

PARS Achilles Midsubstance SpeedBridge™ Implant System

Surgical Technique



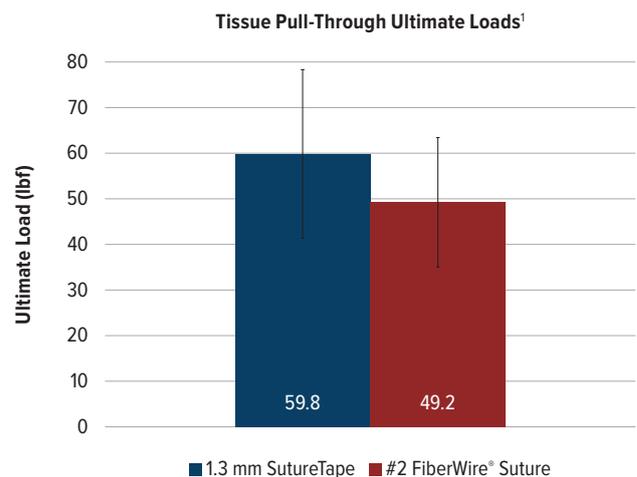
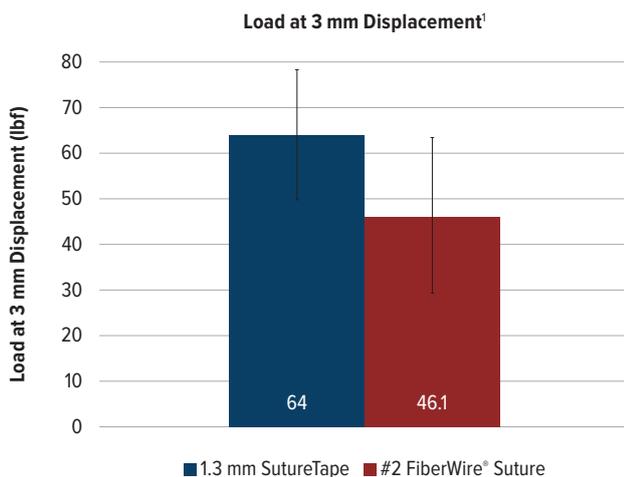
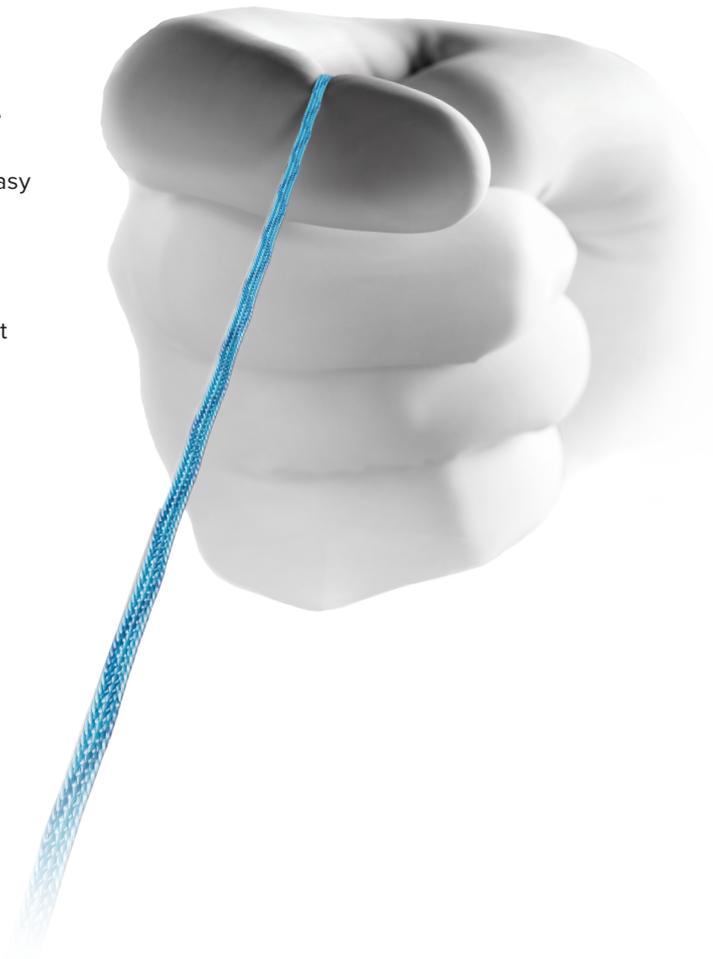
PARS Achilles Midsubstance SpeedBridge™ Implant System

The PARS Achilles Midsubstance SpeedBridge implant system is a percutaneous, minimally invasive technique used to repair Achilles tendon ruptures. Using color-coded 1.3 mm SutureTape, the PARS system makes it easy to create a percutaneous locking stitch in the Achilles tendon, while staying inside the paratenon sheath.

The PARS Achilles Midsubstance SpeedBridge system works with the PARS jig, a minimally invasive instrument that allows for percutaneous passage of SutureTape without a large extensile incision. The PARS Achilles Midsubstance SpeedBridge technique is performed with a knotless construct by fixating the SutureTape in the proximal tendon and using DX 3.9 BioComposite SwiveLock® anchors for distal fixation in the calcaneus.

SutureTape Compared to #2 Suture

- › Feels flat-out better than round suture
- › Increased resistance to tissue pull-through¹
- › Stronger knotted and knotless fixation¹
- › Tighter, smaller knot stacks
- › Better handling characteristics



Features and Benefits



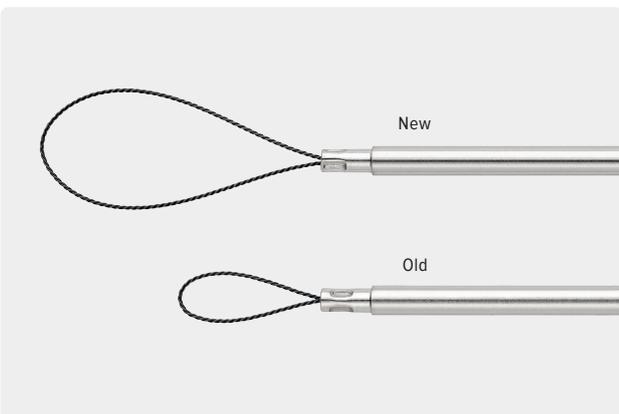
New, **collagen-coated** SutureTape comes in colors designed for easier intraoperative differentiation.



