCore tendon stripper/cutter can amputate grafts up to 11 mm in diameter and features a graduated shaft to ensure appropriate graft length
- Slide the device over the graft and squeeze the handle for transection

Preoperative Planning

Patients who are at least 5 ft tall should be able to provide graft lengths of 7 cm to 8 cm in length. Midsagittal MRI measurements (measured 3 cm proximal to the patella) will help determine graft thickness. A partial-thickness graft can be harvested if the tendon is over 7 mm thick. If the tendon is 7 mm or less, a full-thickness graft will likely be taken.[2]



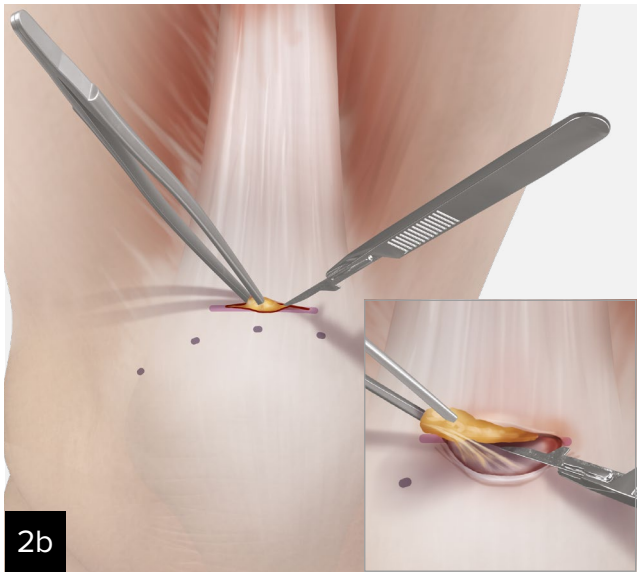
Patient Positioning and Landmarks



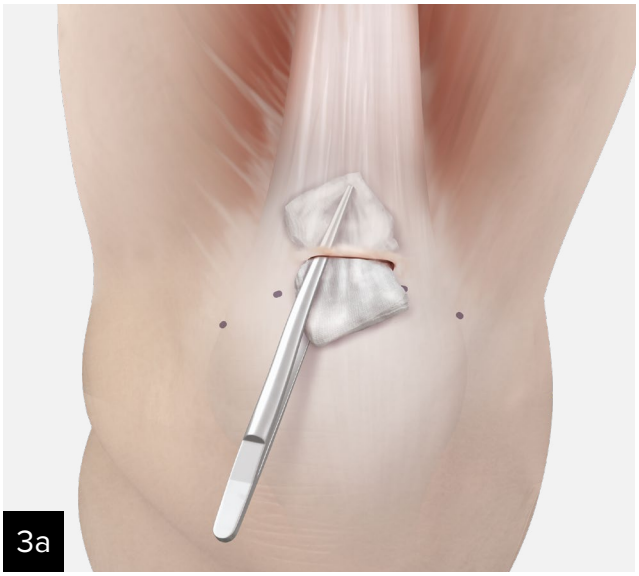
The knee should be flexed to 90˚, which will place tension on the quadriceps tendon and facilitate harvesting. Palpate and identify the following areas:

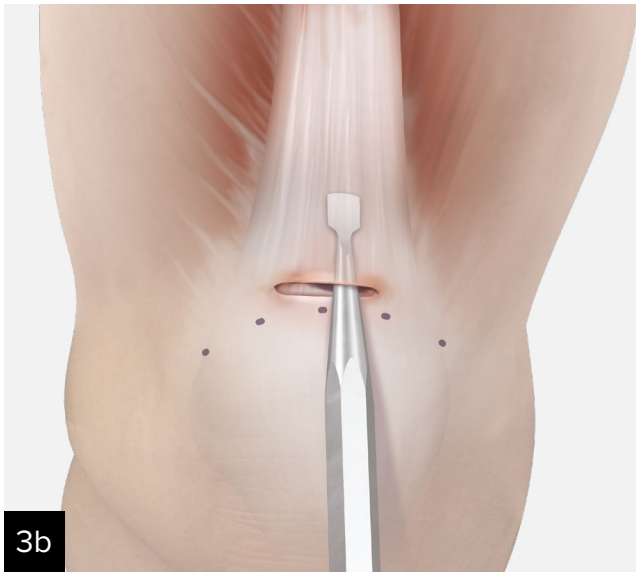
Vastus medialis (VMO) **(a)**
Vastus lateralis **(b)**
Quadriceps tendon **(c)**
Incision line **(d)**
Superior pole of the patella **(e)**

