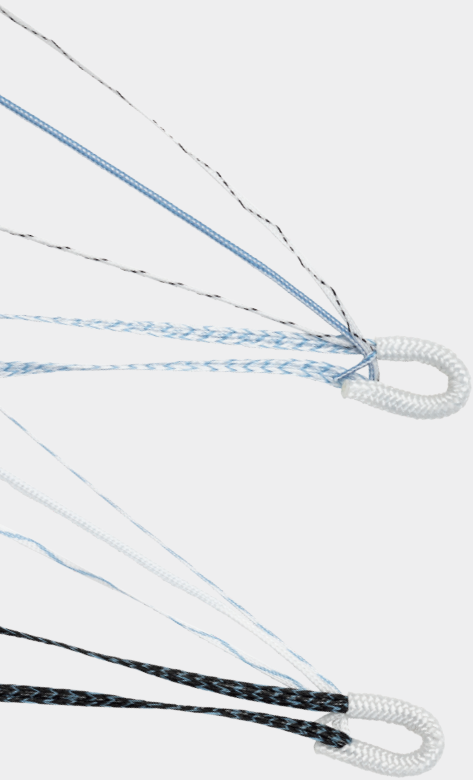
MIS FiberTak® Achilles SpeedBridge™ Repair Implant System With Knotless Rip-Stop

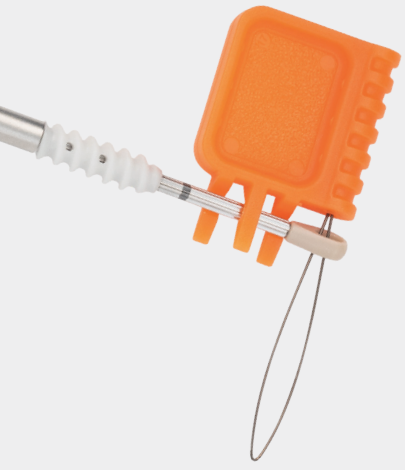
Surgical Technique

Arthrex®



2.6 mm Knotless FiberTak anchor w/ 1.7 mm collagen-coated FiberTape suture

3.9 mm BioComposite SwiveLock anchor



New!

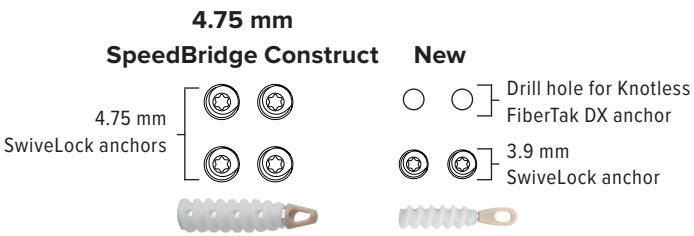
MIS FiberTak® Achilles SpeedBridge™ Repair Implant System With Knotless Rip-Stop and Collagen-Coated FiberTape® Suture

Introduction

The ***new*** MIS FiberTak Achilles SpeedBridge implant system is a novel concept in Achilles reattachment following Haglund's debridement. This repair enables an hourglass pattern of FiberTape® suture and knotless rip-stop to be laid over the tendon's distal end in a completely knotless 4-anchor configuration. The Achilles SpeedBridge repair provides rigid tendon fixation with improved tendon-to-bone apposition, allowing for immediate postoperative weightbearing and range of motion.[1]

Features and Benefits

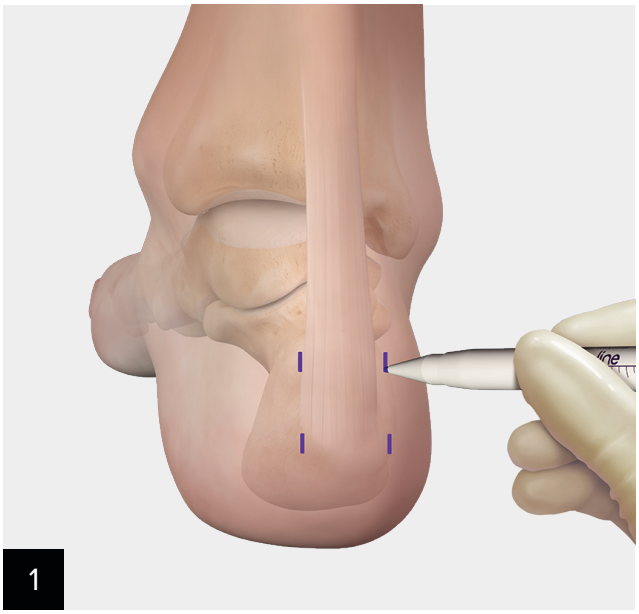
- ***New*** 2.6 mm Knotless FiberTak® DX anchors and 3.9 mm BioComposite SwiveLock® anchors
- **25%** less material than the original SpeedBridge construct[2]



- Double the biomechanical strength of the 4.75 mm SwiveLock SpeedBridge construct, with knotless tensionable technology[2]
- Proximal row rip-stop creates compression across the bleeding bone bed
- Cannulated instruments for a percutaneous approach
- Shorter, ergonomic inserters with laser line and window to assist in depth of 3.9 mm BioComposite SwiveLock anchors
- ***New*** 1.7 mm collagen-coated FiberTape suture with new differentiating colors
- Hexalobe driver on 3.9 mm BioComposite SwiveLock anchors for high insertional torque in hard bone[3]

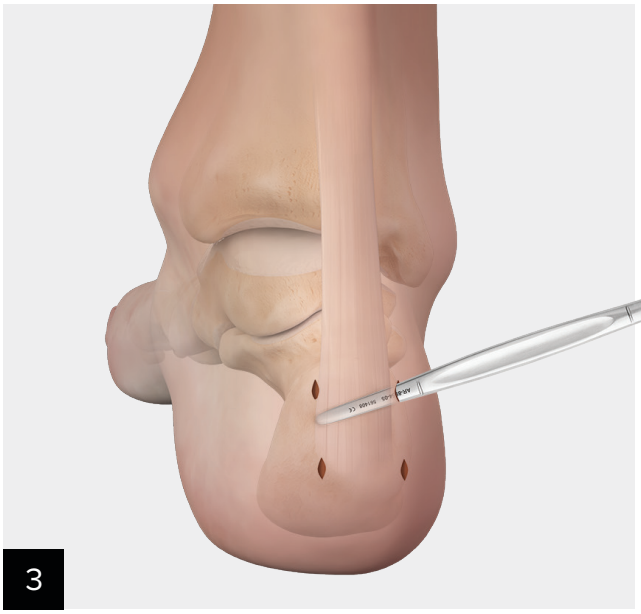
MIS FiberTak® Achilles SpeedBridge™ Repair Implant System

AR-9928BCK-MIS

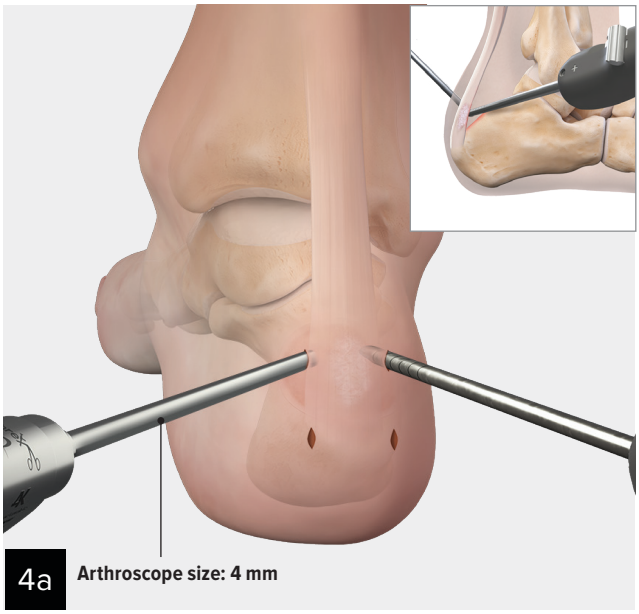


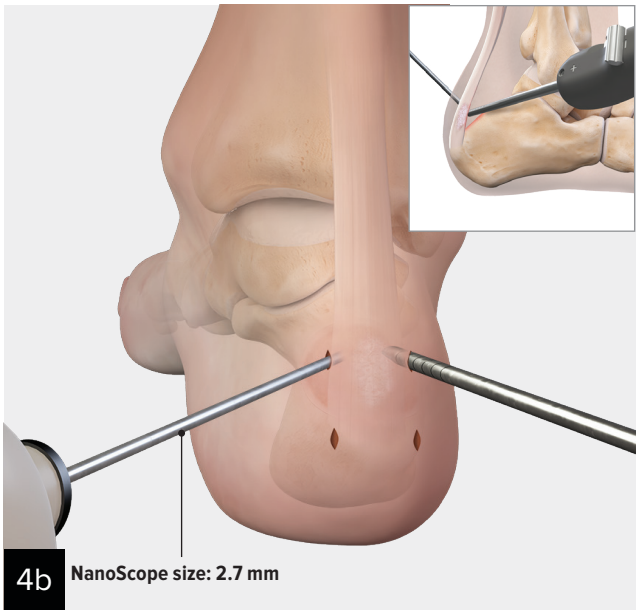
With the patient in a prone position, use fluoroscopy to mark out the proximal and distal portals at the 2, 5, 7, and 10 o'clock positions when viewing posteriorly, so they are at the desired level for bone resection. Place the distal portals at the distal portion of the resection and the proximal portals just distal to the fibular line.