DX 3.9 mm BioComposite SwiveLock® anchors feature a laser-line window that indicates when the anchor is flush or 2 mm countersunk, allowing for more reproducible percutaneous insertion.

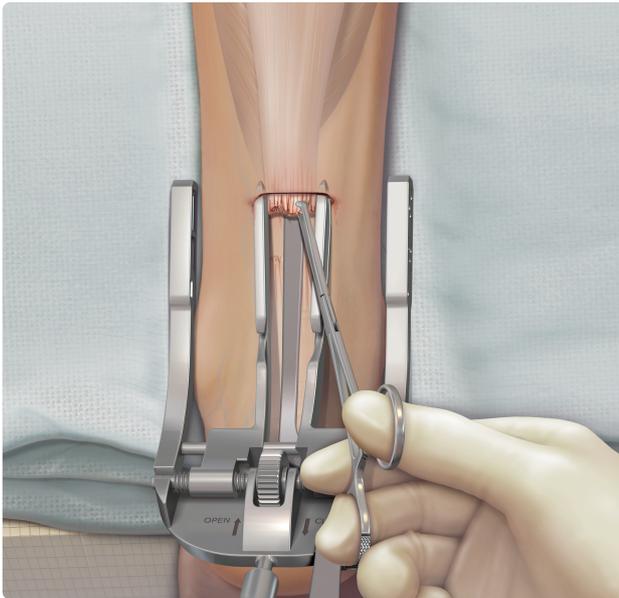


Cannulated drills and taps facilitate percutaneous calcaneus drill hole preparation.



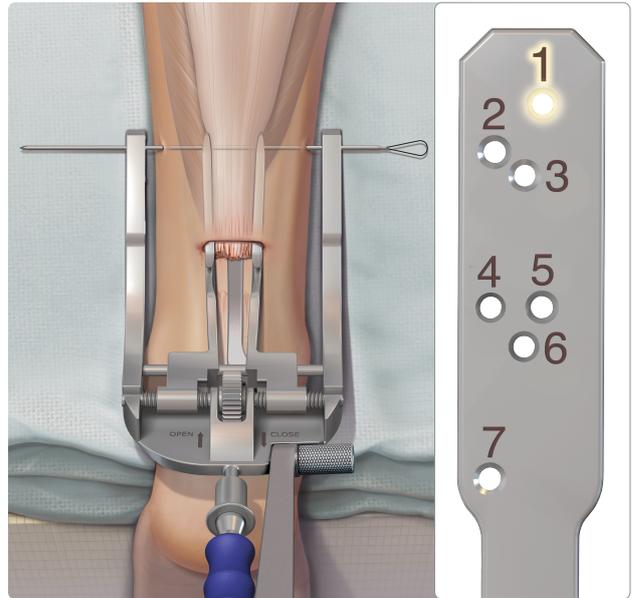
Larger PARS needle eyelets enable more reliable passing of the SutureTape.

PARS Achilles Midsubstance SpeedBridge™ Implant System



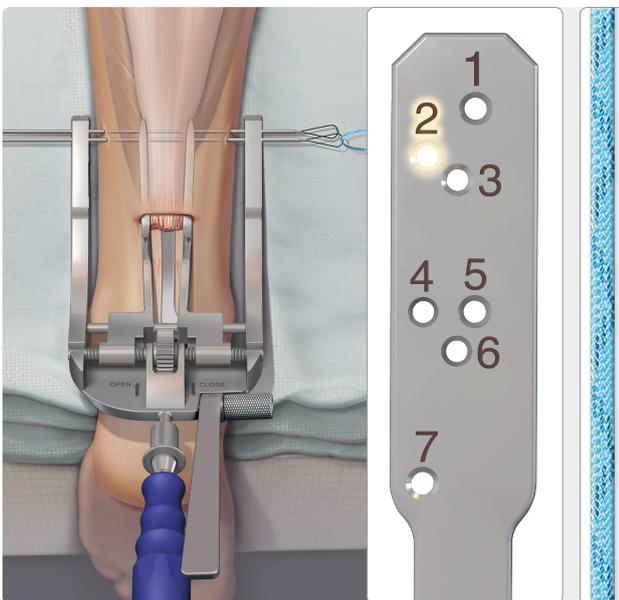
1

Make a percutaneous incision just proximal to the tendon rupture and insert the inner arms of the PARS jig inside the paratenon of the Achilles tendon.



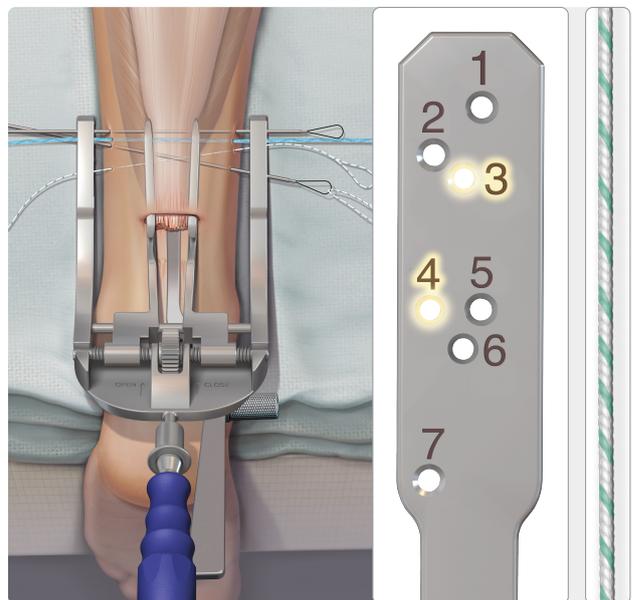
2

Pass the PARS needle with the nitinol loop through the #1 hole. Place manual pressure on the tendon while passing the PARS needle to enhance central placement of the SutureTape. Leave the #1 PARS needle in the #1 spot of the jig to stabilize the construct while passing all other SutureTape strands; pass the #1 white SutureTape last.



