Volume 23, Number 2

SCOPE THIS OUT

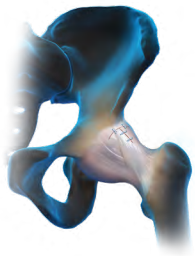
A Technical Pearls Newsletter for Orthopedists

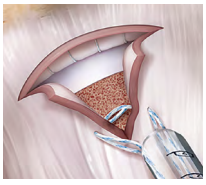
LoopLoc™ Knotless Implant

This knotless alternative to closing the hip capsule with traditional sutures and knot tying is the first of its kind for reapproximating hip capsular tissue following a capsulotomy.

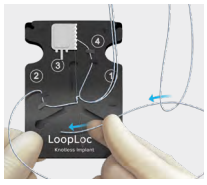
Advantages of the LoopLoc Knotless Implant

- Low profile
- Eliminates knot stacks
- Removes variability of knot strength from surgeon to surgeon
- Loaded on a step-by-step suture management card for ease of use

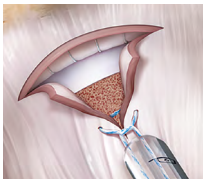




Pass it...



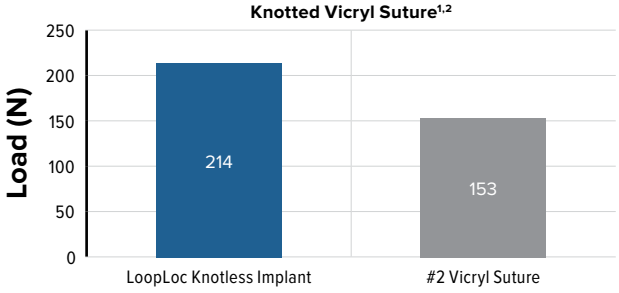
Load it...



Cinch it.

Composed of UHMWPE and polyester blend suture, the LoopLoc knotless implant has superior mechanical strength compared to a #2 Vicryl® suture and displacement values significantly lower than the 3 mm threshold.[1]

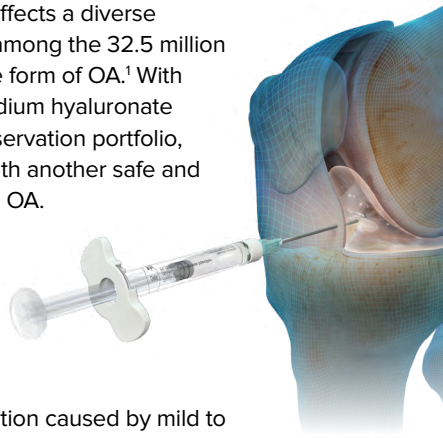
Mean Ultimate Load of LoopLoc Knotless Implant vs Knotted Vicryl Suture[1,2]



References

1. Arthrex, Inc. Data on file (APT 05180). Naples, FL; 2021.
2. Arthrex, Inc. LA1-000149-en-US_B. Naples, FL; 2022.

SynoJoynt™ 1% Sodium Hyaluronate



Osteoarthritis (OA) of the knee affects a diverse population of patients counted among the 32.5 million US adults who experience some form of OA.[1] With the addition of SynoJoynt 1% sodium hyaluronate to our industry-leading joint preservation portfolio, Arthrex is providing surgeons with another safe and effective treatment tool for knee OA.

This 3-dose injection series reduces friction by lubricating cartilage surfaces, slowing the deterioration of cartilage and reducing pain and inflammation caused by mild to moderate knee OA.[2] The unique formulation results in a non–cross-linked, high-molecular-weight (2.5 million Da), and non–avian-sourced solution. This formulation has demonstrated a safety advantage compared to avian-derived HA that uses crosslinking.[3]

To support physicians and their practices, Arthrex has developed the Reimbursement Support Program (RSP), which provides educational resources and support for claims submissions, claims statuses, prior authorizations, appeals, and similar processes and requirements.

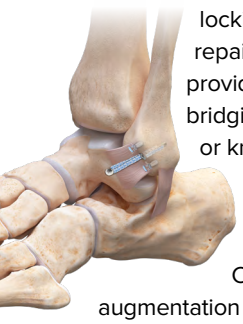
References

1. The Burden of Musculoskeletal Diseases in the United States (BMUS). United States Bone and Joint Initiative. Accessed August 23, 2022. https://www.boneandjointburden.org/fourth-edition/iiia10/prevalence-aorc
2. US Food and Drug Administration. Summary of safety and effectiveness data for SynoJoynt. Accessed August 23, 2022. https://fda.report/PMA/P170016/17/P170016B.pdf
3. Kirchner M, Marshall D. A double-blind randomized controlled trial comparing alternate forms of high molecular weight hyaluronan for the treatment of osteoarthritis of the knee. Osteoarthritis Cartilage. 2006;14(2):154-162. doi:10.1016/j.joca.2005.09.003

Distal Extremities

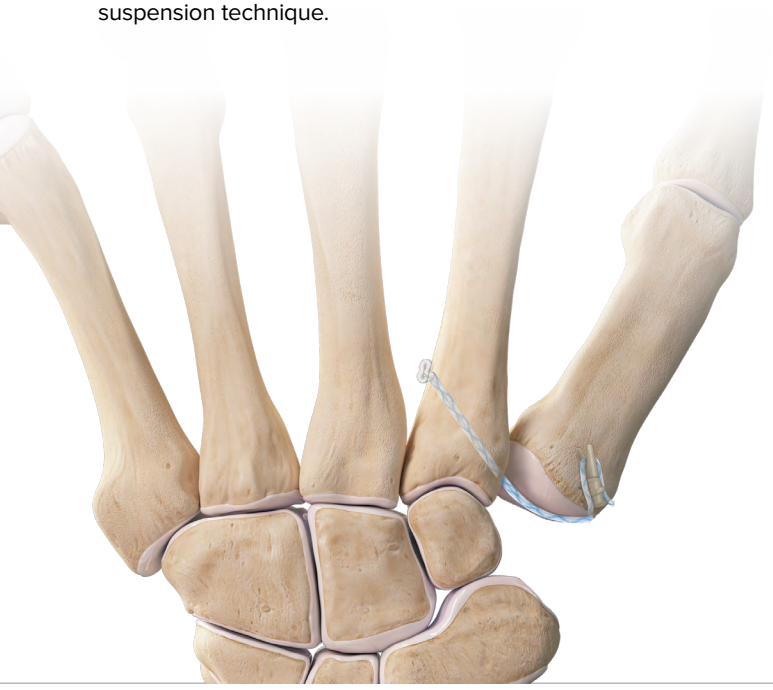
"No-Profile" DX Knotless FiberTak® Anchor

The DX Knotless FiberTak suture anchor provides the combined benefits of all-suture anchors with knotless soft-tissue fixation. A tensionable, suture-locking mechanism allows users to control the repair tension under direct visualization and provides the ability to interconnect anchors for bridging techniques without knot impingement or knot loosening. This anchor is ideal for small areas where minimal bone removal and knotless fixation are desired and is perfect for procedures across the foot and ankle. Combined with the *Internal*Brace™ ligament augmentation procedure for ATFL repair, which uses collagen-coated FiberTape® suture, this anchor provides an all-knotless lateral ankle instability solution.



