Volume 24, Number 1

SCOPE THIS OUT

A Technical Pearls Newsletter for Orthopedists

BoneSync™ BioActive Bone Void Filler

BoneSync BioActive bone void filler is an osteoconductive and osteostimulative matrix that supports bone regrowth.[1] Containing an optimally sized particulate of 45S5 bioglass, BoneSync BioActive filler provides a favorable environment for bone remodeling and osteoblast attachment.[2]

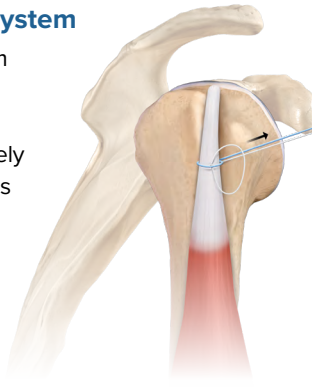
Advantages

- Unique composition: Contains an optimal balance of carbonate apatite anorganic bone mineral, 45S5 bioglass, and type I collagen, a combination that resembles native bone composition and pore structure
- Moldable: Homologous distribution of components in both premixed putty and strip forms

References

1. Hench LL, Polak JM, Xynos ID, Buttery LDK. Bioactive materials to control cell cycle. *Mater Res Innov.* 2000;3(6)313-323. doi:10.1007/s100190000055
2. Xynos ID, Hukkanen MV, Batten JJ, Buttery LD, Hench LL, Polak JM. Bioglass 45S5 stimulates osteoblast turnover and enhances bone formation In vitro: implications and applications for bone tissue engineering. *Calcif Tissue Int.* 2000;67(4):321-329. doi:10.1007/s002230001134

Knotless FiberTak® Biceps Implant System



The Knotless FiberTak Biceps Implant System offers a knotless, all-suture anchor solution for performing an onlay proximal biceps tenodesis at any location. The implant uniquely integrates two individual tensionable knotless mechanisms within a single FiberTak sheath. The blue FiberWire® repair suture is passed around the biceps tendon, while the white suture loop is retrieved through the tendon. The blue repair suture is retrieved through the loop, creating a ripstop, and both are tensioned to complete the tenodesis.

VIP™ System Surpasses Significant Milestone

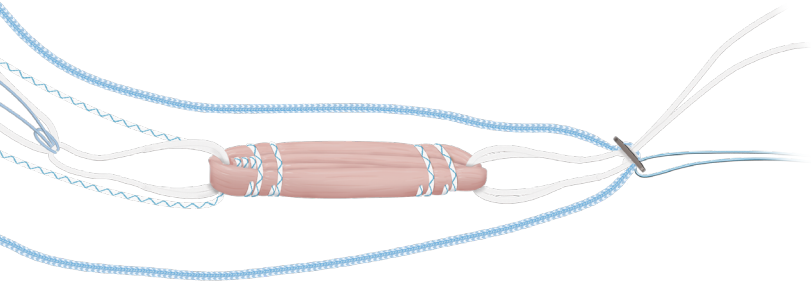
Since its inception in 2016, the Virtual Implant Positioning™ system has continued to grow and evolve year over year. Arthrex is pleased to announce that the VIP system recently surpassed 50,000 uploads and is continuing the trend of significant growth, with nearly 20,000 of those uploads occurring in 2022. The VIP system is the only preoperative planning software with cross-platform capability and patient-specific instrumentation available in less than 48 hours from plan approval. The reusable guide increases accuracy by 82% over standard instrumentation,[1] while the patient-specific depth of ream with a positive stop helps to preserve subchondral bone. Finally, the system is enhanced by a complete portfolio of patient engagement and education tools. We will continue to improve the VIP system in our enduring effort to provide the most seamless preoperative planning system on the market.

Reference

1. Iannotti J, Baker J, Rodriguez E, et al. Three-dimensional preoperative planning software and a novel information transfer technology improve glenoid component positioning. *J Bone Joint Surg Am.* 2014;96(9):e71. doi:10.2106/JBJS.L.01346

GraftLink® 2.0 Kits

The new autograft and allograft GraftLink 2.0 kits contain all the implants and disposables required to perform a GraftLink procedure. Leverage the convenience of having all the required components for graft prep, socket creation, and fixation in one sterile, comprehensive implant system to streamline inventory and optimize efficiency.

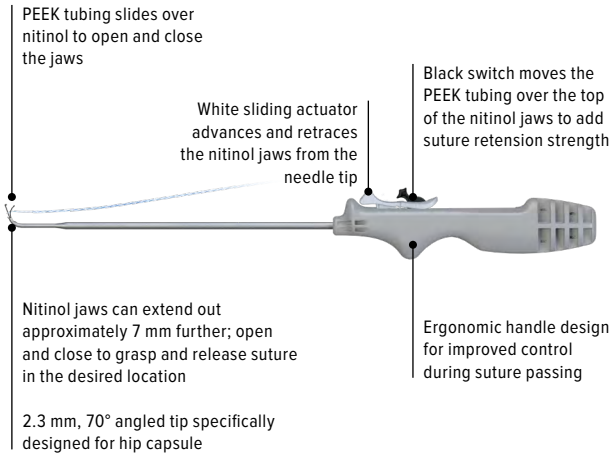


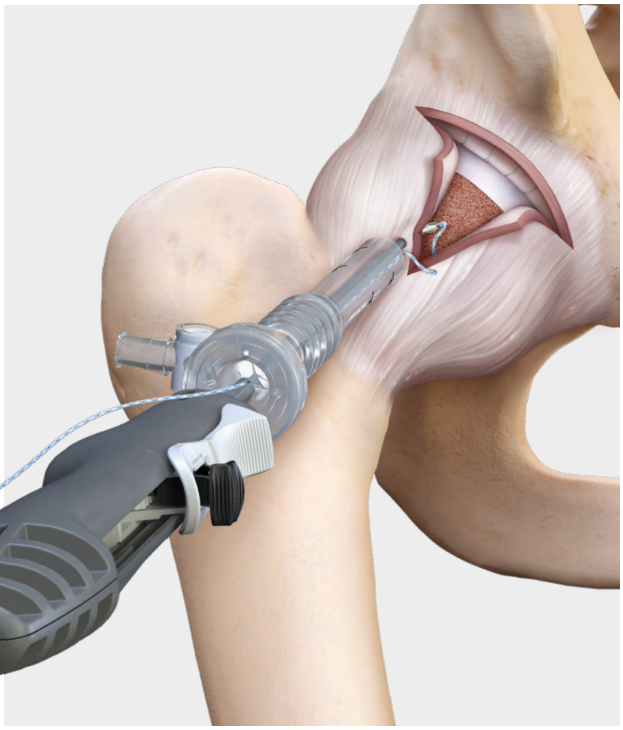
Features

- Upgraded GraftLink kits now include the latest ACL reconstruction technology: the FlipCutter® III drill, a new ABS button for the *Internal*Brace™* technique, new FiberSnare® sutures, and new graft-preparation SutureTapes
- New TightRope ABS 3-hole button features a third hole to facilitate suture placement for sutures for the *Internal*Brace technique
- New white/blue and black/white FiberSnare® sutures are designed for more convenient shuttling and enhanced visibility
- New options for graft-preparation SutureTapes help ensure an efficient autograft GraftLink technique