Under fluoroscopy, draw the projected plane of resection of the posterior/superior calcaneal tuberosity (Haglund's) with the most distal extent starting at the distal portals. Make incisions at each of the portal sites.

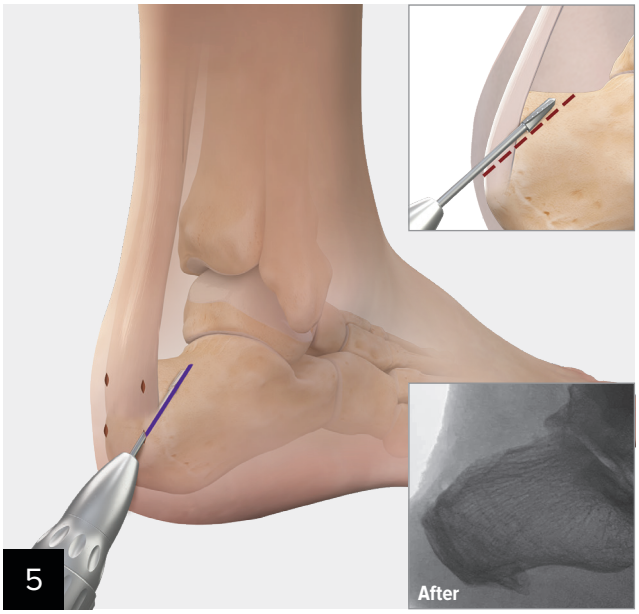


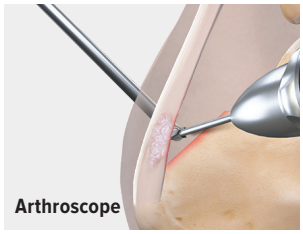
Use the MIS elevators to develop a plane between the Achilles tendon and calcaneal tuberosity at each portal site, then use the Sayre elevator to free up space between the skin and the Achilles tendon to ease passing of the collagen-coated FiberTape® suture superficial to the tendon.

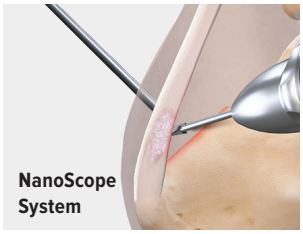




Use an arthroscope or the NanoScope™ operative arthroscopy system and shaver to visualize and debride the elevated tissue and prep for use of the MIS burr.



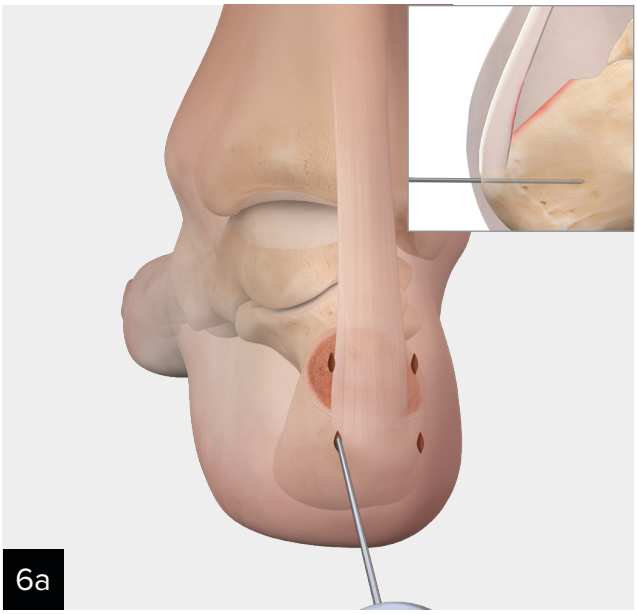


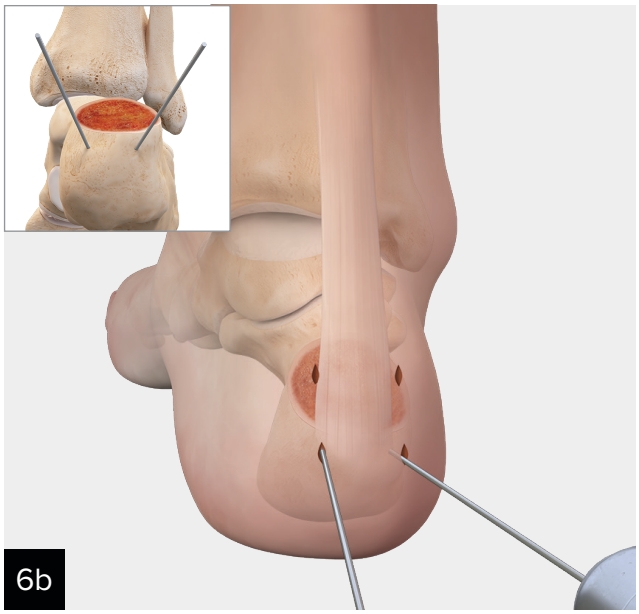


Introduce the 4.3 mm MIS conical burr deep to the tendon through the distal portals. Resect bone in the projected plane using a sweeping motion and remove all excess bone with shaver and/or outflow irrigation.

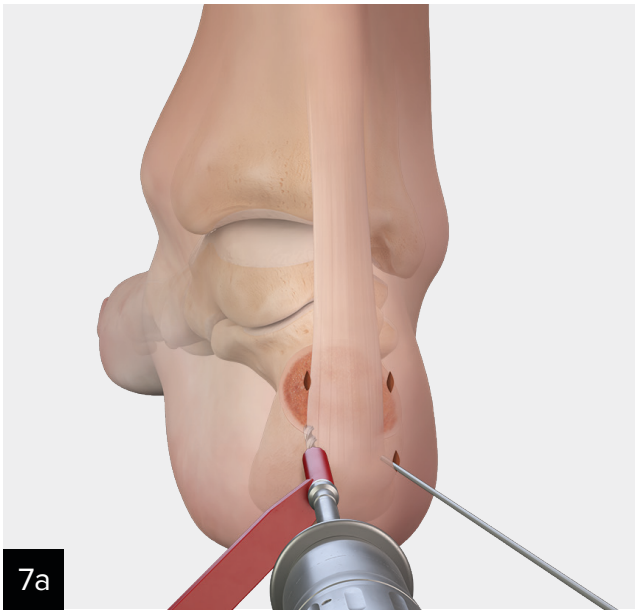
Note: If there is significant calcification within the Achilles, a banana blade and pituitary rongeur can be used to help remove the bone from the tendon through the extended portal.

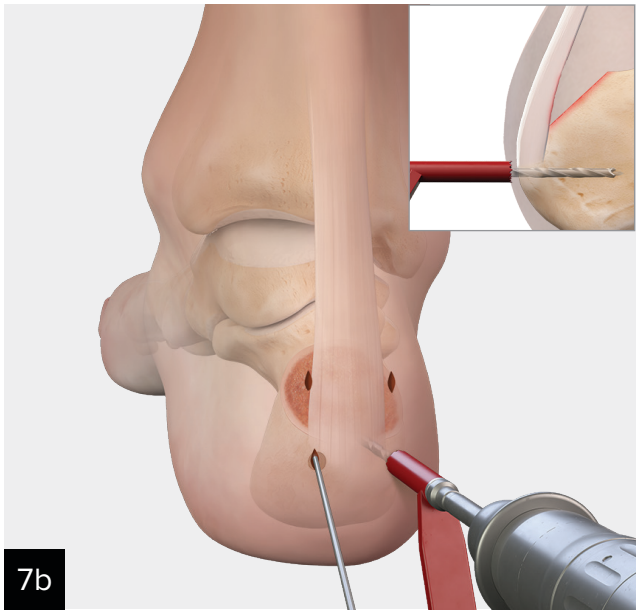
Preparing Distal SwiveLock® Anchor Tunnels



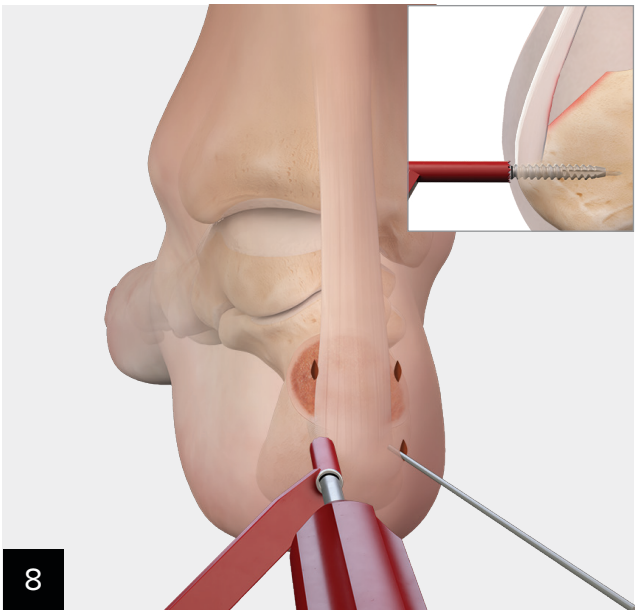


Drill the 1.35 mm K-wires for the 3.9 mm BioComposite SwiveLock anchor through the distal portals, using fluoroscopic guidance showing the depth of the K-wire insertion. Alternatively, use the drill guide with the centering sleeve for more precise placement of the K-wires.