CMC Suspensionplasty With the FiberLock™ Suspension System

The FiberLock suspension system is the next generation in our carpometacarpal (CMC) suspensionplasty portfolio. Cortical-to-cortical fixation with a single incision blends the tenets of both CMC Mini TightRope® and CMC *Internal*Brace™ suspensionplasty.* Shorter instrumentation made specifically for this technique allows reliable and quick deployment of the FiberTak® anchor past the far cortex of the 2nd metacarpal, creating a secure and low-profile fixation point. A SwiveLock® anchor on the base of the 1st metacarpal completes the knotless suspension technique.



Knee & Hip Arthroscopy

Hip Distraction System (HDS) Updates

HDS Traction Boot II

Designed to secure a patient's foot during a hip arthroscopy procedure, the HDS Traction Boot II fits all existing HDS hardware and disposables and can be set in a few simple steps. Similar to a snowboard binding, a system of ratchets fastens both the foot and leg against the boot's outer shell to ensure a stable hold during the procedure.

Postless Hip Arthroscopy Pad

Postless hip arthroscopy has been shown to reduce the risk of groin-related complications.[1] Designed for the HDS, this pad provides additional positioning support during supine hip arthroscopy procedures and does not require a perineal post and pad.

Reference

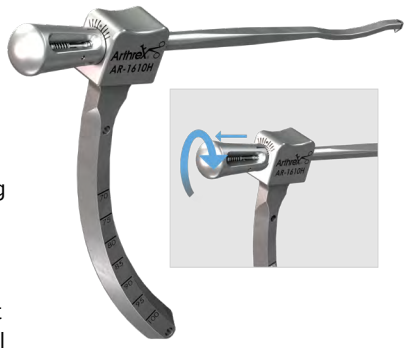
1. Mei-Dan O, Kraeutler MJ, Garabekyan T, Goodrich JA, Young DA. Hip distraction without a perineal post: a prospective study of 1000 hip arthroscopy cases. *Am J Sports Med*. 2018;46(3):632-641. doi:10.1177/0363546517741704

Point-to-Point Meniscal Root Marking Hook

Developed specifically for meniscal root repair, the point-to-point meniscal root marking hook is an additional tool for treating hard-to-reach pathologies. The anatomically designed neck provides easy access to the meniscal root footprint, while a new locking feature securely holds the desired drill angle.

Features

- Point-to-point targeting
- Locking positioning at 10°, 20°, 30°, and 40° in either direction
- Low-profile design
- Compatible with existing instrumentation
- Simplified technique using the FlipCutter® II drill prepares the socket and transosseous tunnel in a single step



PRODUCT INFO

Orthobiologics

OsteoAuger™ Bone Graft Harvesting System

The fully sterile OsteoAuger bone graft harvesting system provides a quick and effective method for obtaining morselized autogenous bone, which naturally contains the patient's own viable cells and creates a bone graft with cell, signal, and scaffold that can be placed at a fracture or fusion site.[1] Morselized bone can be hydrated with Arthrex ACP® platelet-rich plasma, which may increase cell proliferation and support healing.[2,3]

Features and Benefits

- Fully sterile, single-use system
- Pilot-hole creation not required
- Available in 6 mm, 8 mm, and 10 mm sizes
- Plunger provided for simpler graft removal

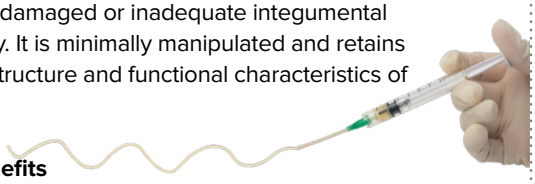
91% **Primary bone union rate with autograft bone in post-traumatic bone defects[4]**

References

1. Baldwin P, Li DJ, Auston DA, Mir HS, Yoon RS, Koval KJ. Autograft, allograft, and bone graft substitutes: clinical evidence and indications for use in the setting of orthopaedic trauma surgery. *J Orthop Trauma.* 2019;33(4):203-213. doi:10.1097/BOT.0000000000001420
2. Arthrex, Inc. Data on file (LA0815A). Naples, FL; 2009.
3. Manini DR, Shega FD, Guo C, Wang Y. Role of platelet-rich plasma in spinal fusion surgery: systematic review and meta-analysis. *Adv Orthop.* 2020;2020:8361798. doi:10.1155/2020/83617988
4. Azi ML, Aprato A, Santi I, Kfuri M Jr, Masse A, Joeris A. Autologous bone graft in the treatment of post-traumatic bone defects: a systematic review and meta-analysis. *BMC Musculoskelet Disord.* 2016;17(1):465. doi:10.1186/s12891-016-1312-4

Interfyl® Connective Tissue Matrix

Interfyl matrix is used to fill irregular spaces or soft-tissue deficits resulting from wounds, trauma, or surgery. Derived from the placenta of healthy, full-term pregnancies, Interfyl matrix is suited for a variety of surgical applications when replacing or supplementing damaged or inadequate integumental tissue is necessary. It is minimally manipulated and retains the fundamental structure and functional characteristics of connective tissue.



Features and Benefits

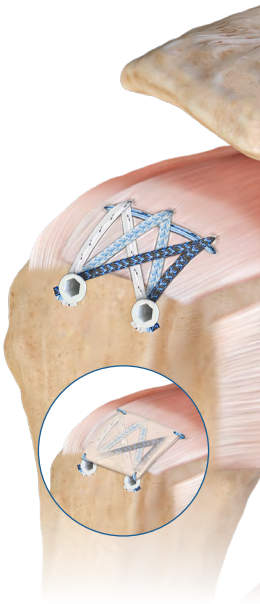
- Highly adaptable: Available in flowable and particulate forms for a variety of surgical applications
- Fills irregular spaces: Interfyl matrix's flowable form conforms to challenging contours and fills irregular spaces or soft-tissue deficits, such as those resulting from trauma or surgery
- No residual growth factors, cytokines, cells, cell debris, or DNA: Serves as a cell-friendly structure for cell attachment, which is a natural stimulus for the orderly release of growth factors to support the natural healing process

PRODUCT INFO

Shoulder & Elbow

FiberTak® SpeedBridge™ Repair

As the next evolution of knotless rotator cuff repair, the FiberTak SpeedBridge technique is completed with 2.6 FiberTak RC soft anchors on the medial row and FiberTape® sutures fixated laterally with trusted Knotless SwiveLock® anchors. Repair techniques can be enhanced with integrated tensionable knotless technology in the Knotless 2.6 FiberTak RC anchors by adding medial compression or augmenting with biologics.



