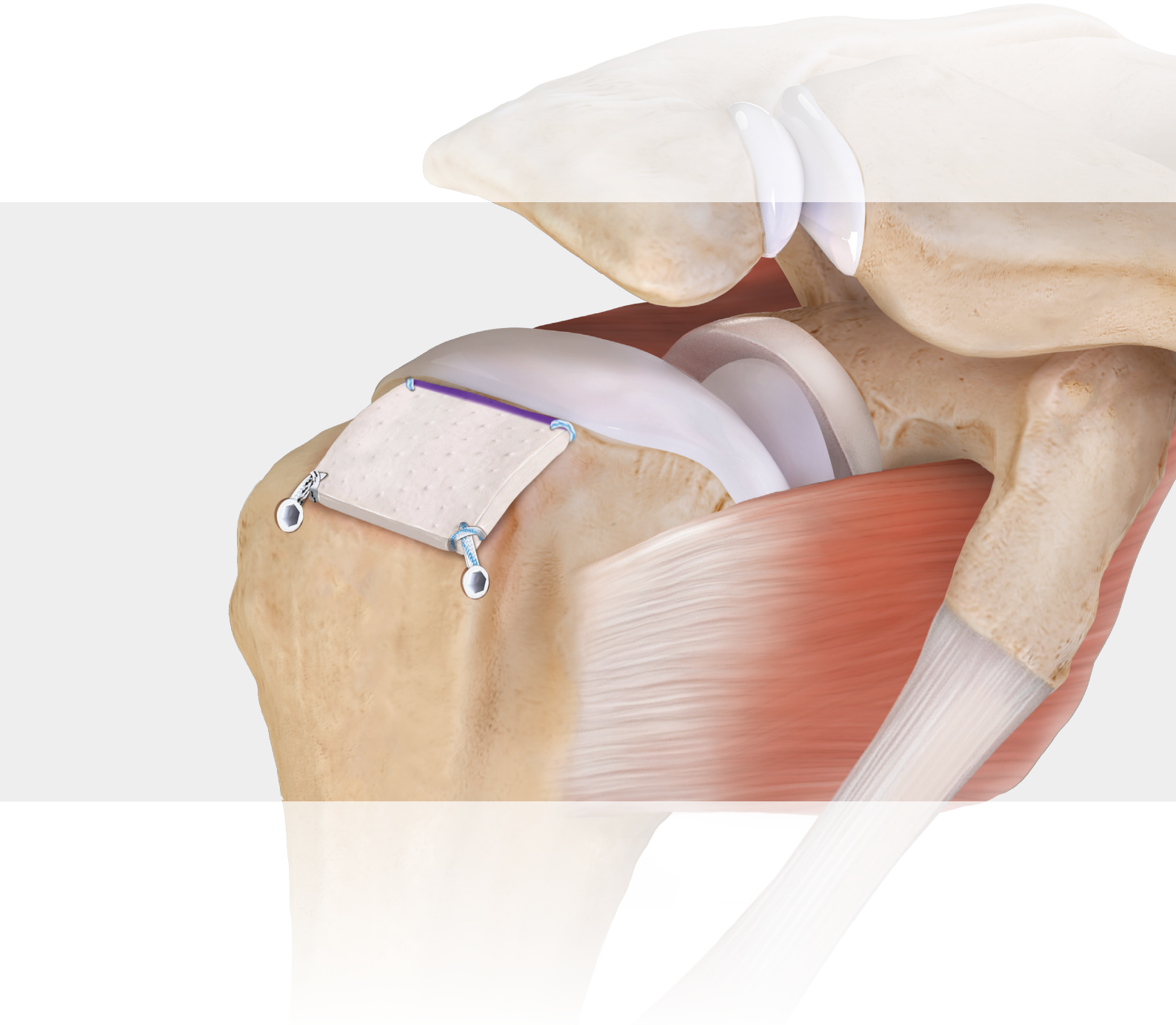
Biologic Tuberoplasty

Surgical Technique



Arthrex®

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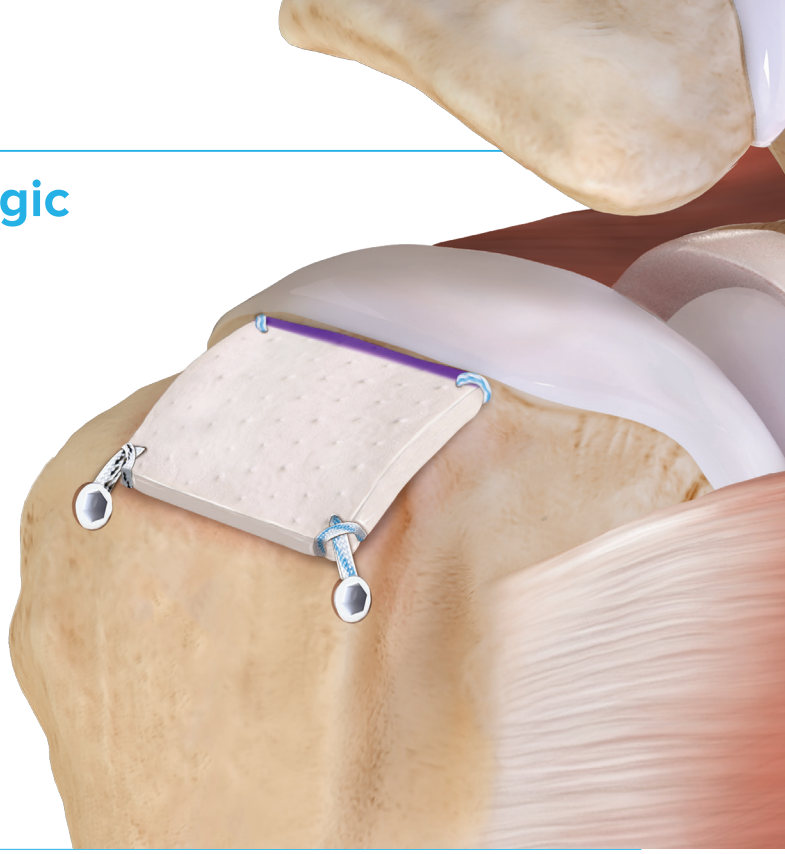
Tensionable Knotless Biologic Tuberoplasty Technique

Tensionable knotless biologic tuberoplasty technique harnesses the power of the ArthroFlex dermal allograft to provide a biologic cushion between the acromion and the tuberosity that can prevent bone-on-bone contact due to an irreparable rotator cuff tear. Self-punching tensionable knotless anchor technology allows the ArthroFlex graft to be placed in a quick, effective, and reproducible technique preventing shoulder impingement syndrome, often associated with shoulder pain.[1]