Incision and Dissection

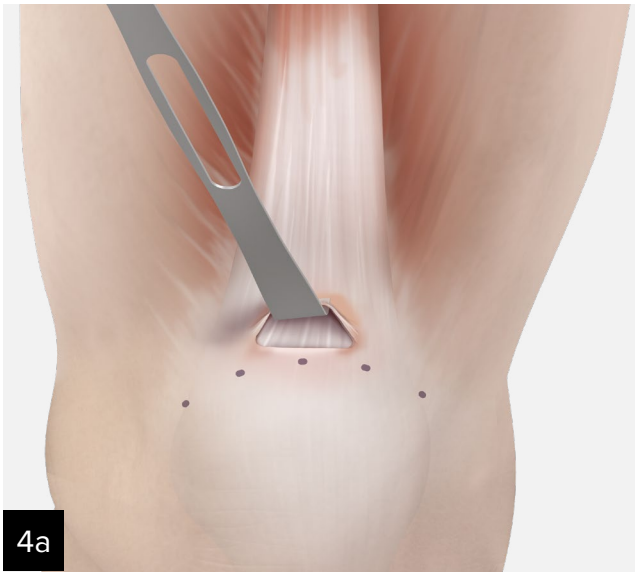


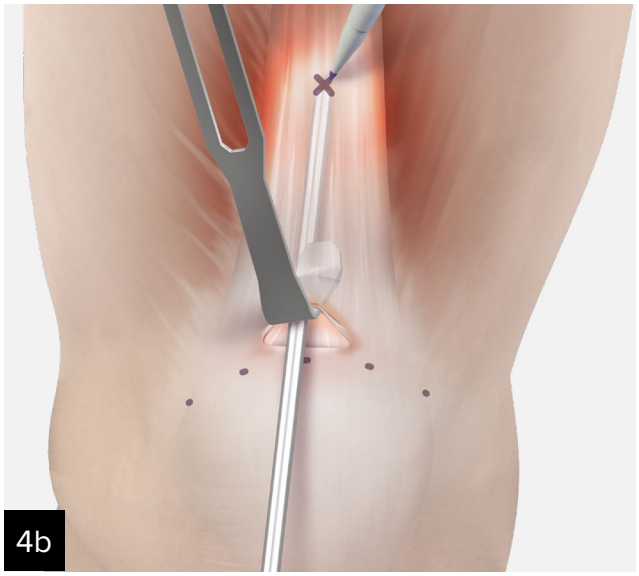
Make a 2 cm transverse incision 1 cm to 2 cm superior to the patella. After making the skin incision, dissect and remove fat proximally and distally from the incision. Bluntly dissect until the distal 8 cm of the quadriceps tendon and proximal half of the patella can be felt and the adhesions have been removed.