Features and Benefits

- Multiple fixation points and additional FiberTape sutures increase tendon-to-bone compression[1]
- Contact area of the tendon-to-footprint interface increased 14% compared to traditional hard-bodied anchors[1]
- Biomechanical repair strength comparable to traditional SpeedBridge repair[2]
- Secure lateral fixation with trusted SwiveLock anchors

References

1. Arthrex, Inc. Data on file (APT-05242). Naples, FL; 2021.
2. Hoffman TR, Lamplot JD, McClish SJ, Payne C, Denard PJ. Three medial all suture anchors improves contact force compared to two hard body anchors in a biomechanical two-tendon rotator cuff tear model. *Arthrosc Sports Med Rehabil.* doi:10.1016/j.asmr.2022.05.012

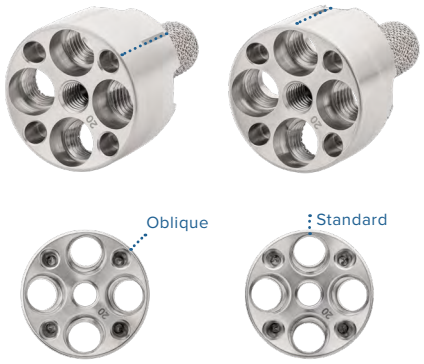
New Shoulder Arthroscopy Instrument System

The modular and customizable Shoulder Arthroscopy Instrument System accommodates a comprehensive selection of specialty instruments to facilitate arthroscopic shoulder repairs. Containing the latest and most popular instruments as determined by leading upper extremity surgeons, the set is configurable to fit your personalized needs and instrument preference.

A new quick-connect system for portal dilation, cannula insertion, and tissue preparation reduces the overall weight and saves space for additional instrument options. An updated, autoclavable aluminum case uses embedded ink and silicone bracketing for a more durable, harder-wearing case design over anodization and metal bracketing. Organized to match the procedural steps of arthroscopic shoulder techniques, there are two removable trays, one for hand instruments and another for the quick-connect attachments. The inclusion of a generous pin-mat creates space for unique instruments as well.

Optimal Augment Orientation

The Augmented Modular Glenoid System (A-MGS) baseplates are now offered in two orientations: oblique and standard. Oblique implants have the maximum thickness of the augment positioned between two of the peripheral screw holes. Standard implants align the maximum thickness of the augment with a peripheral screw hole.



Choose from 10° and 20° full-wedge baseplates and 15°, 25°, and 35° half-wedge baseplates, which are all offered in neutral and +2 mm lateralized versions in both oblique and standard augment orientations.

These implant configurations help you select an implant based precisely on where the bony deficit is located on the glenoid face, without sacrificing the optimal placement of the supplementary screws for added fixation. With half- and full-wedge offerings in these two augmented baseplate orientations, Arthrex provides the most extensive portfolio of augmented reverse baseplates in the industry.

33 mm SutureCup Release

Arthrex developed the 33 mm SutureCup and associated instrumentation to create additional solutions for smaller humeral anatomies during reverse total shoulder arthroplasty procedures. This portfolio expansion, which is expected to release in November 2022, was developed based on valuable surgeon feedback and years of clinical-use data for the Univers Revers™ system.

Using the 33 mm SutureCup not only helps address the needs of smaller patients, it also affords a greater ability to create truly inlayed reverse constructs. Further, when paired with a combo liner, you have the option of combining the 33 SutureCup with a glenosphere one size larger, potentially maximizing glenohumeral stability.

Fact or Fiction: ACL Is Necessary for UKA

Indications for unicompartmental knee arthroplasty (UKA) have changed wildly since 1989, when Kozinn and Scott published their proposed criteria.[1] More than 30 years later, dozens of articles have disproven these traditional indications, establishing modern criteria so prominent that Kozinn and Scott have also adopted them. However, there is one unchanged belief—an intact and functioning ACL must be present. Why is this the case? And is it true?

As the world's foremost authority on ACL reconstruction techniques, Arthrex knows a thing or two about the ACL, which puts us in the unique position to discuss the commonly held belief that a patient undergoing UKA surgery must have an intact and functioning ACL. To understand what drives the narrative on the ACL status and UKA, we need to know that this is being driven by mobile-bearing UKA.

A mobile-bearing UKA is a prosthesis in which the polyethylene bearing is completely unconstrained between the femoral and tibial components. The bearing is held in place strictly by native 4-bar ligament tension, making dislocation a concern and a large driver of revision. If the ACL is damaged, the incidence of mobile-bearing dislocation skyrockets.

Should controlling the primary failure mechanism for a single implant be driving a consistent indication for all UKA? The time is certainly right to have this discussion as *The Journal of Arthroplasty* recently published an article comparing the Patient Acceptable Symptom State (PASS)—created to evaluate patient satisfaction—in ACL-deficient UKA to ACL-intact UKA.[2] The authors concluded there was not a statistically significant difference between the PASS score of the two groups.

As new literature continues to challenge past beliefs, remember that you always have options with Arthrex. Whether an ACL is intact or deficient and wherever you fall on the indication status of the ACL, Arthrex continually adapts to help you treat your patients better.

Reference

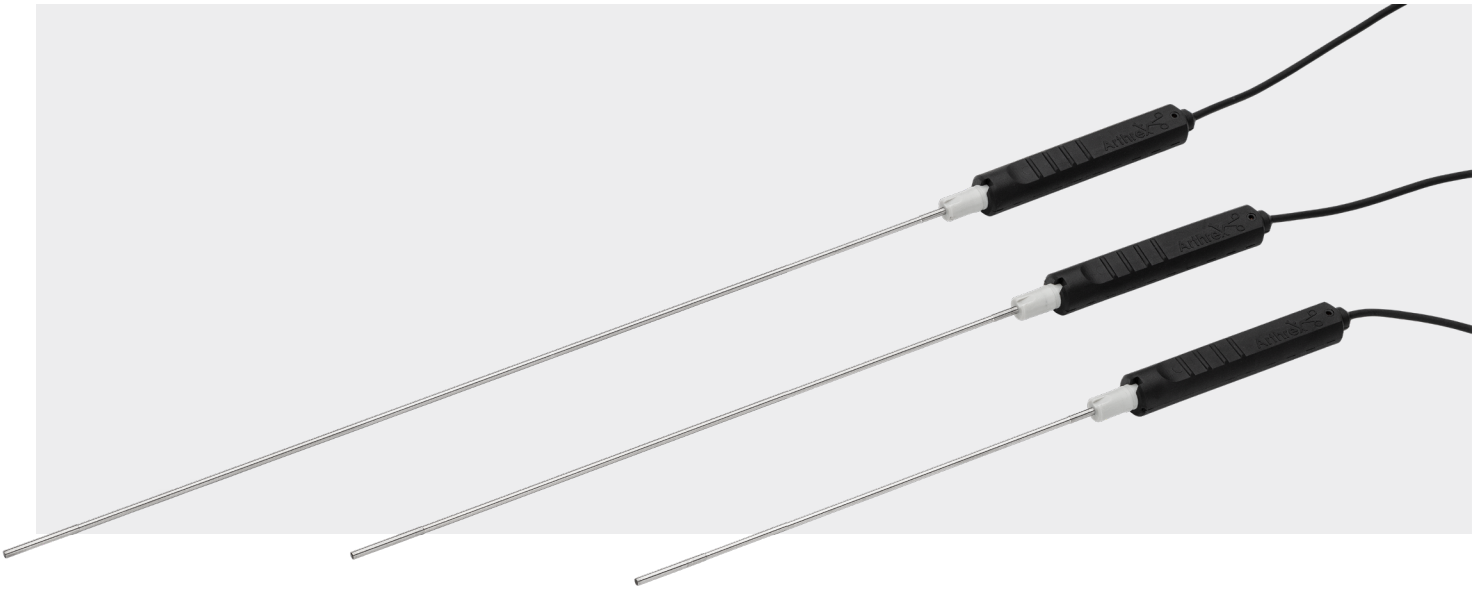
1. Kozinn SC, Scott R. Unicondylar knee arthroplasty. *J Bone Joint Surg Am.* 1989;71(1):145-150.
2. Plancher KD, Briggs KK, Brite JE, Petterson SC. The Lawrence D. Dorr Surgical Techniques & Technologies Award: Patient Acceptable Symptom State (PASS) in medial and lateral unicompartmental knee arthroplasty: does the status of the ACL impact outcomes? *J Arthroplasty.* 2022;37(8S):S710-S715. doi:10.1016/j.arth.2022.01.081