ArthroFLEX® Dermal Allograft

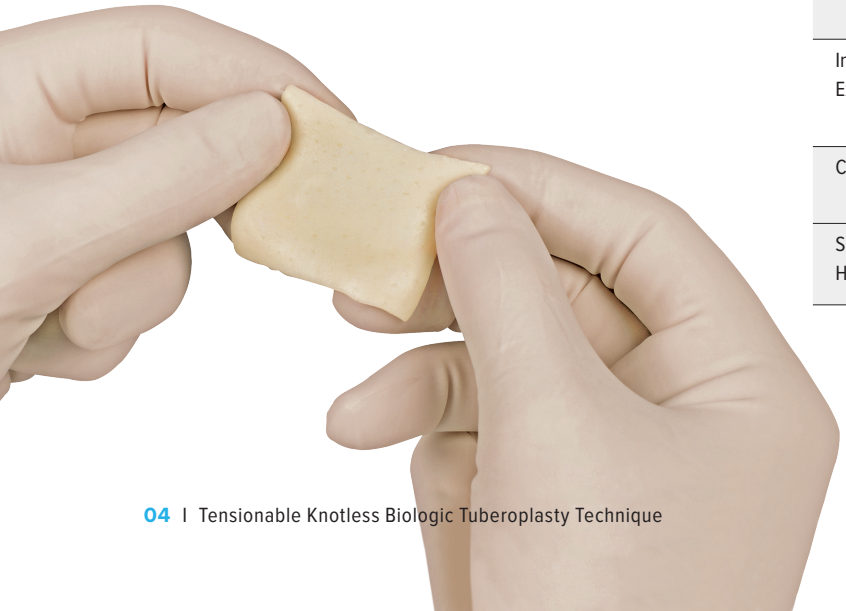
ArthroFlex dermal allograft is a biohospitable acellular dermal allograft intended for supplemental support and covering for soft-tissue repair.[2]

LifeNet Health's patented and validated Matracell decellularization process renders the ArthroFlex dermal allograft acellular without compromising its biomechanical or biochemical properties. Matracell technology removes ≥97% of the donor DNA from the dermal matrix, ensuring a biocompatible scaffold that retains its growth factors, native collagen scaffold, and elastin.[3]

ArthroFlex is treated with Preservon®, a proprietary and patented preservation technology that allows the graft to be fully hydrated at room temperature while avoiding the water-mediated lysis of the natural collagen and elastin scaffold.[2]

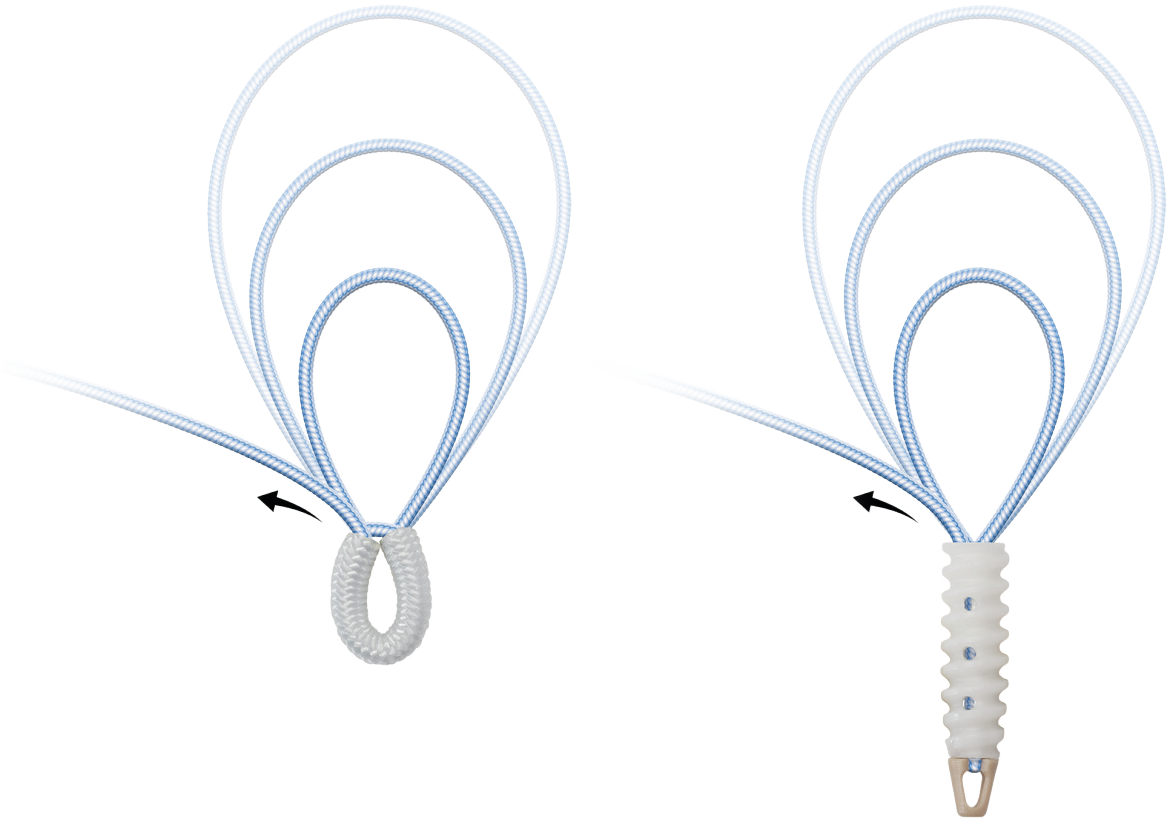
- Biomechanical testing has shown that ArthroFlex dermal allograft provides high ultimate load and suture retention strength.[4]
- ArthroFlex dermal allograft has demonstrated the ability to remodel and integrate with host tissue after implantation.[5]

≥97% DNA and Cellular Content Removed	Removing cells and immunogenetic components allow host cells to readily infiltrate and proliferate[3,5]
Intact Acellular Extracellular Matrix	Provides a strong, biohospitable collagen scaffold for host cellular and vascular ingrowth[1]
Convenience	Excellent handling; ready to use; room temperature storage (15°C-30°C)[6]
Supports Rapid Healing	Retains growth factors, elastin, matrikines, cytokines, and collagens[7]



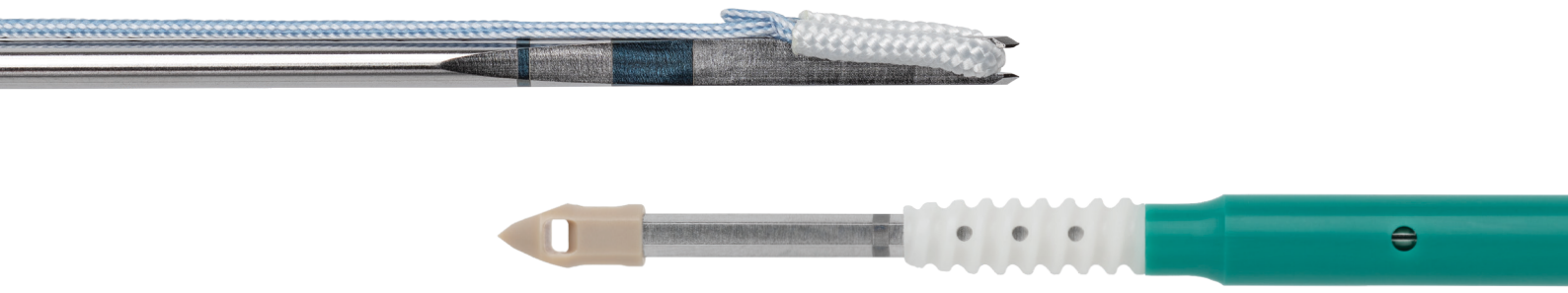
Tensionable Knotless Anchor Technology

Tensionable knotless anchor technology was first introduced in 2015 and has since been trusted by surgeons worldwide with well over 1 million anchor implantations. The tensionable and retensionable capability of these anchors allows for easy introduction and final fixation of ArthroFlex onto the tuberosity.

