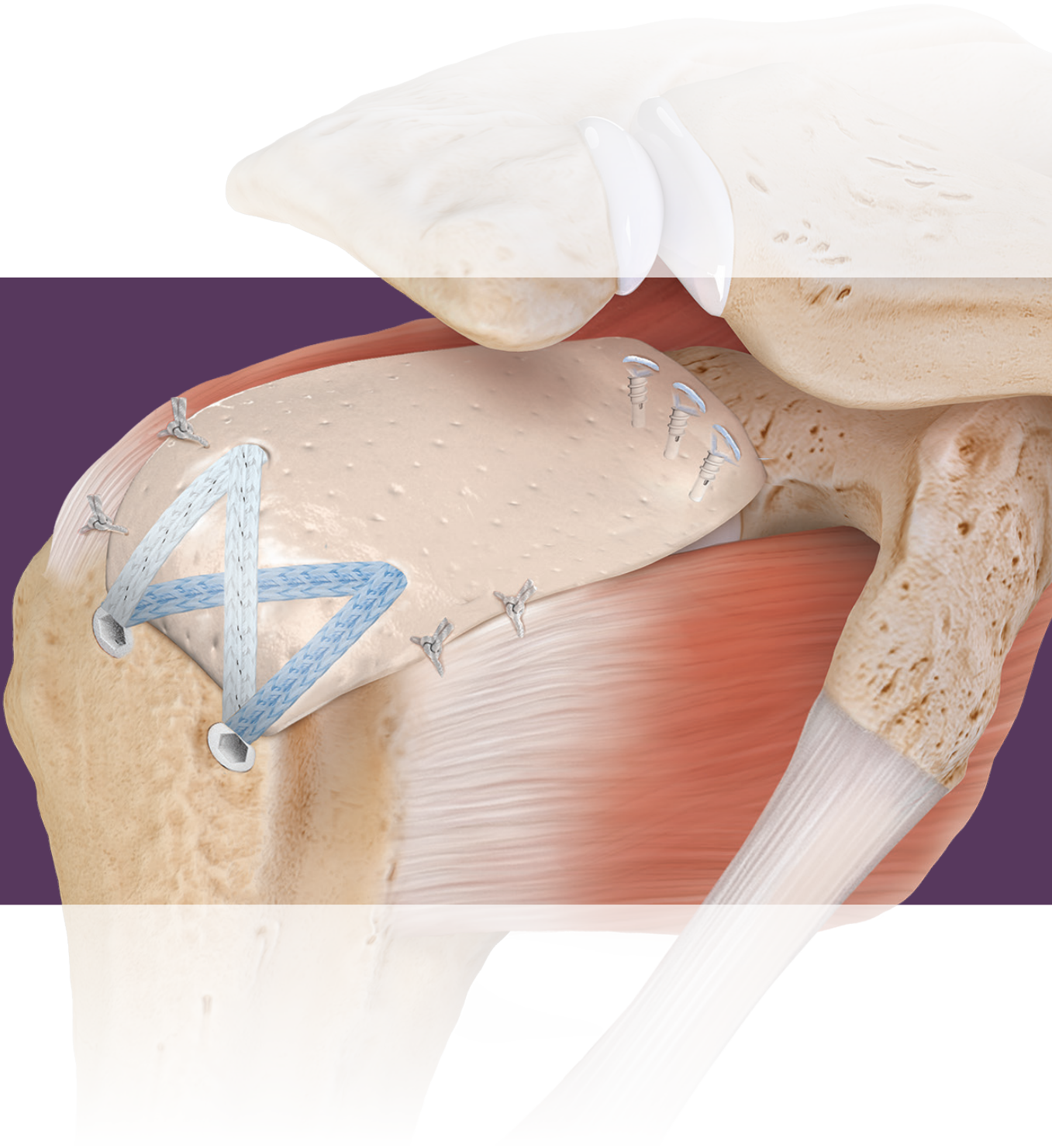


Superior Capsular Reconstruction

Surgical Technique for Massive Irreparable Rotator Cuff Tears



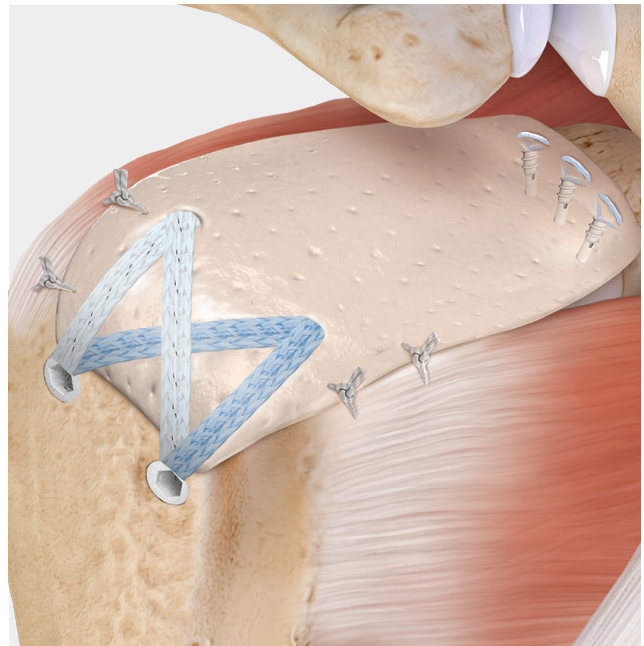
Superior Capsular Reconstruction

for Massive Irreparable Rotator Cuff Tears

The most common signs of irreparable rotator cuff tears are pain, muscle weakness in the shoulder joint, and as a result, limited arm elevation. This is mainly due to loss of superior stability of the glenohumeral joint due to dysfunction of the rotator cuff muscles.