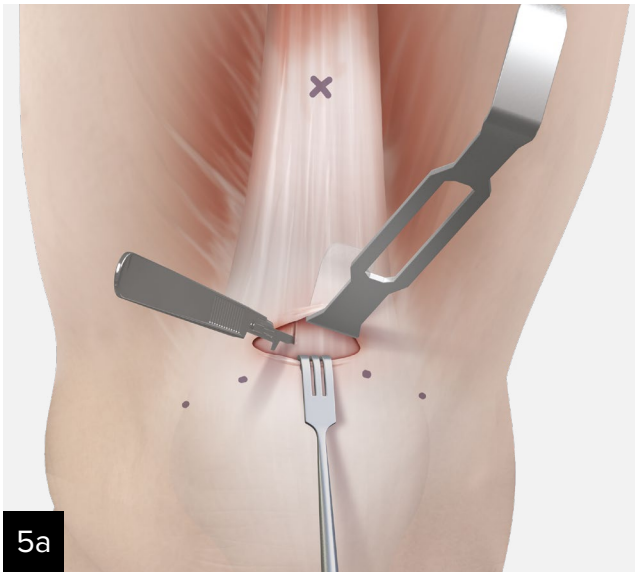


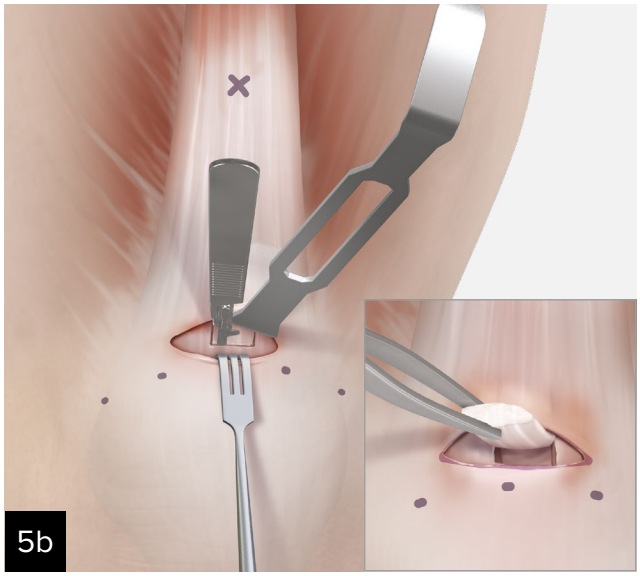
Use a 4 in × 4 in gauze to remove residual fat within the incision, then use a key elevator to clear soft-tissue proximally and distally.





Use a retractor to lift the skin while guiding an arthroscope proximal to visualize the tendon. Identify the VMO and stay lateral to this landmark. Advance the scope proximally until the musculotendinous junction of the rectus femoris is visualized. Turn the lens of the scope toward the skin so the light can be seen through the skin. This is the proximal limit of the graft and marks the direction of the graft harvest. Mark the skin at this point for reference.

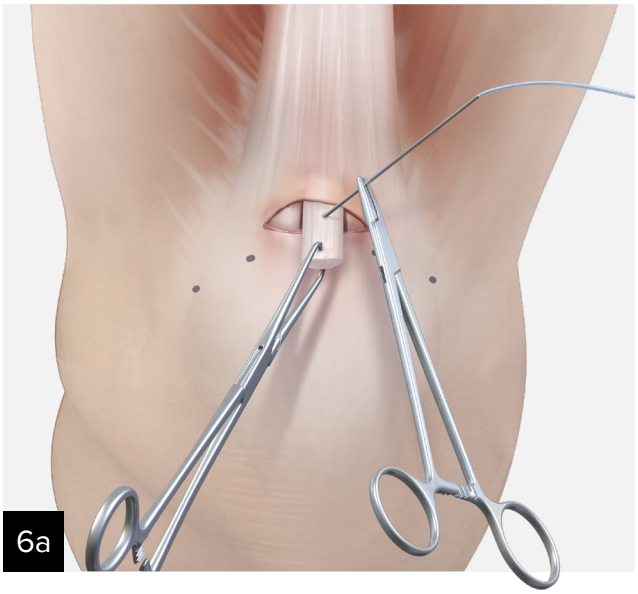


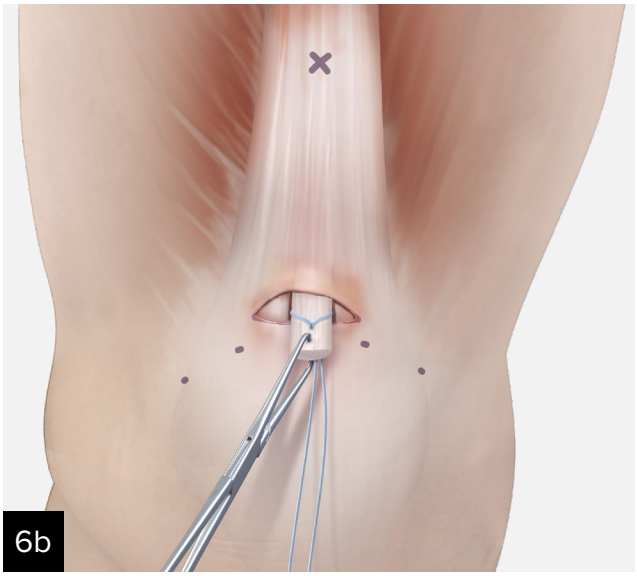


The QuadCore™ tendon harvester may be provisionally placed at the distal aspect of the tendon just adjacent to the patella in order to approximate the width of the longitudinal graft-harvest incisions. The width between incisions should correlate with the desired graft diameter. Make the longitudinal incisions and continue distally toward the patella until bone is contacted.