Fast and Simple Hip Capsular Closure Using the CapsuleStitch™ Suture Passer

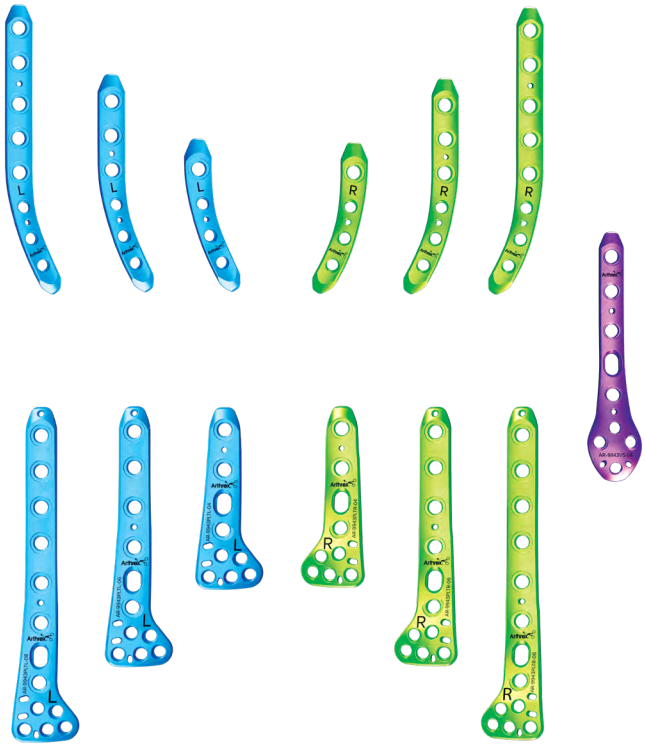
The CapsuleSitch suture passer is designed for single-portal capsular closure at the end of a hip arthroscopy procedure. Compatible with #2 FiberWire® suture, 1.3 mm SutureTape, and LoopLoc™ knotless implants, this suture passer allows a minimum 45 mm of suture to be passed underneath the capsule, leaving ample suture for retrieval through the opposite capsular leaflet. Grasp and release suture with nitinol jaws that extend approximately 7 mm further than the 2.3 mm tip of the needle. The black switch controls PEEK tubing that glides over the nitinol jaws, providing extra retension strength during retrieval.





Titanium Fragment-Specific Ankle Fracture Plates

The addition of posteromedial, posterolateral, and vertical shear plates to the Titanium Ankle Fracture Management System ensures Arthrex offers the most comprehensive system on the market.



Features

- Undercontoured to buttress fracture fragments
- Made from titanium alloy Ti-6Al-4V
- Uses 3.5 mm screws proximally and 3.0 mm screws distally
- Posterolateral plates have suture holes for PITL repair and/or use with the *Internal*Brace™ ligament augmentation repair technique
- Housed in the redesigned Titanium Ankle Fracture Management System
- Compatible with Kreulock locking compression screws

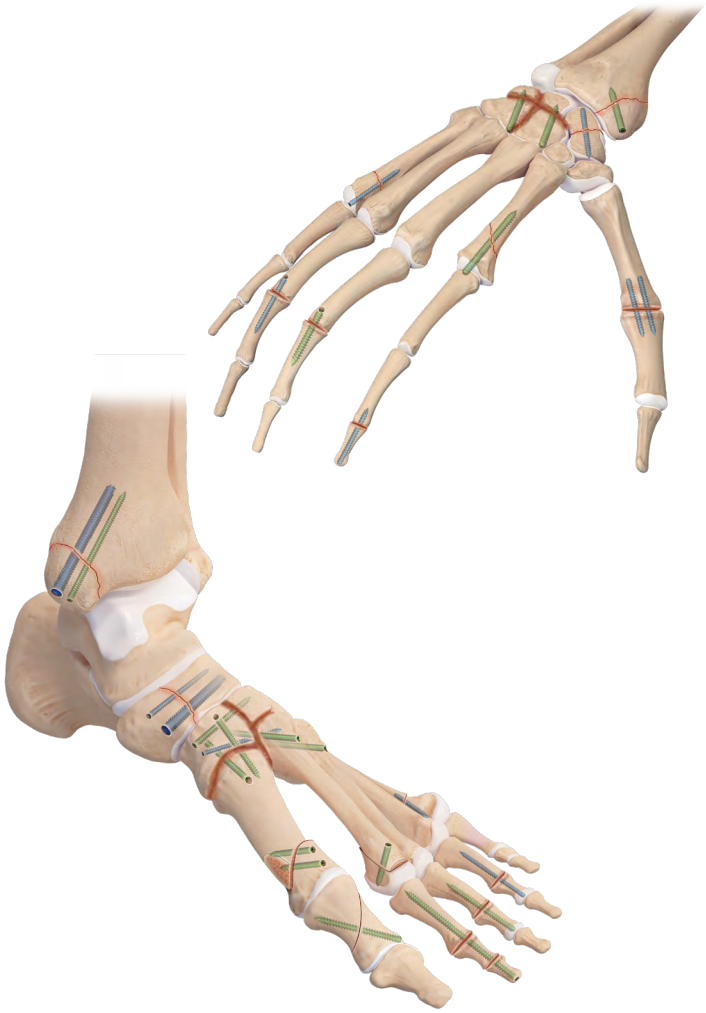
Note: Four- and six-hole posterolateral and posteromedial plates are included in the tray. Eight-hole lengths are available by special order only. The vertical shear plate is available in one size.

Snap-Off Compression FT Pins

Easy to use and available in numerous sizes, the new Snap-Off Compression FT pins offer an innovative range of solutions for upper and lower extremity and trauma applications including joint arthrodesis, intra- and extra-articular fractures, and nonunions. They can also be used in conjunction with other Arthrex products.

Features

- Variable-stepped thread pitch: The screw tip's wider thread pitch enters the bone faster than the trailing threads, gradually compressing fragments as the screw is advanced
- Quick, convenient surgical technique
- Self-drilling and -tapping to facilitate insertion
- Multiple size options in diameters of 1.9 mm and 2.4 mm
- Available in titanium



PRODUCT INFO

Imaging and Resection

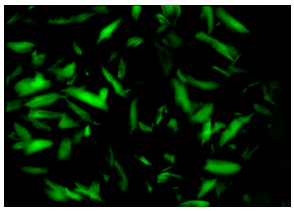
Stabilizing and Augmenting Articular Cartilage Lesions

Featuring a wide variety of instruments, Synergy[Resection™] shaver blades and specialty devices are designed for a multitude of procedures. This portfolio includes shavers engineered for arthroscopic cartilage debridement, harvesting articular cartilage, and marrow-stimulation procedures.