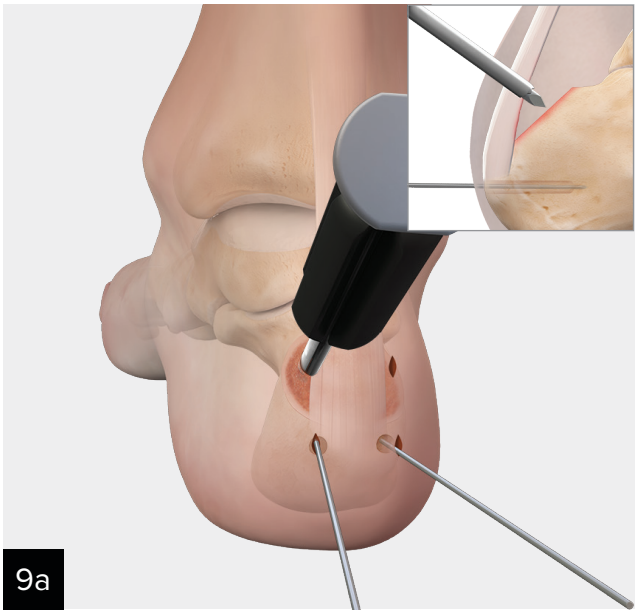
Use the 3.9 mm SwiveLock guide and the 2.6 mm cannulated drill, inserting until the positive stop on the drill meets the back of the guide through both medial and lateral portals. Ensure the drill guide is touching bone.



Use the 3.9 mm cannulated tap to tap over the K-wires to the laser line. The drill guide adjacent to bone ensures accurate depth of the tap.

Optional 3.9 mm quick-connect cannulated power tap is sold separately.

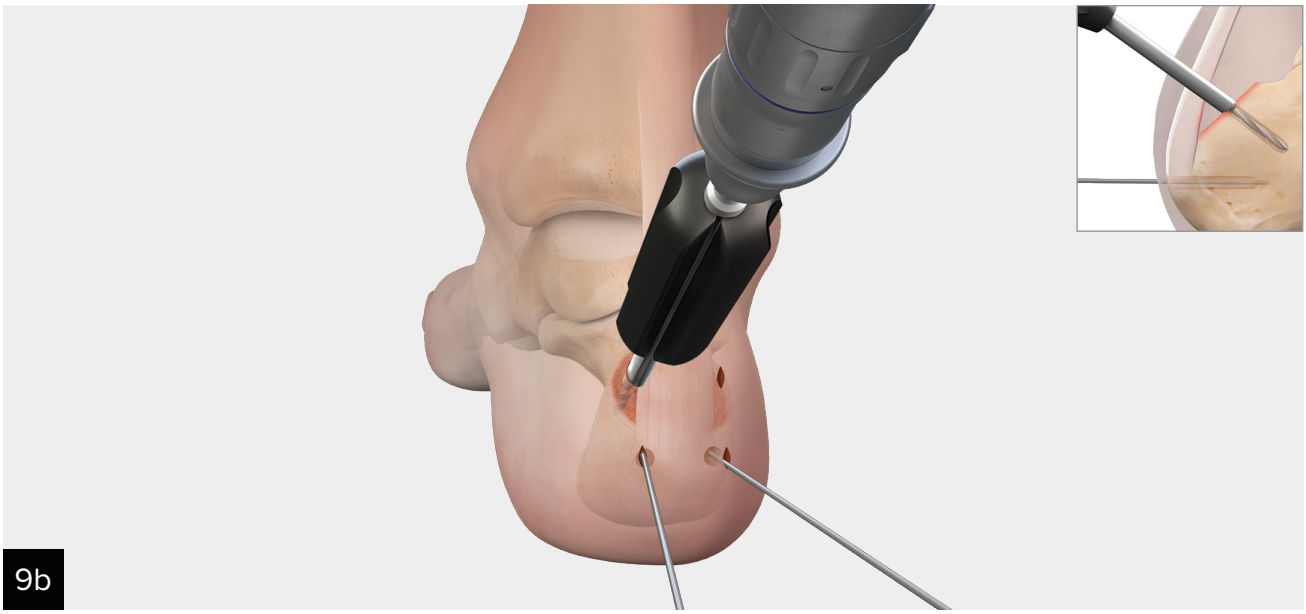
Preparing Proximal 2.6 mm FiberTak® Anchor Tunnels



Use the black-handled 2.6 mm FiberTak guide and obturator to move through the soft tissue and down to bone for targeted placement of the proximal 2.6 mm FiberTak anchors through the proximal portals. Do not push obturator into bone; it is **only** used to help get through soft tissue. Remove the obturator and place the guide slot-side down. Aim the trajectory so the proximal FiberTak anchors will not converge with the distal SwiveLock® anchors or one another.

The guide's beveled edge will ensure placement in the correct plane on the calcaneus where the Haglund's deformity has been removed.

Note: Use fluoroscopy to confirm the lateral view showing appropriate drill guide insertion.



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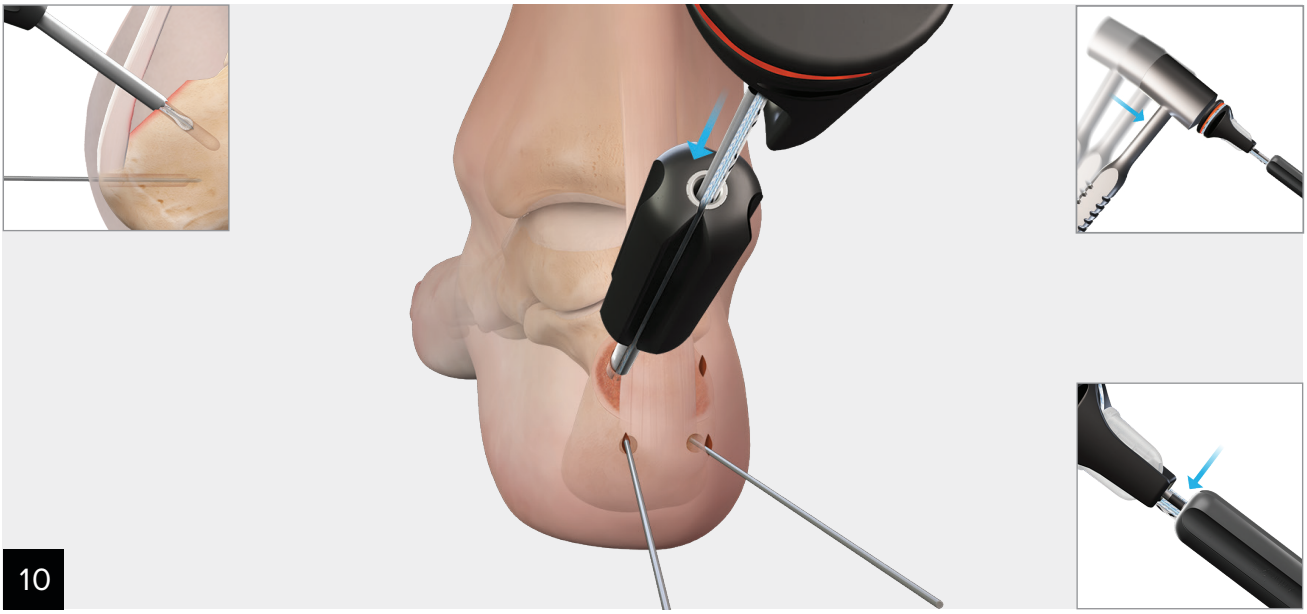
Keeping the position of the guide in place, drill with the long 2.6 mm drill to the positive stop on the drill where it meets the back of the guide. Remove the drill, leaving the guide in place, and insert the 2.6 mm Knotless FiberTak® DX anchor.



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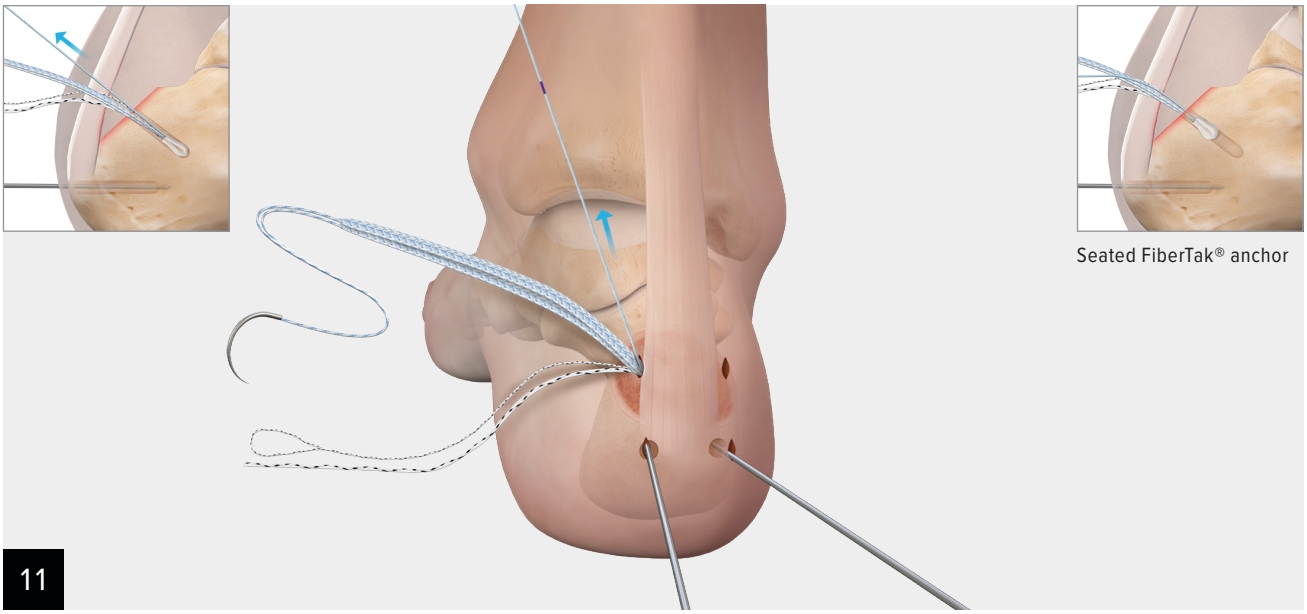
Once the anchor is inserted, mallet the handle of the inserter until the large laser line on the inserter meets the back of the guide.