Note: Approximately 1 cm to 2 cm of tendon length must be dissected and released. It is important to size the diameter of the released graft appropriately for the preferred harvester size. A graft that is too large in diameter may not fit in the tip of the harvester.

Placing a Tagging Stitch





Use a FiberLoop® SutureTape or FiberLoop suture to create a luggage tag cinch 1 cm from the end of the graft. This suture functions as a tagging suture and is used to maintain tension on the graft during tendon harvesting.

Graft Harvesting

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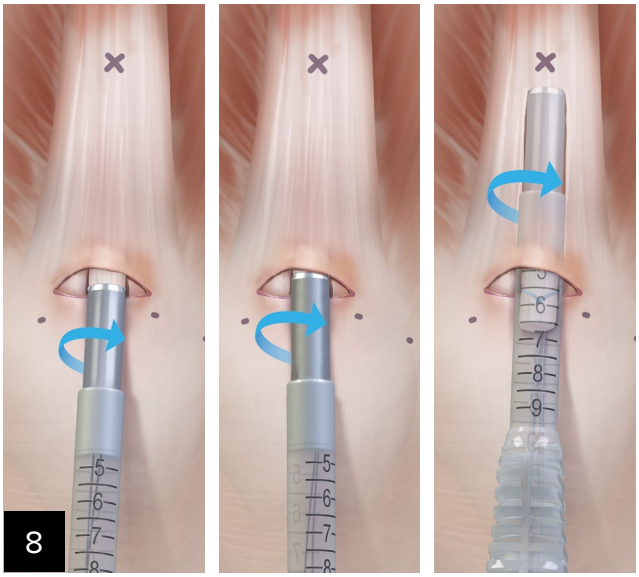
Use the weight of the FiberLoop® needle to pull sutures through the cannulation of the QuadCore™ tendon harvester. With the knee held at 90˚ of flexion, keep steady tension and advance the QuadCore harvester up to the tendon. If resistance is felt, place the knee between 30° and 60° of flexion to reduce tension on the quadriceps tendon during harvest. Overtensioning the tendon may increase the risk of transecting the fibers.



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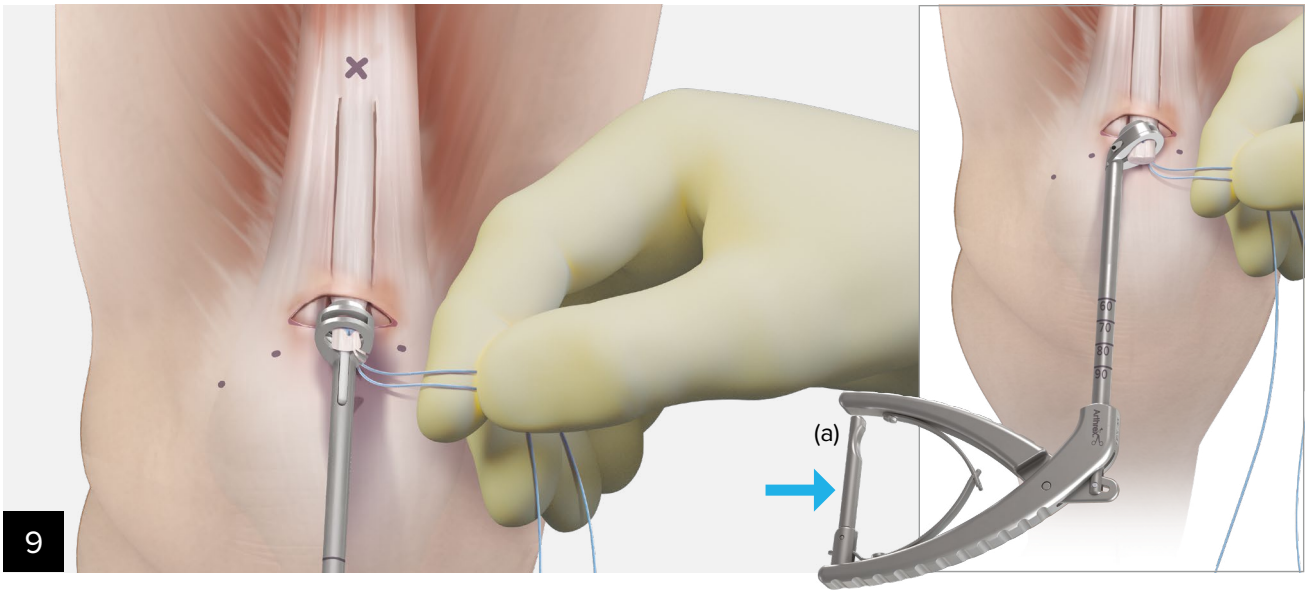
Pull the tendon into the tip of the harvester, ensuring the tagging suture is not cut by the tip of the harvester. Keep steady, gentle tension on the suture and begin rotating the QuadCore harvester while advancing up the tendon, directing the harvester toward the proximal mark on the skin.