Introducing the NanoNeedle Scope

As the latest Arthrex innovation in Nano arthroscopy, this scope features a lightweight, more ergonomic handpiece. The NanoNeedle scope provides precise, direct image-guided visualization of injections and is an alternative to MRI imaging and second-look arthroscopy, offering the same benefits as the NanoScope™ handpiece in a smaller size. Additionally, a single-use camera component eliminates procedure delays due to equipment cleaning, processing, and sterilization without costly maintenance, repairs, or upgrades related to traditional video stacks.

To enhance accessibility in joint spaces, like in the hip and spine, and facilitate general surgery applications, the NanoNeedle scope is available in 3 different sizes—125 mm, 180 mm, and 250 mm. NanoNeedle Sheath Kits, which come in 125 mm and 180 mm versions, were designed with a specialized latching system, a unique quality to help ensure a tight seal from the camera to the sheath in each surgery and procedure. To facilitate usage in a variety of pathologies, surgeons may now choose either an 11° bent option or a straight option for the diagnostic and high-flow kits. All new sheaths also have a thread pattern on the camera insertion site.

The development of FiberTak® anchor adaption handles that can be threaded onto the sheaths means that all 1.8 FiberTak anchors, including DX and Knotless FiberTak anchors, can be introduced in this distinctive manner. With this unique ability, you can now identify pathology and make necessary repairs through the same sheath. New NanoNeedle working sheaths were created to facilitate interchangeability among Nano instrumentation, including NanoResection™ devices.



Arthrex Proximal Tibia Plating System

Hank L. Hutchinson, MD
Tallahassee, FL

The Arthrex Proximal Tibia Plating System builds on the Titanium Pilon Plating System with the addition of lateral and posteromedial proximal tibia plating options, plateau-specific instruments, and longer screws. All plates accept 4.0 mm fixed-angle locking, 3.5 mm variable-angle locking (VAL), 3.5 mm cortical, 4.0 mm cancellous, 2.7 mm VAL, and 2.7 mm cortical screws. The same driver can be used for all screw sizes.

- Titanium alloy plates and screws
- Variable-angle capabilities in all holes
- Snap-in guides save time when drilling nominal-angle locking screws
- Variable-angle drill guide allows percutaneous screw insertion through the sleeve

Lateral Plate

- Percutaneous carbon fiber jig available for a minimally invasive technique
- K-wire holes throughout the plate assist provisional placement and fracture reduction
- Multiple length options: 2 to 14 holes

Posteromedial Plate

- Plate wraps from posterior to medial to facilitate the incision
- Available in 4-, 5-, and 8-hole lengths

Tell us about your practice.

I've been in private practice for the past 14 years in Tallahassee and do 95% trauma. I did my trauma fellowship in Tampa.

Tell us about your first experiences using Arthrex trauma products. What convinced you to try the new Proximal Tibia Plating System?

Four years ago, I did not use any Arthrex products. My first experiences were with the FibuLock® nail. When my local team showed me the nail, it just made sense to me. From there, it expanded to the other ankle fracture and pilon products including the TightRope® fixation system. Recently, I've loved the patella plates, femoral nails, and proximal tibia plates.

What features have been most beneficial to you and your patients?

I see many bicondylar plateau fractures and enjoy using the percutaneous jig to address these injuries with an MIS technique. The jig and instruments are easy to use, the plates fit well, and I like the proximal screw options. I freehand drill all proximal screws so I prefer the 3.5 mm VAL screws and the locking mechanism works well.

Are the ancillary instruments (clamps, elevators, K-wires, etc) in the tray useful?

These have been very beneficial for me. I use many K-wires for proximal fixation and joint work while obtaining articular reduction. For many cases, I used the "king tong" clamps to restore the anatomical width of the plateau. The soft-tissue elevator works well to create a path for the plate when using the jig.

How does this system compare to competitors' offerings?

The posterior tilt of the proximal rows of screws match patients' anatomy better than previous plates I've used. I also like having two rows of proximal screws to address more complex fracture patterns. As previously stated, the jig is simpler than other companies' offerings.

What tips and tricks can you provide to first-time surgeon users and Arthrex Technology Consultants?

There are three ways to "lock the box" for the jig: a K-wire, a post, or a drill bit. [Fixating the most distal hole positioning], I prefer to use the drill bit since it is more rigid than the other options. I drill through the distal locking drill guide and then remove the drill bit from the handpiece, leaving the drill bit in the bone.

Technology Consultants should know the available plate sizes and lengths, the VAL cone (30°), and the screw lengths and diameters. My team also provides me the torque-limited handle for finishing the VAL screws so they reliably lock.

ACL Repair TightRope® Implant and FiberRing™ Sutures

Patrick A. Smith, MD
Columbia, MO

As an early adopter in ACL repair and a leader in studying innovative ACL procedures and outcomes, what first made you consider incorporating ACL repair into your practice?

I've been involved in ACL surgery for 36 years now, and I think the true gold standard is to save the native ACL for proprioception because of the specialized fibers in the ligament.

ACL repair procedures have been done for many years with many different sutures pulling the fibers up to the tibia or femur. My goal was fixing primary ACL repairs in full extension with the ability to retension, and previously, we lacked the tools to do that successfully. However, the technological advancements at Arthrex have created opportunities for many more potential repairs.

Why is patient selection such a critical factor in deciding the course of treatment?

With ACL repair, we want a tear that has good blood supply and enough tissue integrity to reattach to the femur—Sherman class I and II tears. A preoperative MRI can help identify a good candidate for primary repair because you can see the ACL fibers very well.

For a more femoral-sided injury, I will scope the knee first to see exactly how the ACL is torn. I'll do the repair if feasible, but if not, I will convert to a reconstruction. I always get prior consent from my patients for both ACL repair and reconstruction, so I can make the final decision intraoperatively.

What are the important benefits of using the *Internal*Brace™ technique* when performing an ACL repair?

The science has made it clear that incorporating the *Internal*Brace technique is critical for successful ACL primary repair.

I've been involved in important biomechanical studies that showed how much better the repair performed when incorporating the *Internal*Brace technique—less gap formation and the ability to withstand higher loads—and the results were dramatic compared to the repair with sutures only.[1]

You were a key partner in developing the new ACL Repair TightRope implant and FiberRing™ sutures. What is your favorite feature of this new system?

I did baseline time-zero biomechanical testing that showed the strongest repair construct was with the adjustable-loop device, even over screw fixation.[2]

A key feature of the new implant and suture is the retensionability factor. If I put the knee through a range of motion and there is any movement of fibers off of the femur, I can retension the construct with the adjustable loop.

