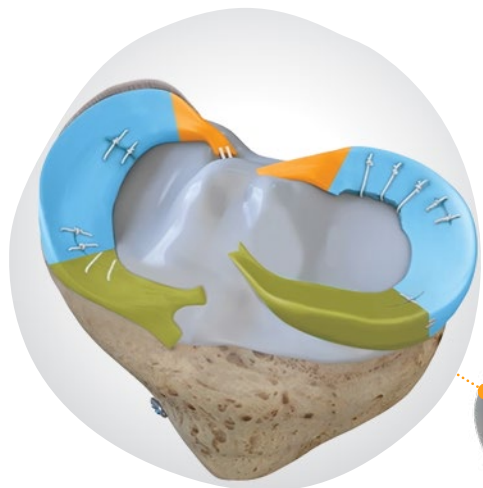


+ Knee Repair

Comprehensive portfolio, techniques
and evidence

Smith+Nephew



Comprehensive knee repair solutions

With our All Tears, All Repairs Meniscal Repair Portfolio and Reimagine Reconstruction Ligament Portfolio, Smith+Nephew offers a full range of knee repair and reconstruction solutions to fit your patients' needs.

Contents

Knee technique video library

- Meniscal repair
- Ligament technique: ACL reconstruction
- Ligament technique: ACL repair
- Ligament: Complex knee ligament

Meniscal repair solutions

- Tear types
- Product portfolio
- Meniscal repair evidence


Ligament solutions

- ACL solutions by graft type
- Product portfolio





























Ordering information

 Click on a section to jump to that page

 To return to this page, click the icon in the bottom right corner







 To view the ordering information, click this icon

✦ Select a technique or tear to learn more

<p>Radial</p>  <p>All-Inside Capsular Fixation Dr. Jorge Chahla </p> <p>All-Inside All-Suture Dr. Chris Dougherty </p>	<p>Vertical/Longitudinal</p>  <p>All-Inside Anterior Capsular Fixation Dr. David Flanigan </p> <p>All-Inside Posterior Capsular Fixation Dr. Vehniah Tjong </p>	<p>Horizontal</p>  <p>All-Inside All-Suture Dr. Seth Sherman </p> <p>All-Inside + Outside-In All-Suture Dr. David Flanigan  </p>	<p>Ramp</p>  <p>All-Inside Capsular Fixation Dr. Jorge Chahla </p>
<p>Root</p>  <p>Double Tunnel Suture-Button Dr. Robert LaPrade </p> <p>Single Tunnel Suture-Button Dr. Geoffrey Van Thiel </p> <p>Single Tunnel Suture-Button Dr. Justin Saliman </p>	<p>Complex</p>  <p>All-Inside All-Suture Dr. Seth Sherman </p> <p>All-Inside Dr. Scott Faucett  </p>	<p>Meniscal Deficient</p>  <p>MAT: Bone Plug Graft Prep Dr. Scott Faucett </p> <p>MAT: Bone Plug Technique Dr. Scott Faucett </p>	<p> FAST-FIX® FLEX Meniscal Repair System</p> <p> FAST-FIX 360 Meniscal Repair System</p> <p> FIRSTPASS® MINI Family of Suture Passers</p> <p> MENISCAL STITCHER Repair System</p> <p> NOVOSTITCH® PRO Meniscal Repair System</p> <p>MAT: Meniscal Allograft Transplant</p>

✦ Select a technique to learn more

ACL Reconstruction

	Graft Harvest	Graft Preparation	Reconstruction Technique	Animation
UltraTRAC[®] QUAD Dr. Cassandra Lee <i>Soft tissue quadriceps tendon</i> 	QUADTRAC [®] QT harvest	Soft tissue quadriceps prep	UltraTRAC QUAD technique	UltraTRAC QUAD animation
UltraSTAR Dr. Mark Bowen <i>Quadrupled semitendinosus</i> 	Semitendinosus harvest	Quadruple looped, single tendon prep	UltraSTAR technique	UltraSTAR animation
UltraSURE Dr. Vehniah Tjong <i>Semitendinosus & gracilis</i> 	Semitendinosus & gracilis harvest	Semitendinosus & gracilis prep	UltraSURE technique	UltraSURE animation
All-Inside <i>Quadrupled semitendinosus</i> 	Semitendinosus harvest with Dr. Mark Bowen	Double ULTRABUTTON with Dr. Brandon Bryant	All-inside technique with Dr. Brandon Bryant	All-inside animation
REGENESORB[®] BTB Dr. Jorge Chahla <i>Bone patellar tendon bone</i> 	Bone tendon bone harvest	Bone tendon bone prep	REGENESORB BTB technique	REGENESORB BTB animation
REGENESORB QT-B Dr. Geoff Van Thiel <i>Quadriceps tendon with bone block</i> 	Quadriceps tendon with bone harvest	Quadriceps tendon with bone graft prep	REGENESORB QT-B technique	

ACL Repair

LIGABRACE[®] Dr. Jan Vonhoegen <i>No graft needed</i> 	Why ACL repair?	LIGABRACE ACL Repair technique	LIGABRACE ACL Repair animation
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✦ Select a technique to learn more

Complex Knee Ligament

	Graft Preparation	Reconstruction/Repair Technique
PCL Single Bundle Dr. Judd Allen <i>Peroneus longus allograft</i>	PCL with ENDOBUTTON [®] CL ULTRA Fixation Device	Single bundle PCL Reconstruction Technique
PCL Double Bundle Dr. Justin Newman <i>Peroneus longus & posterior tibialis allograft</i>	PCL with double ULTRABUTTON [®] Adjustable Fixation Device	Double bundle PCL Reconstruction Technique
MCL Repair Dr. Vehniah Tjong <i>No graft needed</i>		MCL Repair Technique
MCL Reconstruction Dr. Jorge Chahla <i>Semitendinosus & gracilis autograft</i>		MCL Reconstruction Technique
LET All-suture Dr. Jorge Chahla <i>No graft needed</i>		LET All-suture Technique
REGENESORB[®] LET Dr. Geoff Van Thiel <i>No graft needed</i>		REGENESORB LET Technique
PLC: LaPrade Technique Dr. Scott Faucett <i>2x semitendinosus allograft (200mm+)</i>		LaPrade PLC Reconstruction Technique
PMC Reconstruction Dr. Ryan Aukerman <i>2x semitendinosus allograft (160mm+)</i>	PMC with ULTRABUTTON [®] Adjustable Fixation Device	Posteromedial Corner Reconstruction Technique

+ All tears, all repairs

Meniscal repair solutions

The All Tears, All Repairs Portfolio from Smith+Nephew provides surgeons with the tools and techniques to repair any meniscal tear.

[Tear types](#)

[Product portfolio](#)

[Meniscal repair evidence](#)

[Ordering information](#)

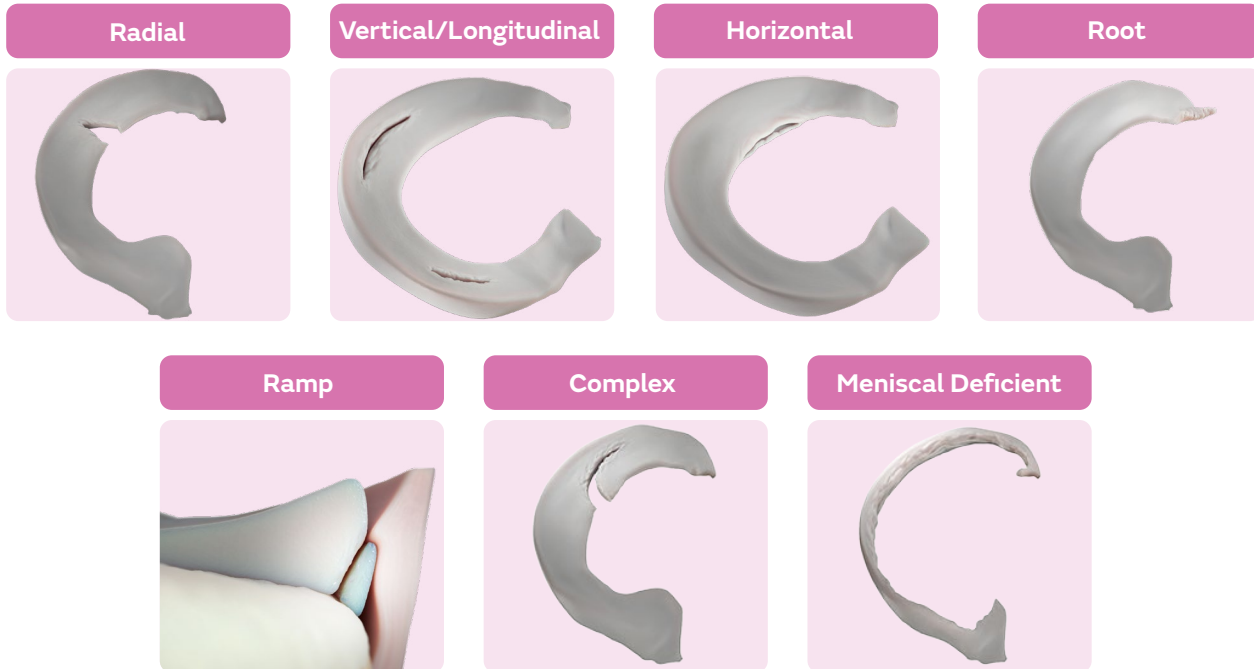
[Meniscal repair video library](#)

[✦ Select a section to learn more](#)

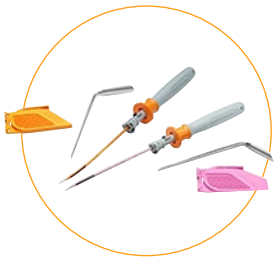


Meniscal tear types

✦ Select a tear type to learn more



✦ Select a product to learn more



FAST-FIX[◇] FLEX
Meniscal Repair System



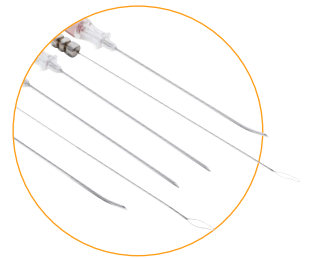
NOVOSTITCH[◇] PRO
Meniscal Repair System



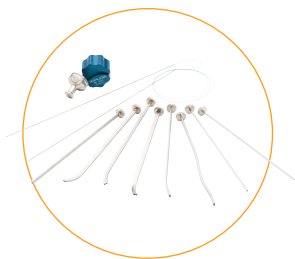
MENISCAL ROOT
Repair System



FIRSTPASS[◇] MINI
Family of Suture Passers



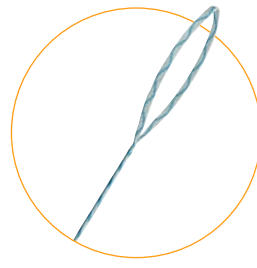
MENISCUS MENDER II
Repair System



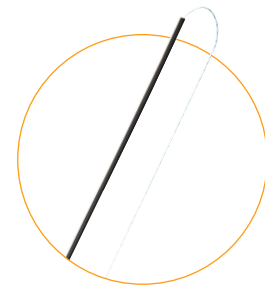
MENISCAL STITCHER
Repair System



NOVOCUT[◇]
Suture Manager



ULTRALOOP[◇]
Suture Loop



ULTRAGRAB[◇]
Suture Manager

Radial tear

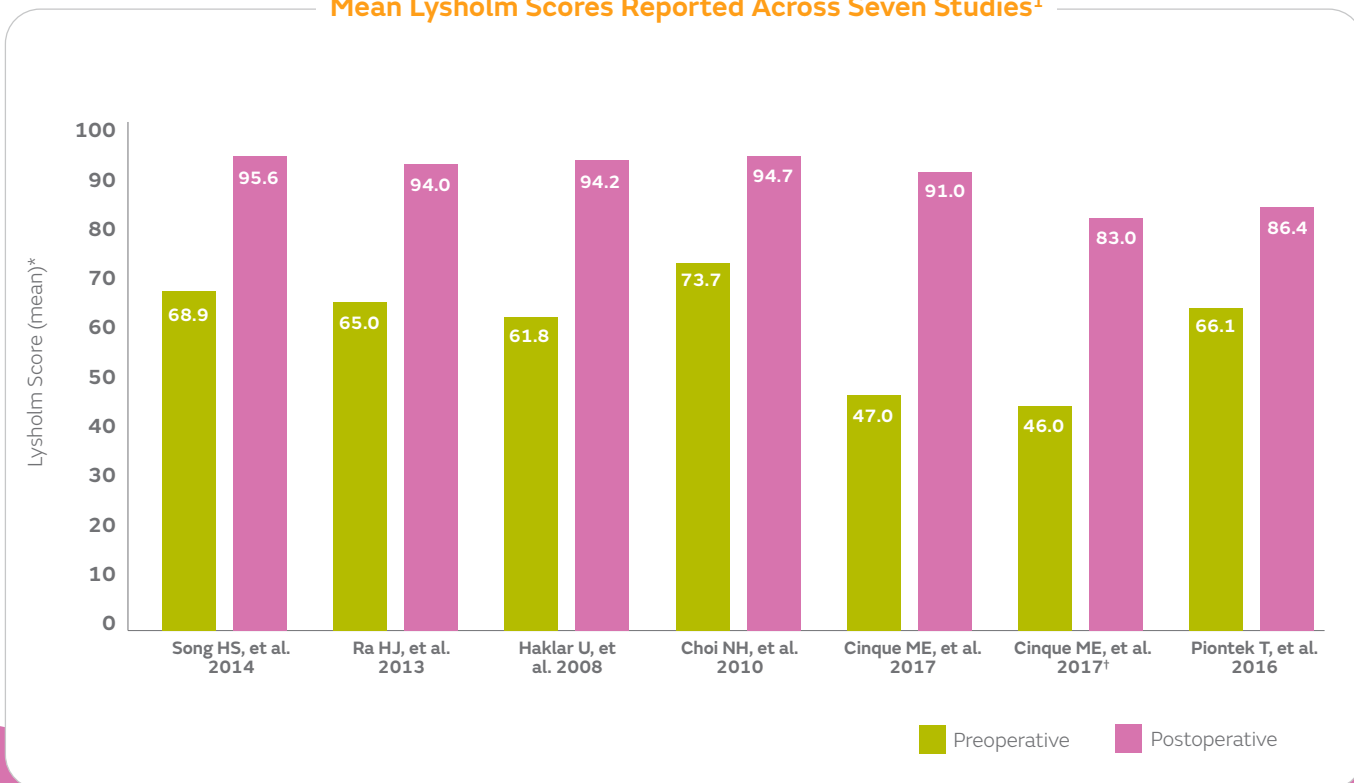


Why repair a radial tear?

Radial tear repair has shown positive clinical outcomes¹

- Lysholm scores postoperative improvements
- Up to 100% of patients from six studies achieved “complete healing” (range: 36–100%)
- Radial meniscal repair demonstrated a low overall rate of failure (range: 0–13%)

Mean Lysholm Scores Reported Across Seven Studies¹



*Increasing scoring scale for knee outcomes, with higher scores representing better outcomes. | † Vertical repair





Radial tear

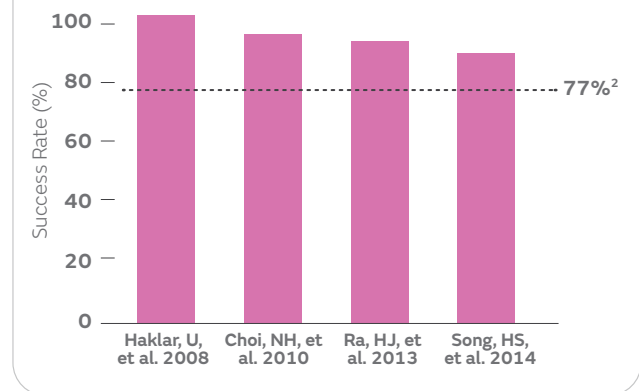
Robust radial repair is possible

- 71-100% radial repair clinical success rates from follow-up results of systematic reviews, similar to other tear patterns²
- Outcomes of full-thickness radial repairs are comparable to bucket handle repairs³
- Patient-reported outcomes of radial meniscus repair with and without ACL reconstruction are encouraging, with improved PROs reported at final follow-up when compared with preoperative scores based on a systematic literature review of twelve studies¹

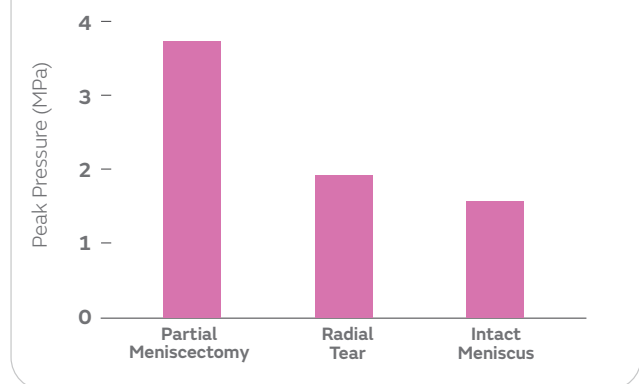
Meniscectomy of radial tears increases contact pressure

- Radial tears increase contact pressures within the knee,⁵ and full-thickness radial tears render the meniscus non-functional³
- Meniscectomy of radial tears increases contact pressures by more than 100% over baseline⁶

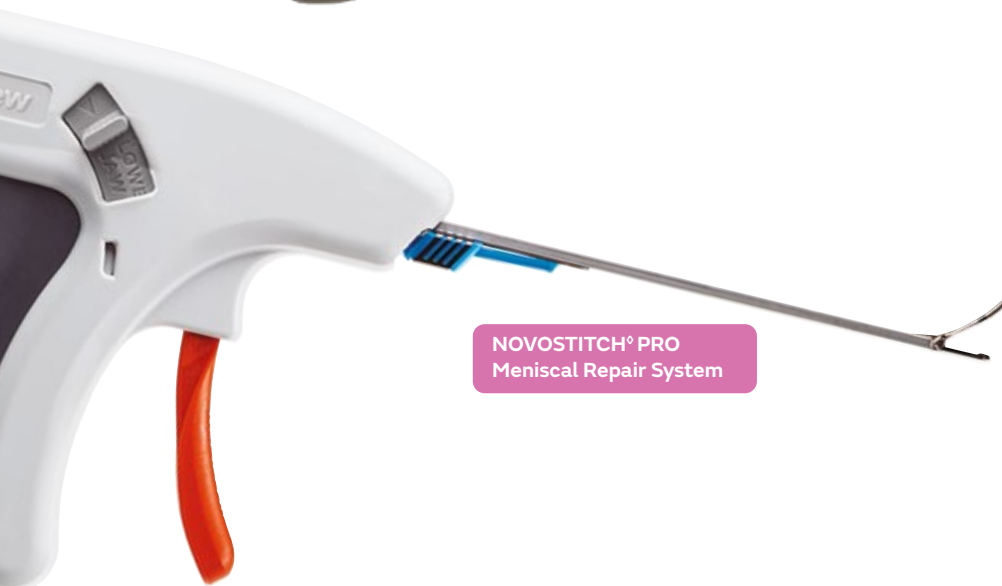
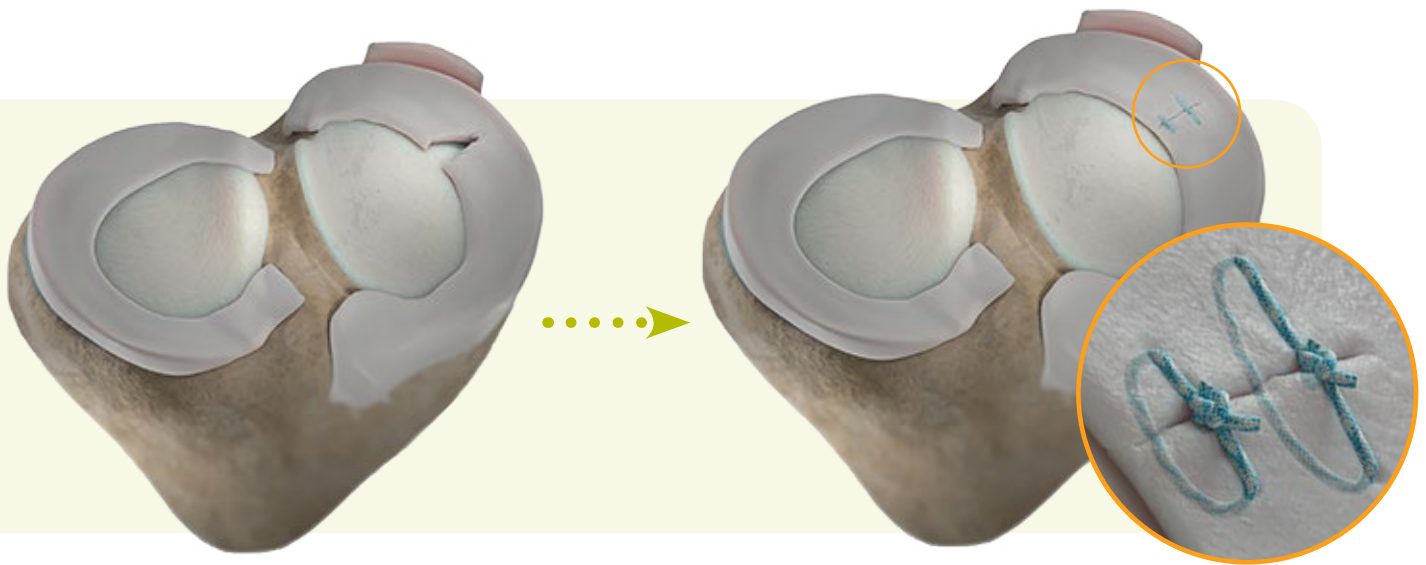
Success of Radial Repairs⁴



Contact Pressures of Radial Tears⁶



Radial tear



NOVOSTITCH® PRO
Meniscal Repair System



FAST-FIX® FLEX
Meniscal Repair System

Watch

- Radial Repair with NOVOSTITCH PRO System featuring an All-Inside, All-Suture Technique with Dr. Chris Dougherty
- Radial Repair with FAST-FIX FLEX System featuring an All-Inside Technique with Dr. Jorge Chahla

Vertical/ Longitudinal tear



Why repair a vertical/longitudinal tear?