Note: Using controlled, quarter-turn rotations in the same direction will allow for an easier advancement of the device compared to a pushing technique. Rotating in the same direction minimizes the opportunity to inadvertently change the trajectory of the harvester, which could result in transecting across fiber planes.

Graft Amputation



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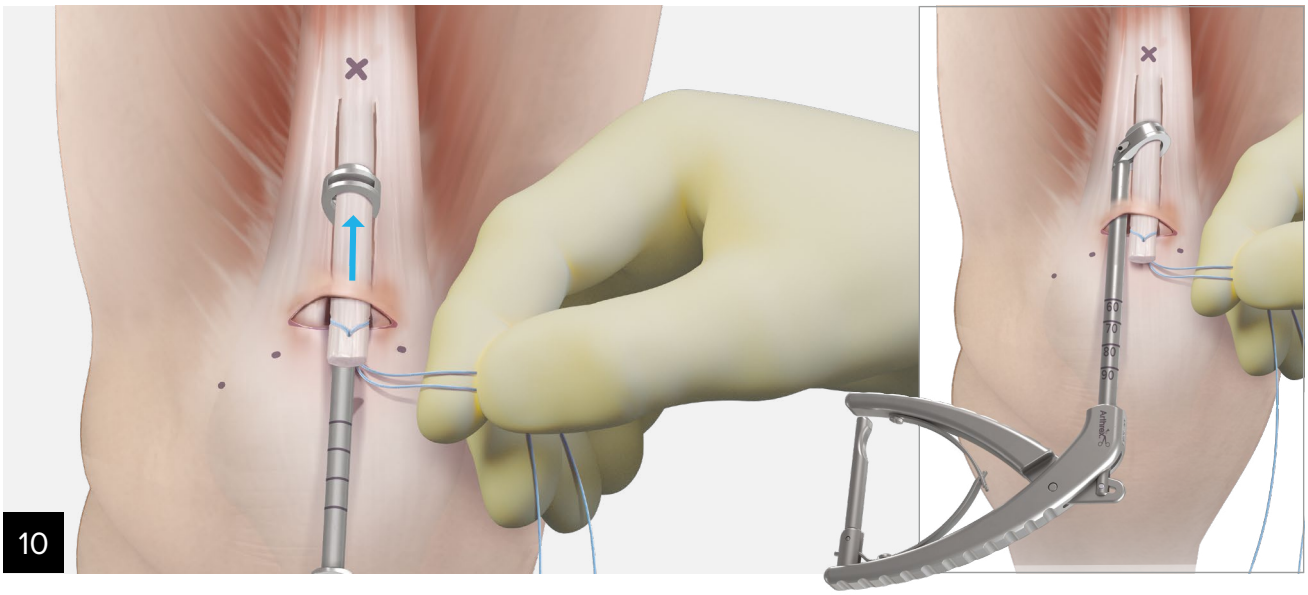
Once the desired graft length has been stripped, withdraw the QuadCore™ tendon harvester from the incision and thread the tagging suture through the end of the quadriceps tendon stripper/cutter. Once through, grasp the tagging suture to maintain control of the graft during amputation.

Note: Ensure the instrument is locked with the safety bar against the handle to prevent premature amputation during advancement (a).