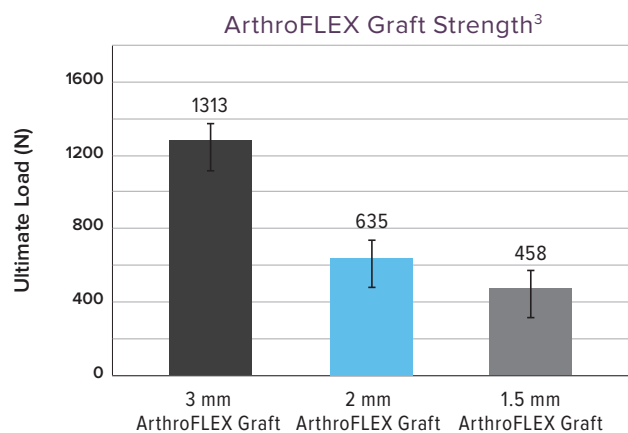
Patients with irreparable rotator cuff tears also have a defect of the superior capsule, which is located on the inferior surface of the supraspinatus and infraspinatus tendons. The shoulder capsule plays a role in stabilizing the glenohumeral joint.¹ Superior migration of the humeral head due to dysfunction of the rotator cuff, superior capsule, and surrounding structures results in pain, muscle weakness, loss of motion, and functional limitations.

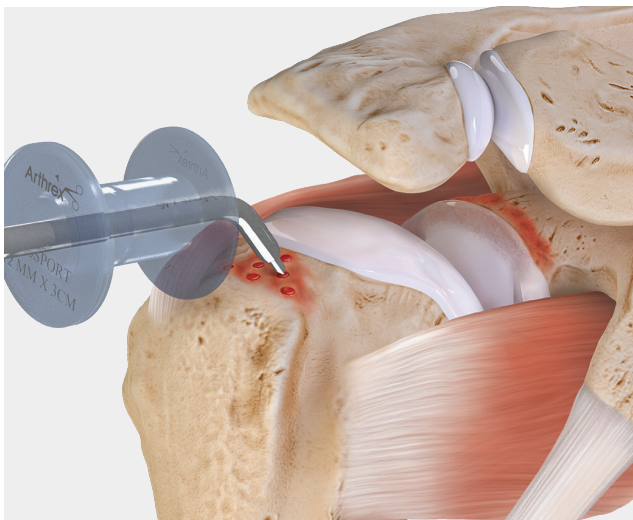
A surgical technique, Arthroscopic Superior Capsular Reconstruction (ASCR), was developed to restore the superior stability of the glenohumeral joint.



ArthroFLEX®* Acellular Bio-Implant for Soft-Tissue Repair

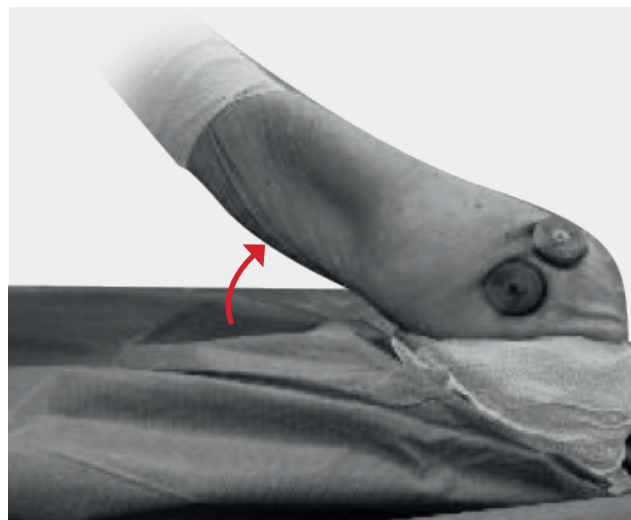
- Over 23,000 ArthroFLEX grafts distributed²
- Superior suture retention strength³
- More than 97% DNA removal through LifeNet Health's MatrACELL®* process
- Mature extracellular dermal matrix
- Hydrated and ready to use
- Sterile for patient safety