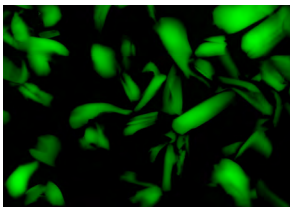
Features and Benefits

- Torpedo™ shaver
  Smooth dual inner cutting windows leave smooth edges on tissue after resection, potentially reducing further tear propagation
- Bone cutter
  Distal tip cutting capability facilitates removal of the calcified layer, exposing subchondral bone prior to microfracturing techniques
- PowerPick™ XL device
  Microdrilling demonstrates superior patient-reported outcomes and lower revision rates compared to patients treated with traditional chondral picks[1]

Supports AutoCart™ cartilage repair technique:
When connected to the GraftNet™ tissue collector, both 4 mm bone cutter and Torpedo shaver blades harvest and collect medium-size cartilage particulate while maintaining high cell viability (>80%).[2]



4 mm Torpedo shaver



4 mm Bone cutter shaver

References

1. Beletsky A, Naveen NB, Tauro T, et al. Microdrilling demonstrates superior patient-reported outcomes and lower revision rates than traditional microfracture: a matched cohort analysis. *Arthrosc Sports Med Rehabil*. 2021;3(3):e629-e638. doi:10.1016/j.asmr.2020.10.006
2. Arthrex, Inc. LA1-000143-en_US-B. Naples, FL; 2022.

PRODUCT INFO

Shoulder Arthroplasty

VIP™ Glenoid Reamer

The VIP glenoid reamer is the latest addition to the Virtual Implant Positioning™ system. Use the new pilot reamer and array of secondary reamers in tandem with the VIP targeter to intraoperatively transfer a preplanned depth of ream to the patient's anatomy.

Using the VIP glenoid reamers will help achieve planned backside seating while avoiding excess bone removal. This reusable, patient-specific instrumentation takes the guesswork out of glenoid preparation, creating a more reproducible procedure. The system can be used with the Univers VaultLock® and Univers Revers™ Modular Glenoid System—both standard and augmented implant options.

The VIP reamer, which is pending FDA clearance, is expected to launch in April 2023.

PRODUCT INFO

Shoulder & Elbow

SutureTag Looping Stitch

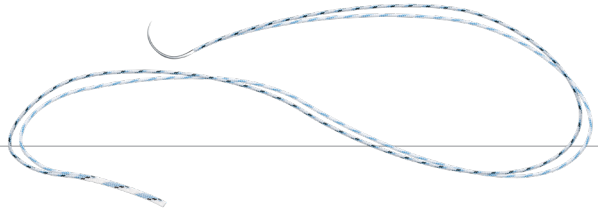
The SutureTag looping stitch creates a running ripstop to reinforce the tendon with minimal passes through the tissue. This novel stitch is lower profile, faster to complete, and stronger than a typical Krackow repair stitch.[1] The SutureTag splits into two #2 sutures that can be easily incorporated into the FiberTak® button repair technique.

Features and Benefits

- Reinforced looping stitch reduces the chance of tissue pull-through
- Looping sutures compress and taper the tendon to reduce the profile of the repair
- Adaptable for multiple tendon repair configurations and button repair techniques

Reference

1. Long C, Nakla A, Chung N, et al. Biomechanical characteristics of a new "looping stitch" versus the classic Krackow stitch for distal biceps fixation. *J Shoulder Elbow Surg*. Submitted 2022.



What's in My Bag?

Point-to-Point Meniscal Root Marking Hook

Aaron J. Krych, MD
Rochester, MN

One of the main features of the new point-to-point meniscal root marking hook is its precision targeting capabilities. What does this mean for you in the OR?

The most important aspect of root repair or meniscal transplantation is recreating the anatomy. Even if the root attachment is created 5 mm away, this will result in an extruded meniscus unable to resist hoop stresses. The precision targeting of the new point-to-point guide helps to exactly restore the anatomy, which then helps minimize extrusion and improve meniscal function.

You were a key partner in developing the first "over-the-back" guide. Describe the challenges the new point-to-point guide has overcome. What clinical factors influence decision-making?

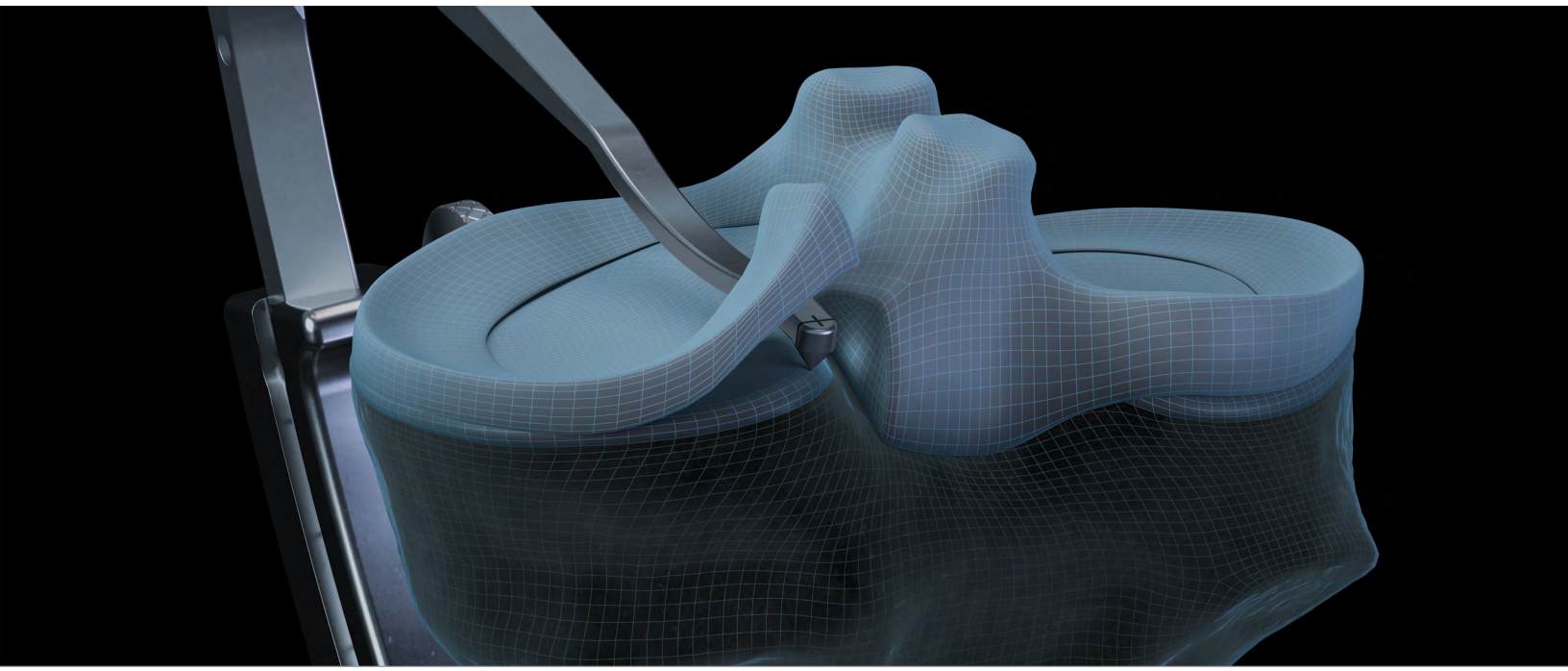
Both root guides overcome some of the main challenges associated with using ACL guides to create the anatomy of the posterior horn attachment. A traditional ACL guide introduces a lot of torque in the system by trying to maintain a flat guide in the joint and hit the perpendicular face of the tibia. These factors can lead to missing the target, which is frustrating. The point-to-point meniscal root marking hook makes the procedure efficient, and the surgeon can be confident in hitting the anatomic target. Overall, both guides do a great job of hitting the target. Each surgeon needs to see what works best in their hands, but it is great to have options.