Results for longitudinal repairs are good, regardless of whether the repair is done isolated or with an ACL reconstruction⁷

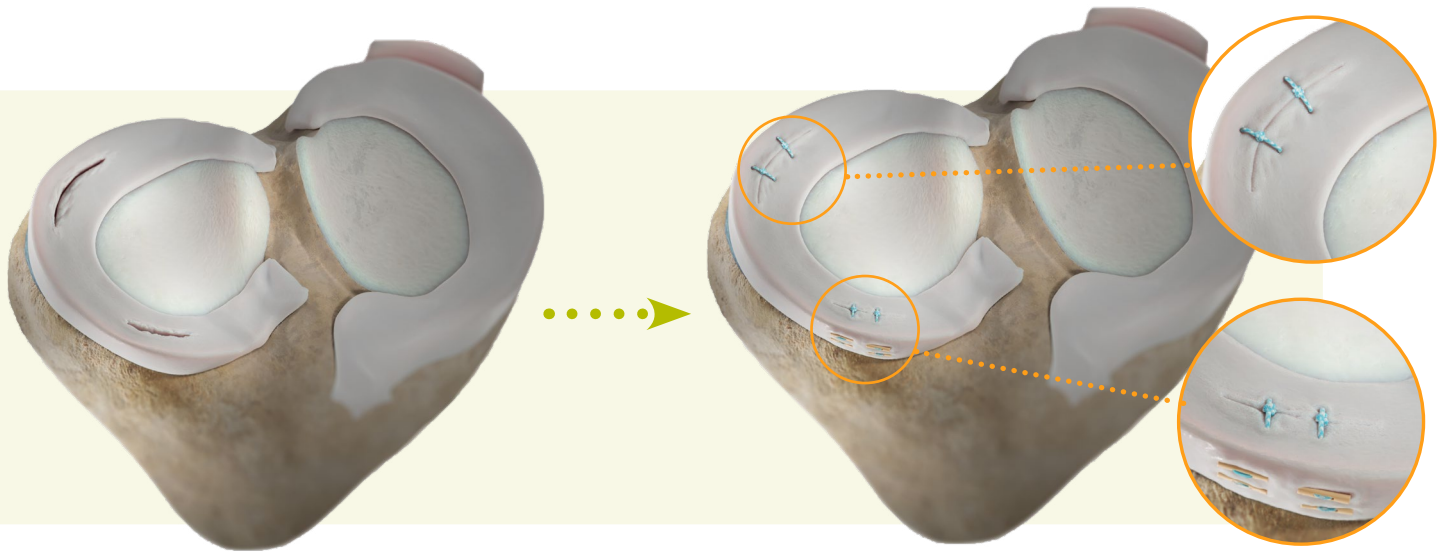
- Return to sport and muscular recovery is comparable⁷
- Functional results are long-lasting, as demonstrated from 10-year follow-up studies⁷
- Repair can provide cartilage protection⁷
- Failure rates are acceptable⁷

Vertical tear patterns within the red-red zone are generally amenable to repair.⁸

Meniscectomy of a bucket-handle meniscal tear can result in total or subtotal loss of meniscal function.⁹

These types of tears, when located in the red-red and red-white zones, can also be repaired with compelling healing rates.⁹

Vertical/ Longitudinal tear



FAST-FIX[®] FLEX
Meniscal Repair System



Watch

- Vertical anterior repair with FAST-FIX FLEX System featuring an All-Inside Technique with Dr. David Flanigan
- Vertical posterior repair with FAST-FIX FLEX System featuring an All-Inside Technique with Dr. Vehniah Tjong

Horizontal tear



Why repair a horizontal tear?

Horizontal Cleavage Tear (HCT) repair has shown positive clinical outcomes¹⁰

- Studies included in a systematic literature review demonstrated that HCT repair leads to favorable clinical and patient outcomes, including postoperative improvements in Lysholm and IKDC scores

93%
returned to sport

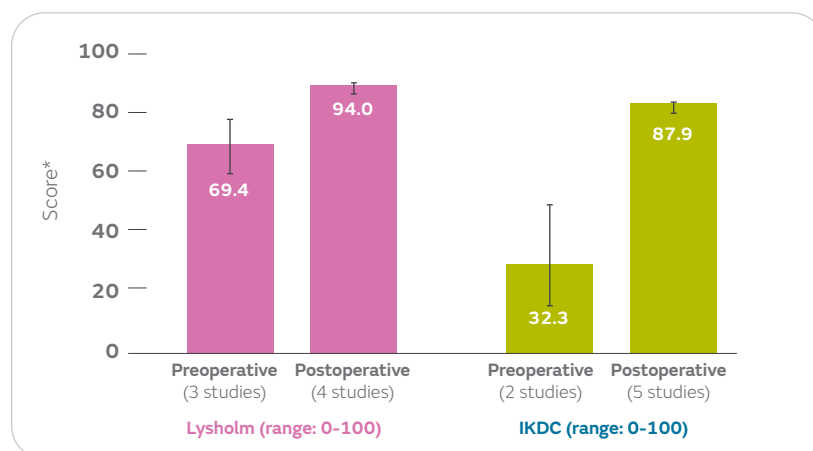
(67/72 patients from 8 studies¹⁰)

80%
satisfied

(80/100 patients[†] expressed satisfaction with their overall result¹⁰)

11.4%
reoperation rate

(Only 32/281 knees from 19 studies required a reoperation¹⁰)



[†]Number of studies not reported. Range of means reported as 72%-84%.

*Weighted mean scores based on a meta-analysis; error bars represent 95% confidence intervals of each calculated mean.

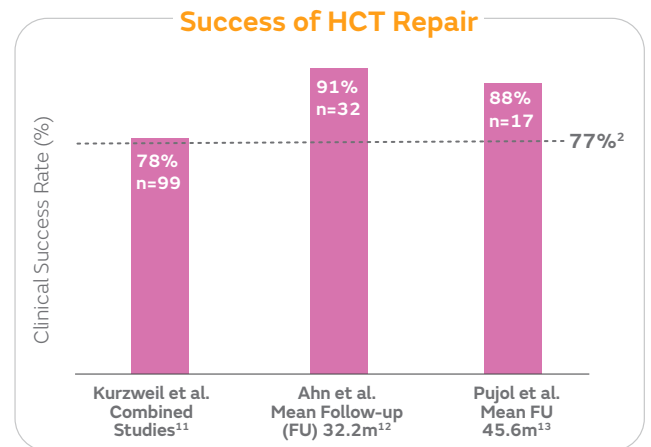




Horizontal tear

Successful HCT repair is possible

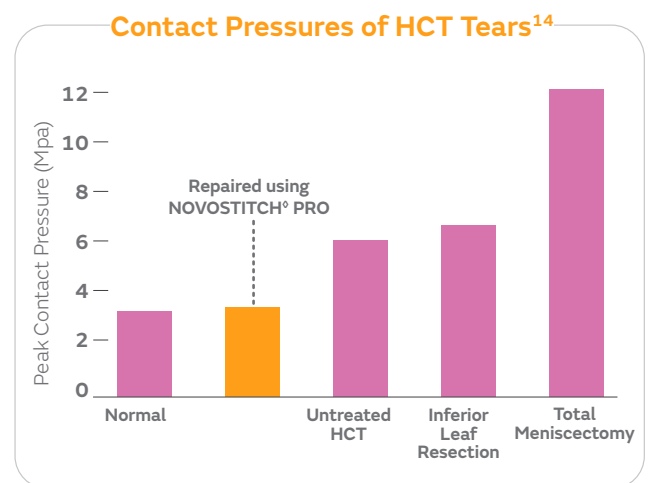
- 78% clinical success rate of HCT repair upon systematic review¹¹, similar to other tear types²
- 91% success rate in broad age range of patients (14-56) confirmed with second look follow-up¹²
- 91% success rate with MRI follow-up¹³



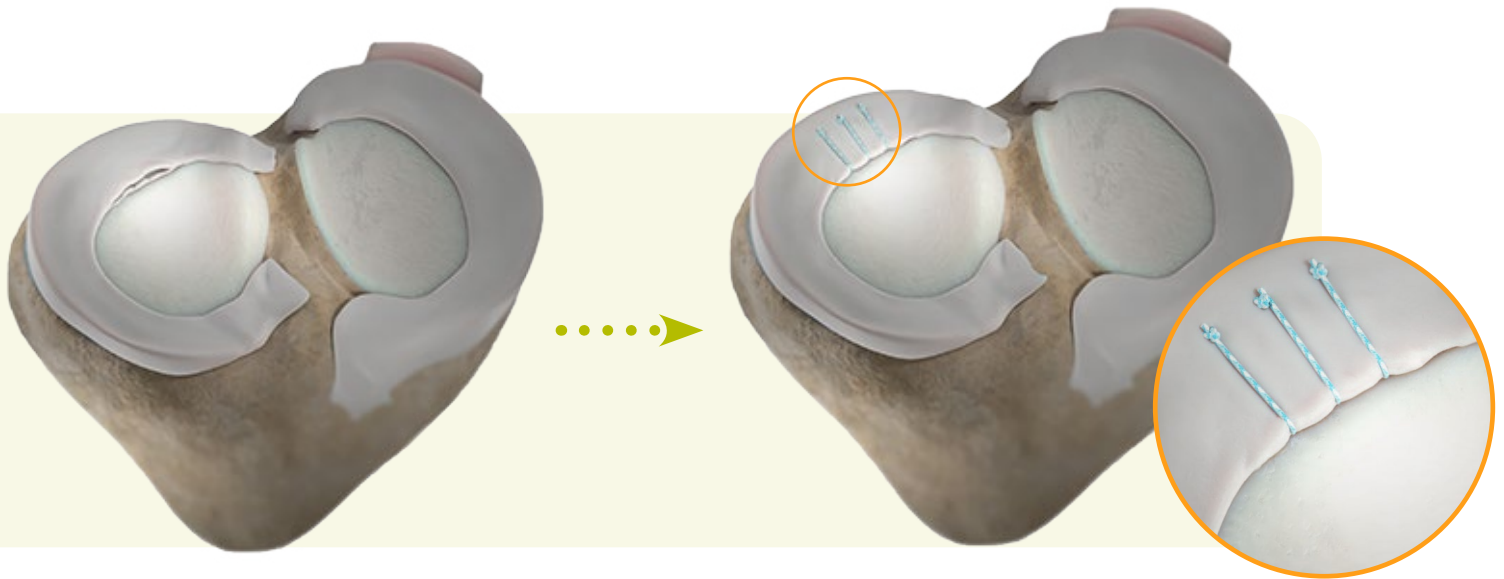
Note: Clinical success rates were calculated for different techniques including: inside-out (IO), IO with bioabsorbable and Biofix arrow anchors and open procedures. MRI follow-up success rate based on independent surgeon interpretations.

If left untreated, an HCT can increase the contact pressures in the knee¹⁴

- Based on in vitro data, pressure from an untreated tear increases contact pressures by 70%
- Studies have shown unfavorable results in leaflet resection improving contact pressures¹⁴
- HCT repair normalizes contact pressures



Horizontal tear



NOVOSTITCH[®] PRO
Meniscal Repair System

Watch

- Horizontal Repair with NOVOSTITCH PRO System featuring an All-Inside, All-Suture Technique with Dr. Seth Sherman
- Horizontal Repair with NOVOSTITCH PRO System featuring an All-Inside and Outside-In, All-Suture Technique with Dr. David Flanigan

Root tear

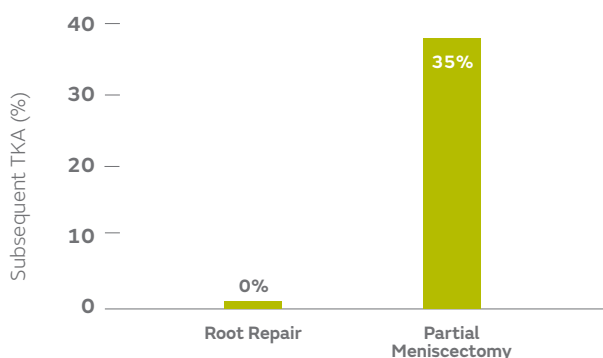


Why repair a root tear?

Meniscectomy for root tears increases OA

- Meniscal root tears, when left untreated, have been reported to result in altered joint biomechanics and accelerated articular cartilage degeneration¹⁵
- Meniscectomy to treat meniscal root avulsions leads to significant joint space narrowing within 5 years¹⁶
- Medial meniscus posterior root repair results in significantly lower rates of radiographic OA progression and conversion to TKA at >60-month follow-up¹⁷
- Repair of medial meniscus root tears, as compared with total meniscectomy and nonsurgical treatment, leads to less osteoarthritis and is a cost-saving intervention¹⁸
- A meta-analysis reported medial meniscus posterior root (MMPR) repair led to the lowest rates of OA progression (53%) followed by nonoperative management (95%) and meniscectomy (99%) when comparing 10-year outcomes. That same analysis found patients that had medial MMPR repair were found to progress to a TKA at a lower rate (34%) within 10 years as compared to meniscectomy (52%) and non-operative management (46%).^{18, 19}
- Another meta-analysis identified that MMPR tears managed with surgical repair, compared with meniscectomy, resulted in less cartilage degeneration and a 77% reduction in TKA risk.²⁰
- A meta-analysis of over 24 studies reported that MMPR repair resulted in improvements in Lysholm, HSS, IKDC, KOOS, and VAS scores¹⁹

TKA After Root Tear Treatment²¹

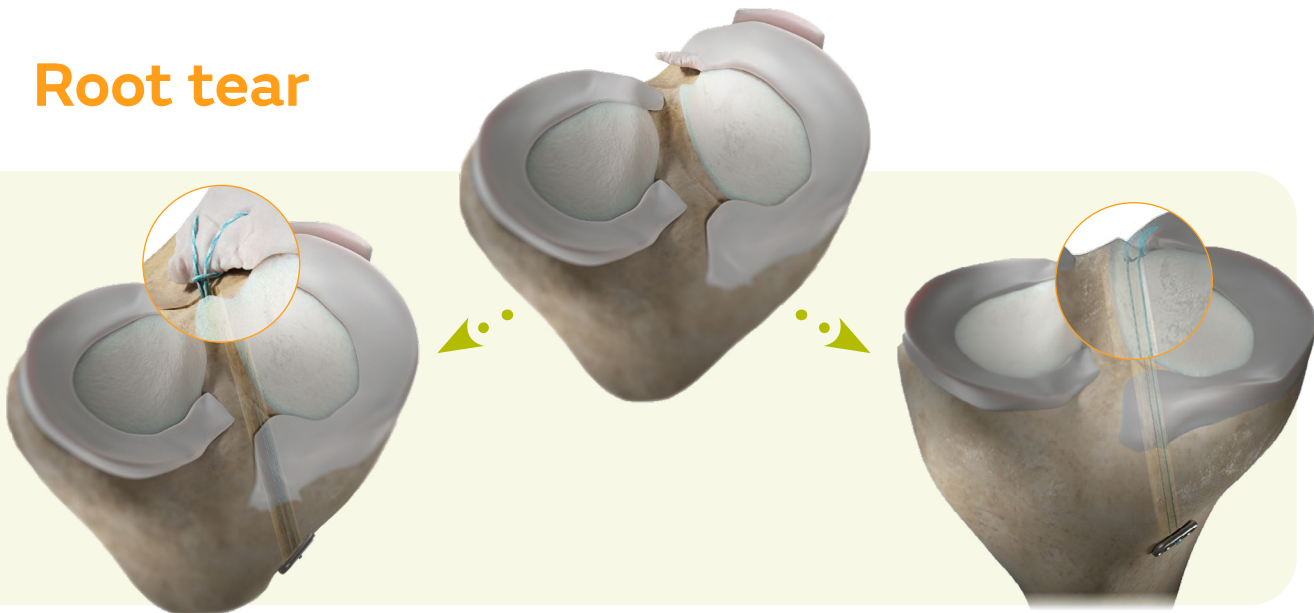


35%

35% of meniscectomy patients in root tear studies advanced to TKA **within 5 years**²¹



Root tear

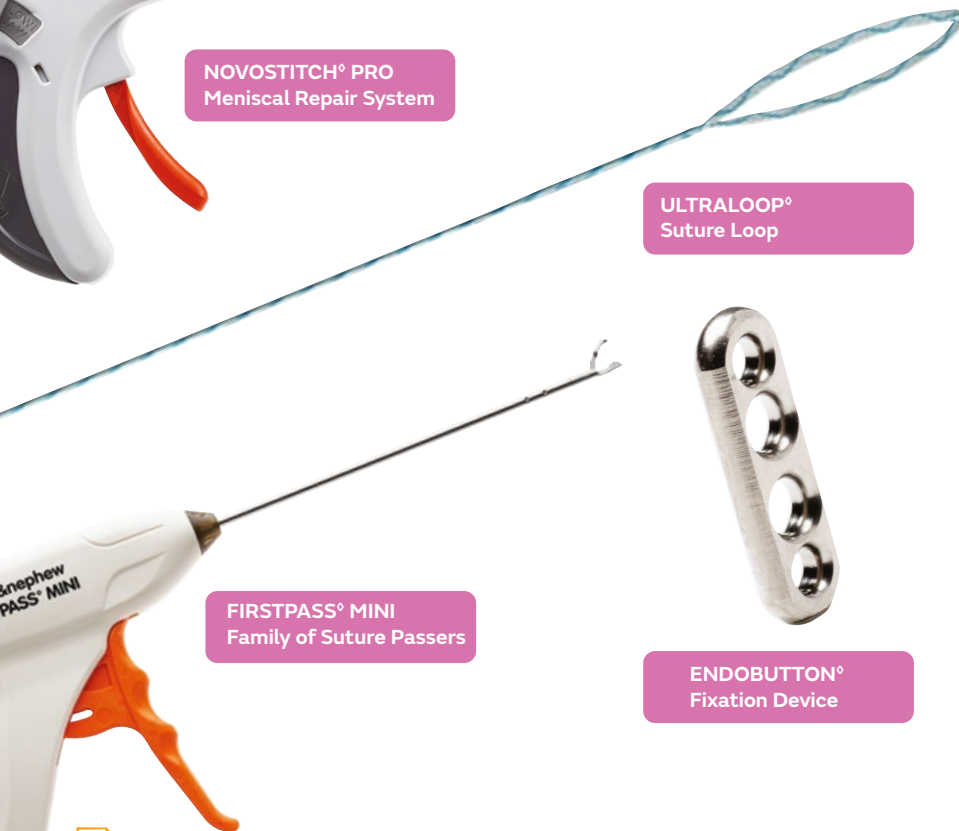


Single-tunnel root repair with NOVOSTITCH PRO System featuring a double modified locking loop technique

Single-tunnel root repair with FIRSTPASS MINI Suture Passer and ULTRALOOP® Suture Loop featuring a luggage tag technique



NOVOSTITCH® PRO Meniscal Repair System



ULTRALOOP® Suture Loop



FIRSTPASS® MINI Family of Suture Passers



ENDOBUTTON® Fixation Device



Watch

- Root Repair with FIRSTPASS MINI Suture Passer featuring a Double-Tunnel Technique with Dr. Robert LaPrade
- Root Repair with NOVOSTITCH PRO System featuring a Single-Tunnel Technique with Dr. Geoffrey Van Thiel
- Root Repair with NOVOSTITCH PRO System featuring a Single-Tunnel Technique with Dr. Justin Saliman

Root tear

Case Checklist: Double-Tunnel Button Fixation

Smith+Nephew has many options available to support root repair cases depending on surgeon preferences and patient needs, including both single-tunnel and double-tunnel approaches.