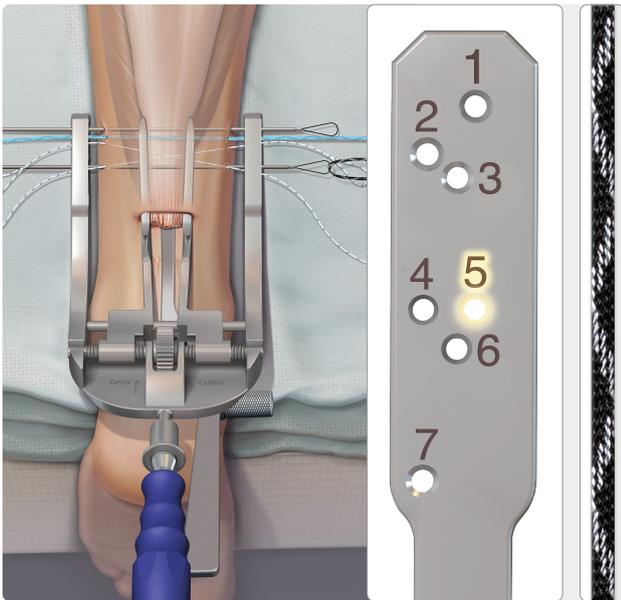
3

Pass the PARS needle with the nitinol loop through the #2 hole. Pull the blue SutureTape through the leg, leaving tails of equal length on both sides.



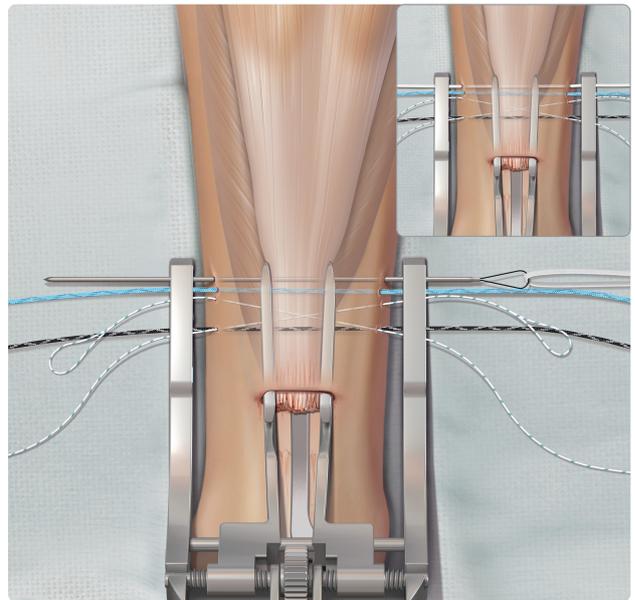
4

Pass the PARS needle with the nitinol loop through the #3 and #4 holes. Pull the white/green FiberLink™ suture with loops through the leg, leaving tails of equal length on both sides. Make sure there is a looped end on each side of the leg.



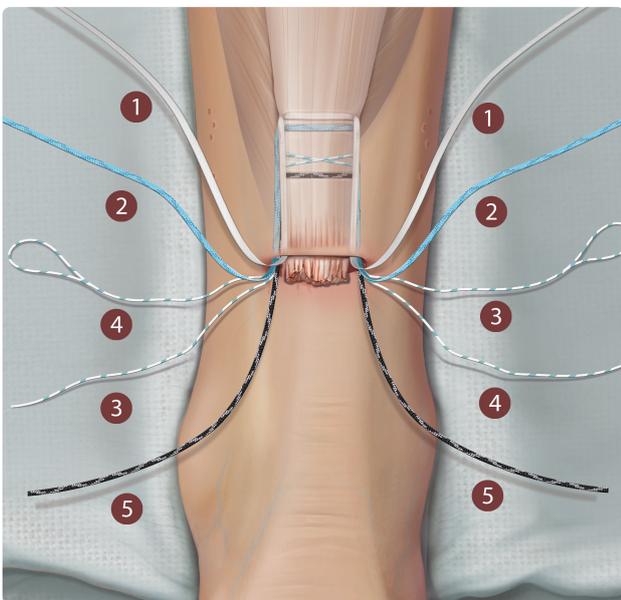
5

Pass the PARS needle with the nitinol loop through the #5 hole. Pull the black SutureTape through the leg, leaving tails of equal length on both sides.



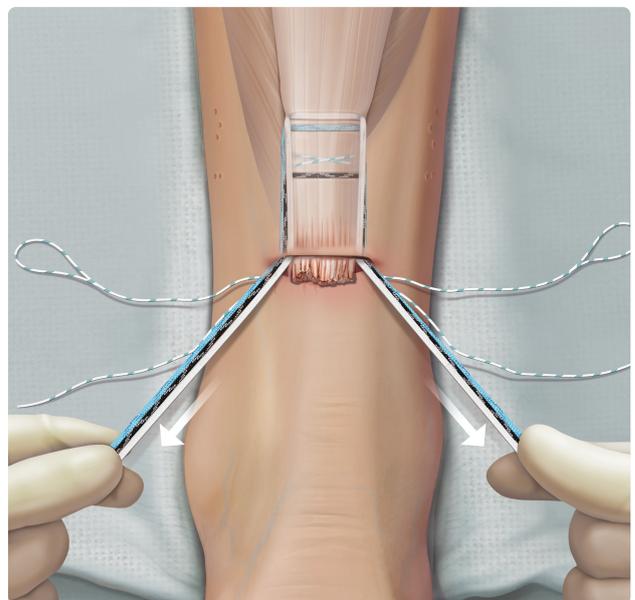
6

Load the white SutureTape in the #1 PARS needle and pass through the tendon.