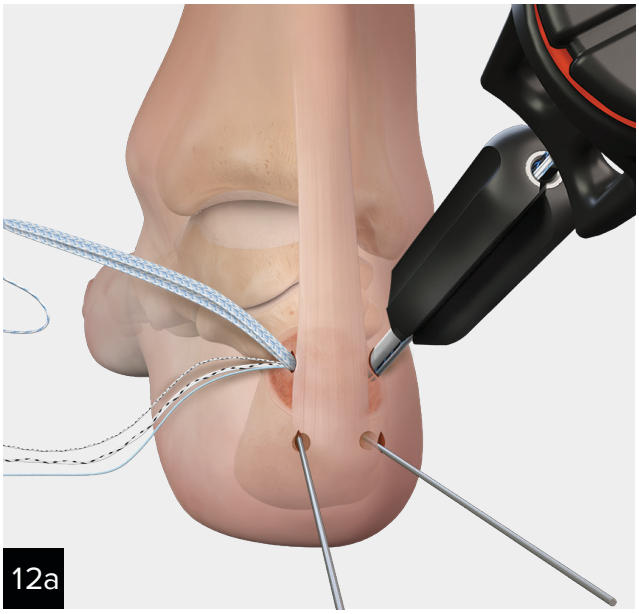
Note: Do not mallet flush to a positive stop on the guide, as this could plunge the guide and anchor too deep and compromise anchor performance.

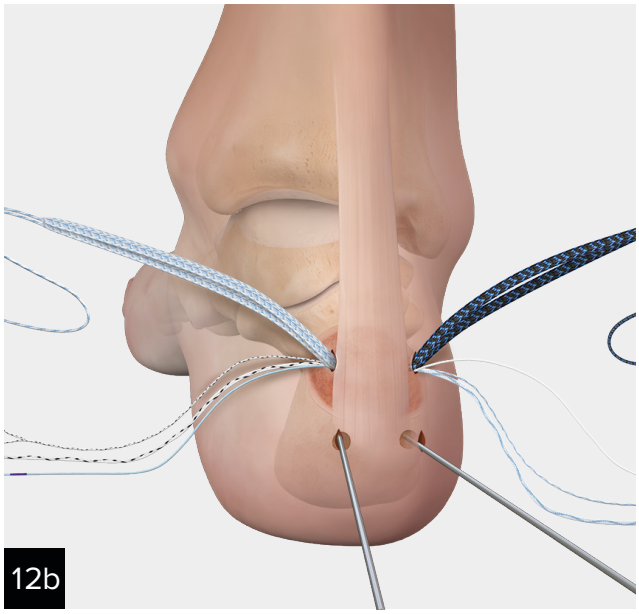
Undo the rubber O-ring from the back of the handle and remove the needle and sutures from the inserter, then remove the inserter. All sutures will slide out of the slot on the guide, which can then be removed.

Note: Do not twist the inserter to remove.

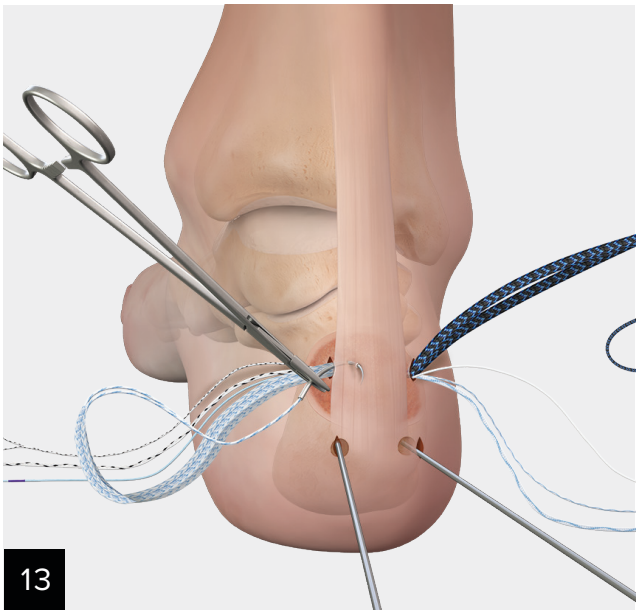


Pull gently on the sutures to ensure the anchor is secure, but **do not** fully set the anchor.



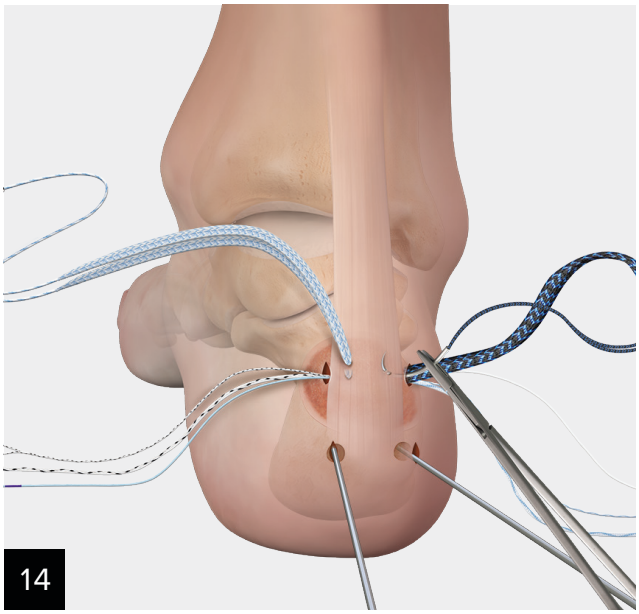


Repeat the steps for the second anchor, again using fluoroscopy, and drill and insert the second 2.6 mm Knotless FiberTak® DX anchor. There is an option to self punch this anchor without drilling, but it is recommended to use the cannulated 2.6 mm drill in order to maximize the performance of the FiberTak anchor. **Do not** self punch in hard bone. Pull gently on the second anchor sutures to ensure the anchor is secure, but **do not** fully set the anchor.



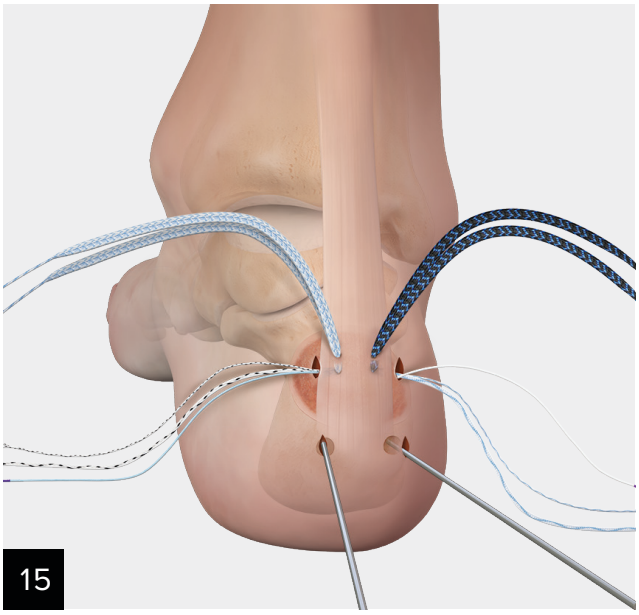
Separate the swedged FiberTape® sutures with needles from the knotless repair sutures. Suture management is key.

In one pass, pass the blue 1.7 mm collagen-coated FiberTape suture with the attached needle through the proximal and medial portals, medial side of the Achilles tendon, and skin.

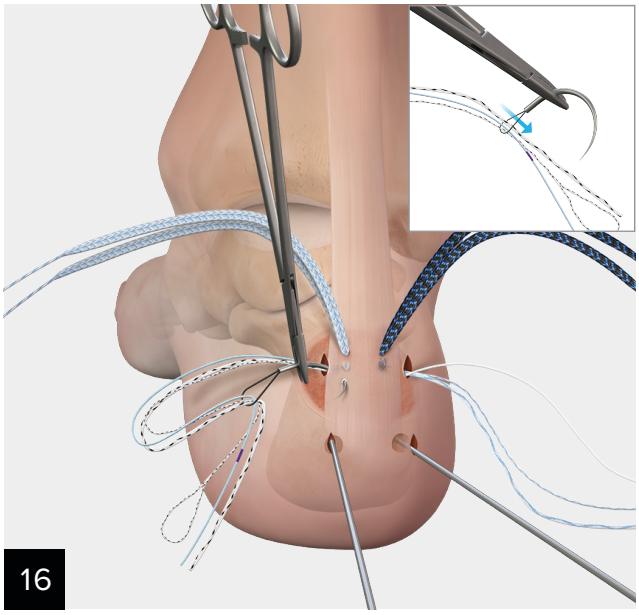


In one pass, pass the black/blue 1.7 mm collagen-coated FiberTape suture with attached needle through the proximal and lateral portals, lateral side of the Achilles tendon, and skin.