What is your favorite feature of the point-to-point guide?

I like both the degrees of freedom to hit the anatomic target of the root insertion and the variable-locking mechanism that you can use to navigate tibial bone real estate with other combined procedures, such as ACL and PCL reconstruction and tibial osteotomy. Specifically, I can maintain a flat guide in the joint parallel to the articular cartilage, but I also use variable rotation to place the FlipCutter® II drill perpendicular to the face of the tibia. Because of these features, the point-to-point guide does not have any torque or constraint, which helps to precisely target the anatomy and navigate around other tunnels.

Have you used the point-to-point marking hook in any notable cases?

I recently had a revision ACL case with a 21-year-old patient. We knew the patient had a medial meniscal root tear, but during surgery, a scope showed a lateral meniscal root tear as well. This case required managing the tibial bone as we drilled tunnels for the revision ACL and the medial and lateral posterior roots. With the new point-to-point guide, I was able to navigate around the ACL revision tibial tunnel and avoid coalescence.



Transitioning to Soft Anchors for Rotator Cuff Repair

Patrick J. Denard, MD
Medford, OR

Why did you transition to soft anchors and were you an early adopter?

I was initially resistant to the idea for rotator cuff repair. But after positive experiences in my labral repairs, I realized there were clear advantages for rotator cuff repair. First, the biomechanical studies show that these anchors have equivalent pullout strength to hard-body anchors.[1] Second, they are easier to revise. Third, and most importantly, I believe there is a distinct biologic advantage. Approximately 27% of rotator cuff repairs still do not heal, and most commonly, biology is the culprit.[2] Rotator cuff repair relies on tendon compression to bone for healing. With the footprint of the supraspinatus being around 2-cm wide, two 4.75- or 5.5-mm anchors can quickly take up valuable real estate in the footprint. What will the tendon heal to in that scenario? Soft anchors are less than half the diameter, and therefore preserve more bone for the tendon to heal to.

What soft anchor technology do you currently use for your rotator cuff repairs?

For a full-thickness tear, my go-to medial anchor is the 2.6 mm FiberTak® RC anchor. There are several features that make it extremely versatile and efficient. The suture configuration has two fixed-tape limbs and a knotless tensionable mechanism. I can create a variety of repair constructs to match the patient. I can remove the knotless mechanism and perform a knotless double-row repair similar to the SpeedBridge™ repair. If tissue quality is a concern, however, I can use the knotless mechanism to create a knotless mattress construct between the medial anchors or even create a ripstop. Additionally, the self-punching insertion eliminates the need to prepunch or predrill a hole in most cases, saving me time in the operating room.

Do you feel like you are sacrificing anchor and construct strength by moving to soft anchors?

This is a common question, but it is not supported by the data or my clinical experience. A study out of Rush showed no difference in load-to-failure between soft- and hard-body medial anchors, and even a trend toward correlation with lower load-to-failure in poor bone mineral density with a hard-body anchor (meaning the soft anchors performed better).[1]

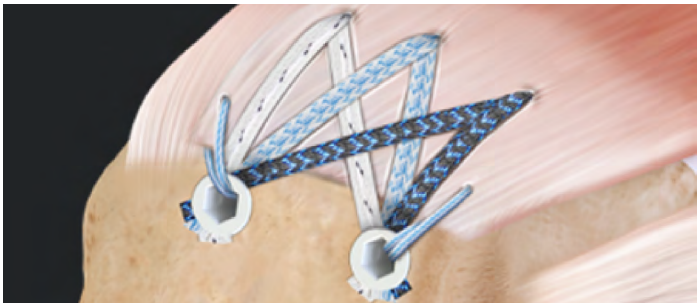
In our biomechanical study, we compared the FiberTak SpeedBridge repair to the classic SpeedBridge repair and didn't observe any differences in load-to-failure or cyclic displacement.[3] Notably, the increased points of fixation and suture crossings of the FiberTak SpeedBridge construct with three medial anchors improved contact force compared to a classic SpeedBridge construct. Furthermore, the difference in contact force progressively increased with larger medial loads, suggesting improved footprint compression with the FiberTak SpeedBridge construct. The three-anchor construct may therefore be particularly beneficial in larger rotator cuff tears. And again, this is done with less medial footprint violation.[3]

Clinically, I've seen very few of these anchors pull out. I can count the number on one hand in over 1000 repairs. Some technical tips are helpful. First, don't decorticate the bone. This will decrease pullout strength and also violate the top layer of the bone that the tendon heals to. Second, a straight angle of insertion is ideal for soft anchors. This has been demonstrated biomechanically.[4] While the anchors can be placed without a guide, I like to use a guide to ensure that the angle of approach is as perpendicular as possible to the bone. Lastly, I'm careful not to over impact the anchor, which can drive the guide into the bone and unintentionally damage the bone cortex.

How have your constructs for rotator cuff repair changed with this anchor?

The main difference has been the medial side. In the past, if I was concerned about tissue quality, I would tie medial knots with the #2 eyelet sutures from the medial SwiveLock® anchors. I would either use a double-pulley technique between the medial anchors or create individual mattress sutures to serve as ripstops. With the FiberTak RC anchor, my entire construct is knotless. As mentioned above, with the knotless tensionable mechanism, I can tailor the configuration to the tear pattern and, if needed, I can enhance medial tissue fixation quickly (since I'm not tying) with a low-profile construct.