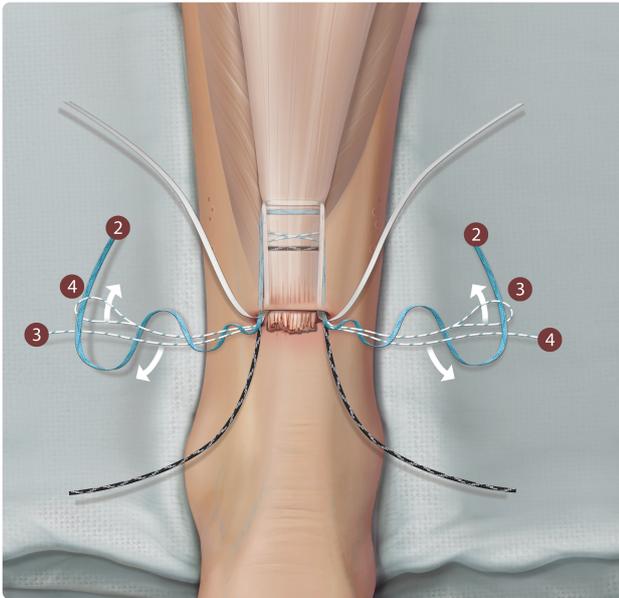
7

Remove the jig and organize the sutures the way they were originally placed through the PARS jig.



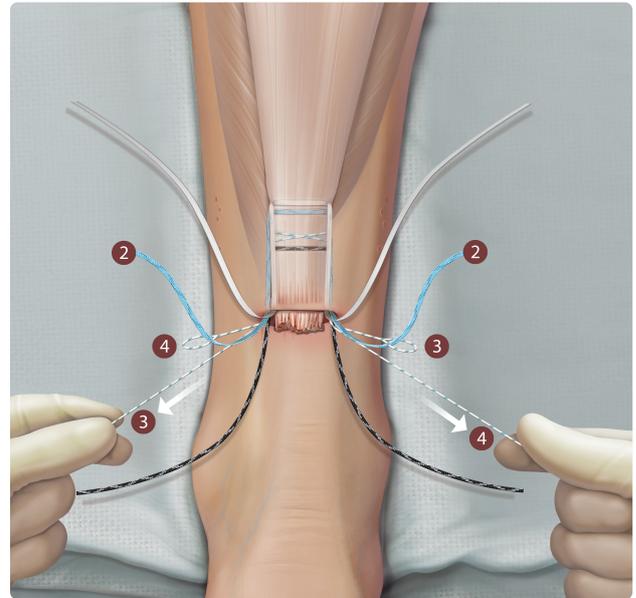
8

Pull each end of the SutureTape strands 10 times to ensure all creep is removed from the construct.



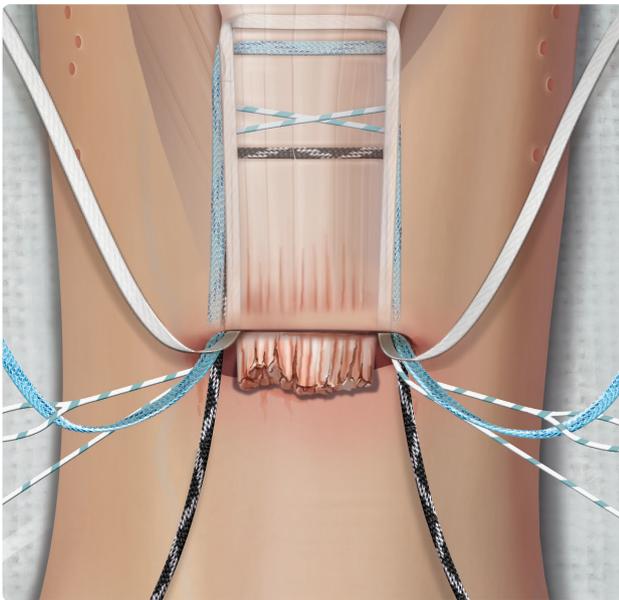
9

Pass the blue SutureTape **under and around** the #3 and #4 (white/green) FiberLink™ sutures **twice, in the same direction on both sides** and then through the loop of the white/green FiberLink suture.



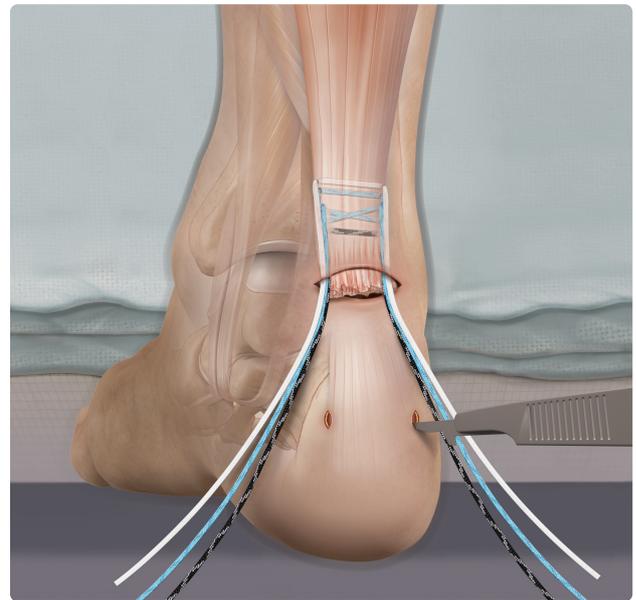
10

Pull the blue SutureTape through the Achilles tendon to the other side by pulling on the nonlooped side of the white/green looped sutures (#3 and #4).