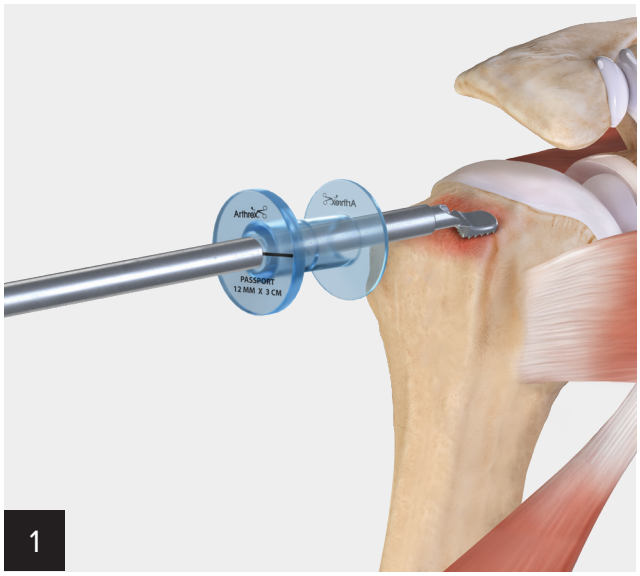


Self-Punching Inserters

Self-punching inserters efficiently eliminate the need to predrill or prepunch a bone socket prior to anchor insertion. With direct visualization of the inserter tip, the self-punching feature lets users precisely insert the anchor into bone.



Tuberosity Preparation and Footprint Measurement



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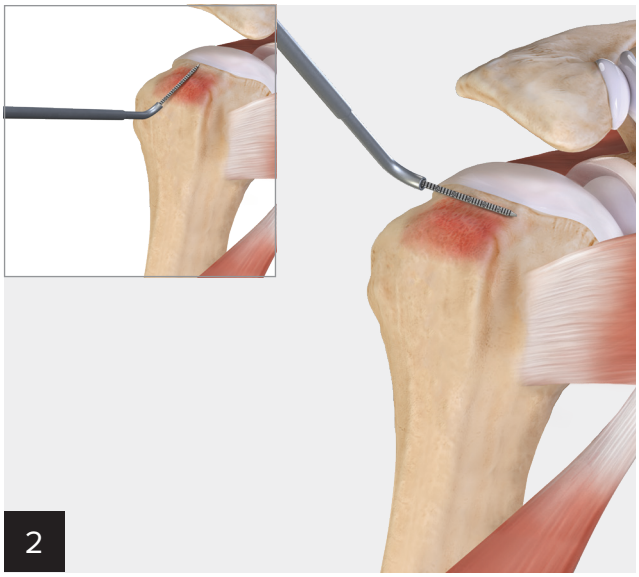
Prepare the greater tuberosity by performing a mild decortication using an arthroscopic burr or power rasp.

Note: Be sure to leave some cortical bone at the articular margin where the medial anchors will be placed.



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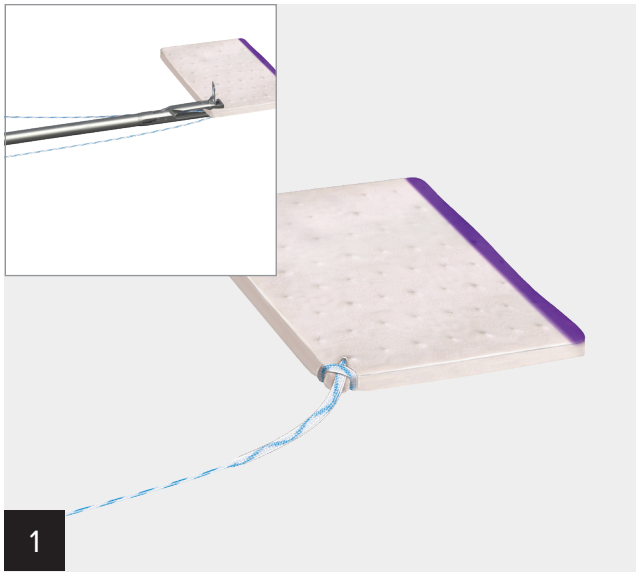
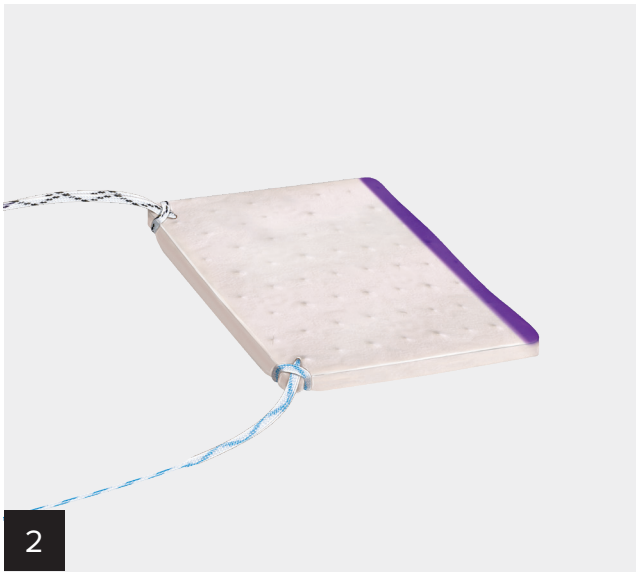
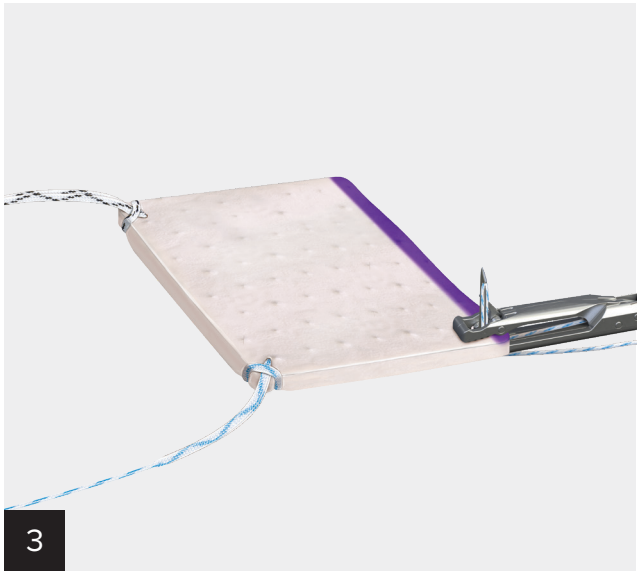
Use an arthroscopic measuring probe to measure the anterior-posterior and medial-lateral footprint of the tuberosity.