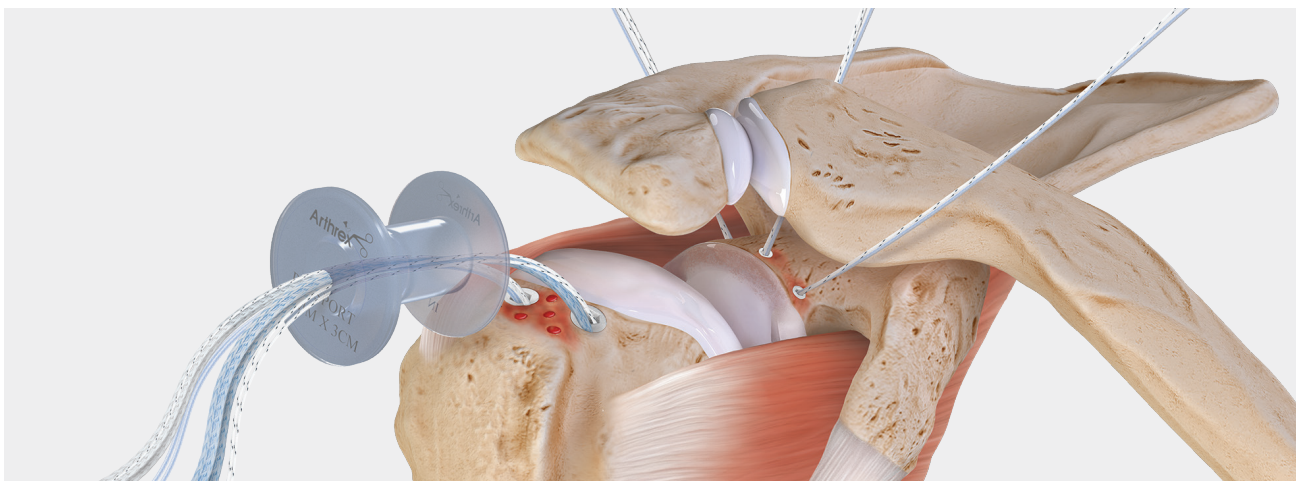
Tissue/Bone Prep

The subacromial bursa, degenerative tissues, and sutures from previous repairs must be thoroughly excised to provide a clean and clear arthroscopic view of the glenoid and humeral footprint. Prepare the glenoid and tuberosity bone beds and use the PowerPick™ drill tip to maximize vascular channels. Biceps tenodesis is often performed as many of the patients also have pain-generating biceps pathology.



Arm Positioning for Graft Measurement

It is recommended to position the arm in 20° to 30° of abduction, neutral flexion, neutral rotation, and the humeral head centered on the glenoid **while measuring the distances between the anchors**. This arm position is recommended for the lateral decubitus or beach chair position and will dictate graft size and help correctly set the graft tension of the final repair.



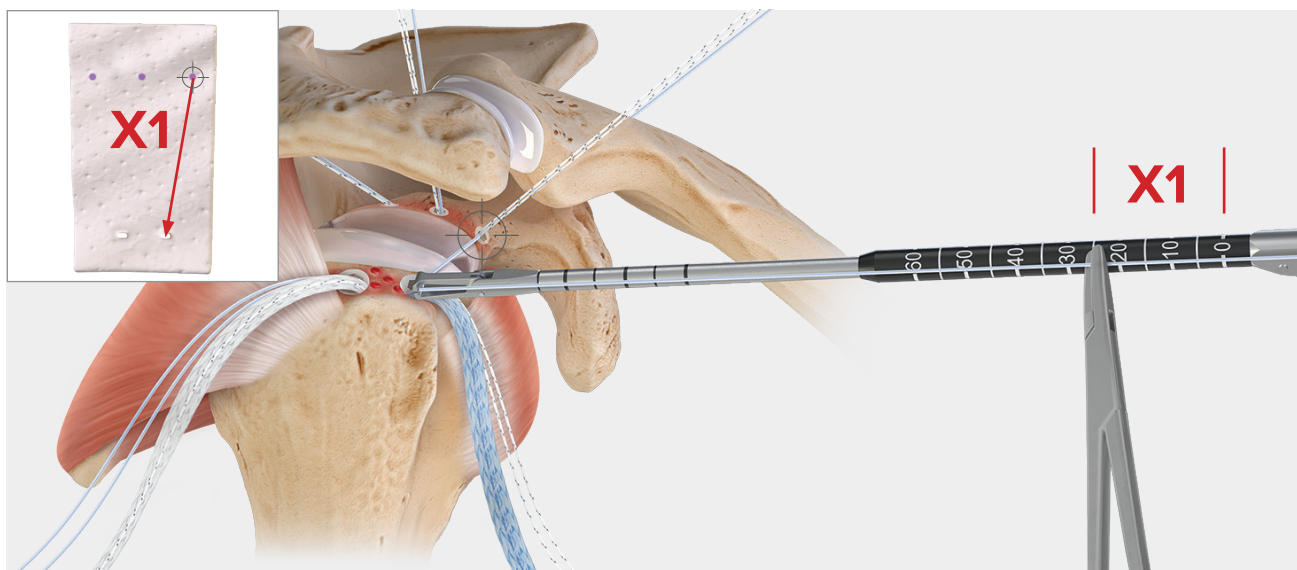
Tuberosity Anchors

The graft will be fixed to the humerus using a knotless SpeedBridge™ repair. Insert two to three 4.75 mm SwiveLock® anchors with FiberTape® suture into the articular margin spanning the humerus from the bicipital groove to the infraspinatus. Retain the associated #2 FiberWire® sutures to aid in the measurement between anchors.