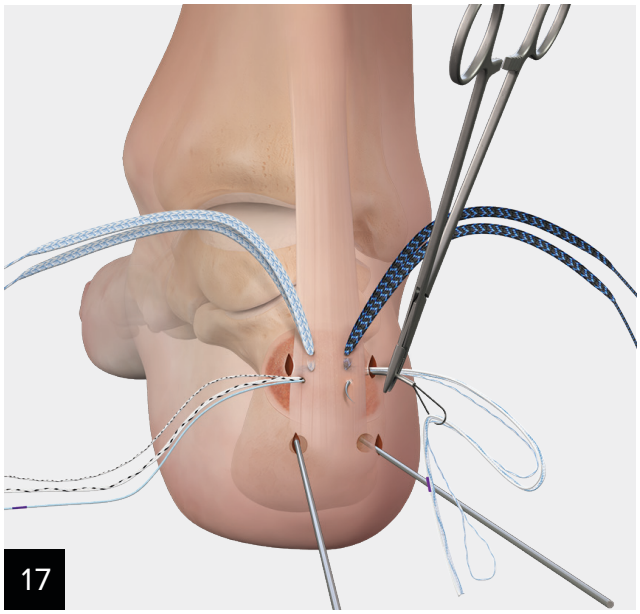
Ensure both FiberTape sutures are equally spaced though the tendon and skin.

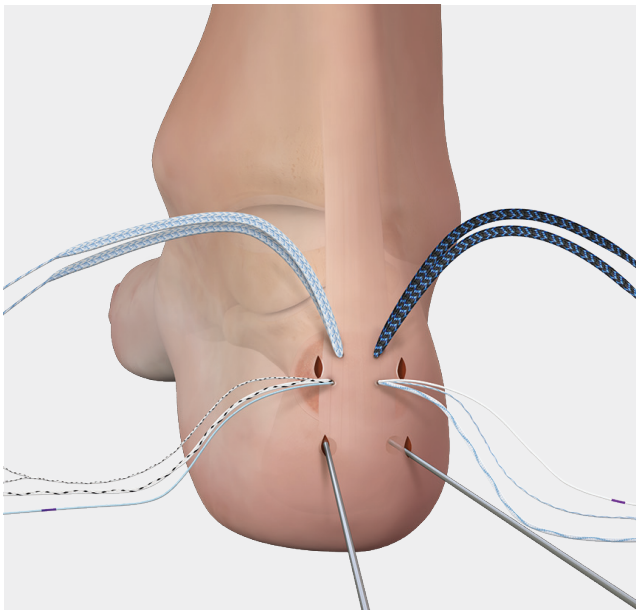


The needles from the FiberTape sutures can be cut off at the swedge, leaving 2 separated ends on each of the sutures.

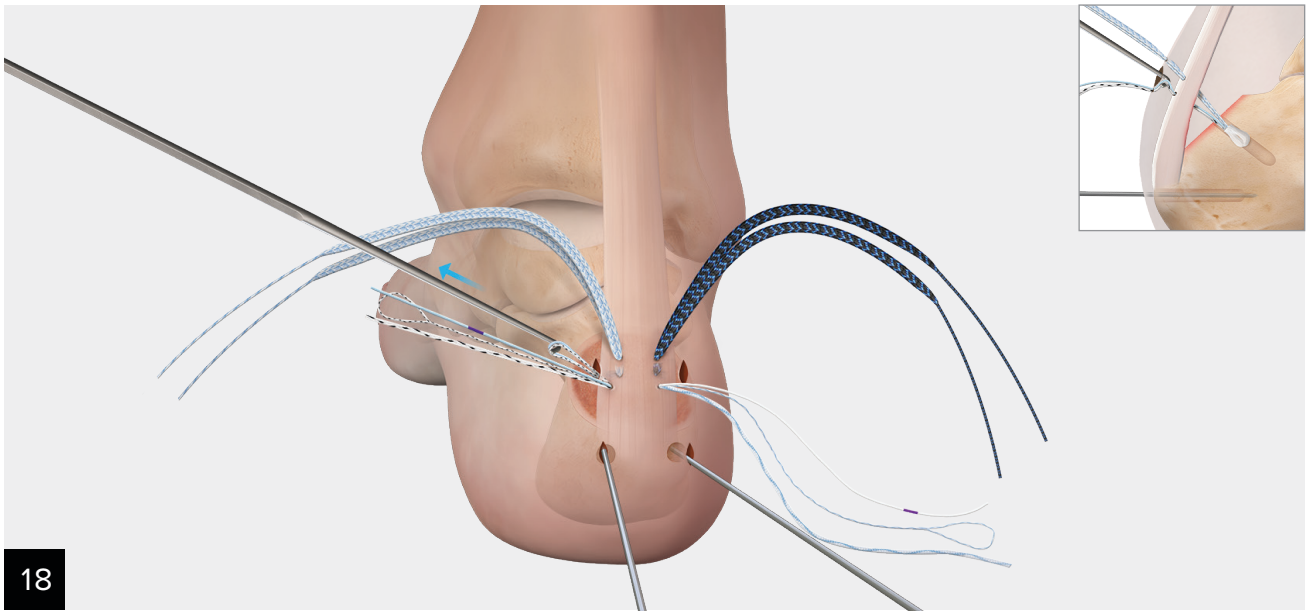


Take the free needle with the nitinol loop and load all 3 knotless sutures from the medial anchor through the nitinol loop, then pass through the proximal medial portal, Achilles tendon, and skin just **distal** and slightly **medial** to the **blue** FiberTape suture.

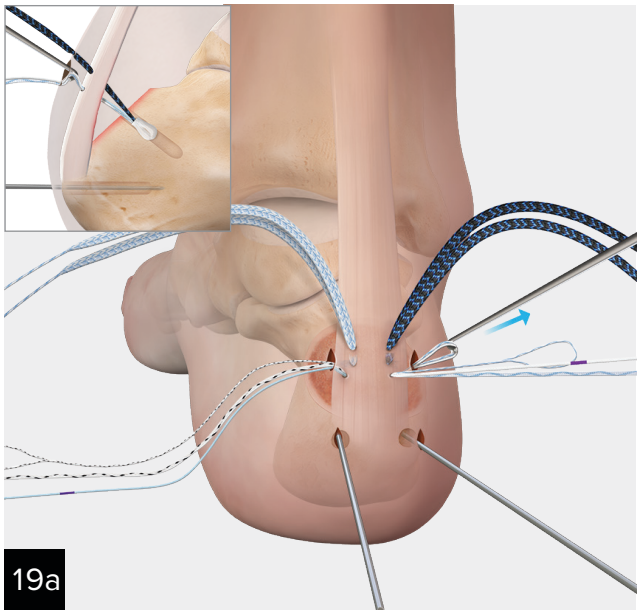


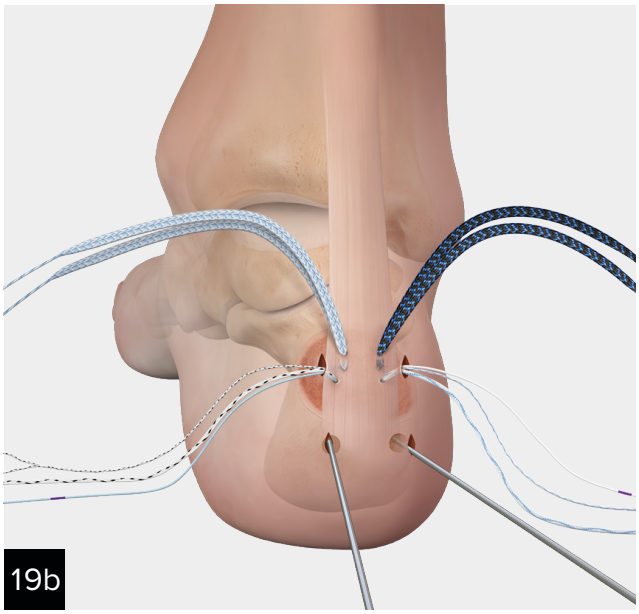


Repeat step 16 on the lateral side by taking the free needle with the nitinol loop and loading all 3 knotless sutures from the lateral anchor through the nitinol loop, then passing through the proximal lateral portal, Achilles, and skin just **distal** and slightly **lateral** to the **black/blue** FiberTape® suture. Ensure that the knotless sutures are equally spaced through the tendon and skin.