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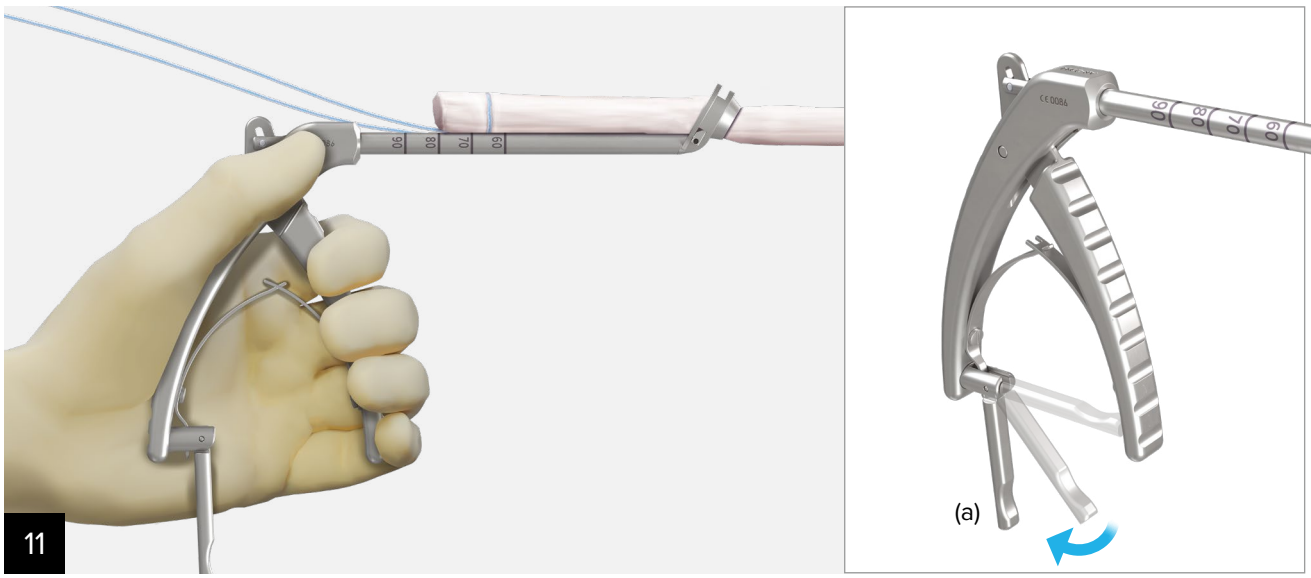
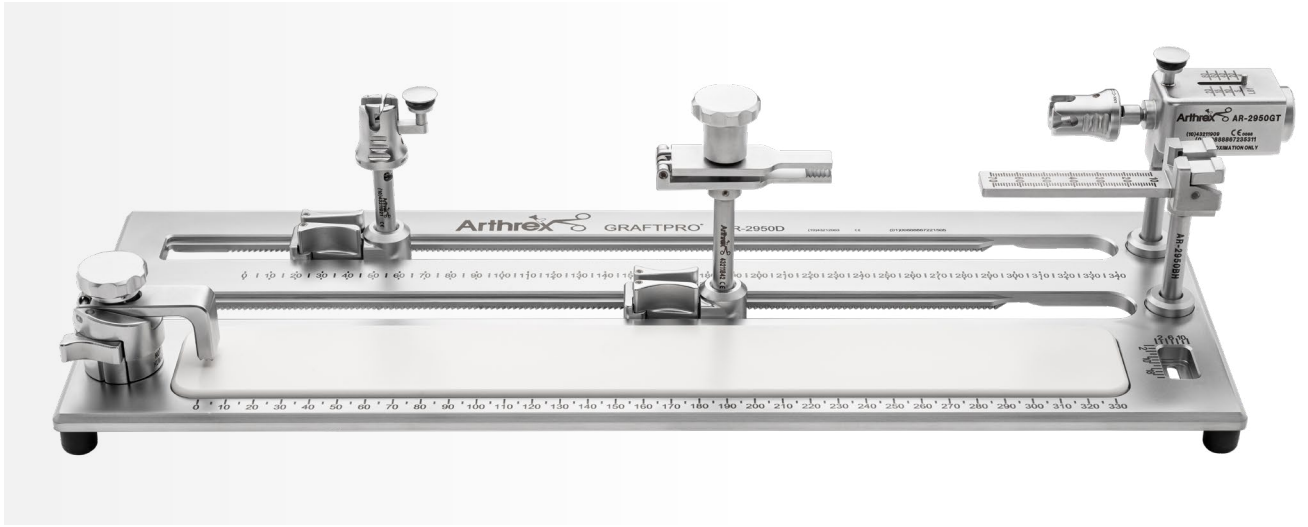
With the tagging suture secured, advance the quadriceps tendon stripper/cutter along the graft until the appropriate length is reached. Reference the measurements along the instrument shaft to confirm graft length.