Glenoid Anchors

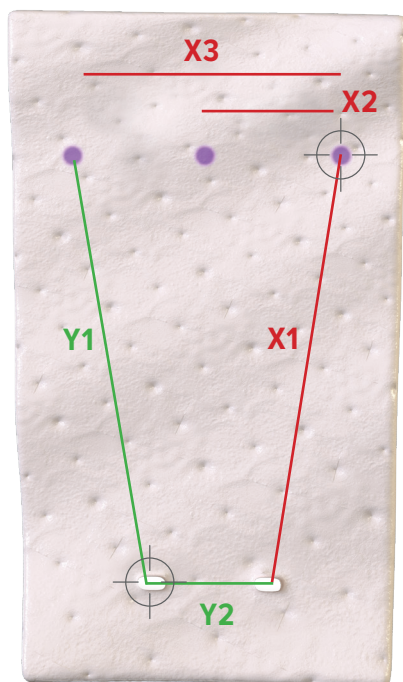
The graft will be fixed to the glenoid with three knotless anchors with independent mattress sutures. Drill and insert three 3.9 mm Knotless Corkscrew® anchors into the superior glenoid through percutaneous skin incisions spanning the glenoid from anterior to posterior.

Graft Measurement



Place the SCR guide over the anterior glenoid anchor and capture the suture by the front jaw eyelet. Tension the suture alongside the SCR guide and place a hemostat on the suture at the zero mark. Determine X1, X2, and X3 by positioning the SCR guide over the corresponding anchors and identifying the distances of the new hemostat location.

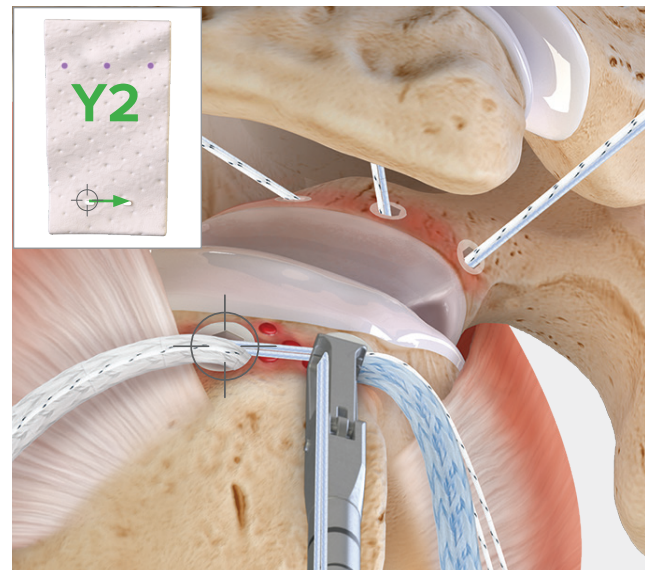
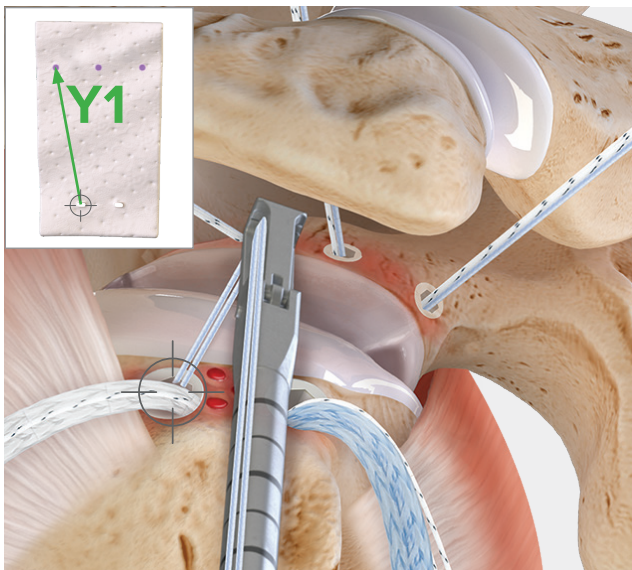
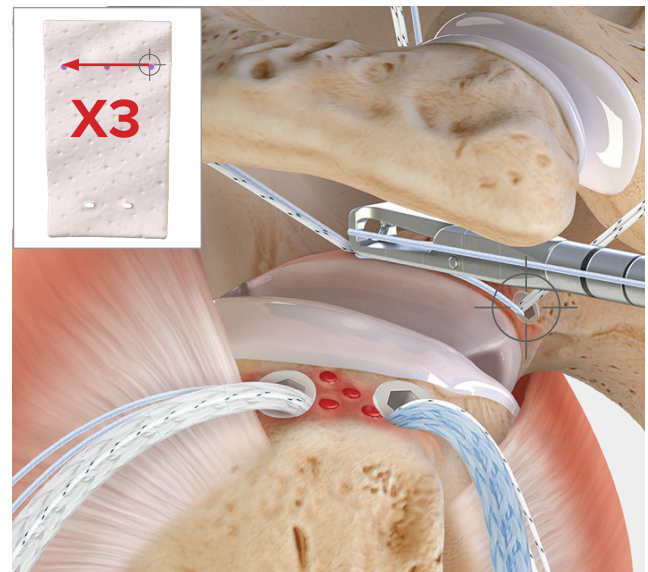
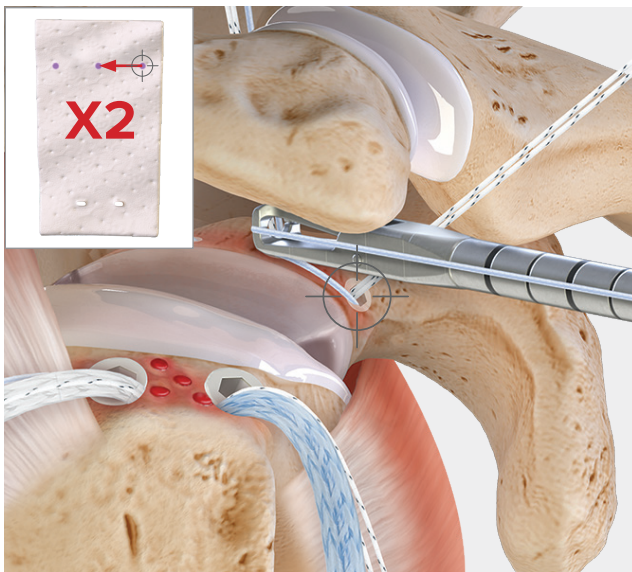
Note: The SCR guide is used to estimate distance between the anchor positions using suture from the anchors.