Additionally, these anchors have lowered my threshold to place a third medial anchor for large tears. Previously, I was limited by the available bone between anchors. Now, for a large tear I can place three medial 2.6 mm anchors with less footprint violation than two 4.75 mm anchors and achieve more points of fixation to potentially maximize healing potential.



FiberTak SpeedBridge Repair

References

1. Bernardoni ED, Frank RM, Veera SS, et al. Biomechanical analysis of medial-row all-suture suture anchor fixation for rotator cuff repair in a pair-matched cadaveric model. *Arthroscopy.* 2019;35(5):1370-1376. doi:10.1016/j.arthro.2019.01.023
2. McElvany MD, McGoldrick E, Gee AO, Neradilek MB, Matsen FA 3rd. Rotator cuff repair: published evidence on factors associated with repair integrity and clinical outcome. *Am J Sports Med.* 2015;43(2):491-500. doi:10.1177/0363546514529644
3. 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.* 2022;4(5):e1601-e1607. doi:10.1016/j.asmr.2022.05.012
4. Oh JH, Jeong HJ, Yang SH, et al. Pullout strength of all-suture anchors: effect of the insertion and traction angle—a biomechanical study. *Arthroscopy.* 2018;34(10):2784-2795. doi:10.1016/j.arthro.2018.04.028

A Fresh Take on Cartilage Restoration: Fresh Osteochondral Allograft Precut Cores

Eric J. Strauss, MD
New York, NY

As the market leader in cartilage restoration and preservation solutions, Arthrex provides easy-to-use products and reproducible techniques for treating a wide range of cartilage defects. Most recently, Arthrex expanded its selection of fresh precut osteochondral allograft (OCA) cores to include a 12 mm option for use with the OATS® 2.0 disposable kit, rounding out the fresh precut core portfolio that also include 10 mm and 16 mm diameters.

What benefits do fresh OCA cores provide?

For smaller lesions, fresh OCA cores are a quick and relatively inexpensive option. Immediate availability and no need for graft-matching allows you to plan cases and treat patients sooner.

What patient-selection criteria do you consider for OCA cores?

Recent experience has me using fresh OCA cores for slightly older patients (30 years of age and older) with focal osteochondral lesions that can be treated using a 10 mm, 12 mm, or 16 mm graft.

What results from your recent publication on fresh OCA cores do you find the most compelling?

Data showed that outcomes were equivalent for appropriate lesions whether the donor plug came from a hemicondyle or a fresh precut core (Table 1).[1]

Table 1

	Whole Condyle	Fresh Precut Core	*P* Value
N	26	26	-
Age	30.9 ± 9.8	31.5 ± 10.7	0.673
Gender (male/female)	16/10	16/10	>0.999
BMI	27.3 ± 6.3	27.1 ± 5.1	0.918
Lesion Location			
MFC	8 (30.8%)	7 (26.9%)	0.7651
LFC	9 (34.6%)	10 (38.5%)	0.7786
Patella	7 (26.9%)	7 (26.9%)	>0.999
Trochlea	2 (7.7%)	2 (7.7%)	>0.999
Lesion Size (mm²)	21.2 ± 4.2	19.6 ± 4.8	0.178
Follow-up (months)	33.7 ± 20.9	34.5 ± 21.1	0.905
Concomitant procedures			
Osteotomy	4 (15.4%)	5 (19.2%)	0.7204
ACLR	2 (7.7%)	2 (7.7%)	>0.999
MPFLR	3 (11.5%)	2 (7.7%)	>0.999
MR/meniscectomy	11 (42.3%)	7 (26.9%)	0.2521
MAT	3 (11.5%)	3 (11.5%)	>0.999
VAS, preop	7.4 ± 1.9	7.4 ± 1.8	<0.999
VAS, rest	1.8 ±1.8	2.5 ± 2.2	0.2423
KOOS JR	74.7 ± 16.4	69.8 ± 15.8	0.2849
Tegner Δ	1.2 ± 2.9	1.7 ± 2.1	0.4875

KOOS JR=Knee Injury and Osteoarthritis Outcome Score for Joint Replacement, Tegner Δ=change in score between preoperative and at final follow-up; VAS=Visual Analog Scale.

What are some pearls for graft sizing and implantation?

With the disposable OATS 2.0 kit, lesion preparation and implantation are easy and reproducible.

The precut OCA cores' press-fit fixation allows for excellent fit and congruity with the surrounding articular cartilage. Simply press the graft into the prepped site and limit impaction with a tamp or mallet to one or two strikes.

Adding a demineralized bone matrix (DBM), such as AlloSync™ Pure DBM, to the site before plug insertion helps promote bony integration and regrowth of the subchondral bone.[2] Use only a small amount to ensure the plug is not proud.

Soaking OCA cores in platelet-rich plasma (PRP) from the Arthrex ACP® or Angel® system has been a successful way to use the patient's own cells to improve bony incorporation.[3] The osseous section of the precut core can help absorb cells and aid in graft incorporation.[3]

What key features of the OATS 2.0 system aid in core preparation?

The completely disposable OATS 2.0 set includes depth-stop features to limit plug depth to either 8 mm or 13 mm for plugs with diameters of 6 mm, 8 mm, 10, mm, and 12 mm. This allows for precise depth-matching of the recipient site to match the desired graft length.

What advice would you give surgeons who are hesitant to implement cartilage restoration procedures into their practices?

Improved technology and innovative instrumentation have made cartilage restoration surgery easier and more reproducible than it was in the past. Both cell-based and osteochondral allograft implantation techniques can be performed easily and efficiently. Published patient outcome data shows success out to 10 years.[4] Also, precut cores provide a significant advantage as these grafts arrive promptly and do not require a size-matched condyle.

Where is there potential for enhancing the cartilage restoration and preservation algorithm?

Products like the NanoScope™ system provide minimally invasive arthroscopic imaging, creating an immense opportunity to obtain visibility of the osteochondral defect and complete a comprehensive diagnostic procedure during an office visit. This may be especially helpful when working with insurance carriers on preauthorizations. In the future, we anticipate new techniques and approaches to complement this diagnostic approach in the clinic setting.