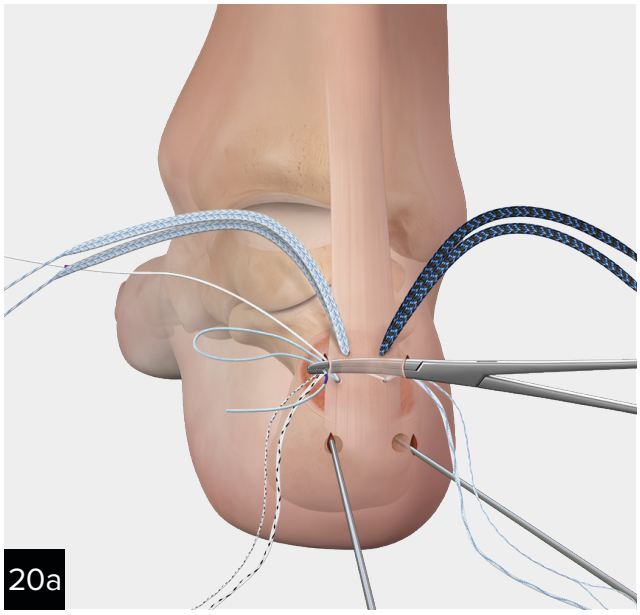


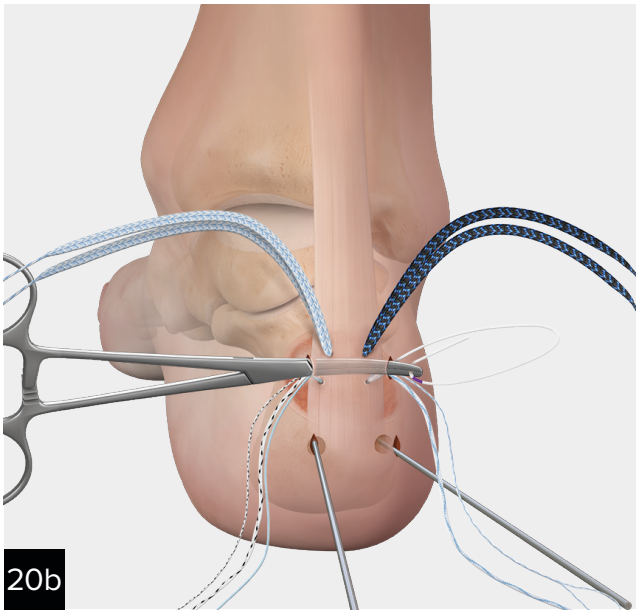
Using a hook probe, shuttle the medial knotless sutures into the space between the skin and Achilles tendon and out through the proximal medial portal.



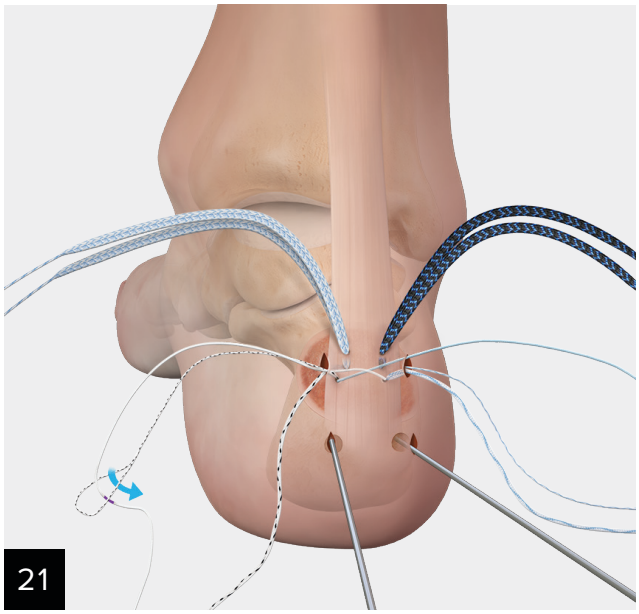


Repeat this step on the lateral side, using the hook probe to shuttle the lateral knotless sutures into the space between the skin and the Achilles tendon and out through the proximal lateral portal.

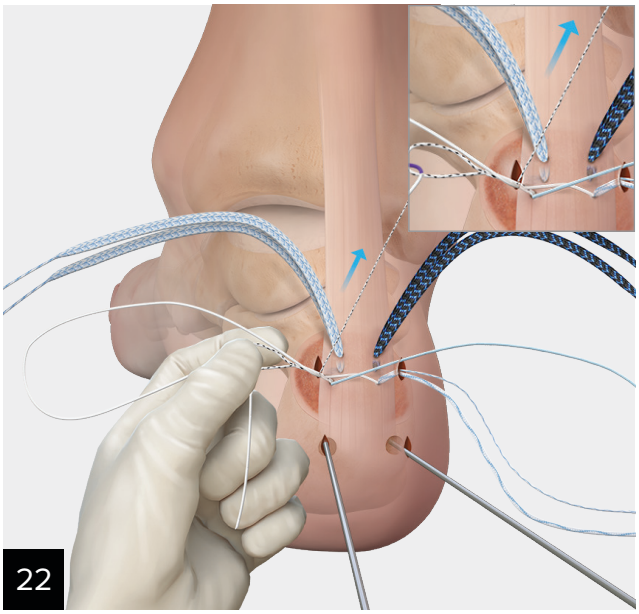




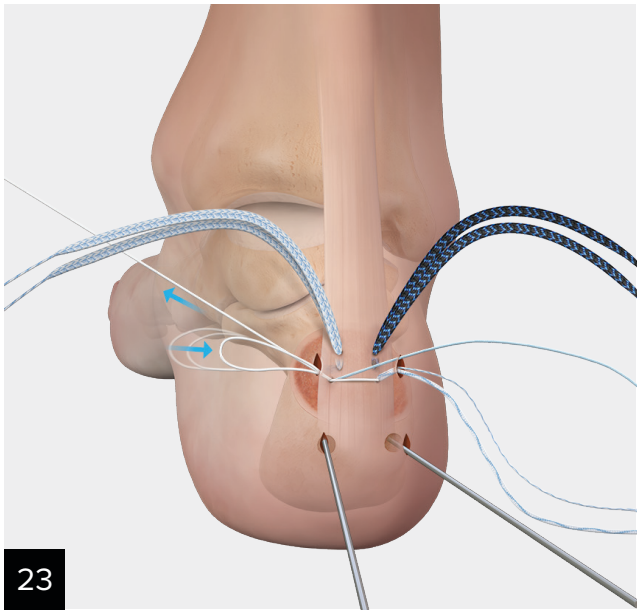
Use a hemostat to shuttle the blue working knotless suture with the purple marking from the medial to the lateral proximal portal. Repeat this for the lateral, white working knotless suture with the purple marking from the lateral to the medial proximal portal.



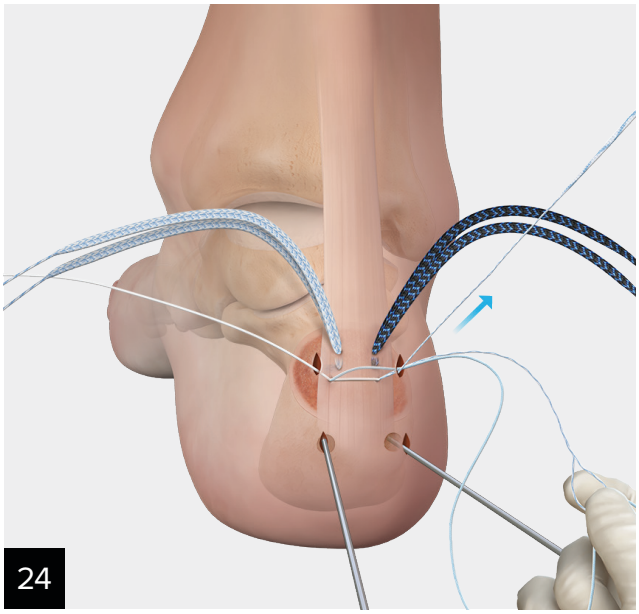
Load the white knotless suture through the looped end of the white/black shuttling suture and double over at the purple marking on the white knotless suture.



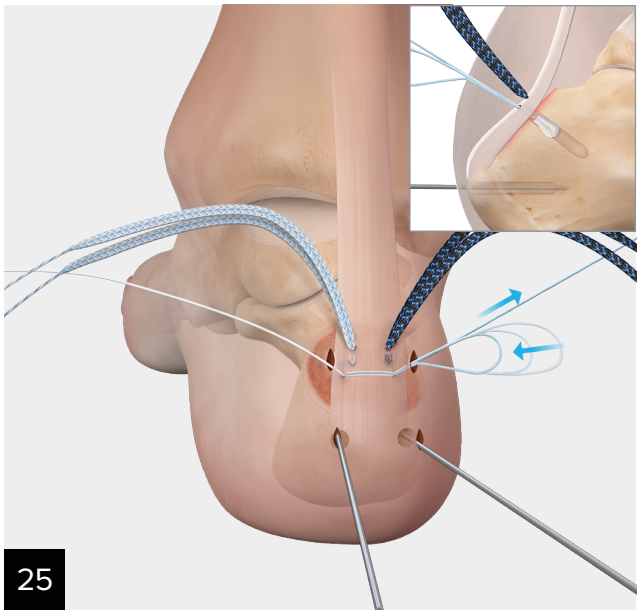
Pinch and hold at the loop and purple marking. With the tape end of the white/black shuttling suture, pull axially in line with the insertion of the anchor until resistance is met. Use **short jigs** until the working knotless suture is shuttled all the way out of the portal.



Cinch the white knotless working suture to avoid any twisting of the remaining suture by holding it as it moves down into the portal. **Do not tension** all the way down before shuttling the contralateral sutures.



Using the loop end of the white/blue shuttling suture on the lateral side, load the blue knotless suture through the looped end and double over at the purple marking on the blue knotless suture. Pinch and hold at the loop and marking.