Graft Measurement

Y1 and Y2 require the SCR guide to be placed over the posteromedial humeral anchor. Tension the #2 FiberWire® sutures from this anchor alongside the SCR guide and place a hemostat on the sutures at the zero mark. Then position the SCR guide over the corresponding anchors and identify the distances of the new hemostat location.

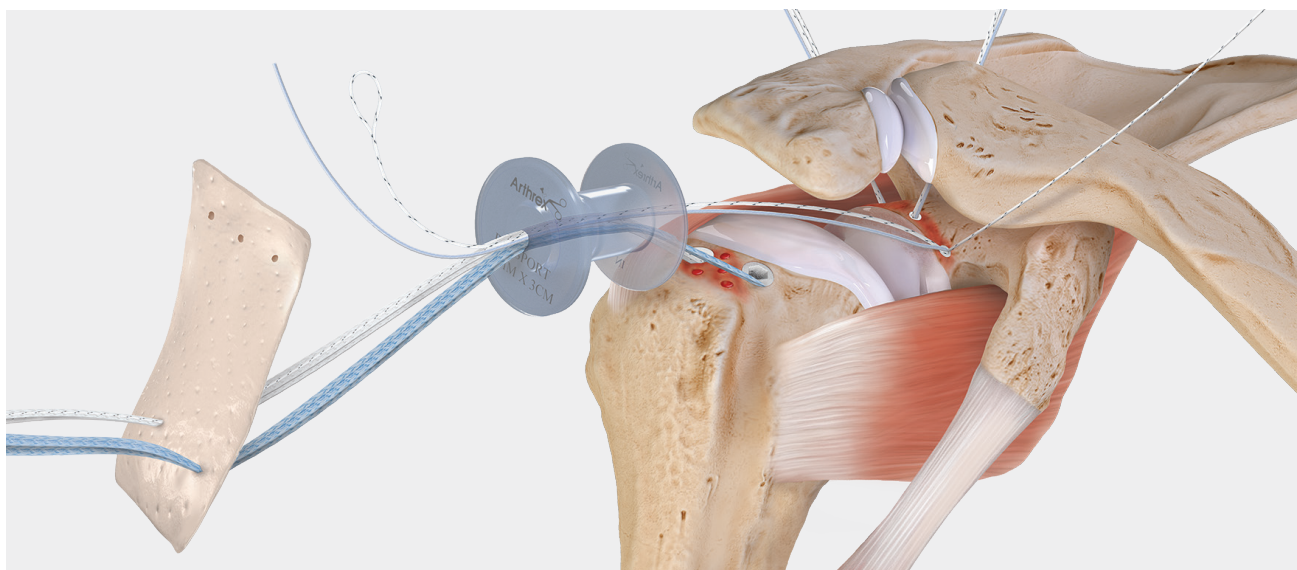
Graft Sizing Recommendations



- Use a marking pen and a ruler to measure out the graft and mark the anchor locations.
- Extend the graft length at least 5 mm around the anchors to avoid the suture from cutting through.
- Extend the graft length about 10 mm to 15 mm on the tuberosity side for footprint coverage.

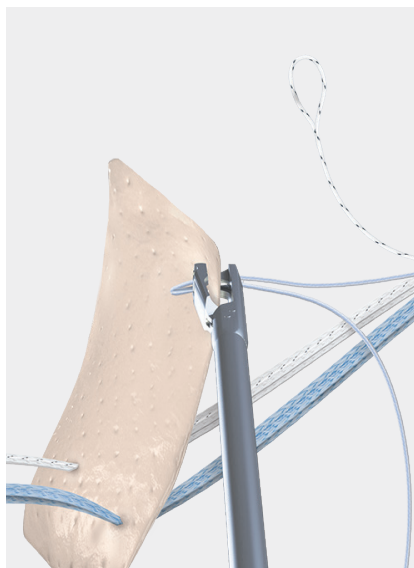
- A scalpel or scissors can be used to cut the graft into form.
- Punch holes at the lateral anchor locations using a 2 mm tissue biopsy punch. Prepunched holes make it easier for the sutures to slide through this very thick graft.