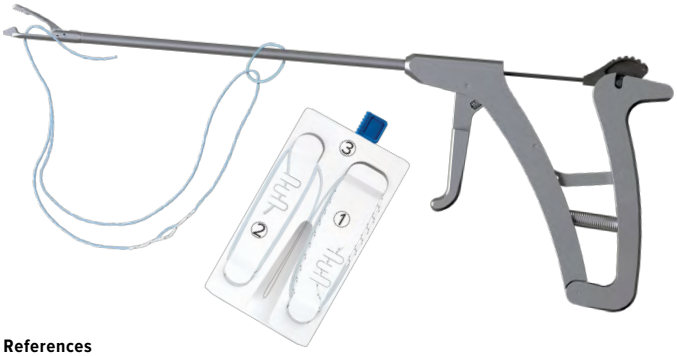
Additionally, FiberRing technology simplifies the adjustable-loop device approach. With FiberRing suture, we are not pulling directly on the suture in the tissue. Instead, we are pulling on a loop that's on that same suture.

The strength of adjustable-loop fixation and incorporation of the *Internal*Brace technique gives me confidence that my patients are not going to jeopardize their repair.

What key technical pearl can you share for ensuring successful case and patient outcomes?

The most important pearl is to get your sutures in a good position in healthy tissue. The amount of tissue you can pull up to the femur is amazing with the retensioning capability. So don't short yourself and put your sutures too close to the rupture. Get into the midportion of the native ACL where there's good tissue. I like placing the sutures from two sides, one from the medial portal and one from the lateral portal. It's easier to avoid crossing your sutures.

The second pearl is to take 80% of the slack out of the initial construct before shuttling the FiberTape® suture for the *Internal*Brace technique through in full extension. Once you have passed the TightRope implant and FiberRing suture, the construct can look intimidating, but if you pull the shortening strands on the femur to pull the ACL fibers up 80% of the way, the slack is removed from the TightRope implant and clears up the initial suture. Next, I pass the FiberTape suture for the *Internal*Brace technique through and fixate it in full extension. Then I go back to finish the tensioning process and pull the ACL fibers all the way up to the femur to complete the repair.



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1. Bachmaier S, DiFelice GS, Sonnery-Cottet B, et al. Treatment of acute proximal anterior cruciate ligament tears-part 2: the role of internal bracing on gap formation and stabilization of repair techniques. *Orthop J Sports Med*. 2020;8(1):2325967119897423. doi:10.1177/2325967119897423
2. Bachmaier S, DiFelice GS, Sonnery-Cottet B, et al. Treatment of acute proximal anterior cruciate ligament tears-part 1: gap formation and stabilization potential of repair techniques. *Orthop J Sports Med*. 2020;8(1):2325967119897421. doi:10.1177/2325967119897421

What's In My Bag?

FiberTape® Cerclage Single-Use Instruments

Erik Kubiak, MD
Las Vegas, NV

Why do you prefer FiberTape cerclage over metal cables for fracture-management procedures?

One of the known disadvantages of braided metal cerclage cables is their susceptibility to fretting and generating metallic debris, which can potentially damage adjacent implants. The nonmetallic FiberTape cerclage solves this problem. Its softer, high-strength suture material does not fragment like a metal cable, eliminating the concern of causing an adverse effect on total joint wear surfaces. I find FiberTape cerclage more manageable to work with, and unlike metal cables, it can easily be retensioned as many times as necessary throughout the procedure. Furthermore, FiberTape cerclage is not visible on radiographs. It's fracture magic.

Is there a particular application in which FiberTape cerclage stands out in your practice?

FiberTape cerclage is perfect for capturing fracture fragments, achieving reduction, and establishing initial fixation when treating periprosthetic fractures. There are no bulky instruments or extra cable tension-retaining devices to get in the way. The FiberTape cerclage can easily be manipulated and tensioned around the bone. In addition, plates lay flush over the flat, low-profile FiberTape cerclage. I also rely on FiberTape cerclage during primary and revision arthroplasty cases to prevent and manage intraoperative fractures. It is useful during direct anterior total joints to control the femoral neck if it splits during stem insertion, as well as to prevent fracture propagation of extended trochanteric osteotomies beyond the isthmus when reinserting the femoral stem during revision hip surgery. I haven't touched a metal cable in more than two years because FiberTape cerclage addresses all my practice needs.

Arthrex offers several different single-use cerclage passing hooks. Do you have a "go-to" passing hook and why?

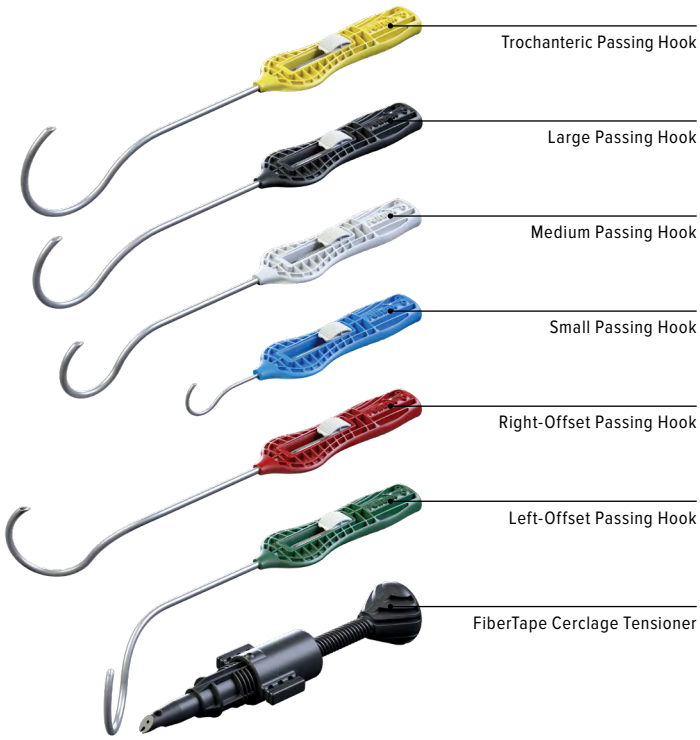
The single-use (left and right) offset passers are my go-to for direct anterior hip arthroplasty cases. I use the right offset for right hips and the left offset for left hips. I find the overall size and shape of these passers to be ideal for this application. Plus, the extending nitinol loop on the end of the passing hook makes it easier to get around the proximal femur and load the suture tails. These features make passing the cerclage more efficient than any other passing hook I have ever used.

What benefits do you experience having such instrumentation available as a disposable?

First and foremost, there are no sterile processing issues to deal with. You don't have to worry about trays not getting turned over, which is currently an issue at many hospitals due to staffing shortages. I don't have to wait for instruments to be reprocessed for back-to-back cases, and it simplifies my operating room setup because OR personnel can grab the sterile boxes for the passers, tensioner, and cerclage right off the shelf. Plus, I tend to be rough on instruments so there is a benefit to single-use instrumentation. I always have a brand-new cerclage passer and tensioner that is not broken, bent, or torqued by myself or colleagues.

Are there any technique pearls you have discovered while using FiberTape cerclage and the single-use cerclage instruments?