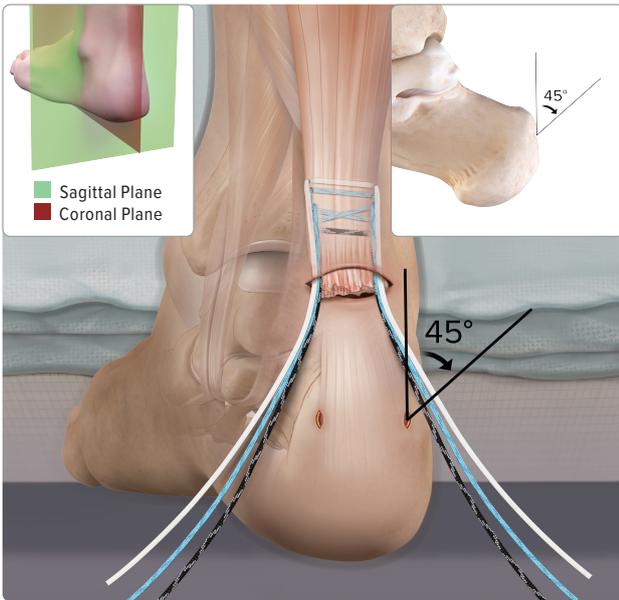
11

Pull on the blue SutureTape to lock the stitch in place. Two transverse sutures (#1 and #5) and one locked suture (#2) remain.



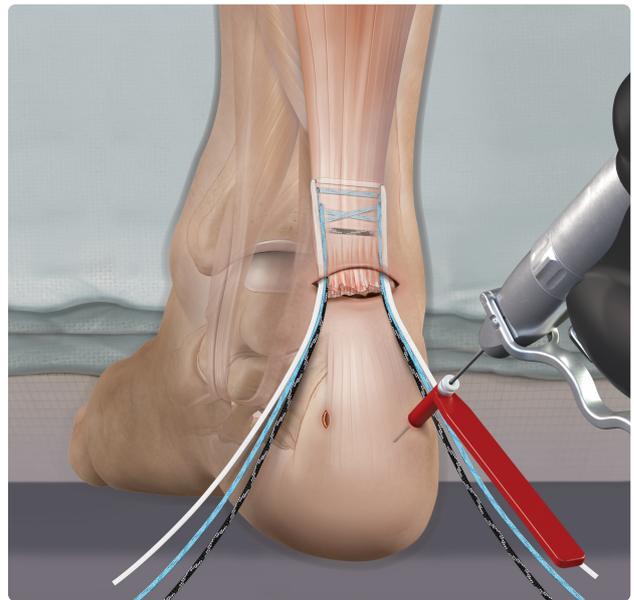
12

Make incisions 1 cm below the superior aspect of the posterior calcaneal tuberosity, medial and lateral to the Achilles tendon.



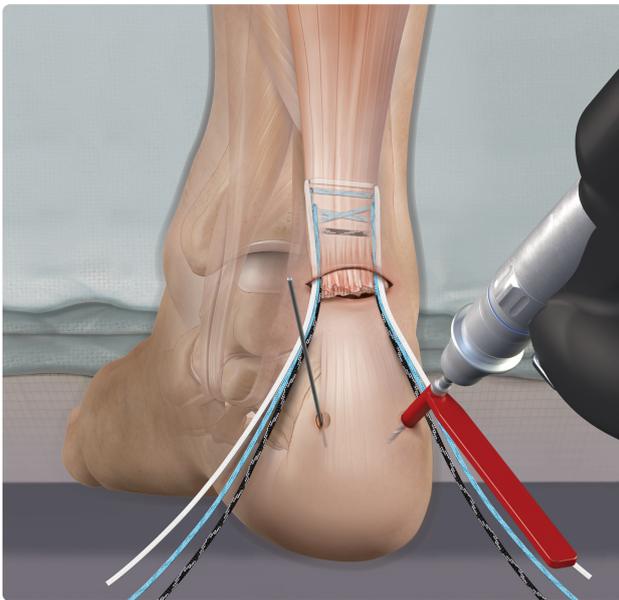
13

Within these stab incisions, insert the drill guide with the white guidewire sleeve down to the bone and insert the guidewire at 45° from the centerline of the Achilles in the coronal plane and 45° from posterior to anterior (sagittal plane).



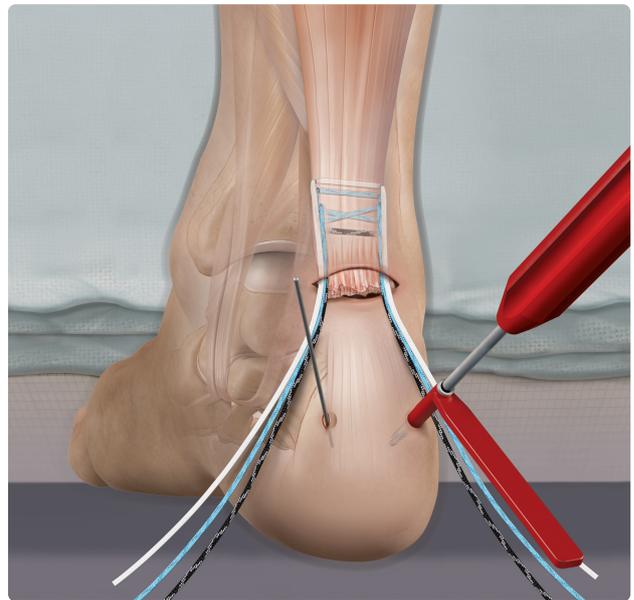
14

Insert the guidewire. Leaving the guide in place, remove the white guidewire sleeve.



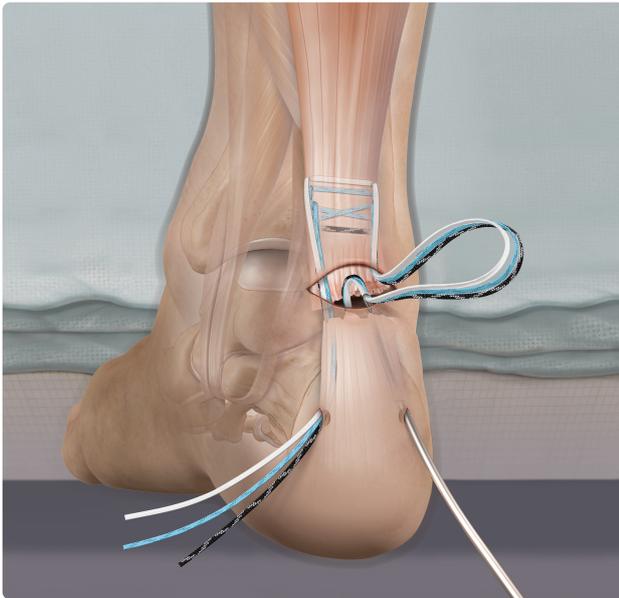
15

Drill to the hard stop with the 2.6 mm cannulated drill (solid 2.6 mm drill option also available).