Graft Fixation Preparation

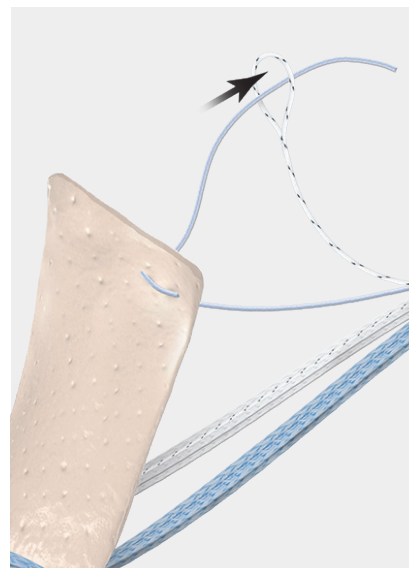
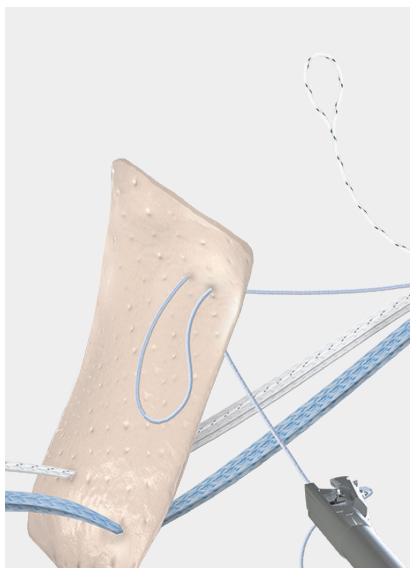


Align and orientate the prepared graft in its implanted position. Use a retriever to carefully pull the FiberTape® sutures through the PassPort Button™ cannula and then through the appropriate punched holes in the graft. Retrieve the blue repair stitch and loop side of the white/black shuttle stitch from the anterior glenoid anchor.

Note: To avoid tangling, care should be taken to tension the passed sutures prior to removal of additional sutures from the cannula.

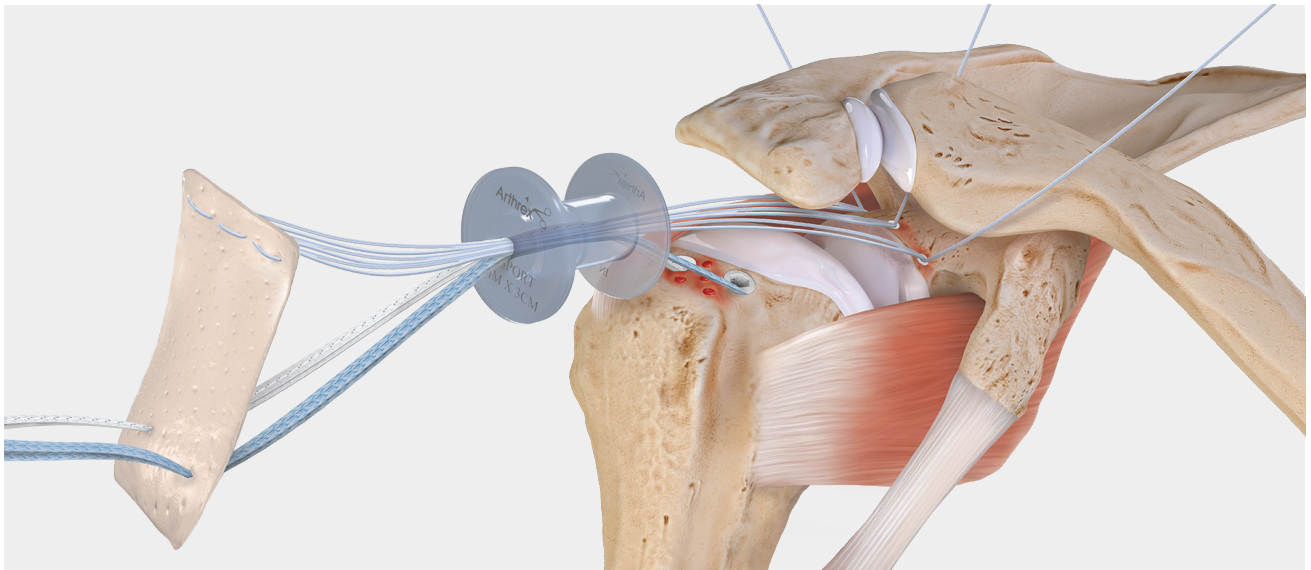


Pass the blue repair stitch in a mattress configuration over its corresponding anchor position with a Scorpion™ SL suture passer.