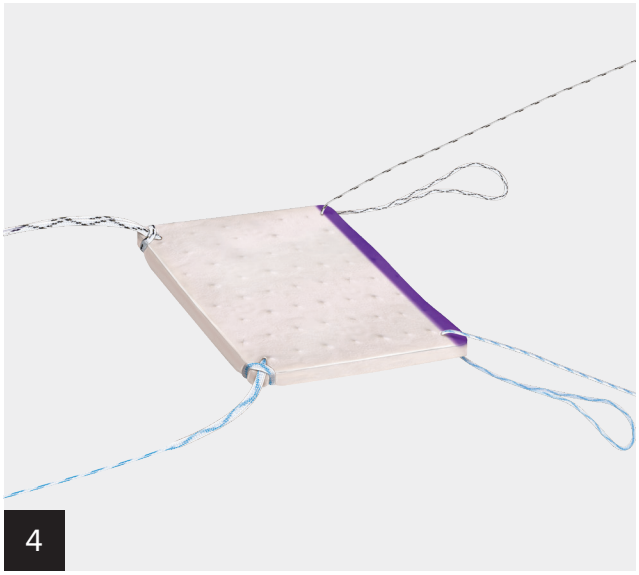
Graft Preparation





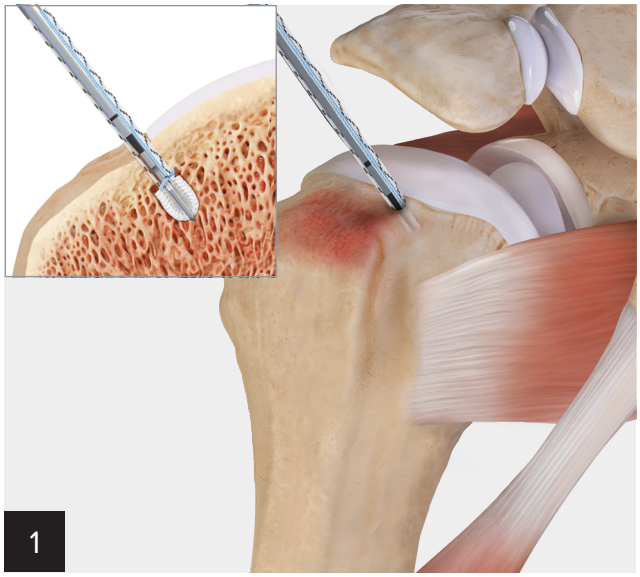
Cut the ArthroFlex human dermal allograft according to the footprint measurements, taking care to **undersize the graft by 15%-20%**. Use a Scorpion™ suture passer to create luggage tags on the lateral corners with 1.3 mm FiberLink™ and TigerLink™ SutureTapes.

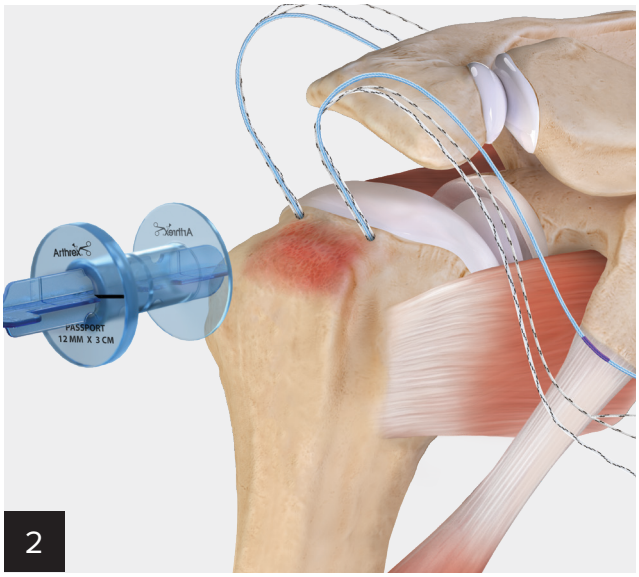




Pass FiberLink and TigerLink sutures in a simple stitch configuration through the medial corners of the graft; ensure the loops are under the graft.

Medial Anchor Placement

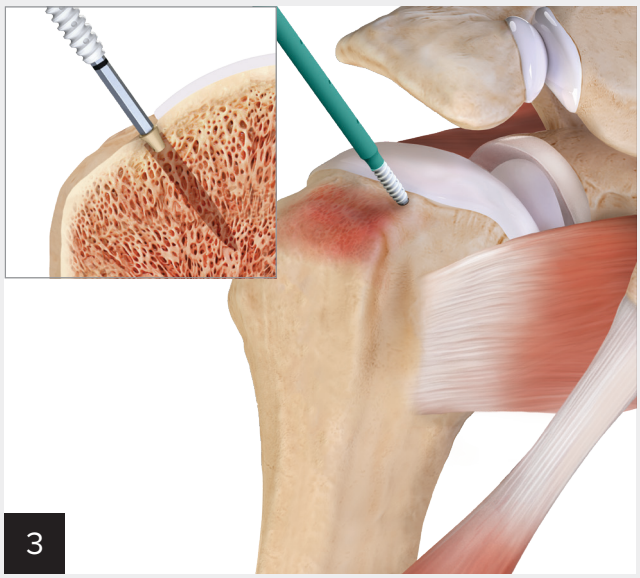


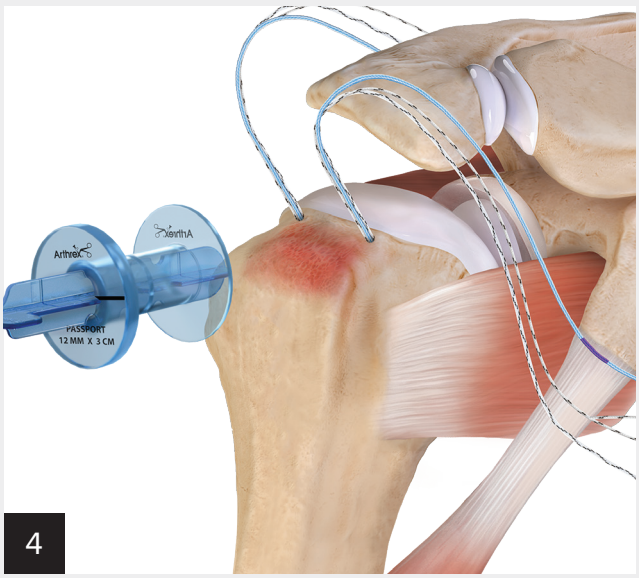


Through percutaneous portals, insert self-punching, Knotless 2.6 FiberTak® soft anchors on the anteromedial and posteromedial corners of the greater tuberosity. Establish a lateral portal using a 12 mm PassPort Button™ cannula. A PassPort divider can be inserted to aid in later suture management.

Note: A 2.6 FiberTak drill guide may be used to aid in anchor placement.