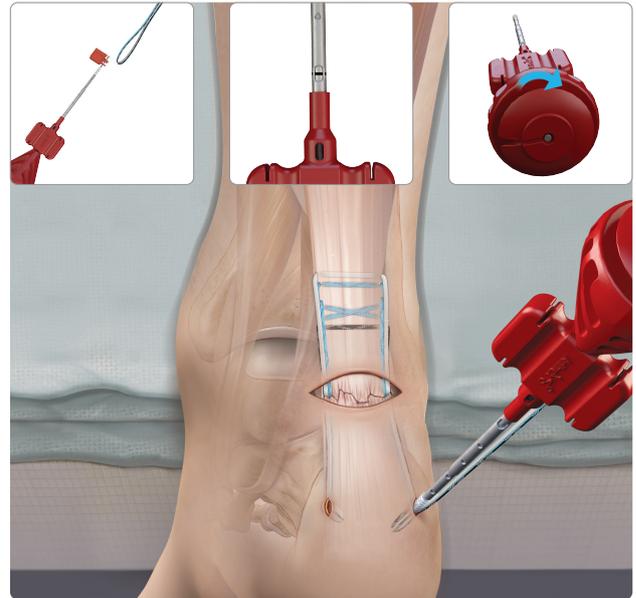
16

Leaving the drill guide in place, use the 3.9 mm tap to prepare the holes for the SwiveLock® anchors.



17

With the guidewires or PARS passing wires in the prepared bone tunnels, advance the Banana SutureLasso™ suture passer through the distal Achilles tendon and retrieve the proximal SutureTape.



18

With the foot in maximal plantar flexion, fixate the sutretapes to the distal Achilles with two DX 3.9 mm BioComposite SwiveLock® anchors. To insert the SwiveLock anchors, hold the square tab in place and turn the pear-shaped driver until you see the laser line in the window of the inserter. When the line appears, the anchor is flush. When the line is centered, the anchor is 2 mm countersunk.

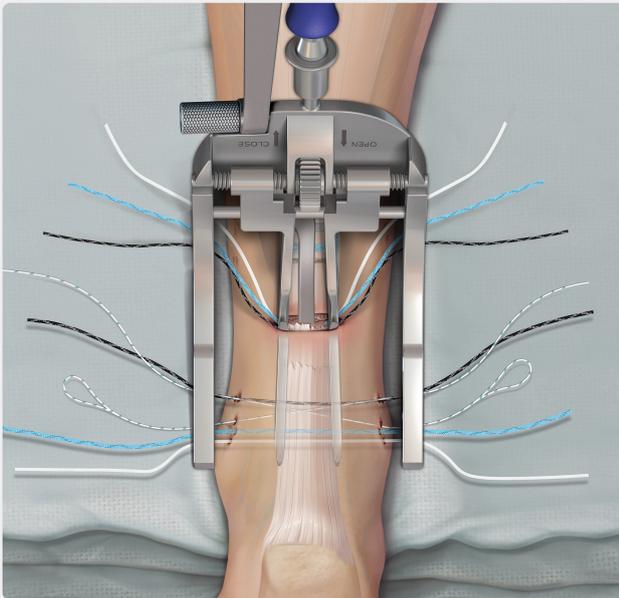


19

After final fixation, apply JumpStart® antimicrobial wound dressing on the incision. JumpStart wound dressing kills a broad spectrum of harmful pathogens, including multidrug-resistant and biofilm-forming bacteria to help reduce the risk of infection.^{2,3}

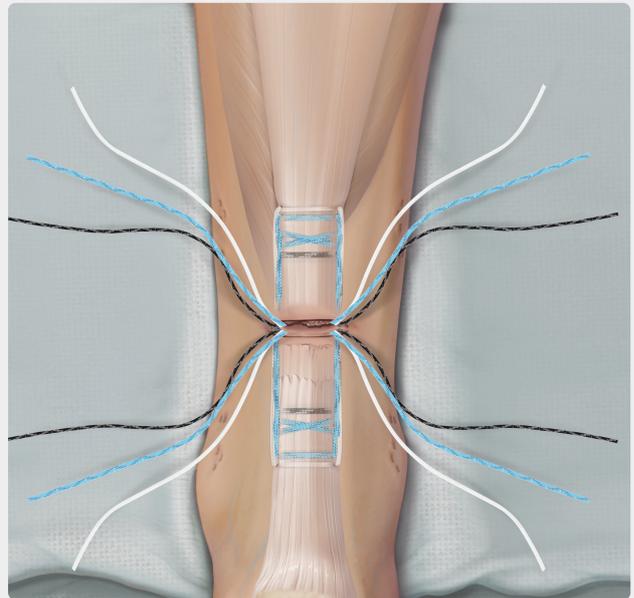
Technique Variation - PARS to PARS

An alternative surgical technique option is presented on the following pages. Perform steps 1-11 as described in the general technique before transitioning to the alternate steps listed here.



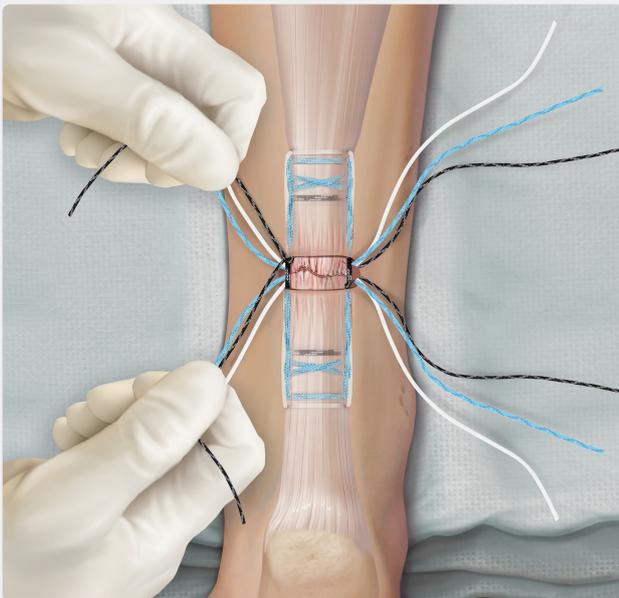
12

Place the jig in the distal part of the incision and perform the exact steps as for the proximal side of the tendon.