References

1. Markus DH, Blaeser AM, Hurley ET, et al. No difference in outcomes following osteochondral allograft with fresh precut cores compared to hemi-condylar allografts. *Cartilage.* 2021;13(1_suppl):886S-893S. doi:10.1177/19476035211021911
2. Kanim LEA, Houman J, Zhao L, et al. Composition of demineralized bone matrix-based products on spinal fusion rate. Poster presented at Annual Meeting of the Orthopedic Research Society; February 4-7, 2012; San Francisco, CA.
3. Stannard JP, Oladeji LO, Cook C, et al. Effects of autogenous bone marrow aspirate concentrate on radiographic integration of femoral condylar osteochondral allografts. *Am J Sports Med.* 2017;45(12):2797-2803. doi:10.1177/2325967117S00330
4. Torrie AM, Kesler WW, Elkin J, Gallo RA. Osteochondral allograft. *Curr Rev Musculoskelet Med.* 2015;8(4):413-422. doi:10.1007/s12178-015-9298-3

AutoPose™ Adipose Harvesting System: A Clinician's Perspective

Michael R. Baria, MD
Columbus, OH

Since first using it during beta release in 2021, how has the AutoPose procedure impacted your practice?

My team and I had experience with several other available adipose processing methods. These earlier techniques were important because they made adipose available for application, but we saw a need for increased efficiency and reliability and for a closed system to further enhance safety. The AutoPose system has exceeded our expectations. The simple setup has reduced our staff's workload and the closed-system processing has improved our efficiency and reduced procedural time.

Of the three types of adipose tissues, why did you choose microfragmented adipose (microfat) from the AutoPose system?

We use the AutoPose system because its closed-system design provides optimal efficiency and safety. No syringe exchanges mean fewer opportunities for contamination, the 800 µm filter is reliable—we've never experienced a filter clog—and it retains a heterogenous population of cells.[1]

There are three main adipose processing types in the US: centrifugation, microfat, and nanofat. Centrifugation methods exchange lipoaspirate between two syringes using a Luer-Luer connection, then spin it to remove oil and cellular debris. Microfat and nanofat methods include a distinct resizing step to optimize tissue for final application that centrifugation does not. Microfat is a larger adipose product that retains whole fat cells. Nanofat is smaller and made by pushing the tissue through very small needles; while smaller, this process results in reduced cell viability.[1] Although they've been equated in the literature, nanofat is not synonymous with stromal vascular fraction (SVF). SVF should be reserved for enzymatically digested adipose with a much higher cellular concentration than nanofat.

What tips and pearls can you share for a successful case and outcome?

Refamiliarize yourself with the anatomy of the abdomen, especially the depth of the muscular layer. Examine the patient's abdomen prior to the procedure to get a sense of how deep the adipose layer is. Using ultrasound also confirms adipose layer depth and how much "working room" is available for harvest. The keys to a successful harvest are to keep the needle and cannula in the horizontal plane, use gentle movements, and monitor cannula depth with your free hand.

To increase patient comfort and provide a safe zone for harvest without risk of contact with adjacent muscle layers, you can use the AutoPose Access device to lift the adipose layer away from the musculature.

What is your tumescent fluid protocol?

We combine 250 cc sterile normal saline, 50 cc 2% lidocaine, and one ampule of epinephrine, then inject 50 cc to 60 cc of that mixture into each harvest site (usually one on each side of the abdomen).

Why do you recommend the AutoPose system over competitors?

The AutoPose system produces high-quality, microfragmented adipose of the same size, 800 µm, as other systems, but has added benefits including superior efficiency, closed-system processing, and better volume yield. While other systems lose a large amount of tissue during the processing cycles, after the infranatant has been removed, there is no tissue loss during the filtration step. This allows for a reliable and predictable final product.

Reference

1. J Magalon. Data on file (Testing performed at Laboratorie de Culture et Thérapie Cellulaire Hôpital de la Conception). Marseille, France; 2019.

Revolutionizing the Patient Experience With Nano Arthroscopy and the NanoSuite

How does Nano arthroscopy benefit surgeons and patients?

Surgeons can optimize the patient experience while enhancing care. By treating pathology directly without the traditional imaging delays, patients receive a diagnosis—and potentially treatment—the same day.

With Nano arthroscopy, 96% of patients return to normal function within 4 weeks with a 93% satisfaction score.[1,2] Furthermore, same-day surgery without the need for PACU and recovery settings gives patients an expedited experience.

How has the NanoSuite allowed surgeons to provide exceptional patient care and surgical experiences?

The traditional surgical experience, with a long and anxious day spent at the hospital, can be daunting for patients. Surgery has never been compared to a quick dental procedure or an injection, but this type of experience is now becoming possible with Nano arthroscopy and the NanoSuite.

Using a NanoSuite can save the surgeon and patient significant amounts of time in the procedure room and pre-op and recovery areas. A patient walks into the building as they would for a routine doctor visit, enters their suite, undergoes their procedure, and heads home within a matter of hours.

Additionally, involving patients in their own care and giving them options has been revolutionary. Each patient can receive customized care based on their individual needs and surgeon recommendations. Moreover, giving patients the choice between local anesthetic and general anesthesia gets them more involved in their care.

Is Nano arthroscopy expected to become more widespread over time?

With anything, adoption does not happen overnight, but patients are now the drivers of their care. Patients are informed enough to ask their doctors about certain procedures and treatments, and they seek out less invasive surgical treatments and a faster pathway to return to their normal activities. The expanded portfolio of Nano arthroscopy products gives surgeons flexibility in where and how they treat their patients.

This growth is expected to continue in tandem with surgeons' adoption of Nano arthroscopy. Always looking for safer and more effective ways to improve procedures, surgeons will understand the true value of Nano arthroscopy, which ultimately helps them provide an exceptional patient experience and positive outcomes.

Why build a NanoSuite?

A NanoSuite is the next generation of orthopedic care. These unique care spaces are a safe and welcoming environment for surgeons and staff to give patients the answers they are seeking and, potentially, same-day treatment. Instead of investing in a traditional operating room, a NanoSuite is equipped with the latest Nano, resection, and biologic devices and products with a focus on the essentials needed to safely perform diagnostic and surgical Nano arthroscopy procedures.

How do you build a NanoSuite?

Arthrex can assist facilities in better understanding their site-of-care space and provide customized quote packages for easy deployment.

For questions regarding your facility's space and coding requirements, please reach out to AmyVanSchoor@arthrex.com, Manager of Provider and Patient Care.