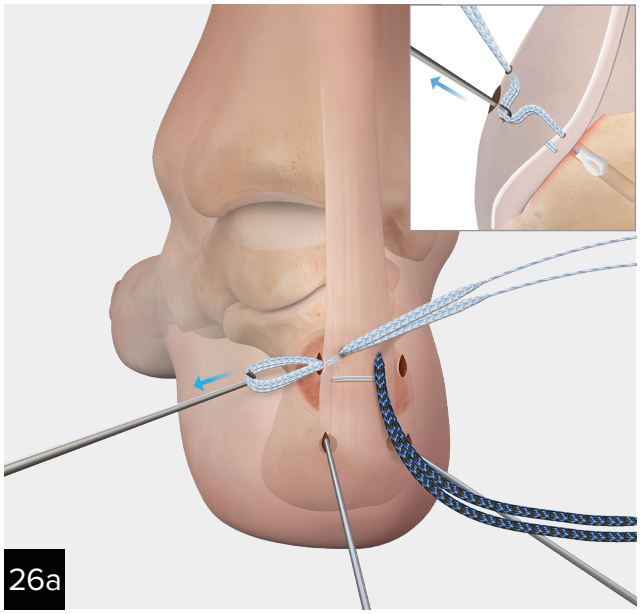


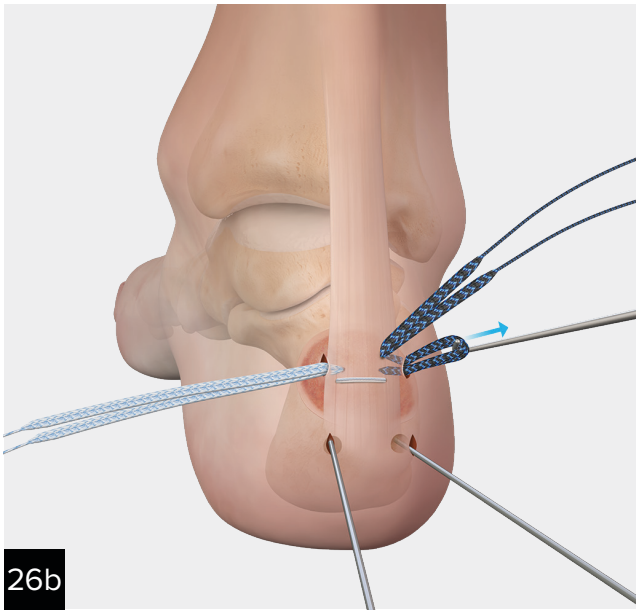
Pull the tape end of the white/blue shuttling suture axially in line with the insertion of the anchor until resistance is met, then **use short jigs** until the working knotless suture is shuttled all the way out of the portal.

To avoid any twisting of remaining suture, cinch the blue knotless working suture with care by holding as it moves down into the portal.

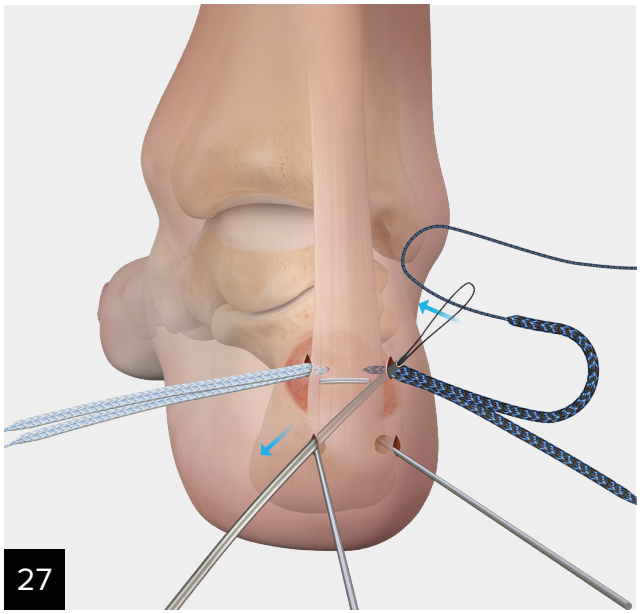
Complete the final tensioning of the knotless rip-stop.

Note: The knotless rip-stop can be discarded by pulling the looped stitch and cutting the repair stitch, according to surgeon preference.



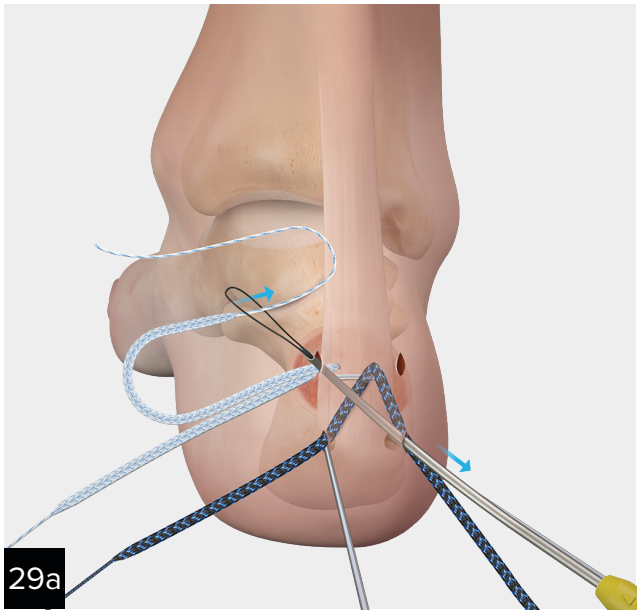


Use the hooked probe to retrieve the FiberTape® suture between the skin and tendon and out through the proximal portals, pulling the blue ends through the medial portal and the black/blue ends through the lateral portal.

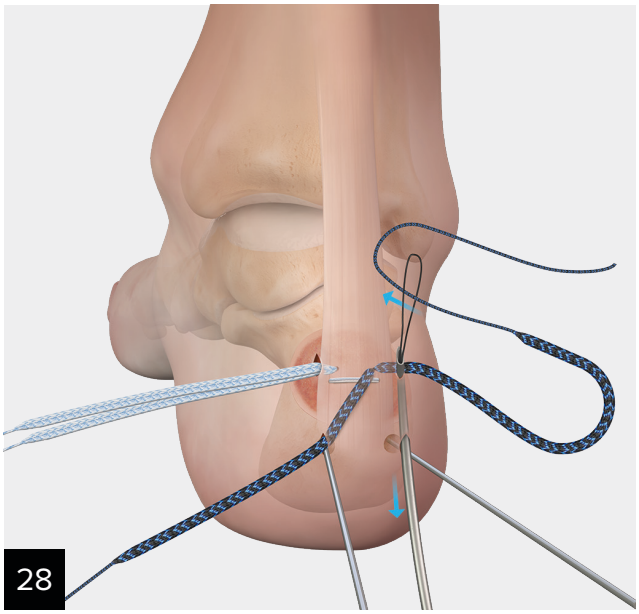


Next, use the Banana SutureLasso™ suture passer to pass each FiberTape® suture individually, from proximal to distal. Start with 1 black/blue suture, moving from proximal-lateral to distal-medial between the skin and Achilles.

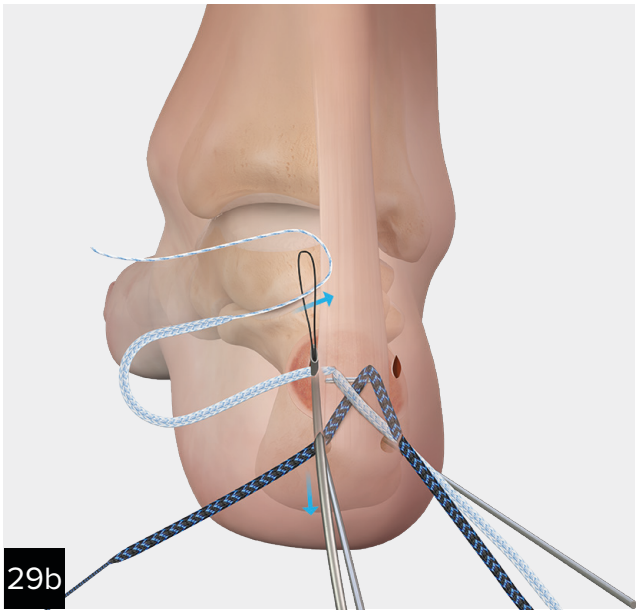
Note: Ensure the tip of the Banana SutureLasso suture passer doesn't pierce the FiberTape sutures or the Achilles tendon.



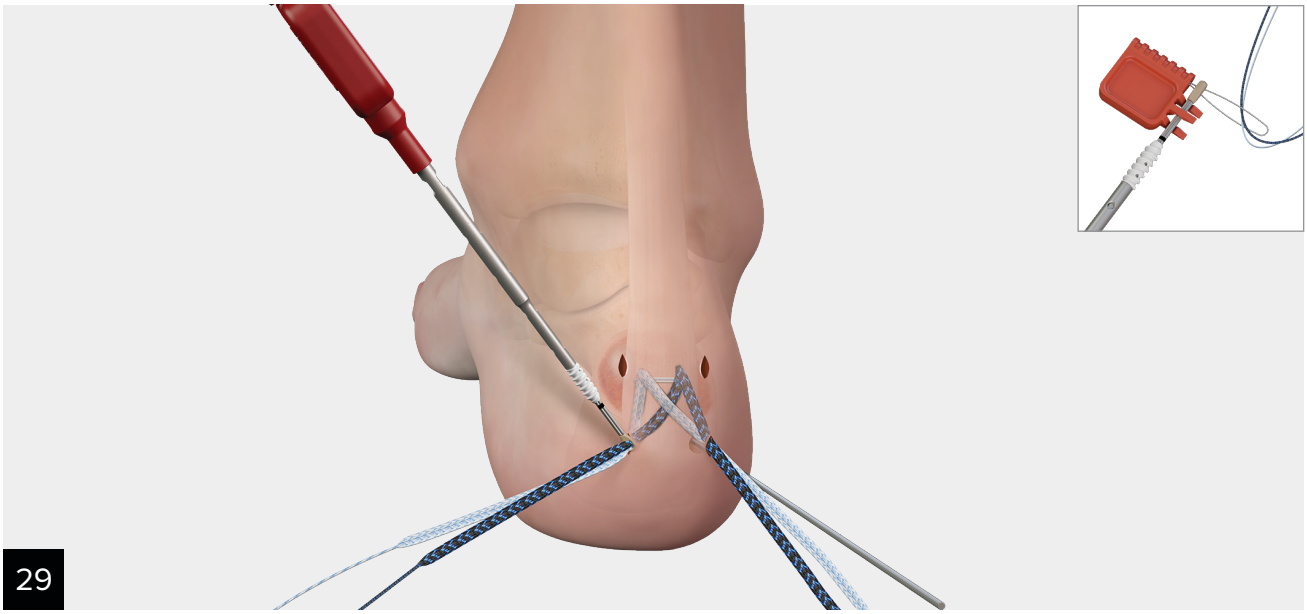
Repeat step 28a for the lateral side using the yellow-handled Banana SutureLasso suture passer to pass the lateral FiberTape sutures (one black/blue and one blue) from the proximal to the distal portals between skin and tendon.