Double-Tunnel Root Repair with NOVOSTITCH[®] PRO Meniscal Repair System featuring a Double Modified Locking Loop Technique fixed with ENDOBUTTON[®] Fixation Device

Qty	Reference	Description
Capital		
1	7193J001	Meniscal Root Repair System
System includes		
1	71935072	Meniscal Root Repair Angled Bullet, 2.8mm
1	71935073	Meniscal Root Repair Drill Guide Handle
1	71935074	Aimer Guide Curve, Left
1	71935075	Aimer Guide Curve, Right
1	71935076	Meniscal Root Repair Offset Guide
1	71935071	Open Curette
Consumables		
1	CTX-A004	NOVOSTITCH PRO, Meniscal Repair System (0)
2	CTX-R002	NOVOSTITCH Cartridge (0)
1	013186	ENDOBUTTON Fixation Device 4.0mm x 12mm
1	71935360	Meniscal Root Repair Instrument Pack (1 monofilament, 2 sheaths and 1 drill)
1	72202825	Spinal Needle, 17g, 6" long, box of 1
1	72290037	FLOW 50 [°] COBLATION [®] Wand
1	72205292	DYONICS [®] PLATINUM 4.0 FLYER [®] Blade

Root tear

Case Checklist: Single-Tunnel Suture Anchor Fixation

Smith+Nephew has many options available to support root repair cases depending on surgeon preferences and patient needs, including both single-tunnel and double-tunnel approaches.

Single Tunnel Root Repair with FIRSTPASS[®] MINI Suture Passer featuring a Double-ULTRALOOP[®] Suture Loop Technique

Qty	Reference	Description
Capital		
1	7193J001	Meniscal Root Repair System
System includes		
1	71935072	Meniscal Root Repair Angled Bullet, 2.8mm
1	71935073	Meniscal Root Repair Drill Guide Handle
1	71935074	Aimer Guide Curve, Left
1	71935075	Aimer Guide Curve, Right
1	71935076	Meniscal Root Repair Offset Guide
1	71935071	Open Curette
Consumables		
1	72290128	FIRSTPASS MINI Suture Passer, straight
1	72205445*	ULTRALOOP Suture Loop, cobraid
1	72205446*	ULTRALOOP Suture Loop, blue
1	013186	ENDOBUTTON [®] Fixation Device, 4.0mm x 12mm
1	72202116	Spade Tip Drill, 3.5mm
1	71935360*	Meniscal Root Repair Instrument Pack (1 monofilament, 2 sheaths and 1 drill)
1	72202825	Spinal Needle, 17g, 6" long, box of 1
1	72290037	FLOW 50 [°] COBLATION [®] Wand
1	72205292	DYONICS [®] PLATINUM 4.0 FLYER [®] Blade

*If ULTRABRAID[®] Suture is preferred, order 71935070 for the Meniscal Root Repair Pack with ULTRABRAID Suture. If ULTRATAPE[®] Suture is preferred, order 71935068 for the Meniscal Root Repair Pack with ULTRATAPE Suture.

Ramp tear



Why repair a ramp tear?

Repairing a ramp lesion can lead to a significant improvement in subjective knee scores, regardless of specific fixation technique²²

If left untreated, ramp lesions can cause

- Anteroposterior instability²³
- Injury to the medial meniscus²⁴
- Early failure of an ACL reconstruction²³
- Meniscal repair failure²³
- Accelerated degeneration of cartilage composition²⁵
- Early osteoarthritis²⁴

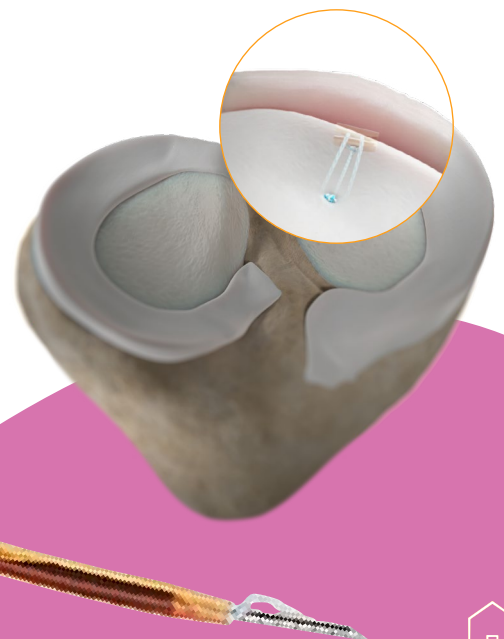


Watch

- Ramp Repair with FAST-FIX FLEX System featuring an All-Inside Technique with Dr. Jorge Chahla



FAST-FIX[®] FLEX
Meniscal Repair System



Complex tear



Why repair a complex tear?

Meniscectomy has been shown to increase intra-articular pressure and to result in degeneration of the articular cartilage over the long term.^{26,27}

The role of menisci and their impact on knee biomechanics has become more evident and resulted in a clear trend towards a more aggressive approach to meniscal repair in the last 5 years.

Surgeons who perform meniscal repair in at least **50%** of their patients increased their rate of repair from **14.3** to **27.9%**.²⁸



Complex tear



NOVOSTITCH[®] PRO
Meniscal Repair System

FAST-FIX[®] FLEX
Meniscal Repair System

Watch

- Undersurface All-Inside, Capsular Fixation Repair featuring Dr. Jorge Chahla
- Complex Repair with NOVOSTITCH PRO System featuring an All-Inside, All-Suture Technique with Dr. Seth Sherman
- Complex Repair with FAST-FIX 360 System and NOVOSTITCH PRO System featuring an All-Inside Technique with Dr. Scott Faucett

FIRSTPASS[®] MINI
Family of Suture Passers

Suture Solutions

MENISCAL STITCHER
Repair System

MENISCUS MENDER
Repair System

Meniscal deficient



Why use a Meniscal Allograft Transplant (MAT) in a meniscal deficient patient?

- MAT can be an effective procedure to treat post-meniscectomy syndrome²⁹
- It can help relieve symptoms in meniscectomized knees and aid patients to get back to work^{29*}
- In patients with non-degenerative knees, one study observed how a MAT can have a moderate chondroprotective effect as well as less joint narrowing at over 11 years follow-up compared to meniscectomy³¹

A retrospective study of 48 MAT patients with over 20 years of follow-up, assessed survivorship and IKDC scores³⁰

Survivorship

20-year survivorship of **56.2%**



PROMS**

Activity levels did not deteriorate compared to pre-MAT



Satisfaction

Only one patient (2%) said they would not have undergone the procedure in retrospect



Conclusion³⁰

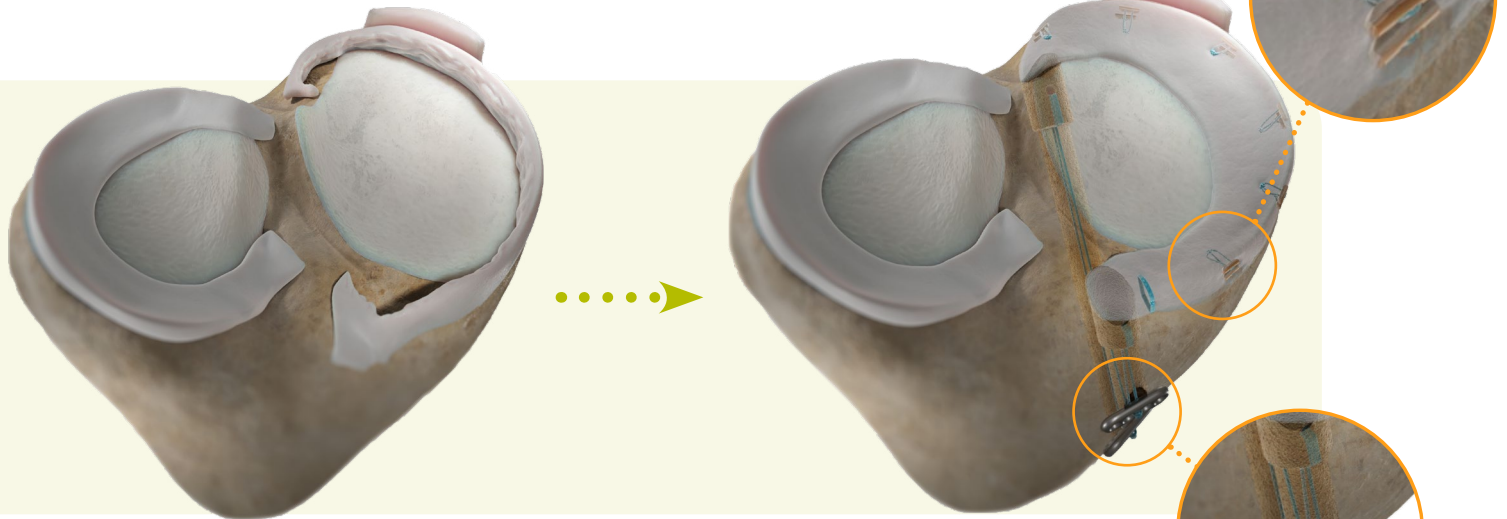
MAT demonstrated >56% survivorship at 20 years, and patients were able to continue with their active lifestyles.^{***}

*Limitation of the study include: low number of patients (n=38)

**Patient Reported Outcome Measures

***Limitation of the study include: low number of patients and survivorship was determined as patients not requiring additional surgery for graft removal

Meniscal deficient



FAST-FIX[®] FLEX
Meniscal Repair System



ACUFEX[®] TRUNAV
Retrograde Drill



ENDOBUTTON[®]
Fixation Device

Suture Solutions

ACUFEX[®] PINPOINT[®]
Anatomic ACL Guide System



Watch

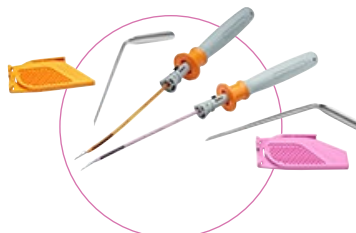
- MAT Graft Preparation for a Bone Plug Technique with Dr. Scott Faucett
- MAT Bone Plug Technique with FAST-FIX FLEX System and ACUFEX TRUNAV Retrograde Drill with Dr. Scott Faucett

+ All tears, all repairs

✦ Select a product to learn more



NOVOSTITCH[◇] PRO
Meniscal Repair System



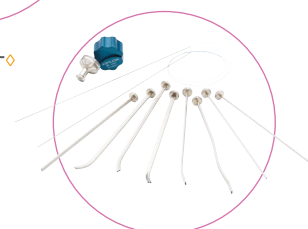
FAST-FIX[◇] FLEX
Meniscal Repair System



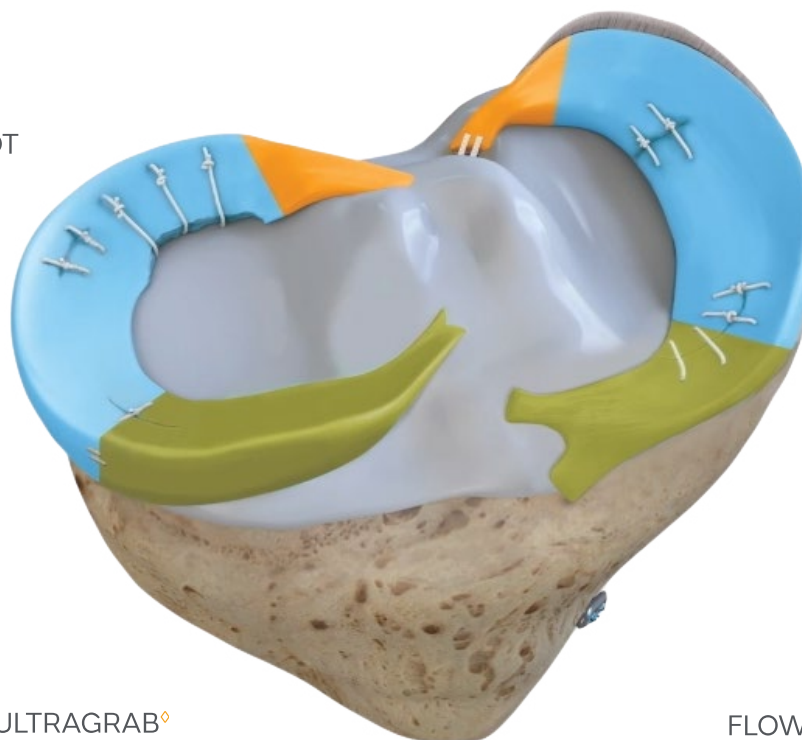
NOVOCUT[◇]
Suture Manager



MENISCAL ROOT
Repair System



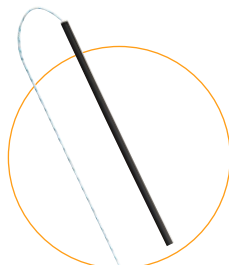
MENISCAL STITCHER
Repair System



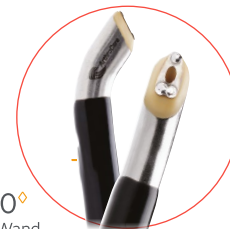
FIRSTPASS[◇] MINI
Family of Suture Passers



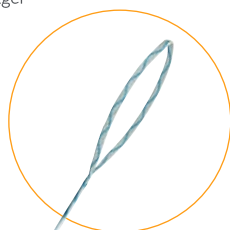
DYONICS[◇]
PLATINUM FLYER[◇]
Shaver Blade



ULTRAGRAB[◇]
Suture Manager



FLOW 50[◇]
COBLATION[®] Wand

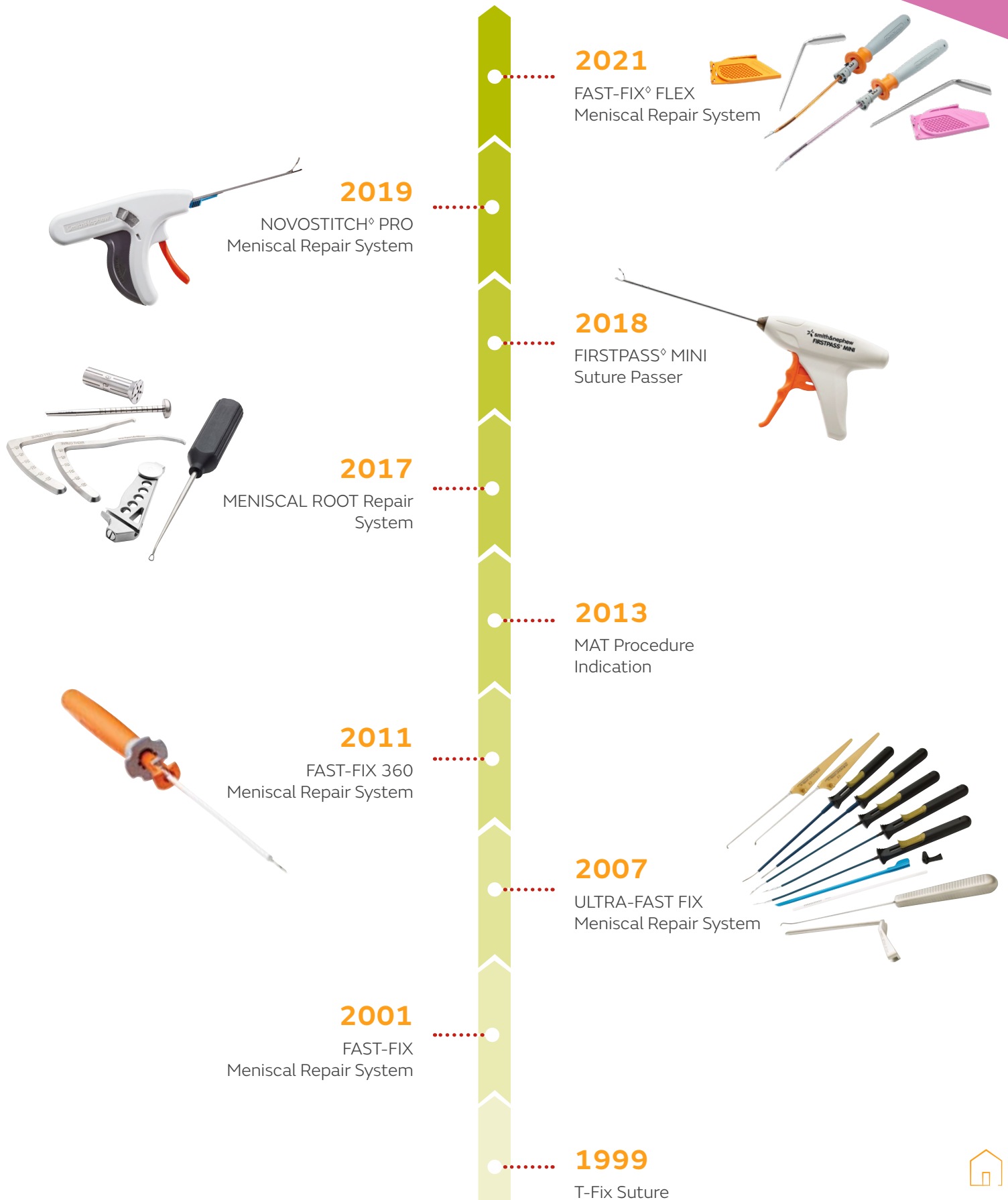


ULTRALOOP[◇]
Suture Loop



MENISCUS MENDER II
Repair System

More than 20 years of innovation in meniscal repair

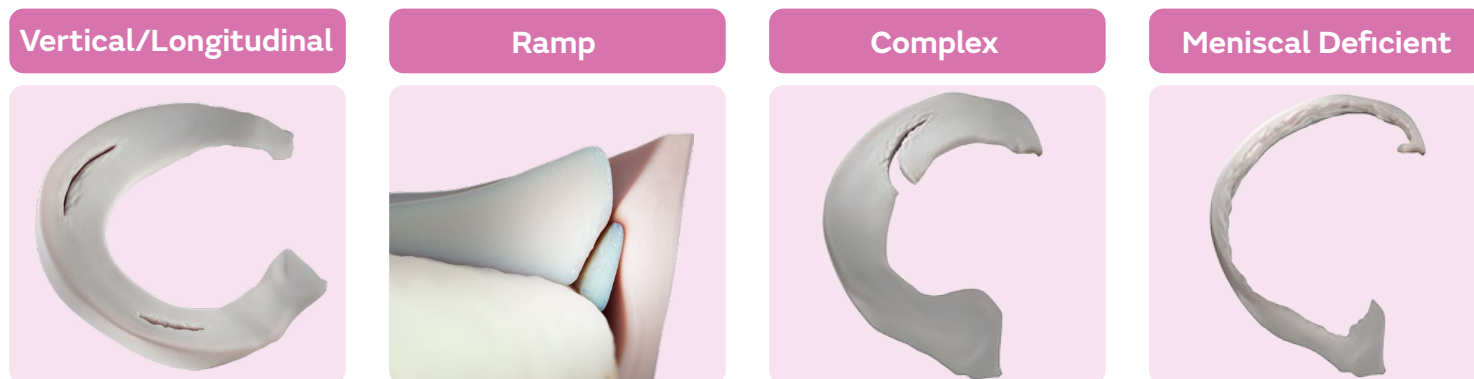


All-inside repair | PEEK

FAST-FIX[◇] FLEX

Meniscal Repair System

Used to repair



The FAST-FIX FLEX System enables all-zone, all-inside meniscal repair to treat tears previously not accessible^{*1-3} utilizing an all-inside, capsular fixation approach and two PEEK implants.