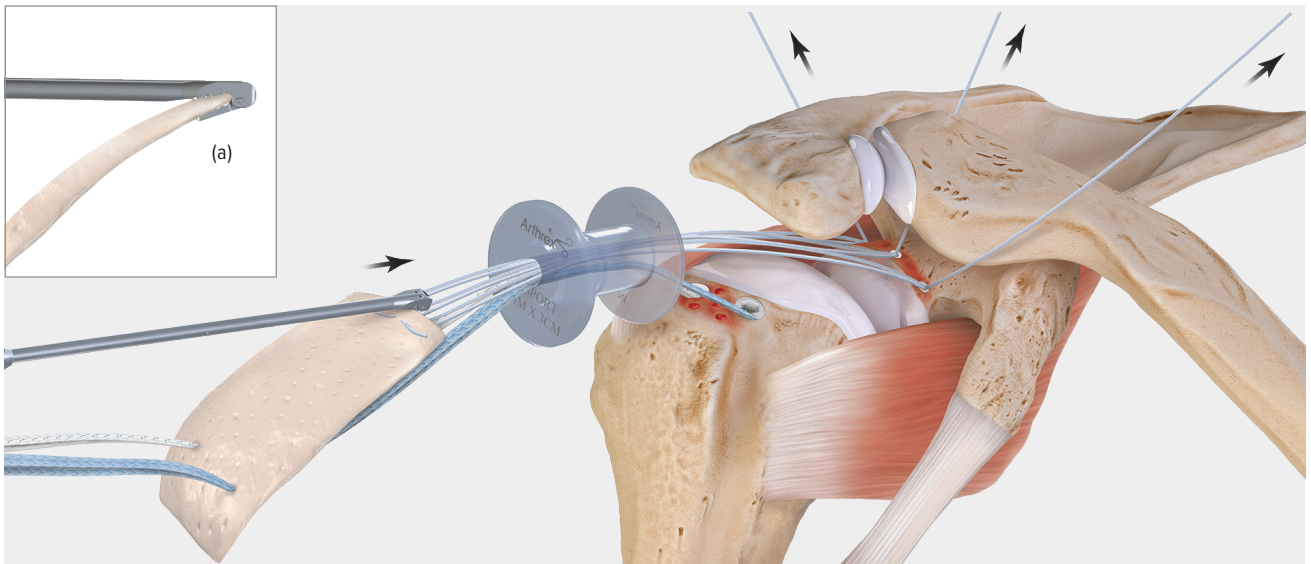
Insert the blue repair stitch and fold it through the white/black shuttle stitch loop.

Note: Refer to the 3 mm Knotless SutureTak® anchor technique (LT1-0511-EN) for more detailed information on this anchor mechanism.



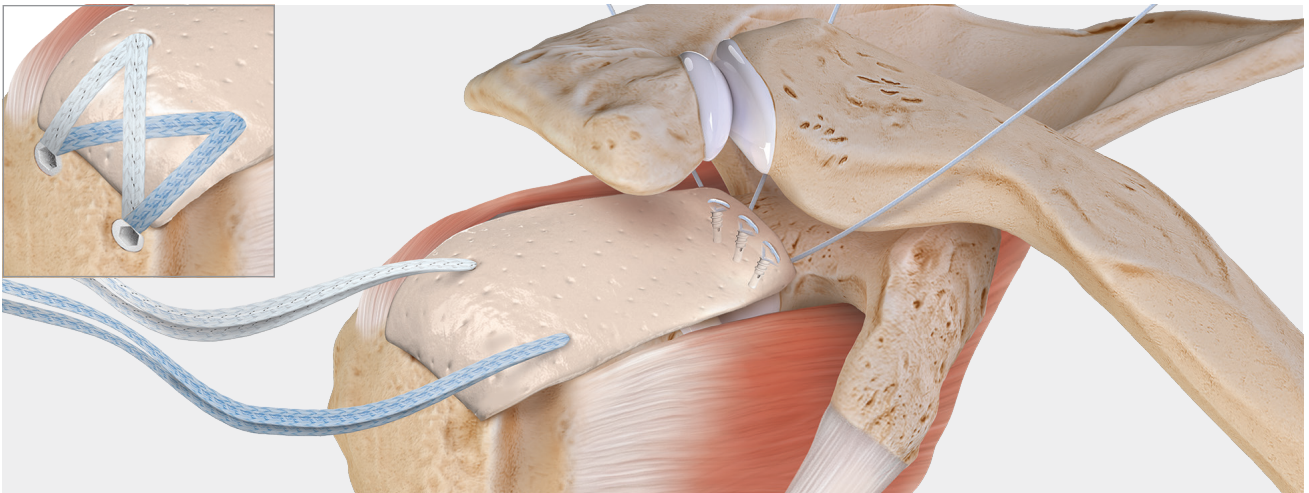
Pull the opposing end of the shuttle stitch, retrieving the blue repair suture back through the anchor and out of the corresponding percutaneous skin portal. Repeat this process for all 3 glenoid anchors.

Graft Delivery



Grasp the leading edge of the graft with the back grasper **(a)**. Pull the graft into position through the PassPort Button™ cannula while systematically pulling tension on the 3 blue repair stitches to minimize slack in the suture. Maintain the graft orientation and do not twist the back grasper during insertion.

Note: A 12 mm PassPort Button cannula is helpful for suture management and also allows direct graft passage.