Bring the second limb of the black/blue FiberTape suture from proximal-lateral to distal-lateral between the skin and Achilles.



Finally, pass the remaining blue FiberTape suture from proximal-medial to distal-medial, completing the SpeedBridge™ construct configuration. Moving to the blue FiberTape sutures, pass 1 limb from proximal-medial to distal-lateral between the skin and Achilles.

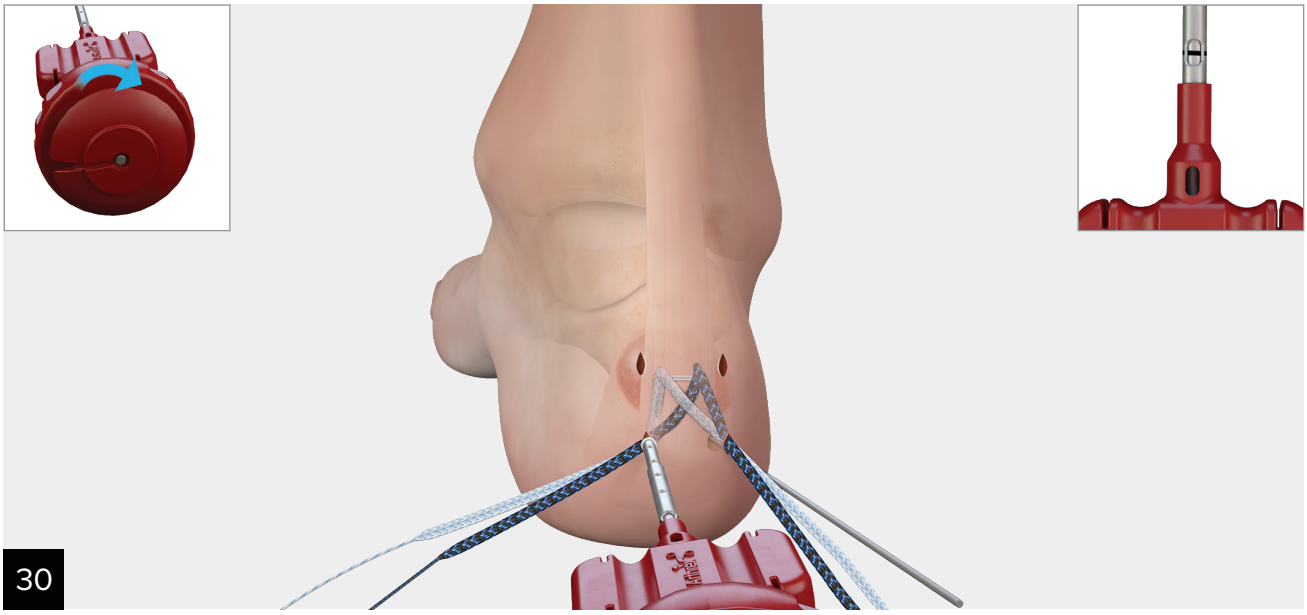


29

Using the orange tab on the 3.9 mm BioComposite SwiveLock® anchor, pull the 2 ends of the FiberTape® suture through the eyelet to load the anchor, **making sure the eyelet holes are facing up and down** to be able to pull FiberTape sutures down easily.

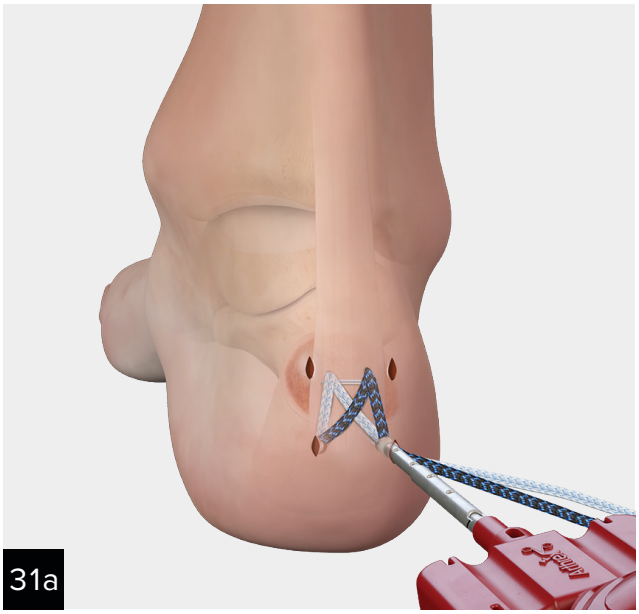
Align the anchor in the same trajectory as the K-wires where holes were drilled and tapped.

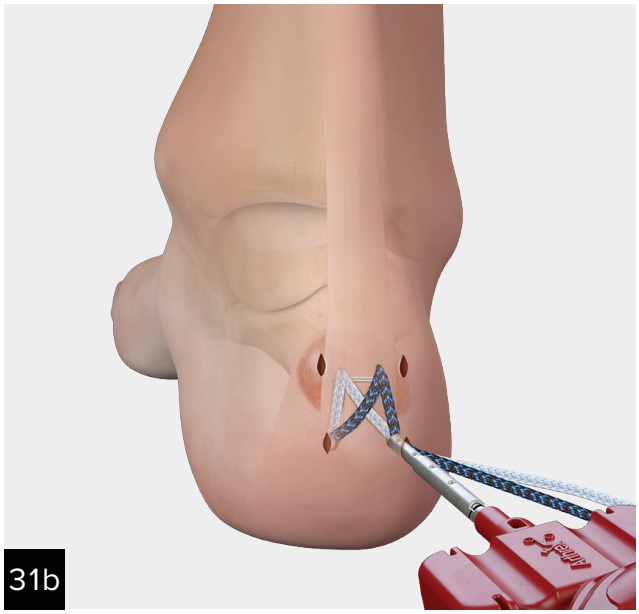
Note: Using ragnell retractors in the portal will help visualize the hole. It is very important that the anchors start in these predrilled holes.



30

Remove the K-wire and insert the 3.9 mm BioComposite SwiveLock anchor. **Gently mallet** to where the tip of the anchor meets bone. Hold the paddle and twist the handle of the inserter until the laser line on the inserter meets the laser line in the window of the inserter, ensuring the anchor is 2 mm countersunk. Remove the inserter.





Repeat step 30 for the second 3.9 mm BioComposite SwiveLock® anchor.

Cut sutures with a 15 blade away from the repair or use an arthroscopic cutter to complete the MIS Achilles SpeedBridge™ repair.

Close each of the portals with a monofilament suture, using simple knots to approximate the skin.

Ordering Information

BioComposite Knotless MIS FiberTak® Achilles SpeedBridge™ Repair Implant System

Product Description	Item Number
2.6 mm Knotless FiberTak® DX Anchor w/ 1.7 mm FiberTape® Loop, w/ MTS (blue) w/ needle 2.6 mm Knotless FiberTak DX Anchor w/ 1.7 mm FiberTape Loop, w/ MTS (black/blue), w/ needle BioComposite SwiveLock Suture Anchor, 3.9 mm, qty. 2 Bone Tap, cannulated Slotted Drill Guide Obturator K-wire Targeting Sleeve Drill Guide K-wire, 1.35 mm, qty. 3 Drill Bit, cannulated, 2.6 mm, short Drill Bit, 2.6 mm, long Free Needle w/ Nitinol Loop Banana SutureLasso™ Suture Passer Burr, 4.3 mm Hook Probe	AR-**9928BCK-MIS**

BioComposite MIS Achilles SpeedBridge Implant System, 3.9 mm

Product Description	Item Number
BioComposite SwiveLock Suture Anchor w/ 1.7 mm FiberTape Loop, w/ MTS (blue) w/ needle, 3.9 mm BioComposite SwiveLock Anchor w/ 1.7 mm FiberTape Loop, w/ MTS (black/blue) w/ needle, 3.9 mm BioComposite SwiveLock Suture Anchors, 3.9 mm, qty.2 Bone Tap, cannulated Slotted Drill Guide Obturator K-wire Targeting Sleeve Drill Guide K-wires, 1.35 mm, qty. 3 Drill Bit, cannulated, 2.6 mm, short Free Needle w/ Nitinol Loop Banana SutureLasso Suture Passer Burr, 4.3 mm Hook Probe	AR-**9928BH-MIS**

References

1. Arthrex, Inc. Data on file (APT-01462, APT-00924, APT-01140). Naples, FL; 2020.
2. Arthrex, Inc. Data on file (APT-05964). Naples, FL; 2023.
3. Arthrex, Inc. Data on file (APT-06030). Naples, FL; 2023.

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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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