+ Increase reliability^{*1-3}

through one-handed 360° active deployment confirmed through touch, sound and sight¹



Adjustable depth limiter

(12mm, 16mm as shipped, 20mm)

Procedural efficiency

Needle shroud may eliminate the use of a cannula and is designed to easily enter and exit the knee joint

Braided suture

may provide visibility against the white meniscus

Laser-marked needle tip

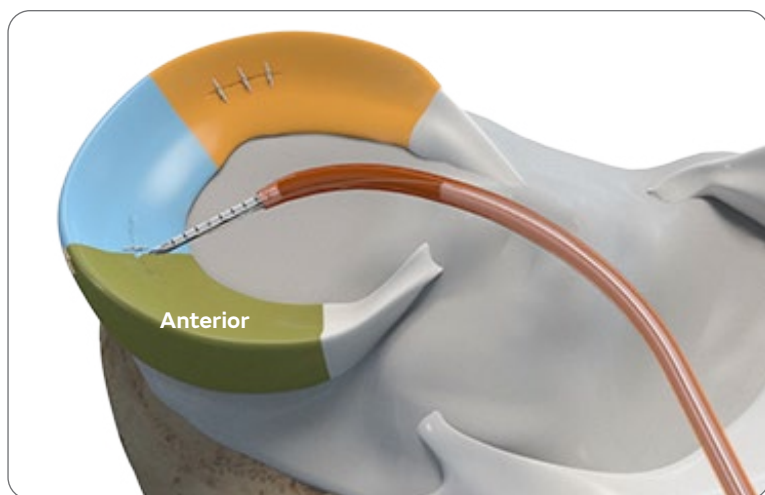
serves as a quick reference for needle depth penetration

FAST-FIX[◊] FLEX

Meniscal Repair System

+ Enhance accessibility

The FAST-FIX[◊] FLEX System provides access to the posterior zone as well as the mid-body and anterior third of the meniscus. The latter two zones have been shown to account for more than 40% of meniscal tears in stable adult knees.^{1,2,4}



FAST-FIX FLEX System, Curved



Needle bend up to 35°

FAST-FIX FLEX System, Reverse Curved



Needle bend up to -22°



Shaft bend up to 80°



Shaft bend up to -80°

Note: Bend tool does not provide measurement. Maximum bend degree was established by benchtop testing.



Ordering information



FAST-FIX[◇] FLEX

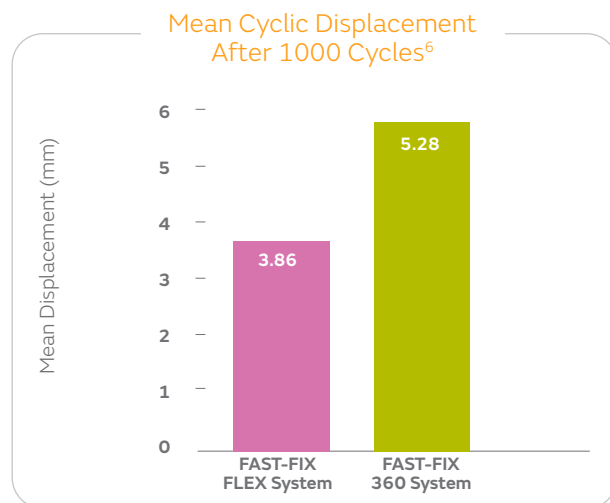
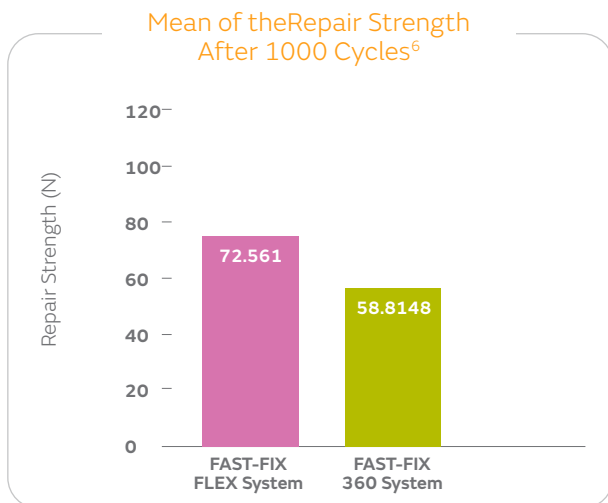
Meniscal Repair System

+ Preserve anatomy


In-line implants and a 17 gauge needle create a 25% reduction in insertion area to minimize disruption to the meniscus^{*5} while a 22% reduction in contact area with the capsule^{*5} still allows for a 23% increase in repair strength.^{**+6}



Improved performance*



 **23%**
stronger^{**+6}

 **27%**
less displacement^{**+6}

FAST-FIX[◇] Family

Meniscal Repair Systems

+ FAST-FIX family legacy of clinical use

All-inside FAST-FIX repair is clinically proven to restore healthy knee function^{*7,8}

Lysholm score

92.3
mean FAST-FIX
postoperative
score⁹

94
mean score in
healthy adults¹⁰



Tegner activity score (TAS)

5.7
mean score in
healthy adults¹⁰

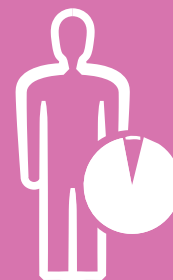
6.3
mean FAST-FIX
postoperative
score⁷



*p<0.01



88%
mean success
rate of all-inside
FAST-FIX repair²⁹



92%
mean success
rate of isolated
all-inside FAST-FIX
repair²⁹

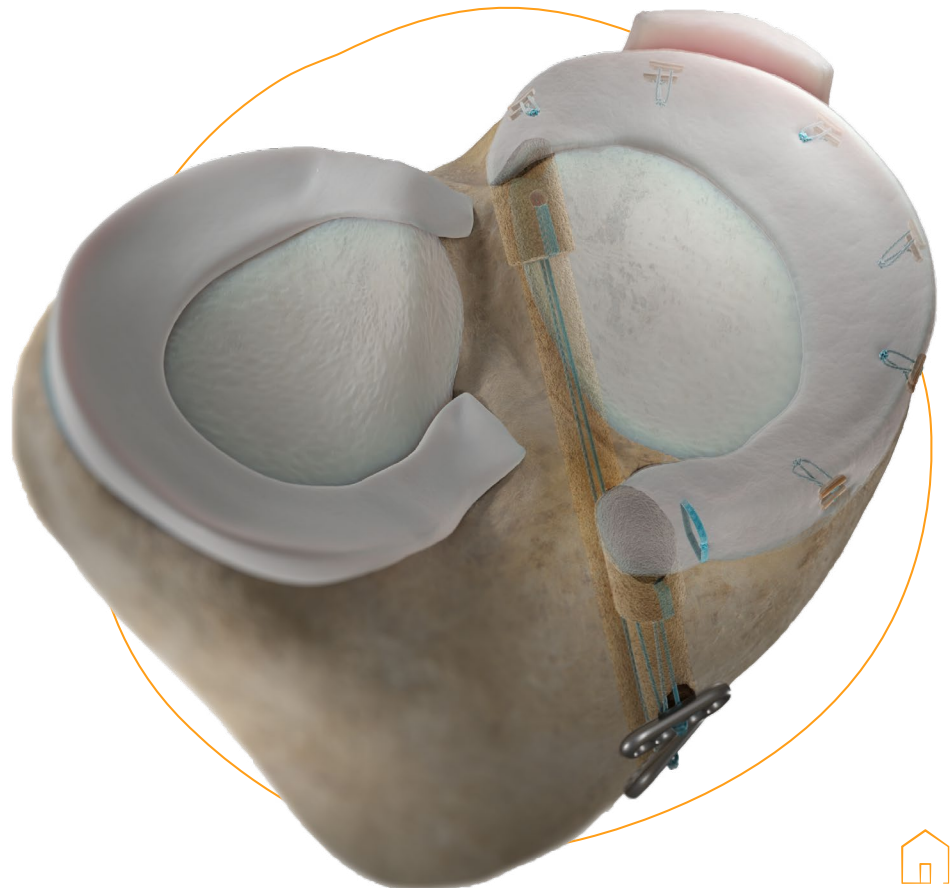
+ FAST-FIX[◇] has favorable outcomes for use in MAT*



Significantly improved pain and functional knee scores¹²**



Low rate of complications*¹²**



*When using FAST-FIX 360 Meniscal Repair System
**As compared to pre-MAT (p<0.001)
***3/24 patients required a second surgery due to suture failure



Watch

- FAST-FIX[®] FLEX System Reach More Repair More Animation
- All Tears All Repairs Animation
- Undersurface All-Inside, Capsular Fixation Repair featuring Dr. Jorge Chahla
- Vertical All-Inside Anterior, Capsular Fixation Repair featuring Dr. David Flanigan
- Vertical All-Inside Posterior, Capsular Fixation Repair featuring Dr. Vehnhiah Tjong
- Ramp Lesion All-Inside, Capsular Fixation featuring Dr. Jorge Chahla
- MAT Bone Plug Graft Preparation featuring Dr. Scott Faucett
- MAT Bone Plug Technique featuring Dr. Scott Faucett
- Complex All-Inside Repair featuring Dr. Scott Faucett



Learn

- FAST-FIX Family Clinical Performance
- All Tears All Repairs Brochure
- FAST-FIX FLEX Meniscal Repair System Brochure
- FAST-FIX FLEX Meniscal Repair System Surgical Technique Guide

All-inside repair | All-suture

NOVOSTITCH[◇] PRO

Meniscal Repair System

Used to repair tears such as

Radial



Root



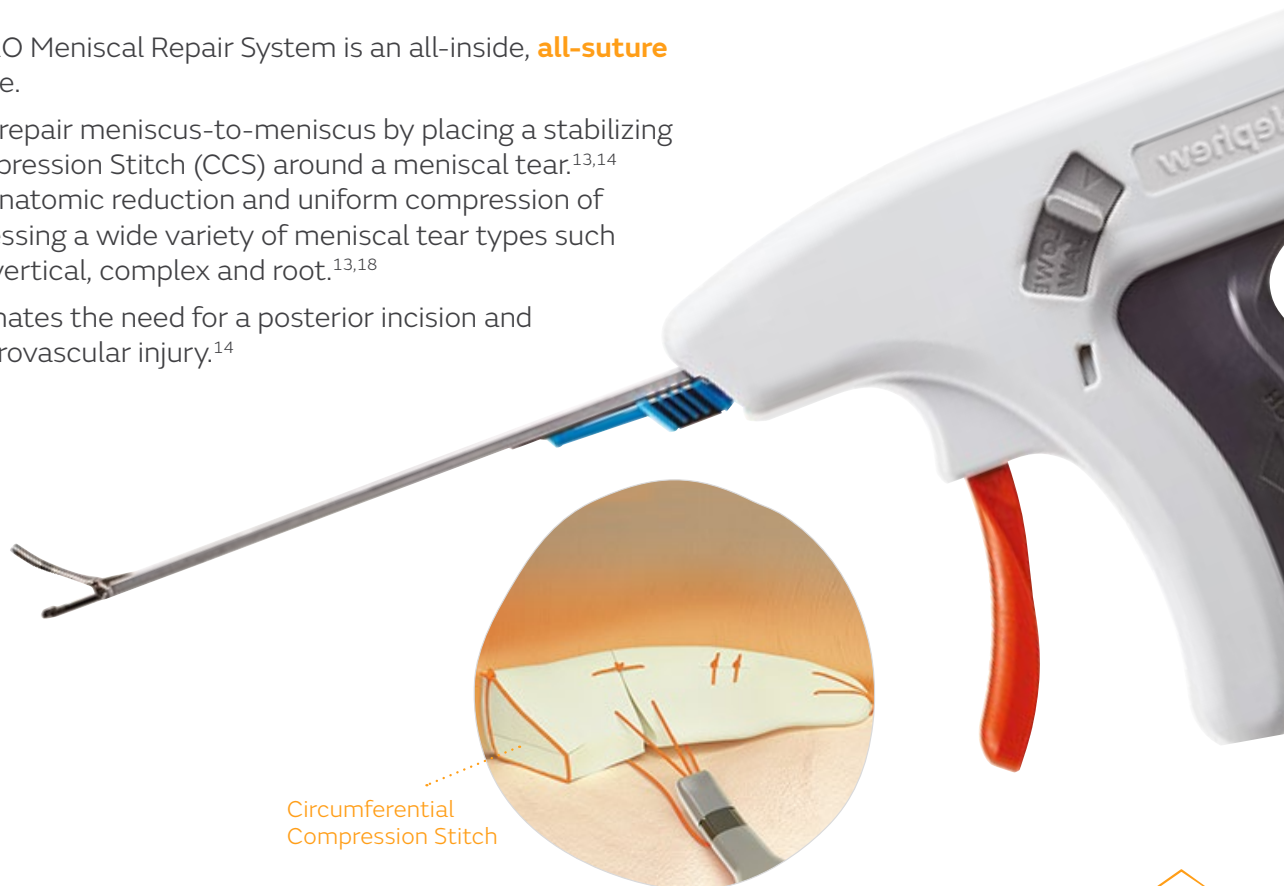
Horizontal



The NOVOSTITCH PRO Meniscal Repair System is an all-inside, **all-suture** meniscal repair device.

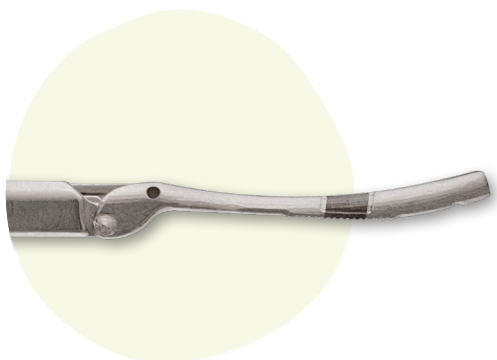
It allows surgeons to repair meniscus-to-meniscus by placing a stabilizing Circumferential Compression Stitch (CCS) around a meniscal tear.^{13,14} This stitch provides anatomic reduction and uniform compression of the tear edges, addressing a wide variety of meniscal tear types such as radial, horizontal, vertical, complex and root.^{13,18}

The use of CCS eliminates the need for a posterior incision and minimizes risk of neurovascular injury.¹⁴



NOVOSTITCH[◇] PRO

Meniscal Repair System

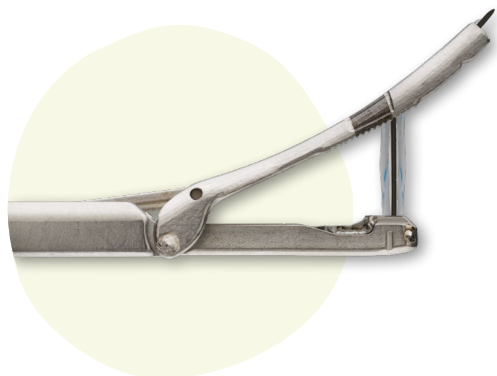
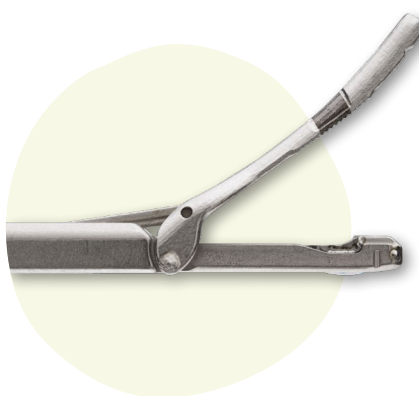


Access

Low 1.6mm profile curved upper jaw with a retractable lower jaw¹³

Maneuver

Curved upper jaw and blunt tip to allow maneuverability^{13,19}

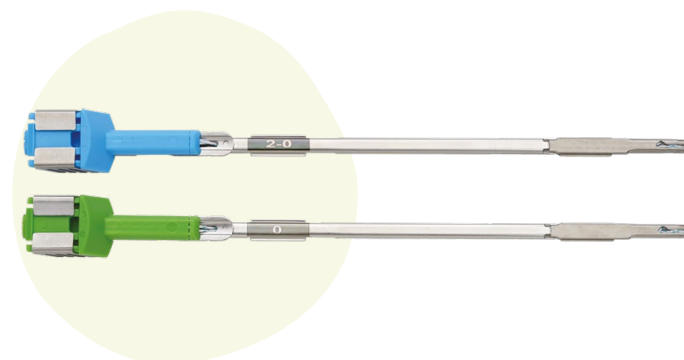


Protect

Intra-articular needle deflects away from the femur; the system is intended to protect the chondral surface in the knee during deployment¹³

Simplify

Preloaded all-suture implant, with single insertion cartridge available in sizes 2-0 and 0 suture, is designed to avoid having to load each suture individually



NOVOSTITCH[◇] PRO

Meniscal Repair System

Repair horizontal tears

Technique articles from leading centers highlight NOVOSTITCH PRO System's proprietary Circumferential Compression Stitches (CCS) to repair HCTs.¹³⁻¹⁶



NOVOSTITCH[◇] PRO

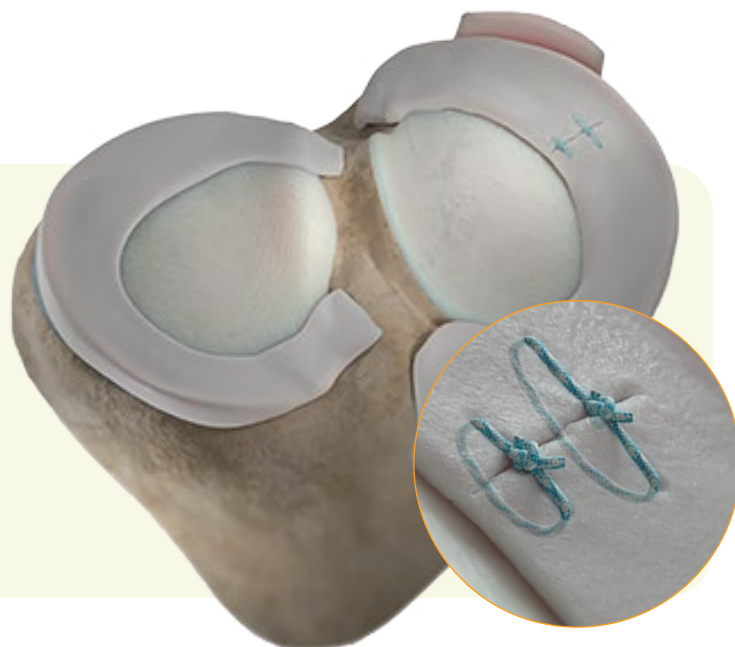
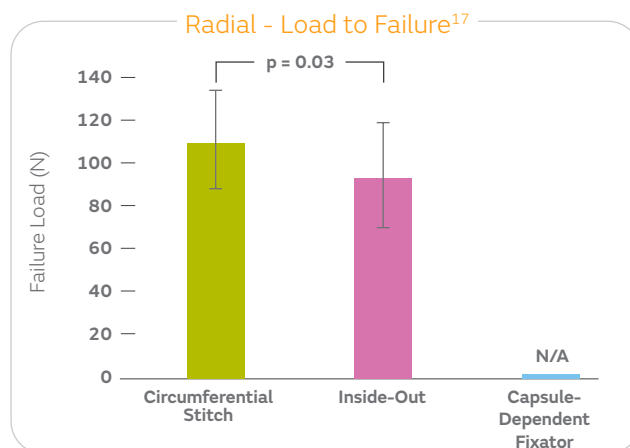
Meniscal Repair System

Repair radial tears

- Based on in vitro data, Circumferential Compression Stitches (CCS) are stronger than inside-out for radial repairs¹⁷
- CCS have less gap formation than inside-out repair for radial tears¹⁷
- CCS can improve repair vectors for radial repairs by creating a stitch straight across the radial tear



Circumferential compression stitch

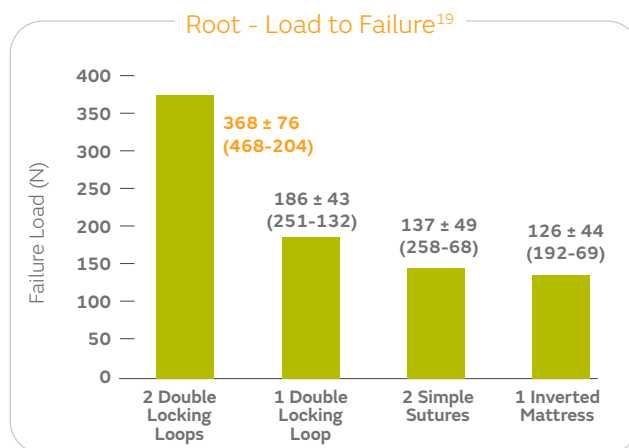


NOVOSTITCH[◇] PRO

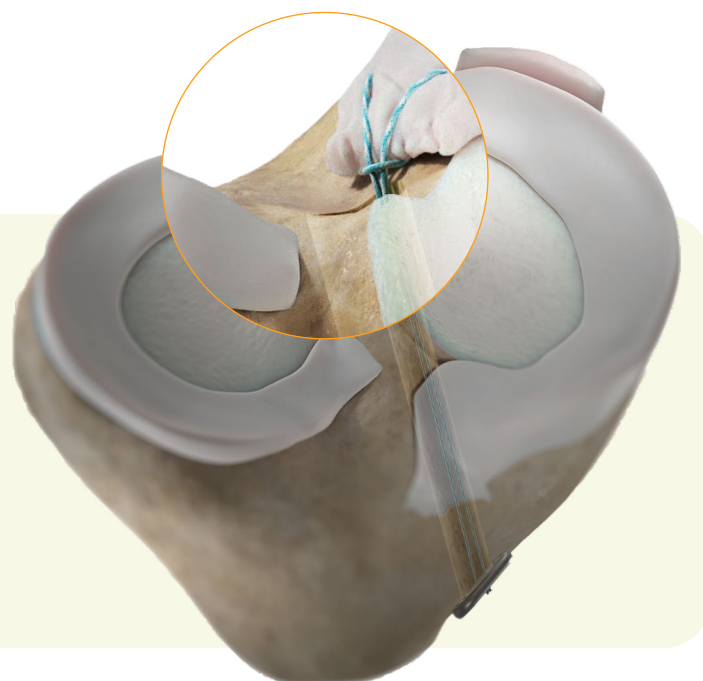
Meniscal Repair System

Repair root tears

- Designed to create two points of fixation in a modified double locking loop without removing the device from the joint^{13, 19}
- Curved upper jaw and retractable lower jaw enhance maneuverability for root repair^{13, 19}



Note: Values expressed are represented as mean ± SD; Study data based on ex vivo analysis with cadaveric knees.