References

1. Murawski CD, Kennedy JG. Anteromedial impingement in the ankle joint: outcomes following arthroscopy. *Am J Sports Med*. 2010;38(10):2017-2024. doi:10.1177/0363546510369335
2. Colasanti CA, Mercer NP, Garcia JV, Kerkhoffs GMMJ, Kennedy JG. In-office needle arthroscopy for the treatment of anterior ankle impingement yields high patient satisfaction with high rates of return to work and sport. *Arthroscopy*. 2021;S0749-8063(21)00848-3. doi:10.1016/j.arthro.2021.09.016

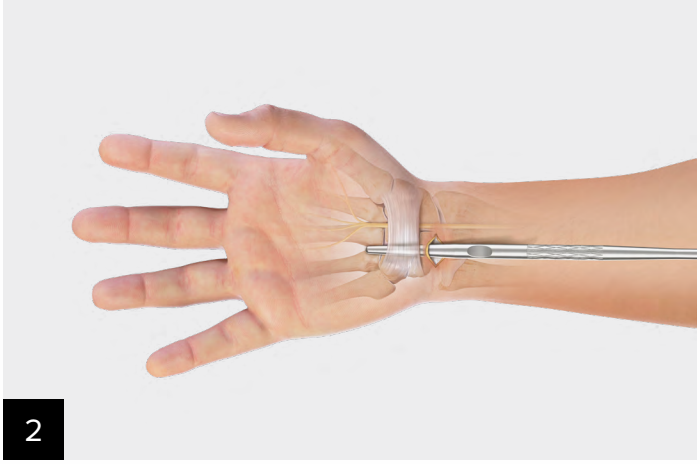
IN THE Loop...

NanoScopic™ Carpal Tunnel Release System

The ergonomic, disposable NanoScopic carpal tunnel release system combines the Centerline™ system with the NanoNeedle Scope. The straightforward, single-handed pull blade technique allows for a quick, exact procedure, maximizing comfort and enhancing feel and function. Traditional carpal tunnel surgery requires significant recovery time. Clinical results show endoscopic treatment is safe[1] and has benefits including improved postoperative morbidity and up to a 46% faster return to work and activity.[2]

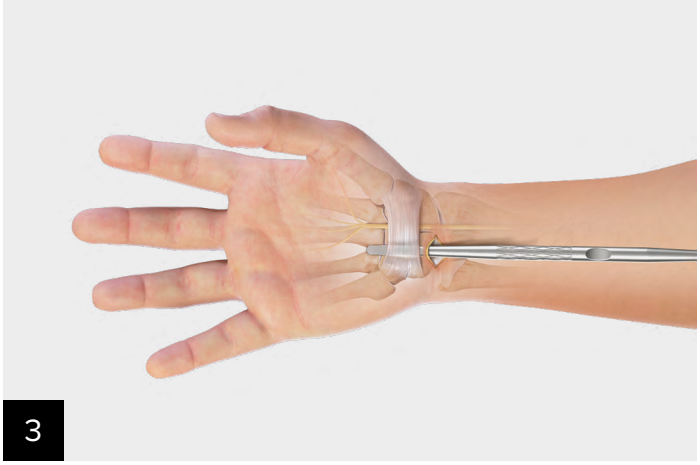
1

Position the patient supine with the arm abducted on a hand table and the wrist extended 15° to 20°. Place a 2 cm to 3 cm surgical incision transversely in one of the wrist flexion creases (usually the proximal) between the flexor carpi ulnaris and the palmaris longus.



2

Dilate the carpal tunnel with the included dilator by aiming them at the base of the ring finger, holding the wrist in slight extension. Gently pass the dilator distally down the ulnar side of the tunnel, hugging the hook of the hamate, and advance distally until the tip is past the carpal tunnel.

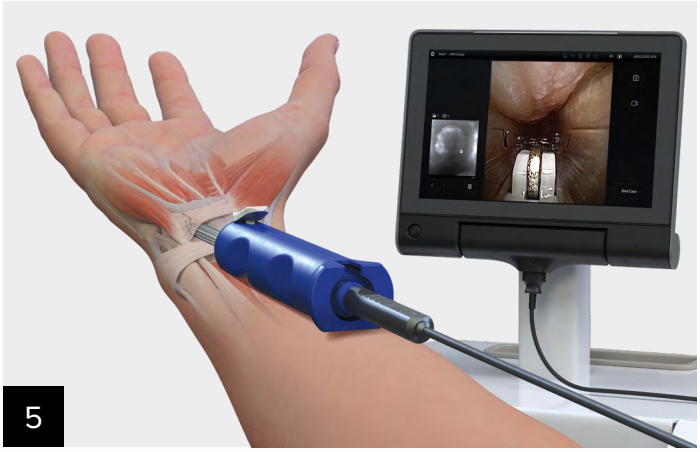


3

Dissect adherent synovium from the underside of the transverse carpal ligament (TCL) with a small synovial elevator. Follow the same path as the dilator and scrape the underside of the TCL. You will feel a noticeable rough, washboard-like effect.

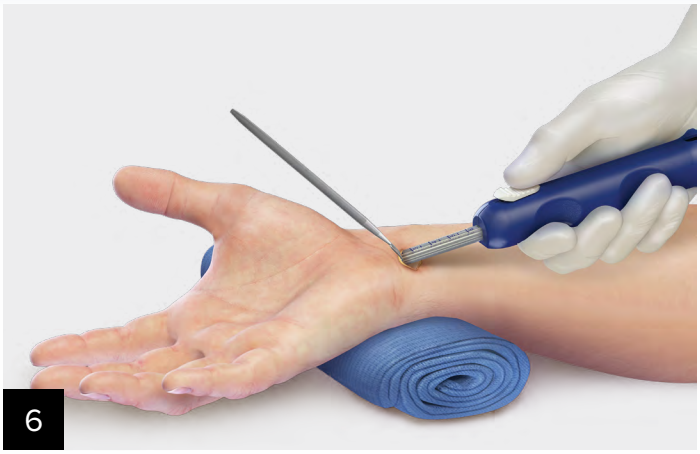
4

Insert the NanoNeedle Scope into the Centerline disposable instrument. Turn slightly until the NanoNeedle Scope clicks into place.



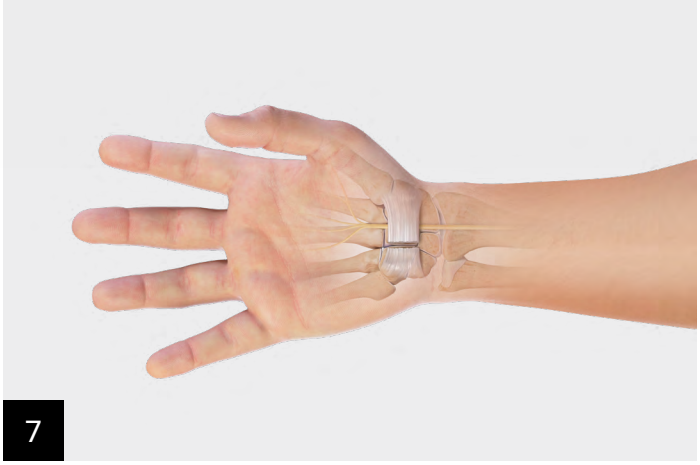
5

Insert the NanoScopic™ system into the carpal tunnel with the viewing window snugly against the deep side of the ligament. Aim at the base of the ring finger and advance the instrument distally, hugging the hook of the hamate to ensure an ulnar course.