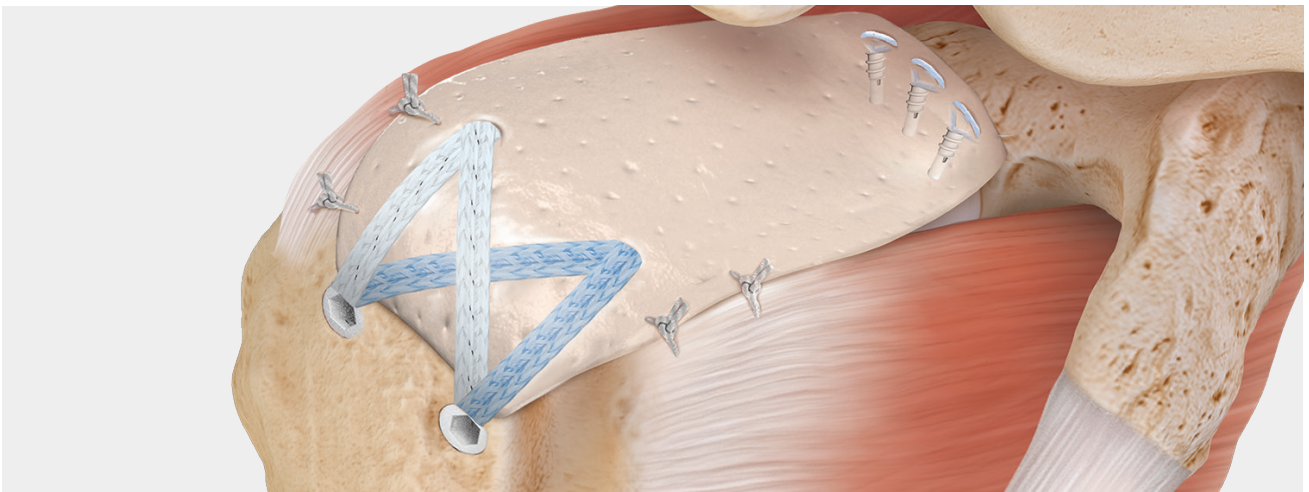
Glenoid Fixation

With the graft in place, tension the 3 blue repair stitches to their final fixation, compressing the graft to the glenoid bone. The remaining suture tails can be cut and discarded.

Humeral Fixation

Maintain tension on the FiberTape® sutures while pushing down on the graft to be sure all suture slack is removed from under the graft. Complete the SpeedBridge™ repair with two lateral 4.75 mm SwiveLock® anchors and cut the remaining suture limbs.

Margin Convergence



Pass 2 to 3 margin convergence stitches to the remaining infraspinatus and subscapularis with a SutureLasso™ or Scorpion™ suture passer to complete the repair.

Ordering Information

Bone Preparation

Product Description	Item Number
ClearCut™ Burr, TR, 6 flute	AR-8450CTS
PoweRasp™ Instrument, 5.5 mm × 13 cm	AR-8550PR
PowerPick™ Instrument, 45°, 6 mm drill depth	AR-8150PX-45

Implant System

Product Description	Item Number
SCR Knotless Implant System Includes: SpeedBridge™ Implant Kit PEEK 3.9 mm Knotless Corkscrew® Anchor, w/ blue/black #5 suture PEEK 3.9 mm Knotless Corkscrew Anchor, w/ white/black #5 suture Percutaneous Instrument Kit for 3.9 mm Knotless Corkscrew SCORPION-multifire Needle PassPort Button™ Cannula Divider	AR-2600SCR

Glenoid Fixation

Product Description	Item Number
BioComposite 3.9 mm Knotless Corkscrew Anchor, w/ #5 suture	AR-1941BC
PEEK 3.9 mm Knotless Corkscrew Anchor, w/ #5 suture	AR-1941PSV
PEEK 3.9 mm Knotless Corkscrew Anchor, w/ #2 suture	AR-1941PS
Drill Guide and Dilator	AR-1941DG
Drill	AR-1941D
Fishmouth Spear for 3.9 mm Knotless Corkscrew Anchor	AR-1941DGF

Humeral Fixation

Product Description	Item Number
SpeedBridge™ Implant System includes: Two 4.75 mm BioComposite SwiveLock® C Anchors, w/ 1 preloaded FiberTape® Loop (one blue, one white/black) Two 4.75 mm BioComposite SwiveLock C Anchors Disposable Punch	AR-2600SBS-4

Other

Product Description	Item Number
3 mm ArthroFLEX®* Dermal Allograft w/ 40 mm × 70 mm MatrACELL®* Decellularized Dermis	AFLEX301
SCR Guide	AR-16950SR
Back Grasper w/ SR Handle	AR-12531SR
KingFisher FiberTape® Suture Retriever/Grasper w/ SR Handle	AR-13971SR
PassPort Button™ Cannula, 12 mm I.D. × 30 mm	AR-6592-12-30
PassPort Button Cannula, 12 mm I.D. × 40 mm	AR-6592-12-40
PassPort Button Cannula, 12 mm I.D. × 50 mm	AR-6592-12-50
SutureTape, 1.3 mm, w/ tapered needle (white/blue)	AR-7500
PassPort Button Inserter, 12 mm	AR-6592-12PI
PassPort Button Divider, 12 mm	AR-6592-12D

ArthroFLEX and MatrACELL are registered trademarks of LifeNet Health.

References

1. Mihata T, Lee TQ, Watanabe C, et al. Clinical results of arthroscopic superior capsule reconstruction for irreparable rotator cuff tears. *Arthroscopy*. 2013;29(3):459-470. doi:10.1016/j.arthro.2012.10.022
2. Arthrex, Inc. Data on file (Sales data as of December 31, 2018). Naples, FL; 2018.
3. Arthrex, Inc. Data on file (APT 04103). Naples, FL; 2019.



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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