NOVOSTITCH[◇] PRO

Meniscal Repair System

An economic analysis demonstrated that from a US payor's perspective, horizontal cleavage tear repair done with NOVOSTITCH PRO Meniscal Repair System, when compared to partial meniscectomy, is cost-effective 2 years after primary treatment and is cost-saving 5 years following primary treatment.²¹ The difference in cost and benefits, and thus cost-effectiveness of meniscal repair, grew for longer time horizons.²¹



Watch



- NOVOSTITCH PRO System Animation
- Single Tunnel Root Repair with Dr. Geoffrey Van Thiel
- All-Inside, All-Suture Radial Repair with Dr. Chris Dougherty
- All-Inside, All-Suture Horizontal Repair with Dr. Seth Sherman
- All-Inside and Outside-In Horizontal Repair with Dr. David Flanigan
- Single Tunnel Root Repair with Dr. Justin Saliman
- All-Inside, All-Suture Complex Repair with Dr. Seth Sherman
- All-Inside Complex Repair with Dr. Scott Faucett

Learn



- All Tears All Repairs Brochure
- NOVOSTITCH PRO System Quick Start Guide
- NOVOSTITCH PRO System Planning Tips and Tricks

MENISCAL ROOT

Repair System

Used to repair

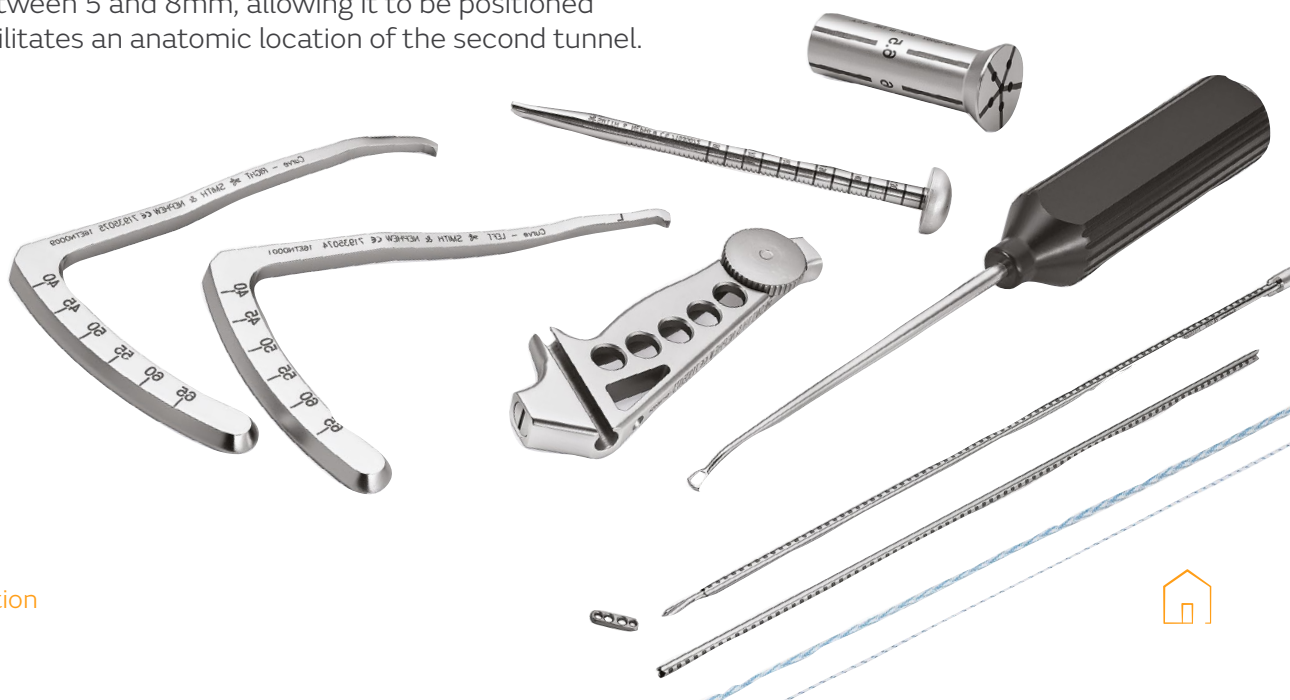
Root



A meniscus root tear can be defined as either an avulsion of the meniscal root from its attachment point or a radial root tear within 1cm of the root attachment.²²

Reproduce the anatomic footprint

The MENISCAL ROOT Repair System features aimers designed to maneuver around the tibial eminence, and the system has been designed to support one- or two-tunnel procedures. The included guide has offsets between 5 and 8mm, allowing it to be positioned in a manner that facilitates an anatomic location of the second tunnel.



Root repair | Suture or tape

FIRSTPASS[◇] MINI

Family of Suture Passers

These suture passers, which come in three versions, left-curved, straight and right-curved, are designed to help facilitate root-repair procedures executed in tight spaces.^{23-26,30}

Reliability

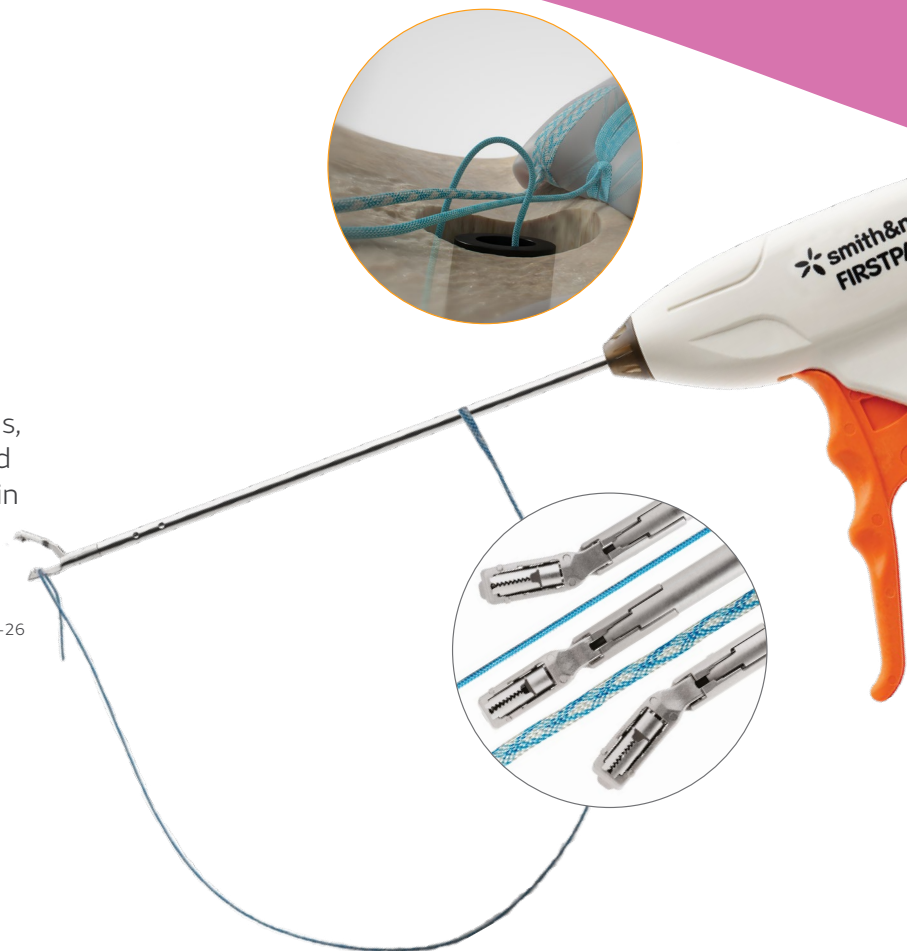
Fully disposable system with a preloaded needle²³⁻²⁶

Versatility

Passes ULTRABRAID[◇] #2 Suture or ULTRATAPE[◇] Suture^{24,25}

Accessibility

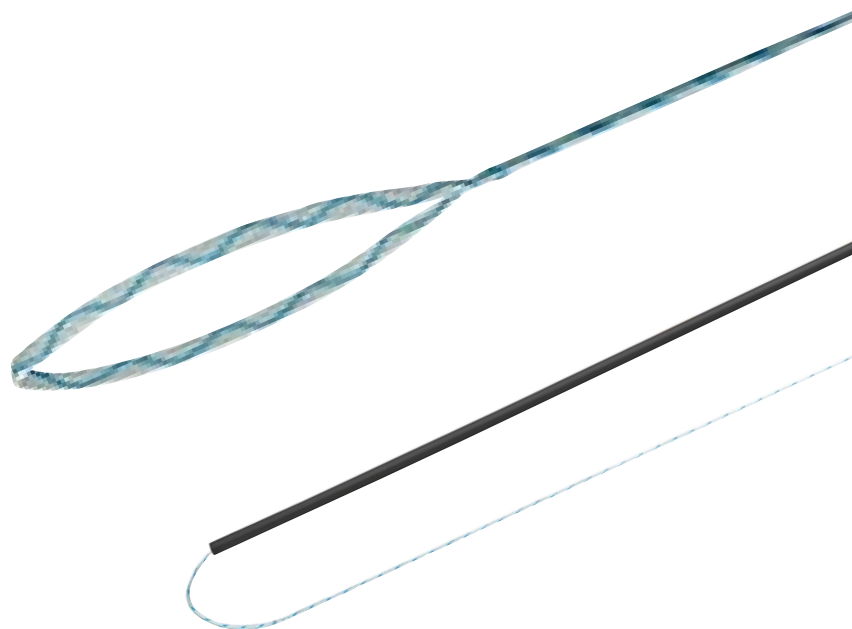
Straight and 17° left- and right-curved jaw options

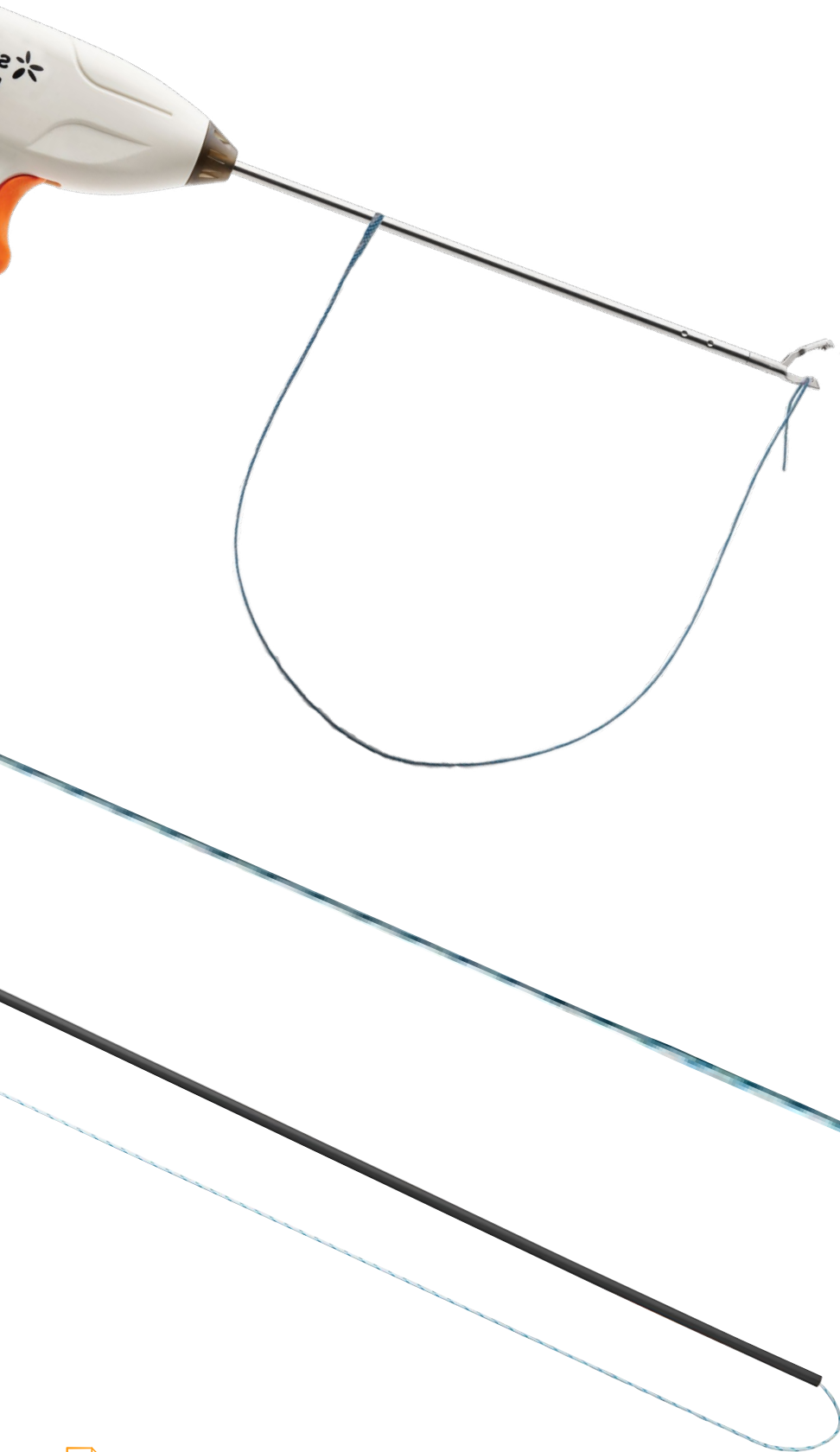


Suture Solutions

Our growing suture solutions portfolio provides a variety of options to support meniscal root repair and other soft-tissue procedures.

- The ULTRALOOP[◇] Suture Loop is designed to bring the benefits of suture tape to luggage tag applications across all joints with its 1.25" MINITAPE[◇] loop on a #2 26" suture tail
- ULTRAGRAB[◇] Suture Manager is designed to shuttle sutures through bone tunnels with its stiffened #2 suture and patient-contacting tube





Watch



- All Tears All Repairs Animation
- Double Tunnel Root Repair with Dr. Robert LaPrade
- FIRSTPASS[®] MINI Family of Suture Passers Animation: Meniscal Root Repair, One Tunnel Technique
- FIRSTPASS MINI Family of Suture Passers Animation: Meniscal Root Repair, Two Tunnel Technique

Learn



- All Tears All Repairs Brochure
- Meniscal Root Repair, One Tunnel Surgical Technique Guide
- Meniscal Root Repair, Two Tunnel Surgical Technique Guide
- FIRSTPASS MINI Family of Suture Passers Sales Sheet
- Suture Solutions Brochure
- Suture Solutions Sell Sheet

Inside-out repair | All-suture

MENISCAL STITCHER

Repair System

Used to repair



Inside-out delivery with small needle diameter

Classic inside-out techniques remain a viable solution for the repair of many kinds of meniscal tears. Providing the versatility to address a variety of tear patterns and the ability to deliver sutures with smaller needles, with proven long-term results, inside-out techniques have been considered the gold standard for arthroscopic meniscus repair.²⁷

The MENISCAL STITCHER System is designed specifically for inside-out procedures and can be customized to the unique needs of each procedure.

Learn

- All Tears All Repairs Brochure



Outside-in repair

MENISCUS MENDER II

Repair System

Used to repair
Anterior horn tears



Outside-in access to anterior tears

The MENISCUS MENDER II (MMII) Repair System is designed for repairing the meniscus under arthroscopic visualization and is ideally suited for anterior horn tears and middle-third tears. The system allows surgeons to work from the outside of the knee into the joint, instead of starting sutures inside the capsule and exiting less predictably out the back.^{*,31}

The MMII system utilizes curved and straight needles with a suture-capture loop. Depending on the patient's anatomy, the surgeon may use a combination of curved or straight needles in order to best access the tear. These components allow the surgeon to use the outside-in approach, which may help minimize the risk of damage to neurovascular structures during meniscal repair.^{*,31,32}

*compared to inside-out approach

Watch



- All Tears All Repairs Animation
- All-Inside and Outside-In Horizontal Repair with Dr. David Flanigan

Learn



- All Tears All Repairs Brochure
- MENISCUS MENDER II Repair System Surgical Technique Guide

NOVOCUT[◇]

Suture Manager



Suture management simplified

The NOVOCUT Suture Manager enables surgeons to tighten knots and cut suture with unique design features to simplify the knot-tying process.

Side Loading

Capture suture without threading the needle

Access

Low profile allows pushing directly on the knot

Consistent Tails

Suture tails designed to minimize risk of cutting the knot

Suture Management

May limit the need for other devices

Watch



- All Tears All Repairs Animation
- NOVOCUT Suture Manager Animation

Learn



- All Tears All Repairs Brochure

Meniscal repair evidence

A number of studies have been published that clearly define the benefits of meniscal repair to help restore as much functional meniscus as possible.^{1,2,3} Whilst meniscectomy offers good short-term outcomes,⁴ long-term data has shown that resection of the meniscus, even in part, is also associated with the following:

Compared with an intact meniscus, meniscectomy can lead to:



Decreased contact area^{5,6}



Increased peak contact pressure^{5,6}

Compared with an intact meniscus, these changes may result in an increased risk of:



Biomechanical wear⁷



Chondral degeneration⁵

In turn, compared with meniscal repair, meniscectomy is associated with an:



Increased risk of developing osteoarthritis⁸



Increased risk of total knee arthroplasty⁹⁻¹¹



In recent years, arthroscopic repair techniques have become more prevalent and widely accepted for the treatment of meniscal tears.¹ The role of menisci and their impact on knee biomechanics has become more evident and resulted in a clear trend towards a more aggressive approach to meniscal repair in the last 5 years (meniscal repair in more than 50% of patients increased from 14.3 to 27.9%)¹³

Compared with meniscectomy, repair demonstrates superior long-term results:^{4,8,12,14}

Significantly improved IKDC score

at 18 months follow-up
(87.1 vs 72.1; $p=0.02$)¹⁶

25–50% reduced risk

of consultation for **OA**⁸
(median follow-up: 9.4 and 11.1 years for repair and meniscectomy, respectively)

Reduced incidence of TKA

(0 vs 10.9%; $p=0.28$; mean follow-up: 17.5 years)¹²



Reimagine reconstruction

Knee ligament solutions

Smith+Nephew's comprehensive Reimagine Reconstruction Portfolio provides high-quality products and thoughtful techniques developed in collaboration with leading global experts.