When passing FiberTape cerclage around the bone, it is imperative to get all the slack out of the FiberTape strands and minimize the amount of friction between the tapes and the bone. One way to do this is making sure the orange cerclage loader is pulled as close to the bone as possible before you use the FiberLink™ suture to shuttle the FiberTape cerclage around the bone for the second pass. To make passing the FiberTape cerclage with the disposable passing hooks even easier, I use the nitinol loop on the orange cerclage loader to retrieve the FiberTape cerclage and FiberLink suture tails through the passer's nitinol loop. I find the single-use cerclage tensioner to be simple to use and it helps deliver consistent tension. However, after tensioning, it is important to turn the handle counterclockwise, resetting the device for properly tensioning the next cerclage.



Reverse for Fracture With the FxBridge™ Tuberosity Repair System

Jonah Davies, MD
Seattle, WA

You are referred complex trauma cases. How does the Arthrex Univers Revers™ system help address the complexities of proximal humerus fractures?

Reverse shoulder arthroplasty has become the best treatment method for elderly patients with proximal humerus fractures, with both improved Constant scores and fewer revision surgeries when compared to ORIF. The geometry of the Univers Revers stem is well suited to properly restoring height. The medial flare helps set the appropriate height, which is critical to restoring stability. The Univers Revers stem also uses a 135° humeral inclination angle, which helps improve the tuberosity healing rate.[1] Lastly, the design of the SutureCup is ideal for helping the tuberosities to heal since there are multiple suture locations on the prosthesis.

Why is good healing of the tuberosities so important in reverse for fracture?

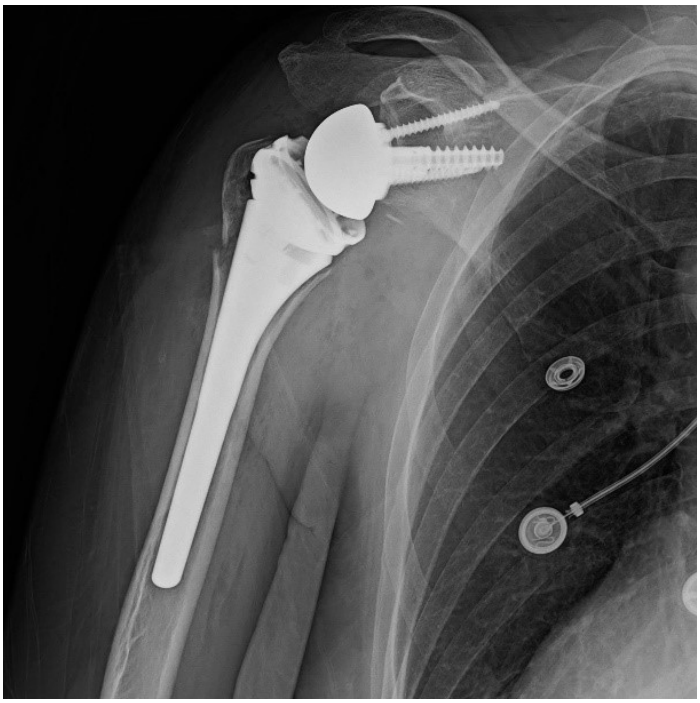
Tuberosity preservation and healing is critical for improved functional outcome. Greater and lesser tuberosity healing increases forward elevation and both internal and external rotation. This gives my patients good motion and the ability to maintain high activity levels.

What aspects of the FxBridge tuberosity repair system provide value to you and your surgical team?

Tuberosity fixation had always been a complicated and tedious portion of the operation. The FiberTape® sutures in the FxBridge provide broader compression with more resistance to tissue pull-through.[2] The organized, prepackaged kit is convenient both for me and my OR staff. The color-coded sutures and FiberLink™ suture simplify the procedure and allow everyone involved in the case to understand the procedure. The system saves me significant time while providing better initial stability of the tuberosities. The technique is reproducible and allows me to teach my fellows and residents a biomechanically and clinically proven method for treating proximal humerus fractures.[1]

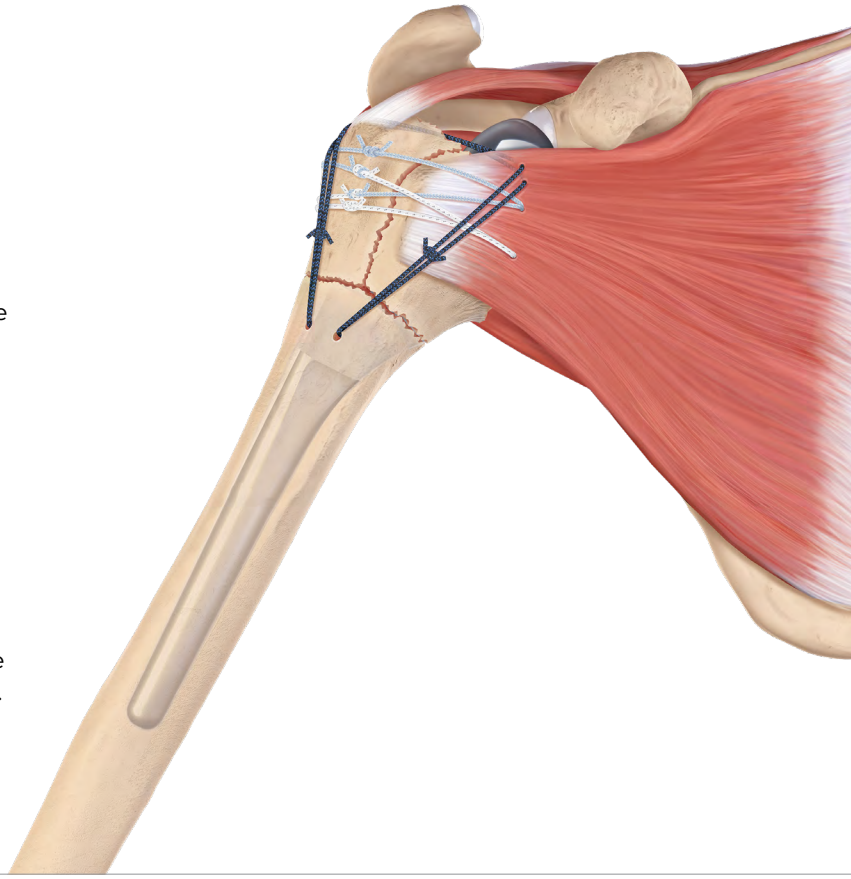
How frequently are you using a reverse prosthesis for proximal humerus fractures? Do you always use the FxBridge system with a Univers Revers implant for fracture?

Trauma is a big part of my practice, so more than half of my reverse arthroplasties are to treat 3- and 4-part proximal humerus fractures. I use the FxBridge system for every case—it has been one of the most impactful changes in my practice in the past few years.