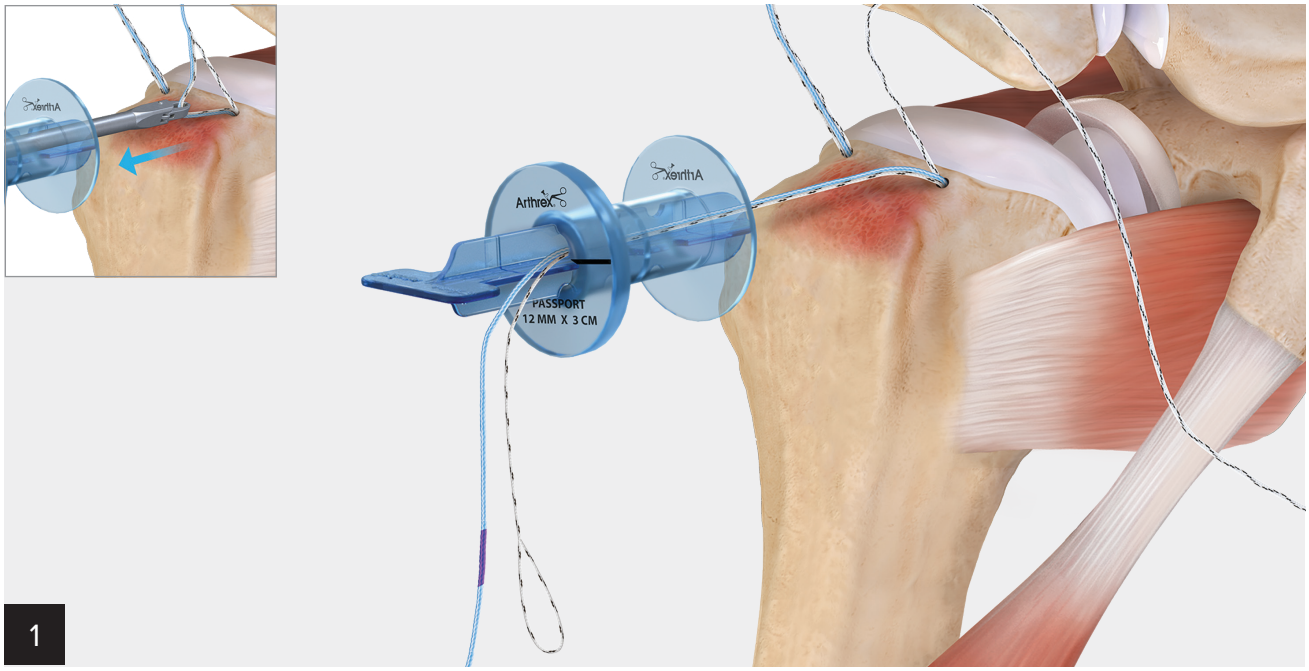
Medial Anchor Placement (Optional)





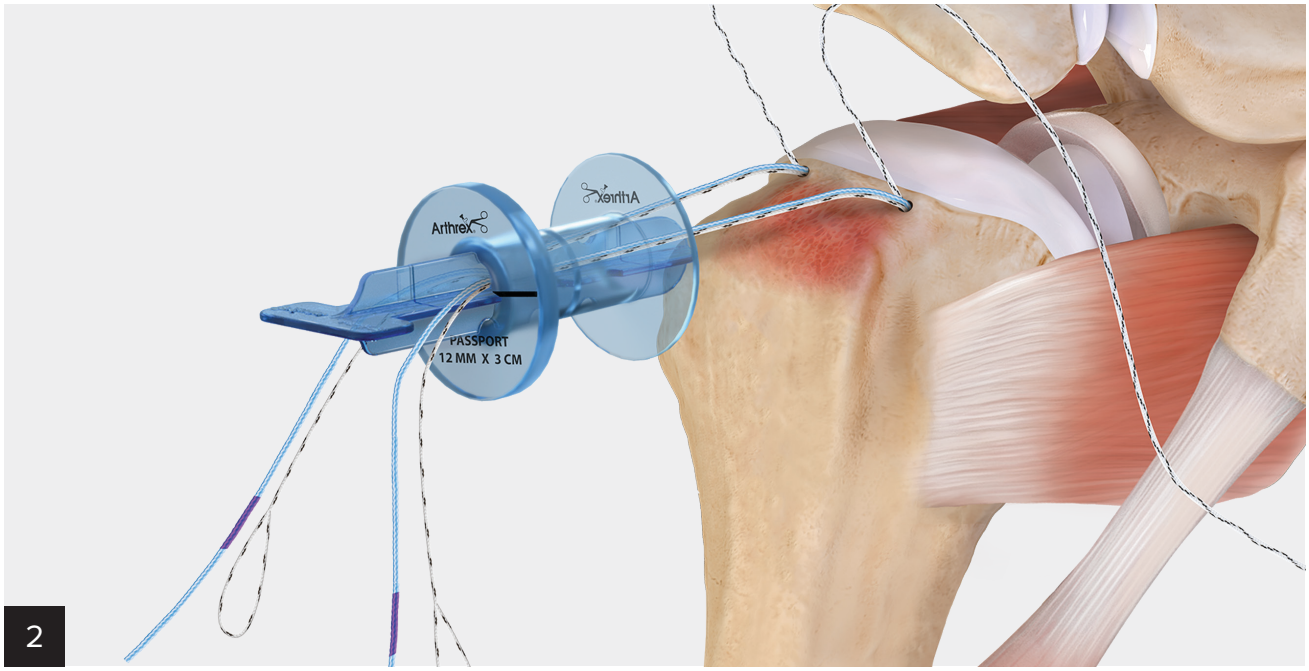
Alternatively, insert Knotless 4.75 mm SwiveLock® anchors into prepunched holes on the anteromedial and posteromedial positions of the tuberosity. Establish a lateral portal using a 12 mm PassPort Button cannula. A PassPort divider can be inserted to aid in later suture management.

Graft Delivery and Fixation



1

Retrieve the repair suture and the round shuttle link looped suture from each medial anchor.