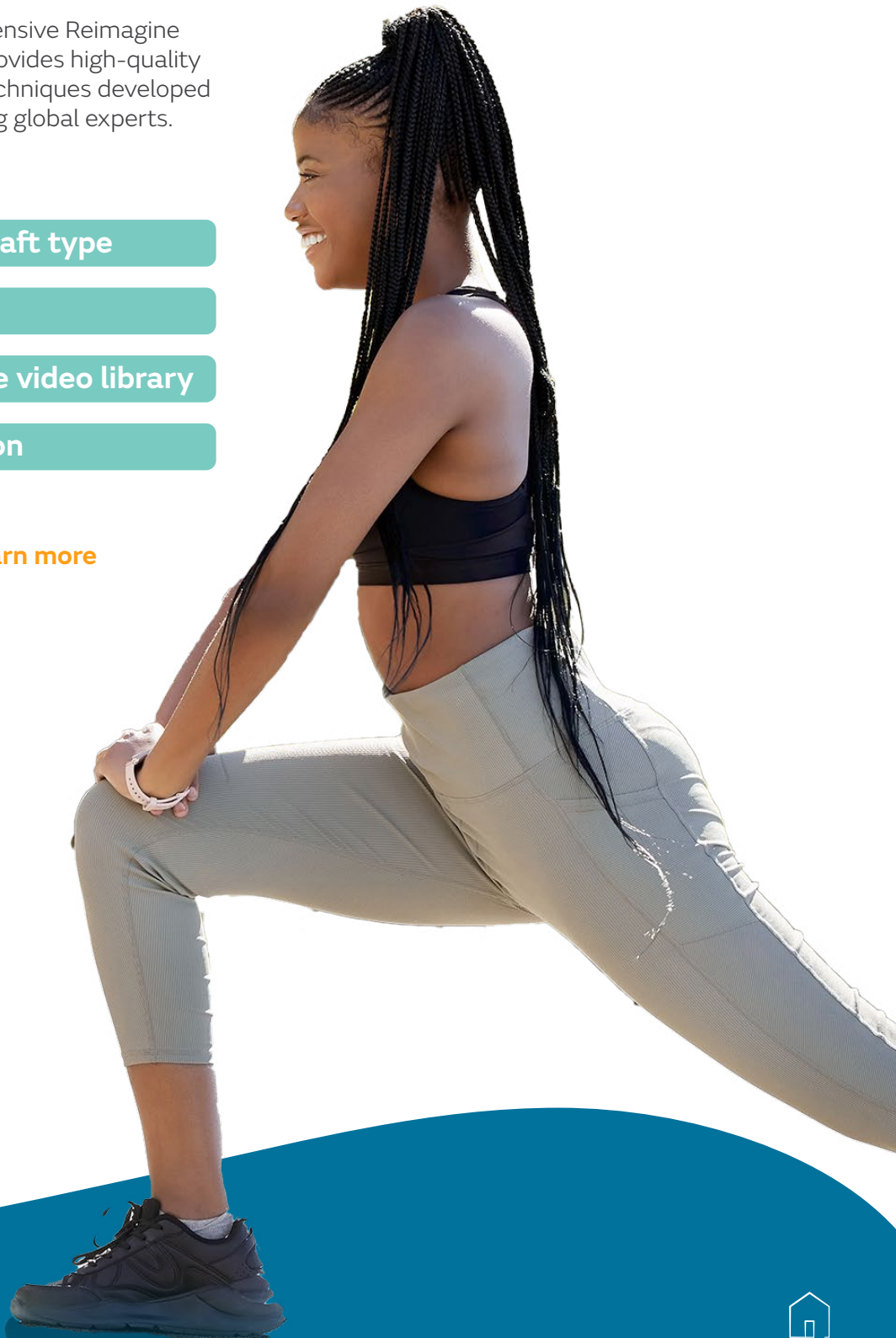
[ACL solutions by graft type](#)

[Product portfolio](#)

[Ligament technique video library](#)

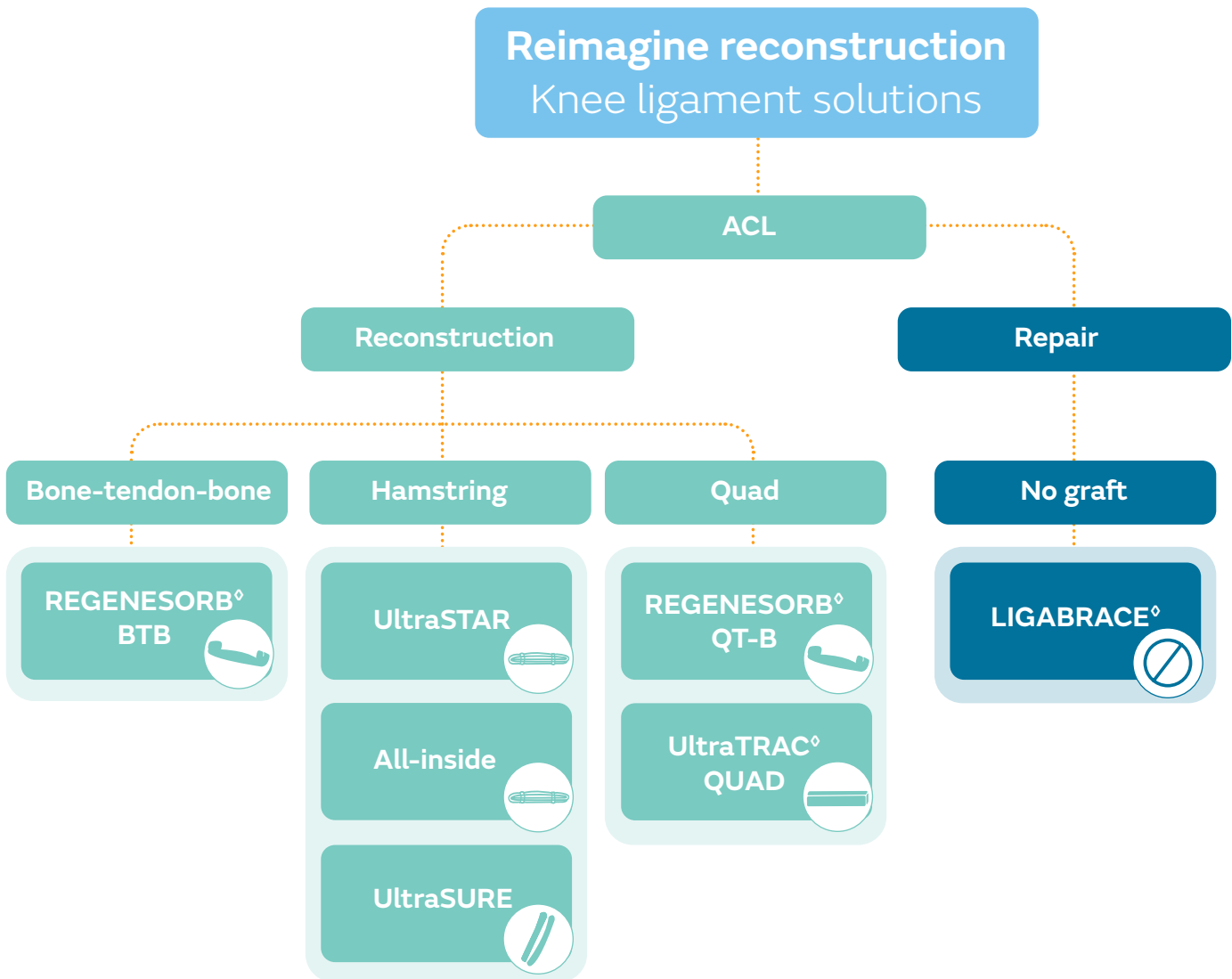
[Ordering information](#)

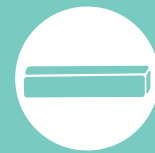
 [Select a section to learn more](#)



✦ [Select a technique to learn more](#)

The Reimagine reconstruction ligament reconstruction portfolio from Smith+Nephew provides surgeons with a full spectrum of ACL technique solutions to address surgeon graft preference.





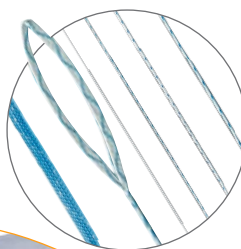
UltraTRAC[◇] QUAD

ACL Reconstruction Technique

The UltraTRAC QUAD ACL reconstruction technique utilizes a soft tissue quadriceps graft, reproducibly^{1,2} harvested with the QUADTRAC[◇] Quadriceps Tendon Harvest Guide System and easily prepared with just 5 needle passes³ on the X-WING[◇] Graft Preparation System with the ultra-strong⁴⁻⁷ ULTRABUTTON[◇] Adjustable Fixation Device Family.



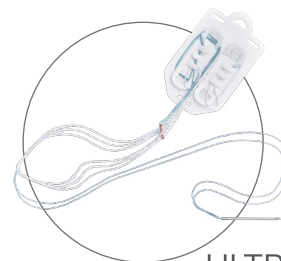
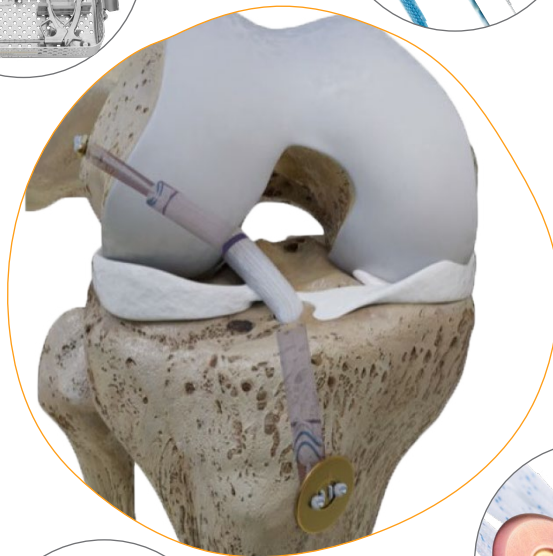
QUADTRAC[◇]
Quadriceps Tendon
Harvest Guide System



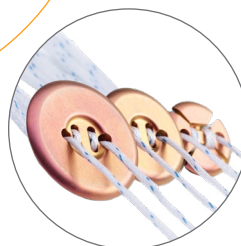
Suture Solutions
Sutures, tapes and tools



X-WING[◇]
Graft Preparation System



**ULTRABUTTON[◇]
QUAD**
Adjustable Fixation Device



**ULTRABUTTON[◇]
TIB**
Adjustable Fixation Device



**ACUFEX[◇]
DIRECTOR
ELITE[◇]**
ACL Drill Guide System



“With the added ULTRABUTTON QUAD, BB and TIB Devices, Smith+Nephew now provides me with a complete solution for all my ACL reconstruction needs with quick graft preparation and minimal steps. Whether the surgeon themselves or their surgical support staff performs graft preparation, these devices can help improve operating room efficiency.”

Cassandra Lee, MD, Chief of the Sports Service
University of California at Davis
Sacramento, CA

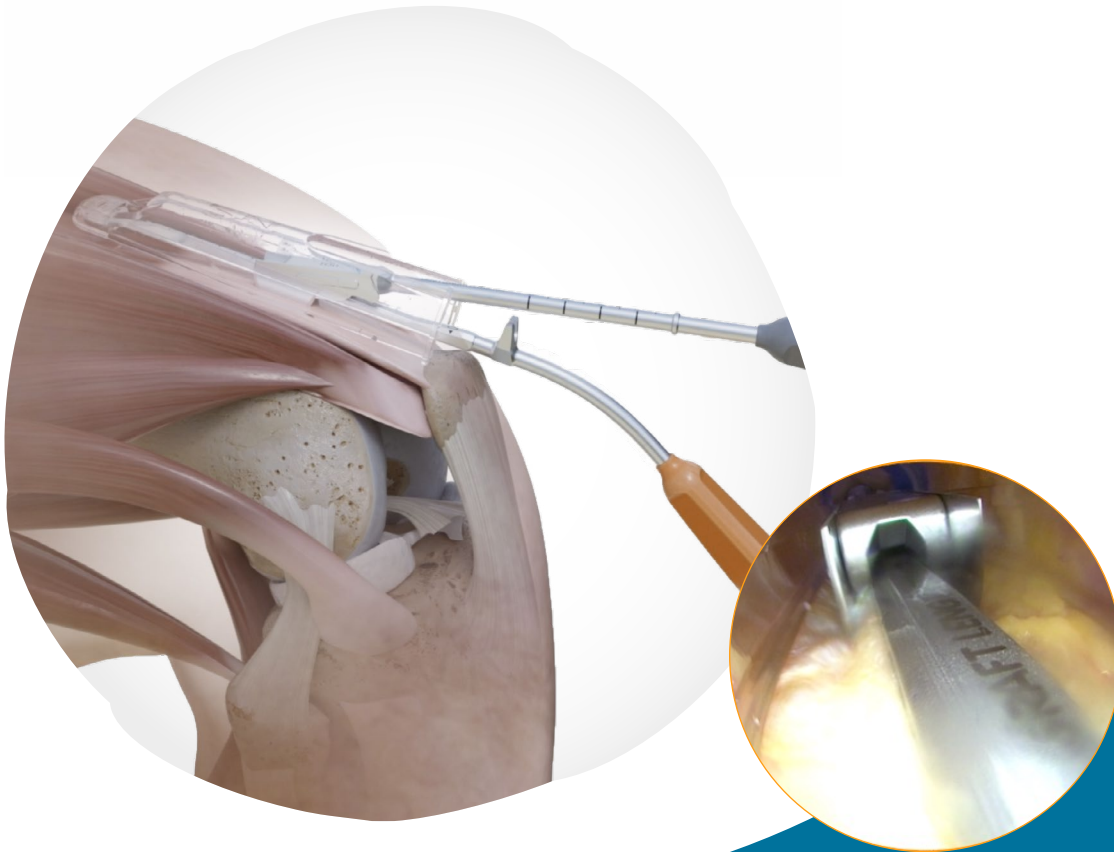
*As demonstrated in benchtop testing





✦ UltraTRAC QUAD Technique Features and Benefits

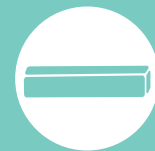
- Hands free, direct tendon visualization during harvest^{8,9}
- Controlled, guided cutting to harvest desired tissue⁹
- Ultra-strong fixation^{*4-7}
- Faster average graft preparation time with ULTRABUTTON QUAD Adjustable Fixation Device^{**3}
- Suspensory fixation allows for 360° graft contact within the femoral and tibial tunnel
- Accommodates surgeon's current drilling preferences
- Allows for graft tensioning after fixation



*As demonstrated in benchtop testing

**As compared to Arthrex FiberTag® TightRope®, n=5, p<0.05





Case Checklist: UltraTRAC[◊] QUAD Technique

Qty	SKU	Product
Capital		
1	72205764*	QUADTRAC [◊] Quadriceps Tendon Harvest Guide System
	Rental SKU: 72205869	
1	72205269*	X-WING [◊] Graft Preparation Board
1	72201746*	ACUFEX [◊] DIRECTOR ELITE [◊] ACL Drill Guide System
1	3134186	Single Flute Endoscopic Cannulated Drill, 9.0mm
1	7205517	ACUFEX DIRECTOR Guide Handle
1	7205519	ACUFEX DIRECTOR ACL Tip Aimer
1	7205524	ACUFEX DIRECTOR ACL Angled Bullet
Consumables		
1	72205580	QUADTRAC Quadriceps Tendon Harvest Guide System Disposable Kit
1	72205443	ULTRABUTTON [◊] QUAD Adjustable Fixation Device
1	72205601	ULTRABUTTON TIB Adjustable Fixation Device, medium
1	72202797	1.2 RAP-PAC B
1	7207315	Endoscopic ULTRABUTTON/ ENDOBUTTON [◊] Drill, 4.5mm, sterile
1	72205437	MINITAPE [◊] Looped Suture on Needle, straight needle, multi-colored braid, 20", 12 per box
1	72200886	ULTRABRAID [◊] #2, white, 38", 10 per box
1	72290128	FIRSTPASS [◊] MINI Suture Passer
1	72290037	FLOW 50 [◊] COBLATION [◊] Wand
1	72202531	DYONICS [◊] BONECUTTER [◊] PLATINUM Blade, 4.5mm



Watch

Graft Harvest + Preparation

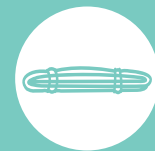
- QUADTRAC System Graft Harvest Video featuring Dr. Cassandra Lee
- QUADTRAC System Graft Harvest Animation
- UltraTRAC QUAD Graft Preparation Video featuring Dr. Cassandra Lee
- UltraTRAC QUAD Graft Preparation Animation

Surgical Techniques

- UltraTRAC QUAD ACL Reconstruction Video featuring Dr. Cassandra Lee
- UltraTRAC QUAD ACL Reconstruction Animation

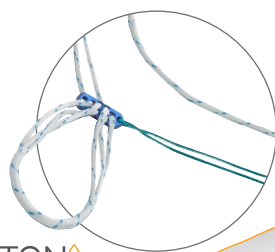


*Placing an order with this code will order individual units of all components as shown in the Ordering Information section. Devices are not provided kitted or part of a system and all devices are individually packaged with their own instructions for use, as applicable.



All-inside

The All-Inside ACL reconstruction technique uses a single, quadrupled semitendinosus graft, where less hamstring is harvested, reducing patient morbidity as compared to traditional dual-hamstring tendon techniques.¹⁰ The technique also allows for preparation of large diameter grafts that are associated with improved outcomes.¹¹⁻¹³ The All-Inside technique features pin-guided retrograde drilling with the ACUFEX TRUNAV Retrograde Drill coupled with a double ULTRABUTTON Adjustable Fixation Device construct, which has shown low displacement during cyclic loading.^{*4,5,14-17}



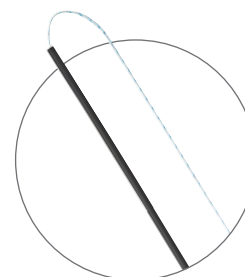
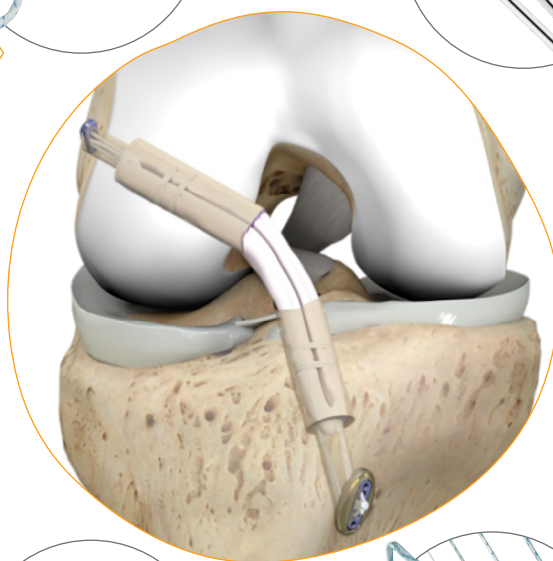
ULTRABUTTON
Adjustable Fixation Device



ACUFEX TRUNAV
Retrograde Drill



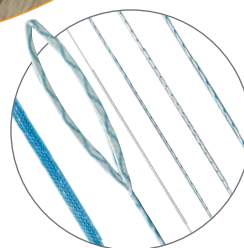
X-WING
Graft Preparation System



ULTRAGRAB
Suture Manager



XTENDOBUTTON
Family of Fixation Devices



Suture Solutions
Sutures, tapes and tools

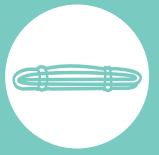


“Harvesting a single tendon is less invasive¹⁰, especially for patients practicing sports which require a full active flexion like dancers, runners, climbers and all high-level sport patients. In addition, it allows a strong cortical fixation and a 360° integration of the graft. Compared to screw fixation, this technique does not require any foreign material inside the tunnel (besides button's sutures) and allows a subsequent tightening of the graft.”