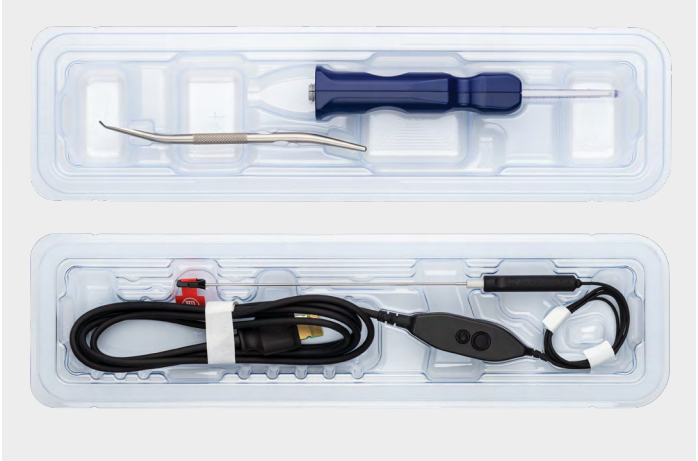
6

Confirm a clear path from the distal to the proximal end of the TCL. Deploy the knife distally and divide the TCL while withdrawing the device along the established path.



7

Reinsert the device to confirm complete division of the TCL and remove the NanoScopic system to finish the procedure.



NanoScopic release system kit contents

The NanoScopic system is expected to launch in May 2023.

References

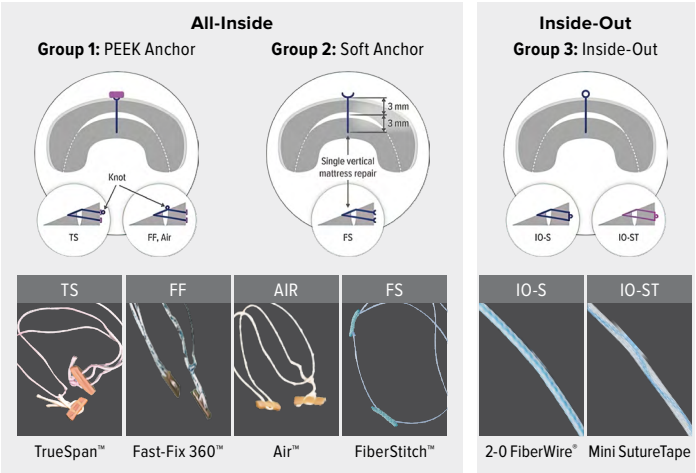
1. Agee JM, Peimer CA, Pyrek JD, Walsh WE. Endoscopic carpal tunnel release: a prospective study of complications and surgical experience. *J Hand Surg Am.* 1995;20(2):165-172. doi:10.1016/S0363-5023(05)80001-2
2. Agee JM, McCarroll HR Jr, Tortosa RD, Berry DA, Szabo RM, Peimer CA. Endoscopic release of the carpal tunnel: a randomized prospective multicenter study. *J Hand Surg Am.* 1992;17(6):987-995. doi:10.1016/s0363-5023(09)91044-9

Recent *AJSM* Biomechanical Study Demonstrates FiberStitch™ Implant Superiority for All-Inside Meniscal Repair

AJSM recently published the outcomes of a biomechanical study comparing the FiberStitch implant to other all-inside meniscal-repair implants and the gold standard inside-out repair. Lead authors include Patrick A. Smith, MD; Aaron J. Krych, MD; and Robert LaPrade, MD, from the US, and Mirco Herbort, MD, from Germany.

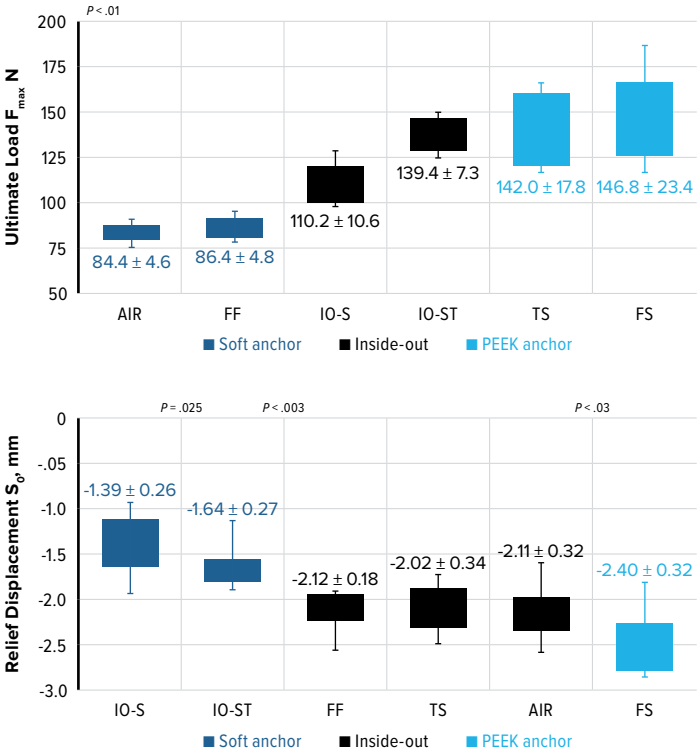
The study found the FiberStitch implant for all-inside meniscal repair was superior to the Smith and Nephew Fast-Fix™ 360, Stryker Air, Mitek TrueSpan™, and inside-out meniscus repairs.[1] Longitudinal bucket-handle tears were created in 60 human cadaveric menisci and repaired with a single stitch. The samples were randomly assigned to 4 all-inside groups (TrueSpan, Fast-Fix 360, Air, and FiberStitch implants) and 2 inside-out groups (2-0 FiberWire® suture and 0.9 mm SutureTape).

60 Human Menisci — Vertical Longitudinal Tear — Randomization



The residual load after repair tensioning at 50 N and relief displacement were measured along with cyclic loading between 2 N and 20 N over 500 cycles. Cyclic stiffness, gap formation, and final peak elongation were measured in addition to ultimate load and stiffness during pull to failure.

The results demonstrated that the FiberStitch implant outperformed all-inside devices and both inside-out repair techniques while maintaining significantly higher primary fixation strength and relief displacement.[1] Final gap formation of the FiberStitch implant was significantly smaller than others.[1]



Reference

1. Bachmaier S, Krych AJ, Smith PA, et al. Primary fixation and cyclic performance of single-stitch all-inside and inside-out meniscal devices for repairing vertical longitudinal meniscal tears. *Am J Sports Med.* 2022;50(10):2705-2713. doi:10.1177/03635465221107086

arthrex.com

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.

Arthrex's Corporate Headquarters is located in Naples, Florida. Additional locations include a global division in Munich, Germany as well as several subsidiaries and distribution centers throughout the world.