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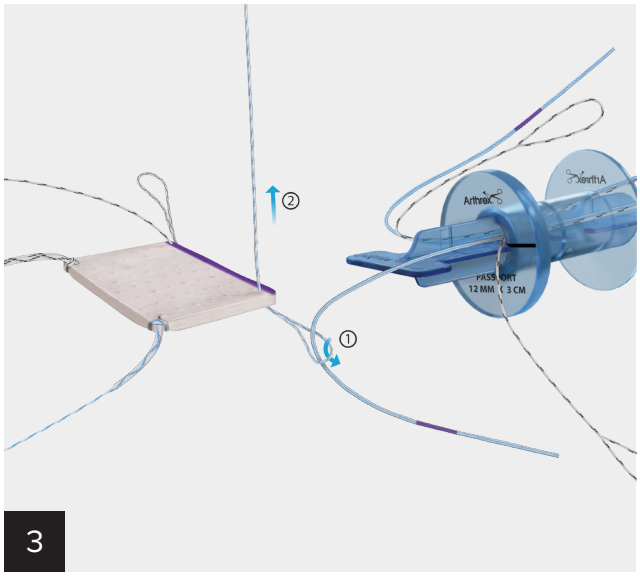
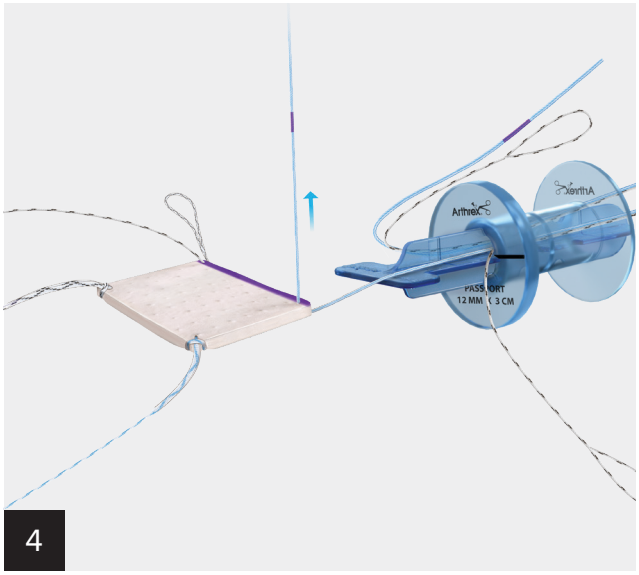
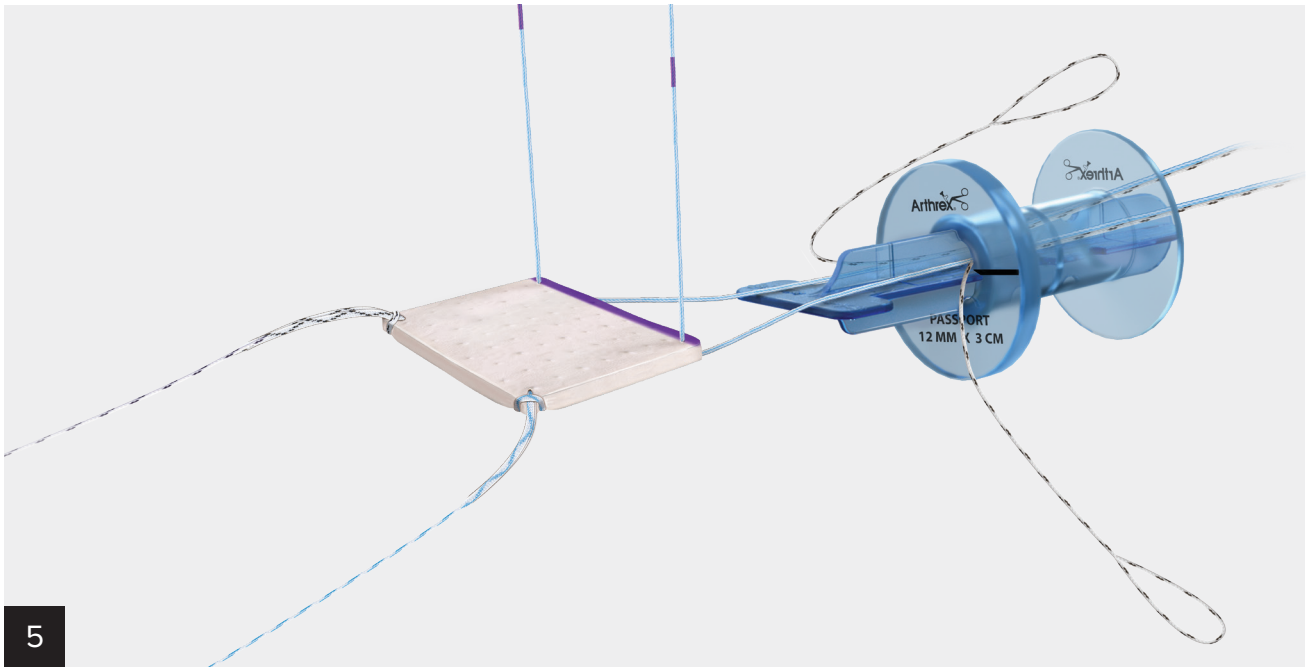
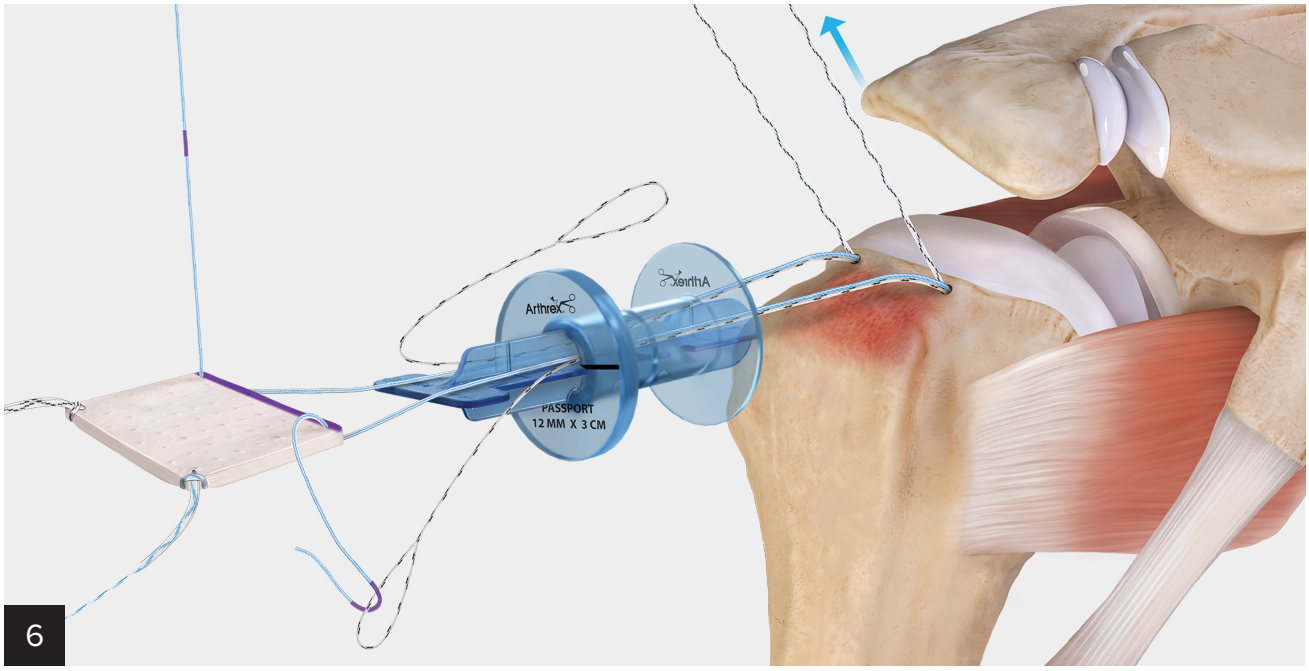