David Dejour, MD
Lyon France

*As demonstrated in benchtop testing

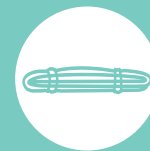




+ All-Inside Technique Features and Benefits

- Predictable, pin-guided antegrade and retrograde reaming with the ACUFEX[®] TRUNAV drill¹⁸
- Quadrupled semitendinosus grafts consistently provide a 8mm+ graft construct¹⁹
- Suspensory fixation allows for 360° graft contact within the femoral and tibial tunnel
- Lower case morbidity from reduced hamstring harvest through preservation of gracilis tendon¹⁰
- Allows for graft tensioning after fixation
- Utilizes the ULTRABUTTON[®] Adjustable Fixation Device, which, after an ACLR, has shown significant improvements in patient-reported outcomes, including that all KOOS sub-domains from preoperative values were sustained beyond 24 months²⁰





Case Checklist: All-inside ACL Technique

Qty	SKU	Product
Capital		
1	72205269*	X-WING [®] Graft Preparation Board
1	7205517	ACUFEX [®] DIRECTOR Guide Handle
1	7205519	ACUFEX DIRECTOR ACL Tip Aimer
1	7205524	ACUFEX DIRECTOR ACL Angled Bullet
1	72203436	ACUFEX PINPOINT Single-bundle Guide, 9mm
1	72205038	ACUFEX PINPOINT Adapter
1	72203450	ACUFEX PINPOINT 4-Point Bullet, 6.5", long
1	72203169	ACUFEX Tunnel Gauge
Consumables		
1	72290003	ULTRABUTTON [®] Adjustable Fixation Device
1	72205600	ULTRABUTTON TIB Adjustable Fixation Device, small, 12mm ø, 4.4mm peg
1	72204044	ACUFEX TRUNAV Retrograde Drill, small, 9mm ø; Tunnel diameter: 4mm-7mm
1	72205427	MINITAPE [®] Suture on Needle, straight needle, multi-colored braid, 40"
1	72290037	FLOW 50 [®] COBLATION [®] Wand
1	72205292	DYONICS [®] PLATINUM FLYER [®] Blade

*Placing an order with this code will order individual units of all X-WING components as shown in the Ordering Information section. Devices are not provided kitted or part of a system and all devices are individually packaged with their own instructions for use, as applicable.

Watch



Graft Harvest + Preparation

- Hamstring Graft Harvest Technique with Dr. Mark Bowen
- Graft Preparation Using the GRAFTMASTER[®] III featuring Dr. Brandon Bryant
- Semi-T Graft Preparation Using the X-WING System featuring Dr. Mark Bowen
- Preparing a Short Semi-t Graft on the X-WING System featuring Dr. Mark Bowen

Surgical Techniques

- All-inside ACL Reconstruction Animation
- All-inside ACL Reconstruction Technique with Dr. Brandon Bryant

Learn



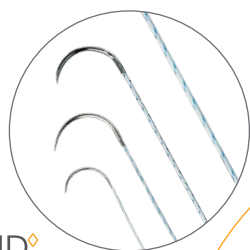
- X-WING Graft Preparation System Brochure
- All-inside and UltraSTAR ACL Reconstruction Surgical Technique Guide



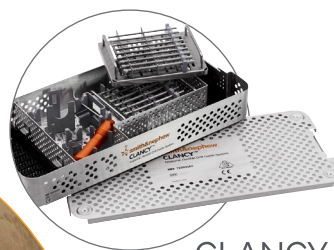


REGENESORB[◇] BTB

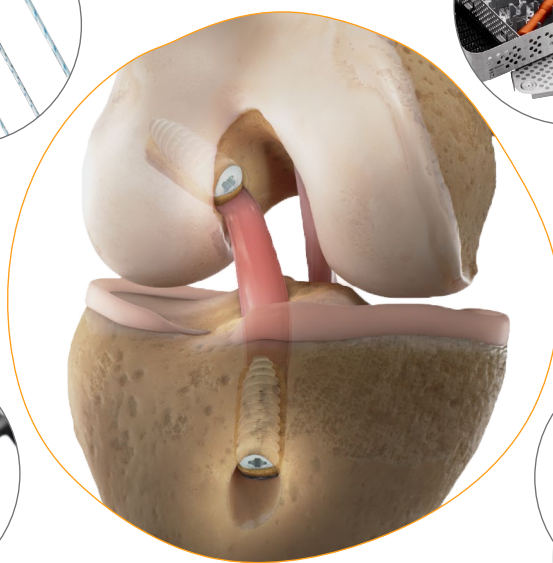
The REGENESORB bone-tendon-bone (BTB) technique takes BTB ACL reconstruction procedure to the next level by utilizing an advanced biocomposite, open-architecture BIOSURE[◇] REGENESORB Interference Screw for fixation. The CLANCY ANATOMIC CRUCIATE GUIDE Flexible Drill System provides the instrumentation to achieve the right trajectory and femoral entry point in anatomic repairs.^{21-24,34}



ULTRABRAID[◇]
Suture Family



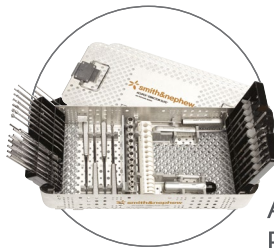
CLANCY ANATOMIC
CRUCIATE GUIDE
Flexible Drill System



X-WING[◇]
Graft Preparation System



BIOSURE[◇]
REGENESORB[◇]
Interference Screw



ACUFEX[◇] DIRECTOR
ELITE[◇]
ACL Drill Guide System



ACL reconstructions with a BTB autograft comprise most of my ACL reconstruction practice for a reason. Clinical literature has shown that the BTB graft minimizes the chance for re-tear in addition to having the best initial fixation strength.²⁵⁻³⁰

Jorge Chahla, MD, PhD
Sports Medicine Service, Midwest Orthopaedics at Rush
Chicago, IL





+ REGENESORB[◊] BTB Features and Benefits

This technique takes advantage of the innovative open-architecture design of the BIOSURE[◊] REGENESORB screw, allowing bone ingrowth across the screw,* which also provides the kind of fixation strength expected from a solid absorbable screw**³¹⁻³³

ACL reconstruction with a BTB graft offers:

- High initial graft strength and stiffness²⁵⁻²⁷
- Faster fixation site healing as compared to soft tissue to bone²⁸
- Favorable clinical results^{29,30}
- High level of patient satisfaction after long term follow-up^{29,30}



CLANCY ANATOMIC CRUCIATE GUIDE Flexible Drill System

- Shown to achieve longer tunnel lengths than can be attained with straight, rigid drilling systems^{21,34}
- CLANCY Flexible Drills facilitate the ability to reach the desired location on the lateral notch wall to access the anatomic footprint of the native ACL^{21,23,24,34}
- CLANCY Flexible Drills do not require knee hyperflexion while drilling through the medial portal, which helps avoid challenges with positioning and fat pad ingress²¹⁻²⁴

*As demonstrated in vivo

**Compared to BIOSURE HA Interference Screws; as demonstrated in benchtop testing





Case Checklist: REGENESORB[®] BTB Technique

Qty	SKU	Product
Capital		
1	72205269*	X-WING [®] Graft Preparation Board
1	72203086*	CLANCY ANATOMIC CRUCIATE GUIDE Flexible Drill System
1	72203169	ACUFEX [®] Tunnel Gauge
1	7205517	ACUFEX DIRECTOR Guide Handle
1	7205519	ACUFEX DIRECTOR ACL Tip Aimer
1	7205524	ACUFEX DIRECTOR ACL Angled Bullet
1	72201942	BIOSURE [®] EASY Tap System
1	013546	Cannulated Drill, 10mm
Consumables		
2	72205432	ULTRABRAID [®] Suture on Needle, #5, straight needle, white
2	72204399	BIOSURE REGENESORB Interference Screw, 8mm x 25mm
1	72201594	Flexible Passing Pin, 2.4mm
1	72111138	Guide Wire, 1.2mm x 12"
1	7207221	Drill Tip Guide Wire, 2.4mm, 12"
1	014477	Cannulated Bone Tunnel Plug, latex free
1	72290037	FLOW 50 [°] COBLATION [®] Wand
1	72202531	DYONICS [®] BONECUTTER [®] PLATINUM Blade, 4.5mm

Watch

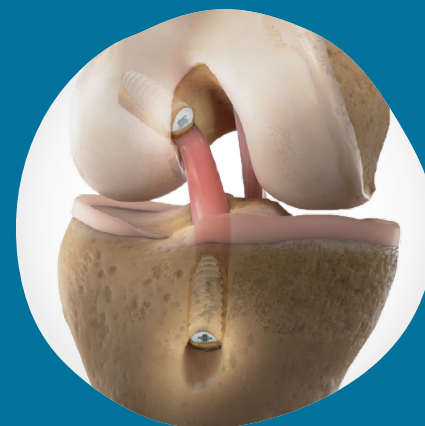


Graft Harvest + Preparation

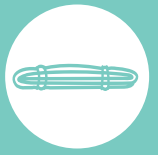
- BTB Graft Harvest featuring Dr. Jorge Chahla
- BTB Graft Preparation featuring Dr. Jorge Chahla

Surgical Techniques

- REGENESORB BTB ACL Reconstruction Video featuring Dr. Jorge Chahla
- REGENESORB BTB ACL Reconstruction Animation
- ENDOBUTTON BTB ACL Reconstruction Animation



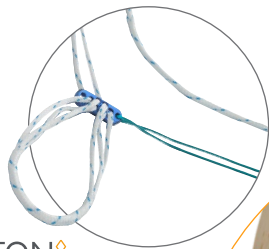
*Placing an order with this code will order individual units of all components as shown in the Ordering Information section. Devices are not provided kitted or part of a system and all devices are individually packaged with their own instructions for use, as applicable.



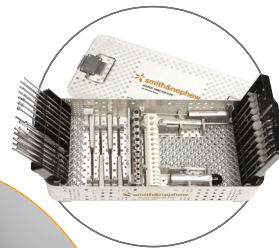
UltraSTAR Technique

Single Tendon ACL Reconstruction

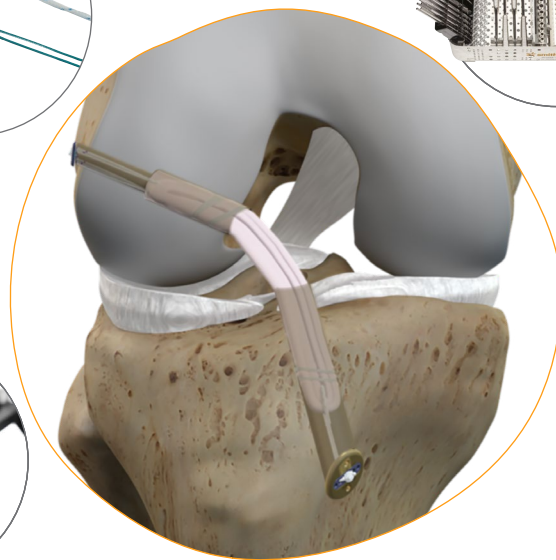
The UltraSTAR ACL reconstruction technique uses a single, quadrupled semitendinosus graft in which less hamstring is harvested, reducing patient morbidity as compared to traditional dual-hamstring tendon techniques.¹⁰ The technique also allows for preparation of large diameter grafts that are associated with improved outcomes.¹¹⁻¹³ UltraSTAR features a double ULTRABUTTON Adjustable Fixation Device construct which has shown low displacement during cyclic loading.^{*4,5,14-17} This can all be done while using your current trusted drilling technique.



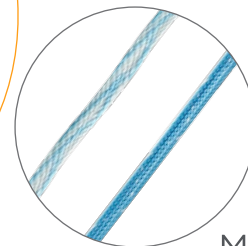
ULTRABUTTON
Adjustable Fixation Device



ACUFEX DIRECTOR
ELITE
ACL Drill Guide System



X-WING
Graft Preparation System



MINITAPE
Suture Family



XTENDOBUTTON
Family of Fixation Devices

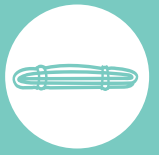


“ UltraSTAR is a great technique for surgeons that are comfortable with their current drilling approach but are looking to get graft diameters consistently larger than 8mm and minimize the case morbidity of their patients through the harvest of a single-hamstring tendon. Coupled with the ULTRABUTTON Adjustable Fixation Device and the X-WING Graft Preparation System, I have confidence that the graft is well prepared and will lead to a great outcome for my patients. ”

Mark Bowen, MD
NorthShore Orthopaedic & Spine Institute
Chicago, IL

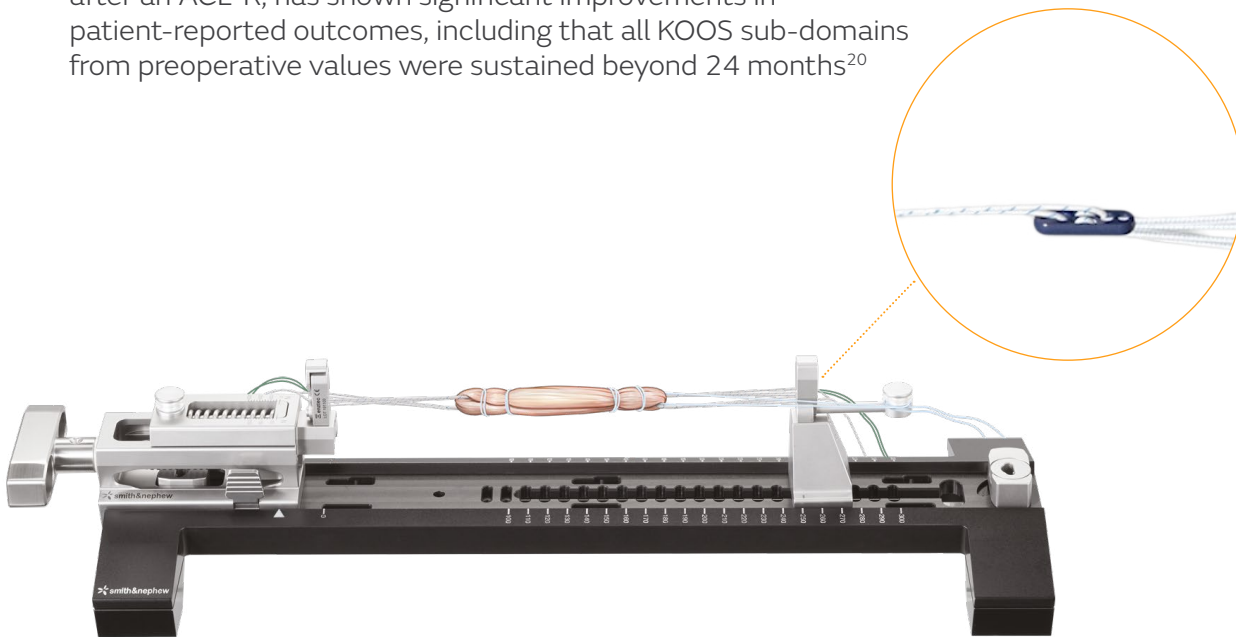
*For an adjustable fixation device; as demonstrated in benchtop testing



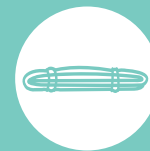


+ UltraSTAR Technique Features and Benefits

- Quadrupled semitendinosus grafts consistently provide an 8mm+ graft construct¹⁹
- Suspensory fixation allows for 360° graft contact within the femoral and tibial tunnel
- Lower case morbidity from reduced hamstring harvest through preservation of gracilis tendon¹⁰
- Accommodates surgeon's current drilling preferences
- Allows for graft tensioning after fixation
- Utilizes the ULTRABUTTON® Adjustable Fixation Device, which, after an ACL-R, has shown significant improvements in patient-reported outcomes, including that all KOOS sub-domains from preoperative values were sustained beyond 24 months²⁰



[Click here to enlarge the image](#)



Case Checklist: UltraSTAR Technique

Qty	SKU	Product
Capital		
1	72205269*	X-WING [°] Graft Preparation Board
1	72201746*	ACUFEX [°] DIRECTOR ELITE [°] ACL Drill Guide System
1	3134186	Single FLUTE ENDOSCOPIC Cannulated DRILL, 9.0mm
1	7205517	ACUFEX DIRECTOR Guide Handle
1	7205519	ACUFEX DIRECTOR ACL Tip Aimer
1	7205524	ACUFEX DIRECTOR ACL Angled Bullet
Consumables		
1	72290003	ULTRABUTTON [°] Adjustable Fixation Devices
1	72202797	1.2 RAP-PAC B, latex free
1	72205600	ULTRABUTTON TIB Adjustable Fixation Device, small, 12mm ø, 4.4mm peg
2	72205427	MINITAPE [°] Suture on Needle, straight needle, multi-colored braid, 40"
1	7207315	Endoscopic ULTRABUTTON/ ENDOBUTTON [°] Drill, 4.5mm, sterile
1	72290037	FLOW 50 [°] COBLATION [°] Wand
1	72205292	DYONICS [°] PLATINUM FLYER [°] Blade

*Placing an order with this code will order individual units of all components as shown in the Ordering Information section. Devices are not provided kitted or part of a system and all devices are individually packaged with their own instructions for use, as applicable.

 [Ordering information](#)



Watch

Graft Harvest + Preparation

- UltraSTAR Hamstring Graft Harvest Technique with Dr. Mark Bowen
- Graft Preparation Using the GRAFTMASTER[°] III System featuring Dr. Brandon Bryant
- Semi-T Graft Preparation Using the X-WING System featuring Dr. Mark Bowen
- Preparing a Short, Semi-T Graft on the X-WING System featuring Dr. Mark Bowen

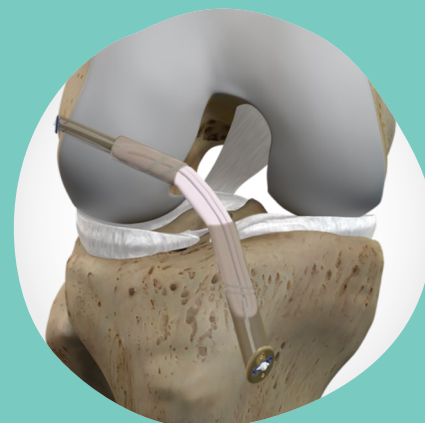
Surgical Technique

- UltraSTAR ACL Reconstruction Animation
- UltraSTAR ACL Reconstruction Video featuring Dr. Mark Bowen
- EndoSTAR ACL Reconstruction Video featuring Dr. Toby Ley



Learn

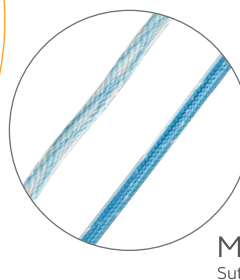
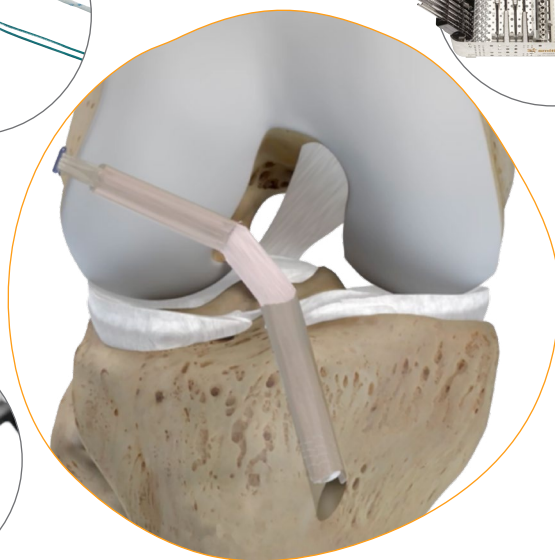
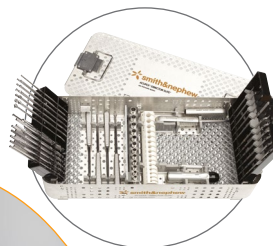
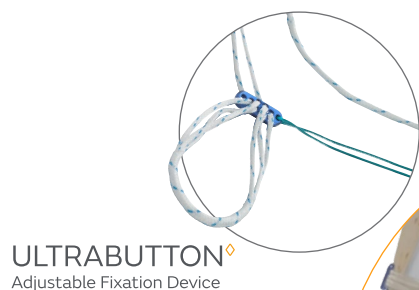
- X-WING Graft Preparation System Technique Guide
- All-inside and UltraSTAR ACL Reconstruction Technique Guide





UltraSURE Technique

The UltraSURE technique enables the use of a semitendinosus and gracilis graft—the most commonly used graft in the industry for ACL reconstruction.³⁵ It utilizes two trusted fixation technologies with the ULTRABUTTON[◊] Adjustable Fixation Device and the advanced biocomposite screw, BIOSURE[◊] REGENESORB[◊] Interference Screw. Versatile drilling options provide the ability to use single fluted reamers designed to minimize iatrogenic damage to the femoral condyle when drilling or other preferred drilling options.