13

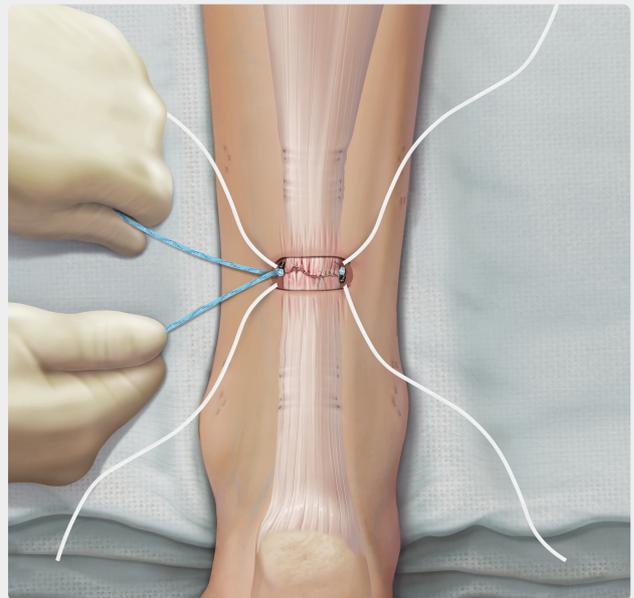
Three sutures remain proximally and three distally, ready for reapproximation of the tendon.



14

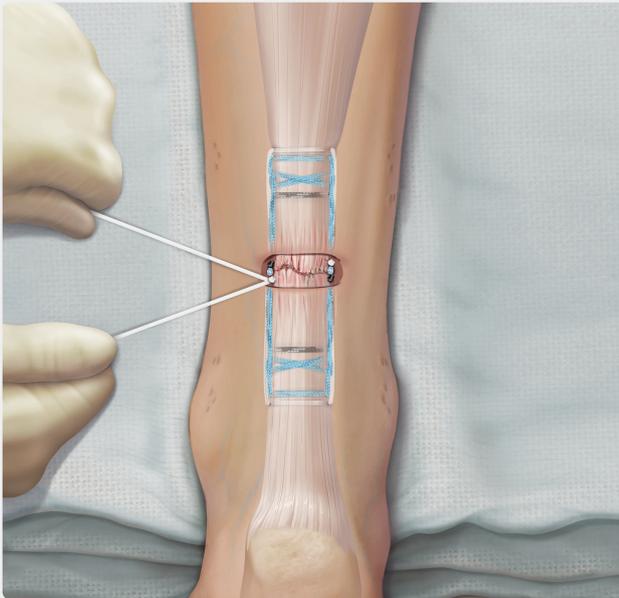
To maintain appropriate tension, tie the black SutureTape first on both sides of the leg with the ankle in maximum plantar flexion. Three to four surgeon's knots are recommended.

Note: The first side tied is the "stay" stitch, which will slide. Lock this knot down when tying the other side.



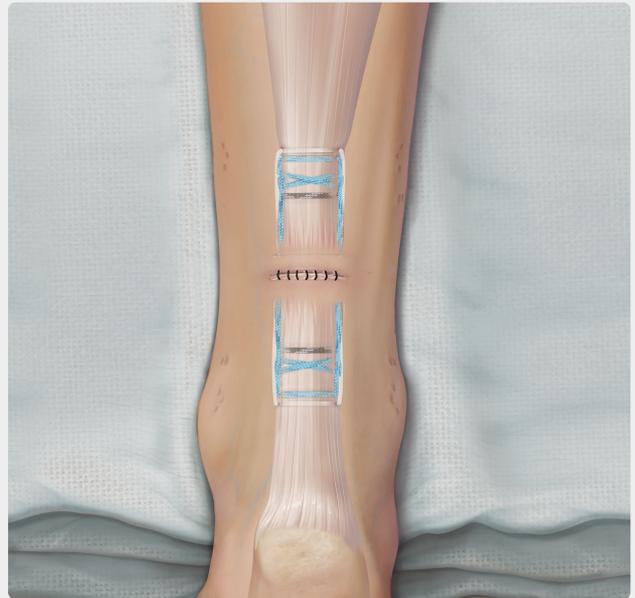
15

To maintain appropriate tension, tie the locked blue SutureTape on both sides of the leg. Three to four surgeon's knots are recommended.



16

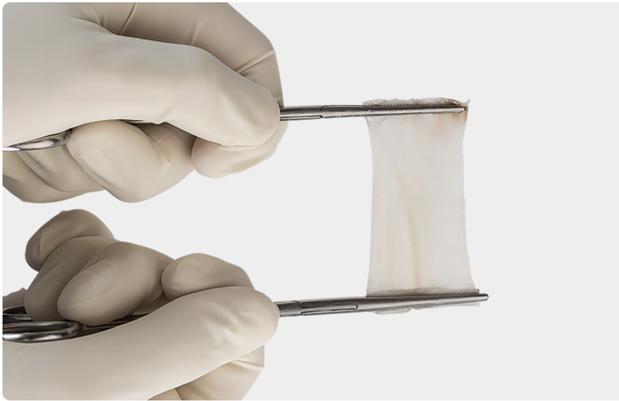
To maintain appropriate tension, tie the white SutureTape last on both sides of the leg. Three to four surgeon's knots are recommended.