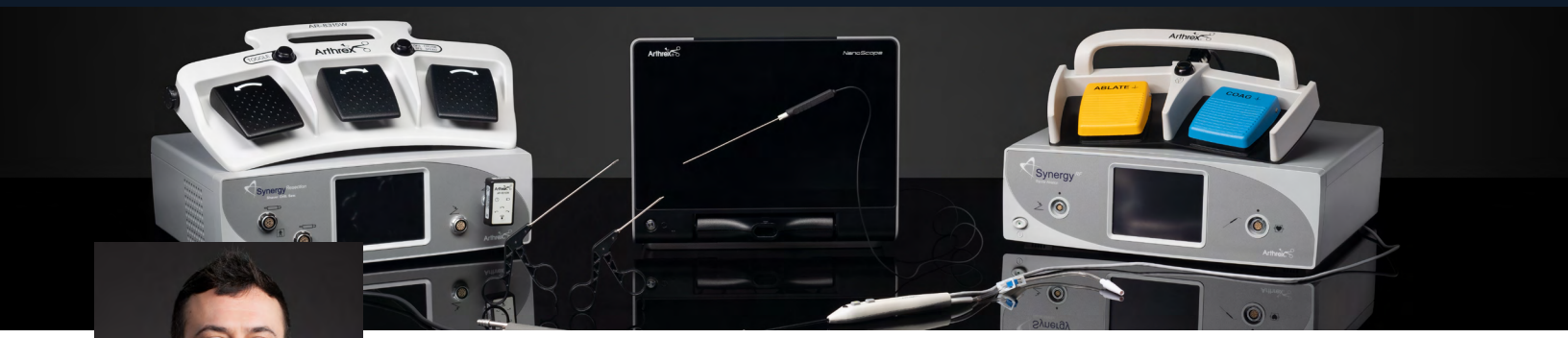


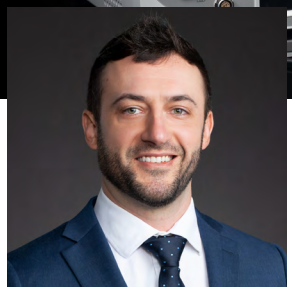
References

1. O'Sullivan J, Lädermann A, Parsons BO, et al. A systematic review of tuberosity healing and outcomes following reverse shoulder arthroplasty for fracture according to humeral inclination of the prosthesis. *J Shoulder Elbow Surg*. 2020;29(9):1938-1949. doi:10.1016/j.jse.2020.03.032
2. Arthrex, Inc. LA0239. Naples, FL; 2008.



What's In My Bag?





How Nano Arthroscopy Helps Me Treat Patients Better

Matthew Brant, DPM
Vineland, NJ

Before Dr. Brant was introduced to Nano arthroscopy, he used whichever imaging and resection devices were already in the OR. Then he experienced Nano arthroscopy and specialized resection devices, discovering the Arthrex difference. Now Nano visualization and NanoResection™ devices are focal points in his OR and procedures.

Can you describe your experience using Nano arthroscopy with NanoResection devices?

I started using Nano arthroscopy with NanoResection devices more than a year ago. The learning curve for using Nano arthroscopy is minimal, and the disposable instruments are consistently effective. The NanoNeedle scope has an improved and clearer field of view, making it easier to view the ankle joint. The scope and the Nano Sabre shaver are both lighter and easier to maneuver, especially in small joints.

You switched from Smith and Nephew to Arthrex for your Nano cases, and now you use the Nano Sabre shaver and Apollo$^{RF®}$ probe. What convinced you to use Nano arthroscopy in your practice?

I switched to Nano arthroscopy for several reasons. One reason was the field of view. The wide angle makes navigation easier and joint visibility better. Another reason was the photo video option and quality. The pictures emailed to me after the case are higher quality than those printed in the OR using traditional arthroscopy. The Nano Sabre shaver handpiece is smaller and more ergonomic, increasing maneuverability. The device also efficiently removes tissue, so I spend less time in the joint.

Another reason I switched to Nano arthroscopy was my frustration with equipment in the hospital. Frequently, I would have to wait for instrumentation to be swapped due to a malfunction or nonworking components while the patient was under anesthesia. Nano arthroscopy is a more consistent and efficient system with less variability and simpler instrumentation.

How do you set up for your Nano arthroscopy cases?

My typical setup includes the tablet close to the table and connected to the larger screen in the OR, which is above the patient so I can face forward and look straight ahead. I found that the high-flow sheath keeps the joint distended better for most patients, but making both sheaths available is beneficial on a case-by-case basis. The blunt-end metal probe or the plastic probe helps avoid damaging cartilage when entering the joint, and I slide my hand up onto the actual scope itself for more control, essentially holding it like a pencil. I fluctuate the amount of suction on the handpiece to adapt to the joint. If the joint has some blood, I decrease the suction a bit using the handpiece, and the Nano Sabre shaver is never running if I can't physically see the end of the shaver with the scope. When I enter the joint with the shaver, the rounded back of the shaver faces distal so the blunt end of the shaver enters nearest the talar cartilage to decrease iatrogenic scoring of the talar cartilage.

How has the Apollo^{RF} SJ50 probe changed your perspective of RF in the ankle?

Until I tested Apollo^{RF} SJ50 probe in the lab, I would not have attempted to remove synovitic tissue with an RF probe, but Apollo^{RF} SJ50 probe is safe and extremely effective in removing synovitis. The probe is most effective when activated in short bursts while sweeping through synovitic tissue in the joint.

How have you been able to treat your patients better using Nano arthroscopy?

Overall, the Nano arthroscopy system reduces my time in the OR. The NanoNeedle scope has greater visualization with a wider field of view, and the Nano Sabre shaver is more efficient than a traditional shaver. The shaver is less prone to clogging, so I do not need to swap the shaver out of the handpiece as often. This can reduce time in distraction, which is beneficial to the patient while increasing efficiency because I know exactly how the instruments will operate and there is less variability on a case-by-case basis. Patients love to see pictures and videos of their actual procedure, as well.

The NanoNeedle scope is obviously a great improvement over a traditional arthroscope for the ankle. When navigating smaller joints, visualization and control are better. I trust the NanoResection devices to come out of the box consistently every time. Once you learn to use Nano arthroscopy, you no longer need to adapt to equipment variability in the OR.

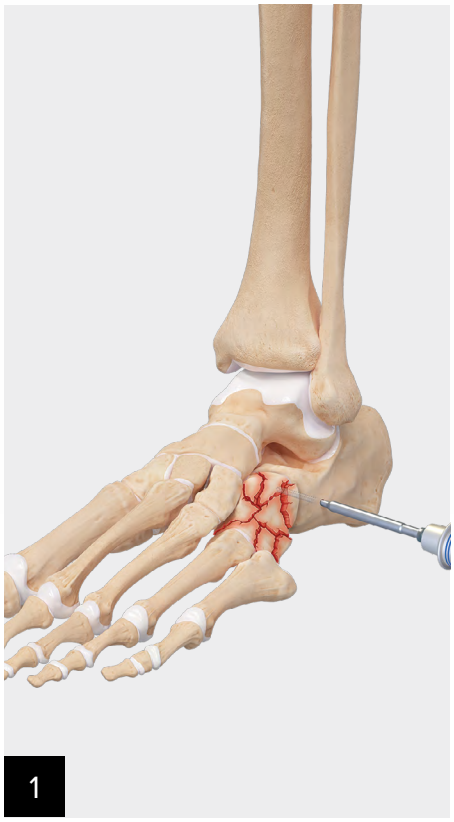
IN THE Loop...

Arthrex Small External Fixator System

The Arthrex Small External Fixator System is a great addition to the Arthrex Trauma and Fracture Fixation portfolio. This line consists of 2 mm and 3 mm threaded pins and 5 mm carbon fiber rods. The system is appropriately sized for medium- to small-bone fracture fixation where soft-tissue injury may preclude the use of other fracture treatments. Applications span from lateral column lengthening in the foot to distal radius fractures of the wrist. An array of clamps, rods, and pins allows for flexibility in fixation constructs.