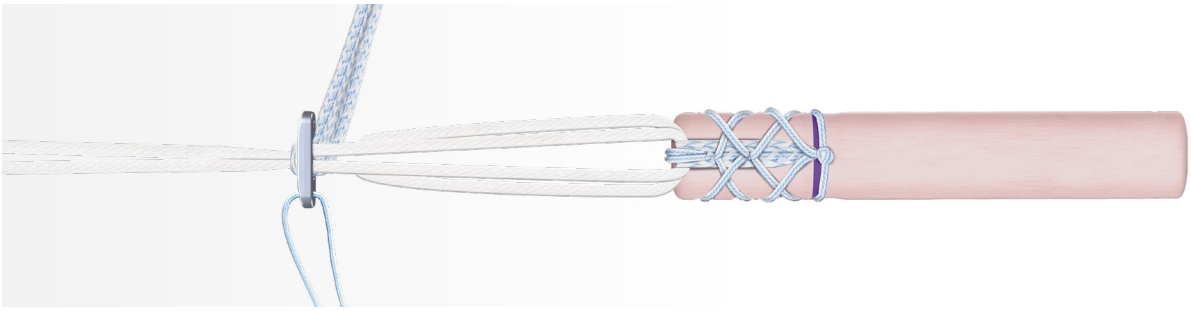
Release the safety bar to unlock the handle **(a)**. Secure the tagging suture and firmly squeeze the handle to amputate the graft.

Note: During graft amputation, it is important to maintain visualization of the harvested length to ensure the graft is not cut short.

Additional Products for Quadriceps Tendon ACLR

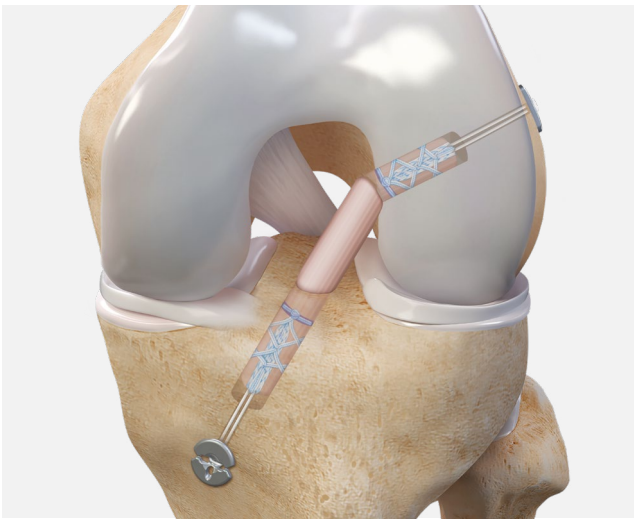


GraftPro® Graft Preparation System: The GraftPro system has numerous features that simplify and accelerate graft preparation of quadriceps tendon, BTB, and GraftLink® technique grafts.