17

For the final repair, the wound can be closed with suture of choice. Postoperative routine is also surgeon's preference. Apply JumpStart® antimicrobial wound dressing on the incision to kill a broad spectrum of harmful pathogens, including multidrug-resistant and biofilm-forming bacteria to help reduce risk on infection.²⁻⁴

Biologic Augmentation Options



Arthrex Amnion™ Matrices

Arthrex Amnion matrices, available in thick and thin options, are rich in growth factors and maintain the natural healing properties of amnion. Used as an anatomical barrier or wrap in a variety of orthopedic applications, Arthrex Amnion matrices provide essential biological and mechanical protection while helping prevent adhesion.⁵

Arthrex Amnion matrix – thin

2 cm × 2 cm	ABS-4100-022
2 cm × 3 cm	ABS-4100-023
4 cm × 4 cm	ABS-4100-044
4 cm × 6 cm	ABS-4100-046
7 cm × 7 cm	ABS-4100-077

Arthrex Amnion matrix – thick

2 cm × 2 cm	ABS-4200-022
2 cm × 3 cm	ABS-4200-023
3 cm × 3 cm	ABS-4200-033
3 cm × 4 cm	ABS-4200-034
3 cm × 6 cm	ABS-4200-036
3 cm × 8 cm	ABS-4200-038
5 mm × 40 mm	ABS-4200-054



Interfyl® Connective Tissue Matrix (CTM)

Interfyl CTM is used to fill irregular spaces or soft-tissue deficits resulting from wounds, trauma, or surgery. It is suited for a variety of surgical applications when there is a need to replace or supplement damaged or inadequate integumental tissue.

Interfyl tissue matrix, 50 mg particulate	HCTM050
Interfyl tissue matrix, 100 mg particulate	HCTM100
Interfyl tissue matrix, 0.3 mL flowable	HCTM030
Interfyl tissue matrix, 0.6 mL flowable	HCTM060
Interfyl tissue matrix, 1 mL flowable	HCTM010
Interfyl tissue matrix, 1.5 mL flowable	HCTM015

Interfyl is a registered trademark of Celularity, Inc.



JumpStart® Dressings

JumpStart antimicrobial wound dressings are composed of advanced microcurrent-generating technology used for the management of surgical incision sites and provide antimicrobial protection to assist with wound healing.²⁻⁴ JumpStart dressings can be applied directly over sutures, staples, Steri-Strip wound closures, and liquid skin adhesives.

Included in Implant System

JumpStart single-layer dressing, 2 in × 5 in	ABS-4025
--	----------

Ordering Information

Achilles Midsubstance SpeedBridge™ Implant System AR-9929BC-CP

- › Cannulated drill bit, 2.6 mm
- › Solid drill bit, 2.6 mm
- › Guidewire, qty. 2
- › Straight needles w/ nitinol loops, 1.6 mm, qty. 3
- › FiberWire® SutureTape, white, 1.3 mm, qty. 2
- › FiberWire SutureTape, blue, 1.3 mm, qty. 2
- › FiberWire SutureTape, black/white, 1.3 mm, qty. 2
- › #2 FiberWire suture, closed loop, white/green, qty. 2
- › JumpStart® single-layer dressing, 2 in × 5 in
- › Cannulated tap for 3.9 mm SwiveLock® anchor
- › DX 3.9 mm Biocomposite SwiveLock anchors, qty. 2
- › Banana SutureLasso™ suture passer w/ nitinol wire
- › Drill guide, 3.9 mm

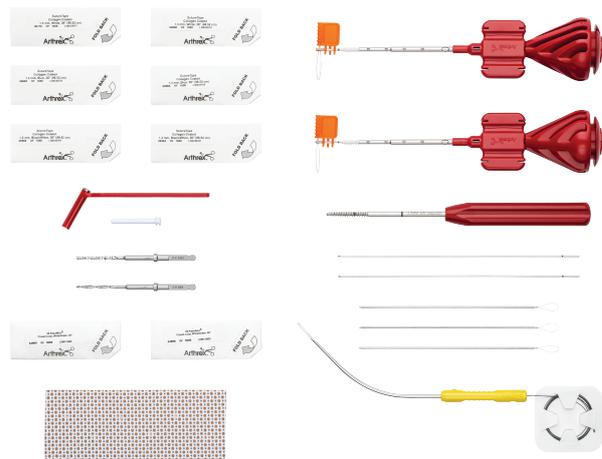
PARS Achilles Jig Instrument Set

PARS Achilles jig	AR-8860J
Driver handle w/ AO connection, cannulated	AR-13221AOC
PARS Achilles repair instrument case	AR-8860C
Tendon elevator (optional)	AR-8860J-01

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.

References

1. Arthrex, Inc. LA1-00038-EN_B. Naples, FL; 2017.
2. Kim H, Makin I, Skiba J, et al. Antibacterial efficacy testing of a bioelectric wound dressing against clinical wound pathogens. *Open Microbiol J.* 2014;21:8:15-21. doi:10.2174/1874285801408010015
3. Kim H, Izadjo M. Antibiofilm efficacy evaluation of a bioelectric dressing in mono- and multi-species biofilms. *J Wound Care.* 2015;24(suppl 2):S10-S14. doi:10.12968/jowc.2015.24.Sup2.S10
4. Banerjee J, Das Ghatak P, Roy S, et al. Silver-zinc redox-coupled electroceutical wound dressing disrupts bacterial biofilm. *PLoS One.* 2015;10(3):e0119531. doi:10.1371/journal.pone.0119531.
5. Kim SS, Sohn SK, Lee KY, Lee MJ, Roh MS, Kim CH. Use of human amniotic membrane wrap in reducing perineural adhesions in a rabbit model of ulnar nerve neurolysis. *J Hand Surg Eur Vol.* 2010;35(3):214-219. doi:10.1177/1753193409352410



Implant System, PARS Achilles Midsubstance SpeedBridge with JumpStart Dressing – AR-9929BC-CP



PARS Achilles Jig
AR-8860J



Tendon Elevator (optional)
AR-8860J-01



Arthrex manufacturer, authorized representative, and importer information (Arthrex eIFUs)



US patent information