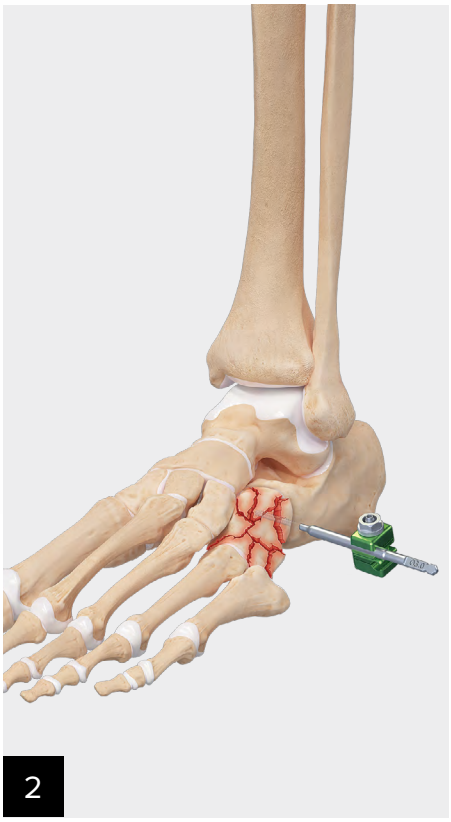
The Small External Fixator System consists of:

- 2 mm and 3 mm pins with varying overall lengths and thread lengths
- 5 mm carbon fiber rods ranging in length from 50 mm to 300 mm
- Multipin and single-pin clamps



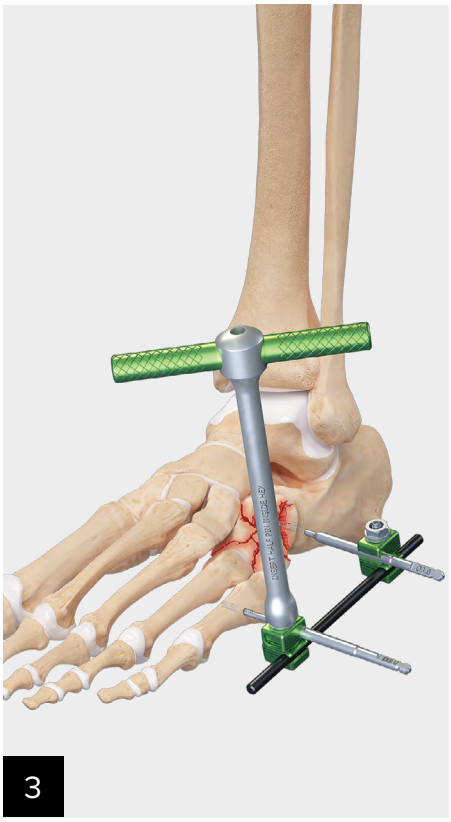
1

Place the desired pin in the calcaneus either by power or with the T-handle.



2

Attach a 5 mm single clamp to the pin.

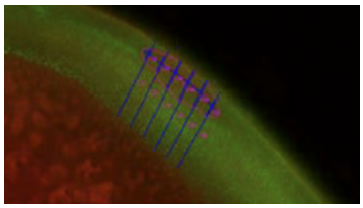


3

Insert a second pin into the 5th metatarsal and attach a single clamp. Place a rod between the two clamps and lock the construct into place using the T-handle.

Apollo[RF®] MP50 Probe: A Study on Bipolar RF Depth of Penetration in Cartilage

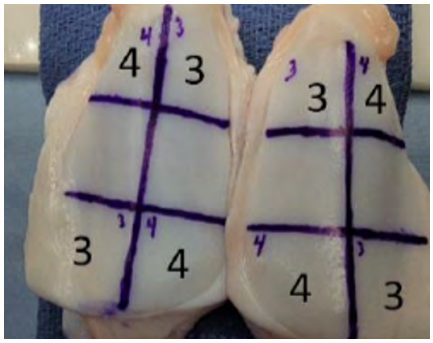
In a recent study, the Apollo[RF] MP50 probe was used to evaluate depth of penetration (DoP) using ablation settings 3 and 4 on articular cartilage within the knee joint. To assess consistently, a 1 mm spacer was used on the distal end of the probe to maintain distance from cartilage.



The study revealed that when evaluating DoP on the treated patellar, condylar, and trochlear surfaces, ablation setting 3 had a mean DoP of 237.9 µm, which is a 50.9% lower mean DoP than setting 4.[1] For reference, the mean DoP for setting 3 is approximately the same thickness as 3 human hairs. Based on the data, ablation setting 3 demonstrated significantly less articular cartilage DoP than setting 4. Other studies' measurements of penetration show similar results.

Reference

1. Khoury AN, Krupp MJ, Matuska AM, Friedman DJ. Bipolar radiofrequency ablation does not result in full-thickness articular cartilage penetration: an ex vivo bovine investigation. *Arthrosc Sports Med Rehabil*. 2022;4(3):e1067-e1073. doi:10.1016/j.asmr.2022.03.002



Arthrex®

Graft Augmentation of Repairable Rotator Cuff Tears: An Algorithmic Approach Based on Healing Rates

Despite advances in fixation methods, failed healing is frequently observed following arthroscopic rotator cuff repair. The question of when to add biologic augmentation to a rotator cuff repair often arises. Answering this question may ultimately rely on predicting the chance of healing.

A study of 603 patients demonstrated the odds of a retear increased to the greatest degree with ≥3 cm rotator cuff retraction, infraspinatus fatty infiltration grade ≥2, and age >70 years.[1] These factors increased retear rates by 12.9 times, 2.9 times, and 2.7 times, respectively. Using these factors, the authors developed the Rotator Cuff Healing Index (RoHI), which combines risk factors to predict tendon healing (Table 1). Based on this 15-point scoring system, patients with ≤4 points had an 86% healing rate, while those with ≥5 and ≥10 points had 70% and 27% healing rates, respectively. The largest drop in healing occurred after 6 points; the healing rate was 66% at 6 points but decreased to 38% at 7 points. This scoring system can be used with simple patient demographics and MRI evaluation to better predict rotator cuff healing and may be a useful tool for considering when to incorporate biologic augmentation.

Rotator Cuff Healing Index (RoHI)

Table 1

Prognostic Factor	Points in RoHI
Age > 70 tears	2
AP tear size >2.5 cm	2
Retraction, CM	
<1 cm	0
1 to <2 cm	1
2 to <3 cm	2
≥3 cm	4
Infraspinatus fatty infiltration, grade	
≥-2.5	3
BMD, ≤-2.5	2
Level of work activity, high	2

Reference

1. Kwon J, Kim SH, Lee YH, Kim TI, Oh JH. The rotator cuff healing index: a new scoring system to predict rotator cuff healing after surgical repair. *Am J Sports Med*. 2019;47(1):173-180. doi:10.1177/0363546518810763

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SCOPE THIS OUT

Scope This Out is an informational newsletter designed to educate orthopedic surgeons on new products, state-of-the-art surgical procedures, and "pearls" to assist in improving surgical skills.

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