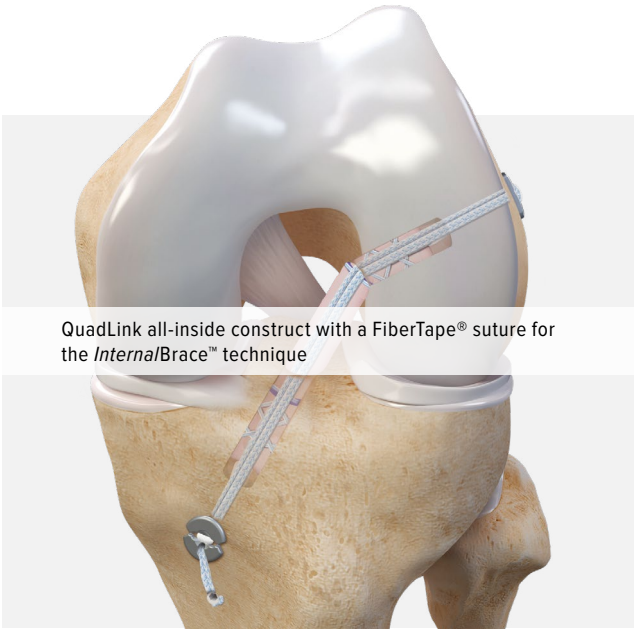


FiberTag® TightRope® II Implant: The all-inside ACL technique is ideal for quadriceps grafts. The FiberTag TightRope II and FiberTag TightRope II ABS implants were specifically designed for quadriceps tendon grafts. This implant offers improved performance and reliability and reduces overall graft preparation time for quadriceps tendon grafts. FiberTag suture is integrated into the TightRope implant for a strong, consistent connection between the suture and TightRope implant loop.

FlipCutter® III Drill: The innovative FlipCutter III drill is an adjustable, variable-size, all-in-one guide pin and reamer that allows minimally invasive socket creation from the inside out. The drill simplifies the technique and costs associated with quadriceps tendon grafts in which each end may be slightly different in size.



QuadLink™ All-Inside Construct: This construct provides the ultimate in anatomic, minimally invasive, and reproducible ACLR. Used in combination with anatomic guides, the FlipCutter III drill allows independent femoral and tibial retrograde drilling to create sockets while maintaining the cortices to maximize fixation and bone preservation.



QuadLink all-inside construct with a FiberTape® suture for the *Internal*Brace™ technique

The *Internal*Brace surgical technique is intended only to augment the primary repair/reconstruction by expanding the area of tissue approximation during the healing period and is not intended as a replacement for the native ligament. The *Internal*Brace technique is for use during soft tissue-to-bone fixation procedures and is not cleared for bone-to-bone fixation.

Ordering Information

QuadCore™ Tendon Harvester

Product description	Item number
QuadCore tendon harvester, 8 mm	AR-**2386-08HS**
QuadCore tendon harvester, 9 mm	AR-**2386-09HS**
QuadCore tendon harvester, 10 mm	AR-**2386-10HS**
QuadCore tendon harvester, 11 mm	AR-**2386-11HS**

Instrumentation

Product description	Item number
QuadCore tendon stripper/cutter	AR-**2384**

Optional Implant Systems for Quad ACL Reconstruction

Product description	Item number
FiberTag® TightRope® II w/ implant for the *Internal*Brace™ technique, FlipCutter® III drill, and FiberSnare® suture **(a)**	AR-**1288RTT2-FC3**
FiberTag TightRope II w/ implant for the *Internal*Brace technique, ACL TightRope drill pin, and FiberLink™ suture	AR-**1288RTT2-IBS**
FiberTag TightRope II w/ implant for the *Internal*Brace technique, flexible ACL TightRope drill pin, and FiberLink suture	AR-**1288RTT2-IBSF**

Products advertised in this brochure / surgical technique guide may not be available in all countries. For information on availability, please contact Arthrex Customer Service or your local Arthrex representative.

(a)

References

1. Arthrex, Inc. LA1-00100-en-US_N. Naples, FL; 2024.
2. Xerogeanes JW, Mitchell PM, Karasev PA, Kolesov IA, Romine SE. Anatomic and morphological evaluation of the quadriceps tendon using 3-dimensional magnetic resonance imaging reconstruction: applications for anterior cruciate ligament autograft choice and procurement. *Am J Sports Med.* 2013;41(10):2392-2399.

This description of technique is provided as an educational tool and clinical aid to assist properly licensed medical professionals in the usage of specific Arthrex products. As part of this professional usage, the medical professional must use their professional judgment in making any final determinations in product usage and technique. In doing so, the medical professional should rely on their own training and experience and should conduct a thorough review of pertinent medical literature and the product's directions for use. Postoperative management is patient-specific and dependent on the treating professional's assessment. Individual results will vary and not all patients will experience the same postoperative activity level and/or outcomes.

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US patent information

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