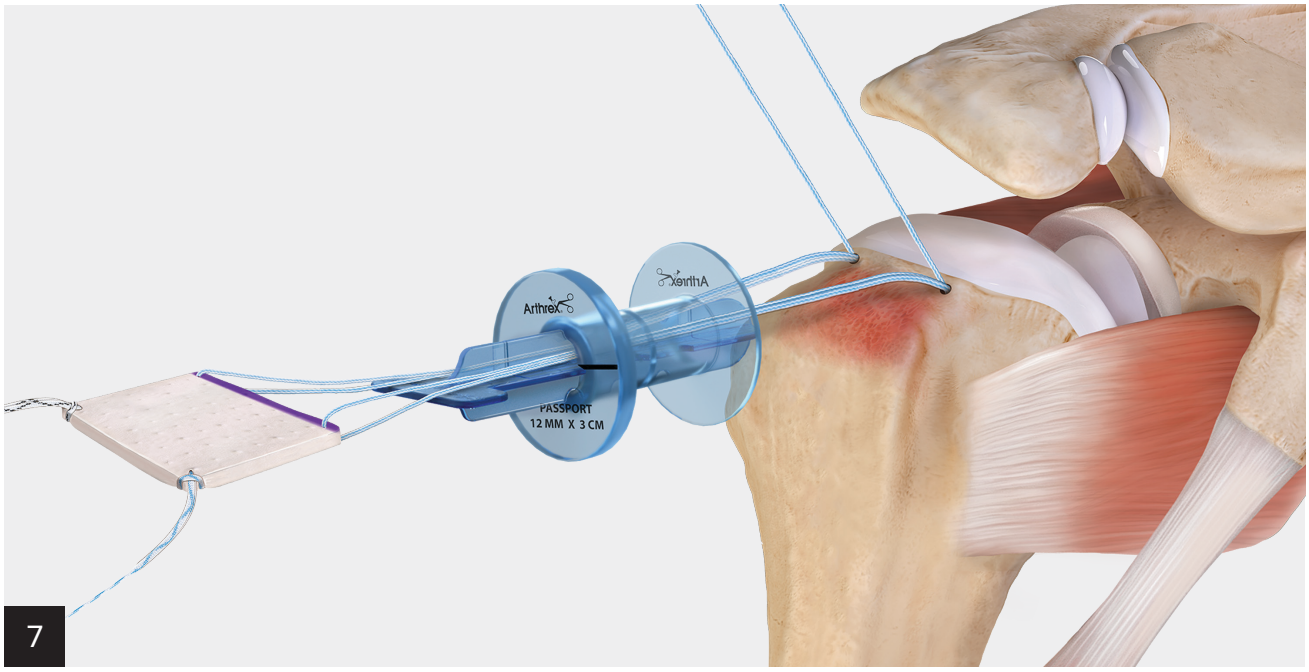
Use the medial FiberLink™ and TigerLink™ sutures to pass the repair sutures through the medial corners of the graft.

Note: Knotless mechanism is not yet converted.

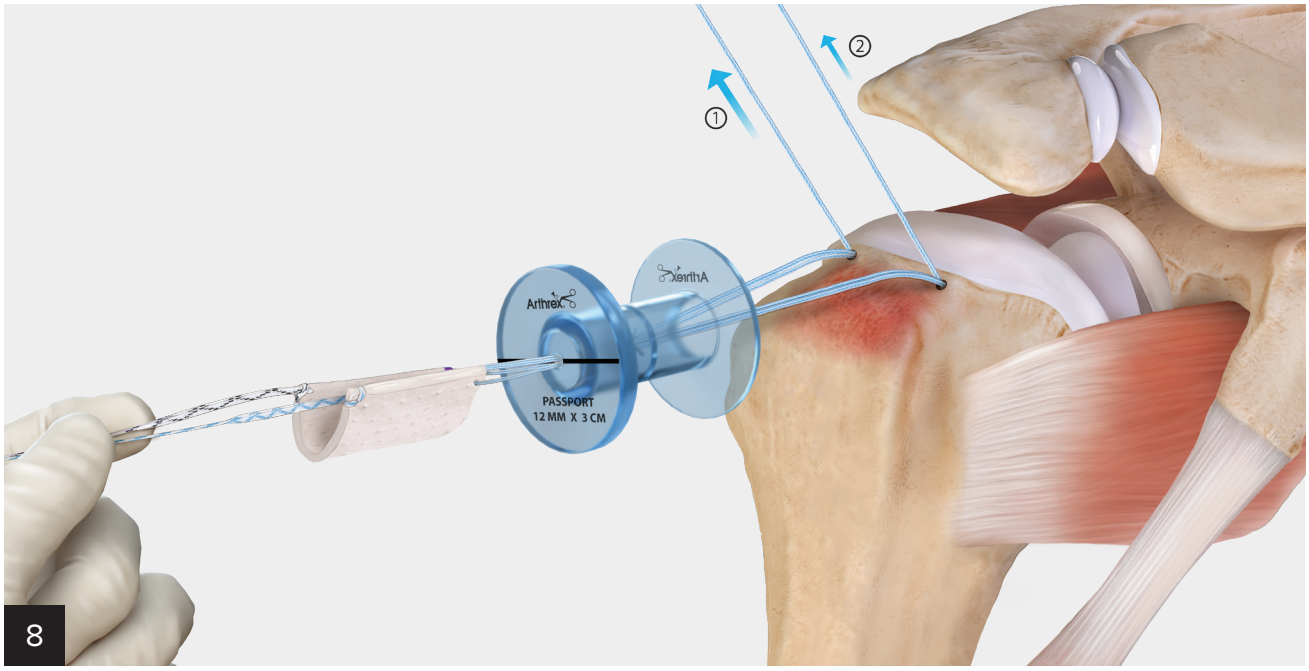




Load the repair suture into the loop of the shuttle stitch and fold it over at the purple mark. Pull the suture tape limb of the shuttle stitch to convert the knotless mechanism of each anchor.



Repeat the steps for the other medial corner. Upon completion of converting the knotless mechanisms, carefully remove the Passport divider.



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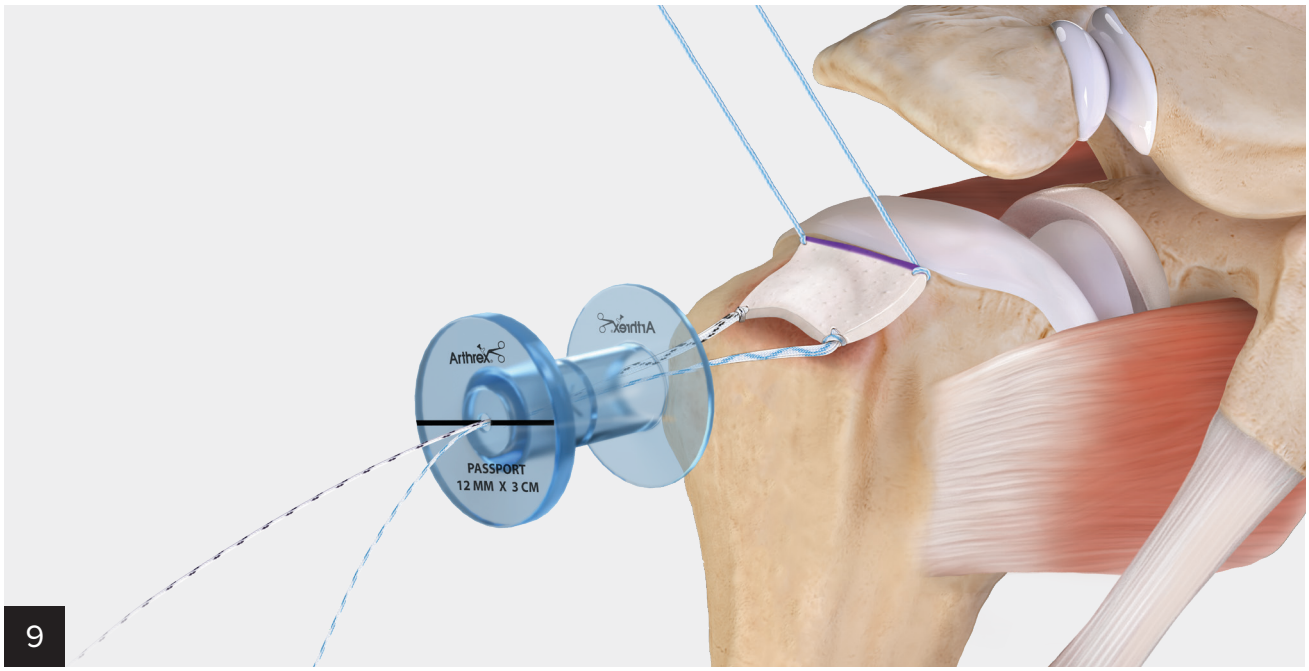
Alternate pulling tension on each repair suture to shuttle the graft through the 12 mm PassPort Button™ cannula and onto the tuberosity. It is important to hold slight counter tension on the lateral sutures to aid in easier graft passage.



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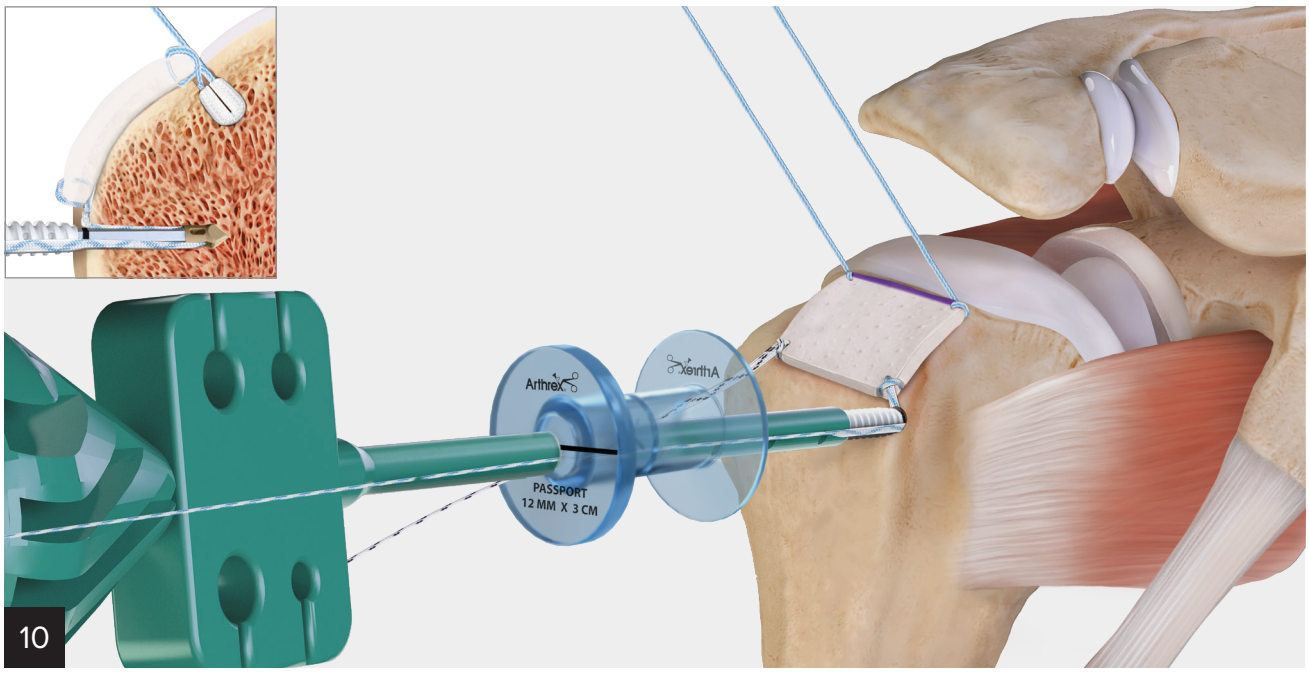

Insert two self-punching 4.75 mm SwiveLock® SP anchors to secure the lateral luggage tag suture tails into the tuberosity. Alternatively, self-punching 3.5 mm PushLock® Anchors can be used.

Optional: Partial Rotator Cuff Repair

Inverted Mattress Stitch Repair
Inverted mattress stitch FiberTape® suture secured in the eyelet of the posteromedial Knotless SwiveLock® anchor

Simple Stitch Repair
Simple stitch repair secured in the eyelet of the posteromedial Knotless SwiveLock anchor

Side-to-Side Repair
Side-to-side repair between the graft and remaining rotator cuff tendon

Ordering Information

Product Description	Item Number
Implants - Medial Row	
Knotless 2.6 FiberTak® anchor w/ #5 suture, self-punching	AR-**3641SP**
Knotless BioComposite SwiveLock® anchor, 4.75 mm × 19.1 mm, w/ #2 suture (blue) and SutureTape link (white/blue)	AR-**2324KBCC**
Knotless PEEK SwiveLock anchor, 4.75 mm × 19.1 mm, w/ #2 suture (blue) and SutureTape link (white/blue)	AR-**2324KPSLC**
Implants - Lateral Row	
BioComposite SwiveLock SP anchor, 4.75 mm × 24.5 mm, w/ 1.3 mm SutureTape (white/blue), self-punching PEEK eyelet	AR-**2324BCSP**
PEEK SwiveLock SP anchor, 4.75 mm x 24.5 mm, w/ 1.3 mm SutureTape (white/blue), self-punching PEEK eyelet	AR-**2324PSP**
Graft	
ArthroFLEX® 20 mm x 30 mm × 3 mm, w/ MatraACELL® decellularized dermis	AFLEX**352**
Bone Preparation	
PoweRasp™ instrument, 5.5 mm × 13 cm	AR-**8550PR**
PowerPick™ instrument, 45°, 6 mm drill depth	AR-**8150PX-45**
Other	
Arthroscopic measurement probe, 60°, 220 mm	AR-**4070-01**
SCR guide	AR-**16950SR**
Back grasper w/ SR handle	AR-**12531SR**
PassPort Button™ cannula, 12 mm ID × 3 cm	AR-**6592-12-30**
PassPort Button cannula, 12 mm ID × 4 cm	AR-**6592-12-40**
PassPort Button cannula, 12 mm ID × 5 cm	AR-**6592-12-50**
12 mm PassPort inserter	AR-**6592-12PI**
PassPort divider, 12 mm	AR-**6592-12D**
FiberLink™ SutureTape, 1.3 mm, w/ loop (white/blue)	AR-**7535**
TigerLink™ SutureTape, 1.3 mm, w/ loop (white/black)	AR-**7535T**

References

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3. LifeNet Health. Memo DD-0206. Virginia Beach, VA; 2023.
4. Arthrex, Inc. Data on file (Biomechanical properties of tendon augmentation material; LA0822-EN, TR-4926). Naples, FL; 2011.
5. Hartzler RU, Softic D, Qin X, Dorfman A, Adams CR, Burkhart SS. The histology of a healed superior capsular reconstruction dermal allograft: a case report. *Arthroscopy*. 2019;35(10):2950-2958. doi:10.1016/j.arthro.2019.06.024
6. LifeNet Health. Sterile decellularized dermis instructions for use [63-0050-01]. Virginia Beach, VA; 2019.
7. LifeNet Health. Analysis of the acellular matrix, growth factors, and cytokines present in ArthroFlex® [68-20-048]. Virginia Beach, VA; 2012.

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