“ We like to use the hamstring tendon soft tissue graft typically in non-collision, non-contact athletes. When you have a four stranded hamstring or soft-tissue hamstring graft, we aim for at least an 8mm diameter graft. So far the evidence has shown that leads to less risk of graft re-rupture.³⁶ In this technique, the suspensory fixation on the femur is with the ULTRABUTTON Adjustable Fixation Device, which is adjustable, so there’s no math. With the tunnel on the tibia, we can use the BIOSURE REGENESORB Interference Screw. ”

Vehniah Tjong, MD
Northwestern Center for Comprehensive Orthopaedic and Spine Care
Chicago, IL





+ UltraSURE Technique Features and Benefits

Semitendinosus and gracilis graft:

- Is the most-used graft in ACL reconstruction³⁵
- Ensures a maximum load to failure of around 4,590N³⁷

Using the ULTRABUTTON[®] Adjustable Fixation Device and the BIOSURE[®] REGENESORB[®] Interference Screw for fixation:

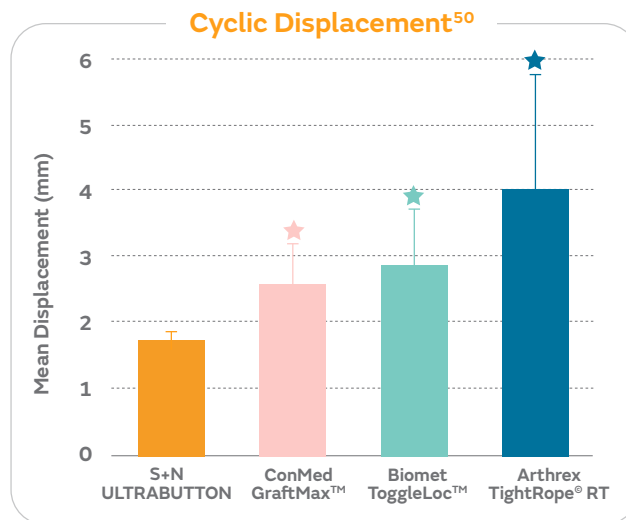
- ULTRABUTTON allows for easy graft loading,³⁸ has shown in a study to have significantly less cyclic displacement than other competitive adjustable fixation devices^{*4} and has ultra-strong fixation^{**4-7}
- BIOSURE REGENESORB's open-architecture design allows for bone ingrowth across the interference screw^{^31} and has shown that approximately 50% bone volume is restored by new bone within the center cannulation at 12 weeks in a pre-clinical study³¹

Accommodates surgeon's current drilling preferences

ULTRABUTTON Adjustable Fixation Device



Up to **75%** less displacement^{†4-6,14,15}

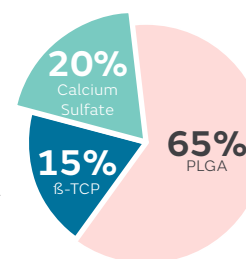


★ Denotes that comparison relative to the ULTRABUTTON Adjustable Fixation Device is statistically significant.

Advanced Material

REGENESORB material is replaced by bone within

24 months
in clinical and pre-clinical studies³⁹⁻⁴¹



*As demonstrated in benchtop testing; compared to TightRope[®], ToggleLoc[™] and GraftMax[™]; p <= 0.008

**For an adjustable fixation device; as demonstrated in benchtop testing

^As demonstrated in vivo

†As demonstrated in benchtop testing; compared to TightRope





Case Checklist: UltraSURE Technique

Qty	SKU	Product
Capital		
1	72205269*	X-WING [°] Graft Preparation System
1	72201746*	ACUFEX [°] DIRECTOR ELITE [°] ACL Drill Guide System
1	3134186	Single FLUTE ENDOSCOPIC Cannulated Drill, 9.0mm
1	7205519	ACUFEX DIRECTOR ACL Tip Aimer
1	7205524	ACUFEX DIRECTOR ACL Angled Bullet
Consumables		
1	72290003	ULTRABUTTON [°] Adjustable Fixation Device
1	72204404	BIOSURE [°] REGENESORB [°] Interference Screw, 9mm x 25mm
4	72205435	MINITAPE [°] Looped Suture on Needle, curved needle, multi-colored braid, 40"
1	7207315	Endoscopic ULTRABUTTON/ ENDOBUTTON [°] Drill, 4.5mm, sterile
1	72202797	1.2 RAP-PAC B Latex Free
1	72290037	FLOW 50 [°] COBLATION [°] Wand
1	72205292	DYONICS [°] PLATINUM FLYER [°] Blade

Watch



Graft Harvest + Preparation

- Hamstring Graft Harvest featuring Dr. Vehniah Tjong
- UltraSURE Hamstring Graft Preparation featuring Dr. Vehniah Tjong

Surgical Technique

- UltraSURE ACL Reconstruction Animation
- UltraSURE ACL Reconstruction Video featuring Dr. Vehniah Tjong

Learn



- X-WING Graft Preparation System Technique Guide

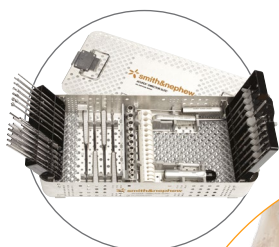


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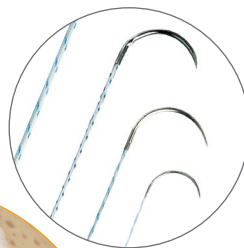


REGENESORB[◇] QT-B

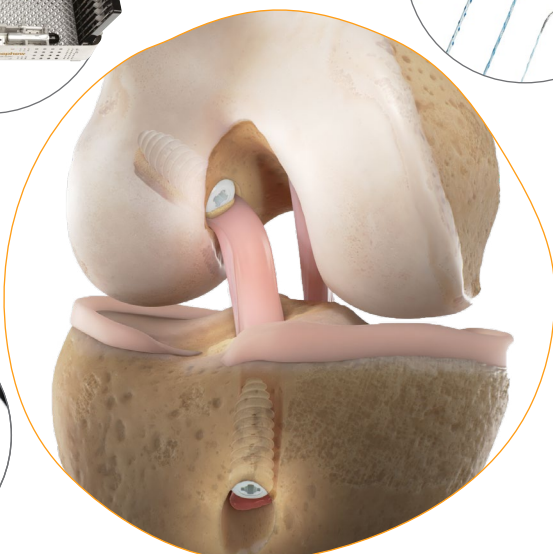
The REGENESORB quad tendon-bone (QT-B) technique uses the innovative, open-architecture BIOSURE[◇] REGENESORB Interference Screw for bone ingrowth across the screw^{*31} with a quadriceps tendon bone graft which provides a lower risk of anterior knee pain^{42,43} and predictable, larger graft diameter^{28, 44, 45} as compared to bone-tendon-bone or hamstring grafts, respectively.



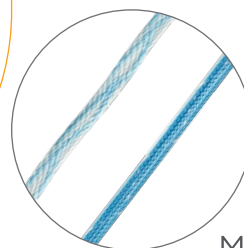
ACUFEX[◇] DIRECTOR
ELITE[◇]
ACL Drill Guide System



ULTRABRAID[◇]
Suture Family



X-WING[◇]
Graft Preparation System



MINITAPE[◇]
Suture Family



BIOSURE[◇]
REGENESORB[◇]
Interference Screw



The addition of the QT-B graft to my practice has allowed me to improve the standard of care for my patients. I recommend this option to my young athletic female patients looking to return to cutting and pivoting sports to help minimize the risk of a re-rupture, which has been shown in literature to be as high as 20% using other graft options.⁴⁶

Geoffrey Van Thiel, MD
Orthollinois
Chicago, IL





+ REGENESORB QT-B Features and Benefits

The QT-B graft offers:

- Direct bone-to-bone integration of the graft, like BTB
- Predictable, larger graft diameter^{28,44,45}
- Stability results on par with hamstring and BTB autografts^{27,47}
- Favorable clinical results^{27,47}
- Lower risk of anterior knee pain as compared to BTB^{28,42,43}

Using the BIOSURE® REGENESORB screw for fixation:

- Achieves circumferential graft-to-bone integration with the innovative open-architecture design^{*31}

Minimize possible iatrogenic damage

- The ACUFEX® DIRECTOR Single Fluted Reamers were designed with a smooth face to help minimize the risk of cartilage damage during insertion





Case Checklist: REGENESORB[◊] QT-B Technique

Qty	SKU	Product
Capital		
1	72205269*	X-WING [◊] Graft Preparation System
1	72201746*	ACUFEX [◊] DIRECTOR ELITE [◊] ACL Drill Guide System
1	3134186	Single Flute Endoscopic Cannulated Drill
1	7205519	ACUFEX DIRECTOR ACL Tip Aimer
1	7205524	ACUFEX DIRECTOR ACL Angled Bullet
1	72201942	BIOSURE [◊] EASY TAP System
Consumables		
1	72205435	MINITAPE [◊] Looped Suture on Needle, curved needle, multi-color braid, 40", 12 per box
1	72202798	1.2 RAP-PAC C latex free
2	72205432	ULTRABRAID [◊] Suture on Needle, #5, straight needle, white, 40", 12 per box
1	72204394	BIOSURE REGENESORB Interference Screw, 7mm x 20mm
1	72204404	BIOSURE REGENESORB Interference Screw, 9mm x 25mm
1	72290037	FLOW 50 [◊] COBLATION [◊] Wand
1	72202531	DYONICS [◊] BONECUTTER [◊] PLATINUM Blade, 4.5mm

Watch

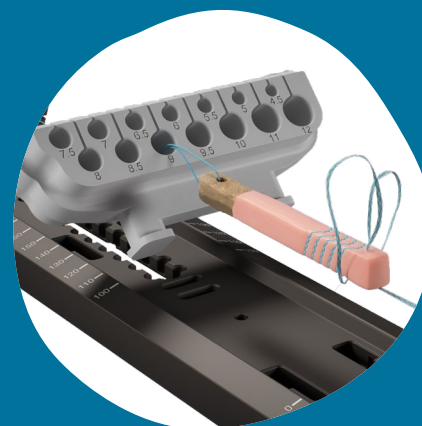


Graft Harvest + Preparation

- QT-B Graft Harvest featuring Dr. Geoffrey Van Thiel
- QT-B Graft Preparation featuring Dr. Geoffrey Van Thiel
- Why Quad Tendon? featuring Dr. R. Lee Murphy

Surgical Technique

- QT-B Surgical Technique Video featuring Dr. Geoffrey Van Thiel
- All Soft Tissue Quad Tendon with ULTRABUTTON Device Technique Video featuring Dr. R. Lee Murphy



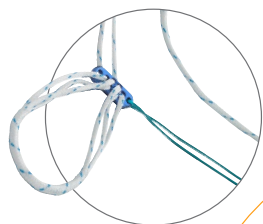
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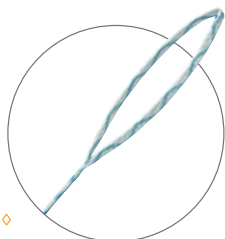
LIGABRACE[◇] ACL Repair

The LIGABRACE ACL Repair technique is another treatment solution for surgeons who want to preserve the native patient anatomy, including insertion sites, bundle morphology, nerves, and intrinsic cell populations.⁴⁸ Additionally, the preservation of the patient's musculature due to zero graft harvest eliminates donor site morbidity and can potentially increase patient proprioception and other functional outcomes.⁴⁹ The LIGABRACE ACL Repair technique eliminates the need for intraosseous implants because it features the ULTRABUTTON[◇] Adjustable Fixation Device and the ENDOBUTTON[◇] Fixation Device to complete the repair.

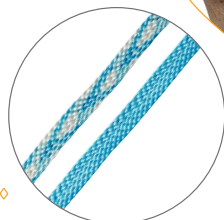
ULTRABUTTON[◇]
Adjustable Fixation Device



ULTRALOOP[◇]
Suture Tape Loop



ULTRATAPE[◇]
Suture



ENDOBUTTON[◇]
Fixation Device



FLOW 50[◇]
COBLATION[®] Wand



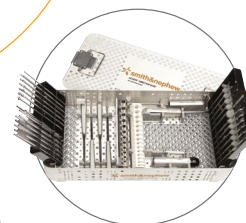
FIRSTPASS[◇] MINI
Family of Suture Passers



ACCU-PASS[◇]
Suture Shuttle



ACUFEX[◇] DIRECTOR
ELITE[◇]
ACL Drill Guide System



The biggest advantage of ACL Repair over ACL Reconstruction is that you preserve the native ACL tissue. The minimally invasive nature of this technique may lead to a lower inflammatory response of the joint and also may lead to better early range of motion and fewer complications compared to ACL Reconstruction.⁵¹

Jan Vonhoegen, MD
Klinik am Ring, Cologne
Germany





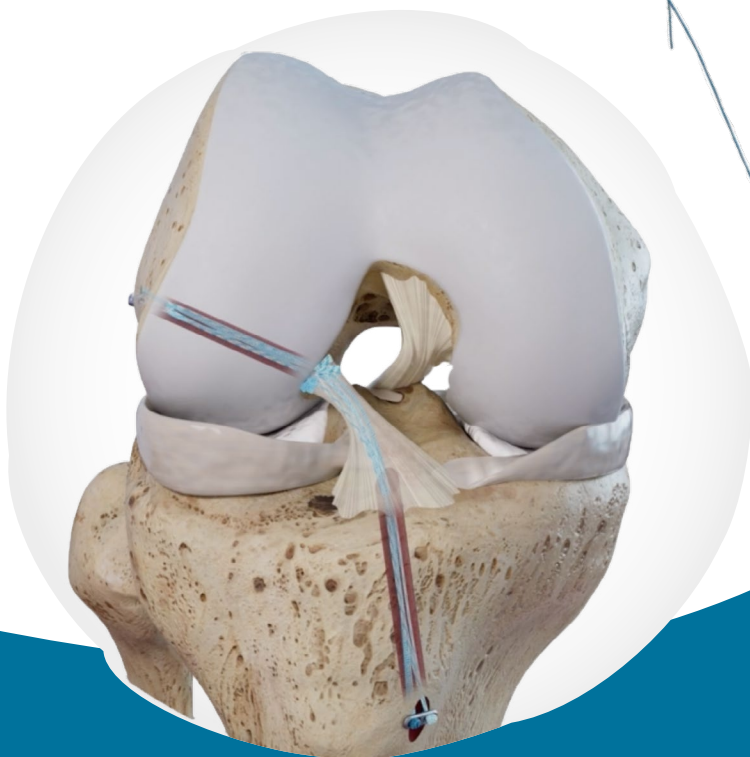
+ LIGABRACE[◊] Technique Features and Benefits

The LIGABRACE ACL Repair technique:

- Preserves native ACL tissue⁴⁸
- Avoids graft harvest morbidity⁴⁹
- Offers all cortical fixation

This technique uses:

- The ULTRALOOP[◊] Suture Loop loaded on a FIRSTPASS[◊] MINI for a 1-pass luggage tag of the proximal torn ACL
- ULTRATAPE[◊] Suture to create a bracing construct to protect healing of the repaired ACL
- The ULTRABUTTON[◊] Adjustable Fixation Device, which has shown in a study to have significantly less cyclic displacement than other competitive adjustable fixation devices^{*4} and has ultra-strong fixation^{**4-6}



*As demonstrated in benchtop testing; compared to TightRope®, ToggleLoc™ and GraftMax™

**For an adjustable fixation device; as demonstrated in benchtop testing





Case Checklist: LIGABRACE[◊] ACL Repair Technique

Qty	SKU	Product
Capital		
1	72201746*	ACUFEX [◊] DIRECTOR ELITE [◊] ACL Drill Guide System
1	7205517	ACUFEX DIRECTOR Guide Handle
1	7205519	ACUFEX DIRECTOR ACL Tip Aimer
1	7205524	ACUFEX DIRECTOR Angled Bullet
1	72201737	Femoral Aimer Offset Guide, 0mm
1	72201732	Femoral Aimer Offset Guide, Handle
1	7209494	ELITE [◊] Loop Grasper
1	72203453	Microfracture Awl, 45°
1	72203850	ELITE Knot Pusher XL
Consumables		
1	7210425	ACCU-PASS [◊] Suture Shuttle
1	72201361	ACCU-PASS Monofilament, #1, sterile, single package, 10 per box
1	13186	ENDOBUTTON [◊] , 4.0mm x 12mm
1	72203896	ULTRATAPE [◊] Suture, blue
1	72203897	ULTRATAPE Suture, cobraid-blue
1	72290003	ULTRABUTTON [◊] Adjustable Fixation Device
1	72205445	ULTRALOOP [◊] Suture Loop, cobraid
1	72205446	ULTRALOOP Suture Loop, blue
1	72290128	FIRSTPASS [◊] MINI Suture Passer, straight
1	72200886	ULTRABRAID [◊] Suture, #2
1	7207315	ENDOBUTTON Drill, 4.5mm, cannulated, 1 per package
1	7207221	Drill Tip Guide Wire, 2.4mm, 12"
1	72290037	FLOW 50 [◊] COBLATION [◊] Wand

*Placing an order with this code will order individual units of all components as shown in the Ordering Information section. Devices are not provided kitted or part of a system and all devices are individually packaged with their own instructions for use, as applicable.

Watch



Graft Harvest + Preparation

- Why Repair the ACL with Dr. Jan Vonhoegen
- Evidence in Focus: ACL Repair History

Surgical Technique

- LIGABRACE ACL Repair Animation
- LIGABRACE ACL Repair Surgical Video featuring Dr. Jan Vonhoegen



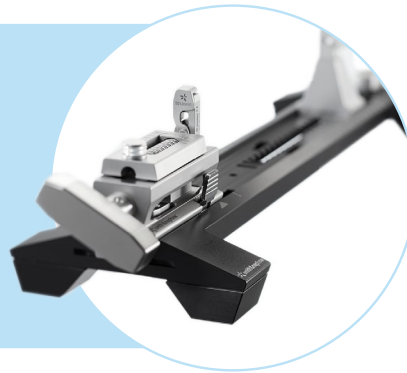
Graft Harvest

- Quadriceps Harvest



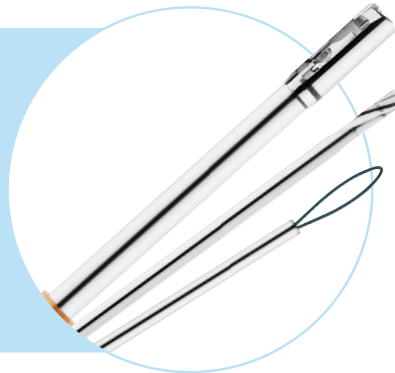
Graft Preparation

- Suture Solutions
- Graft Prep Boards



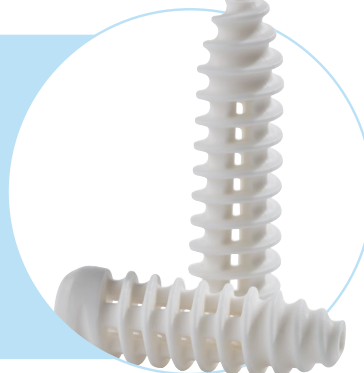
Guide Systems and Tunnel Drilling

- Inside-out Rigid Drilling
- Inside-out Flexible Drilling
- Retrograde Drilling
- Outside-in Drilling
- Extra-articular Drilling



Fixation

- Button Fixation
- Screw Fixation

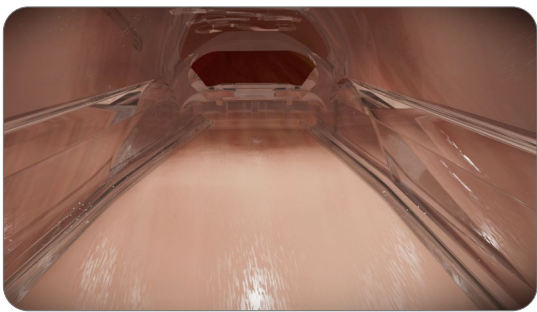


QUADTRAC[®] Quadriceps Tendon Harvest Guide System

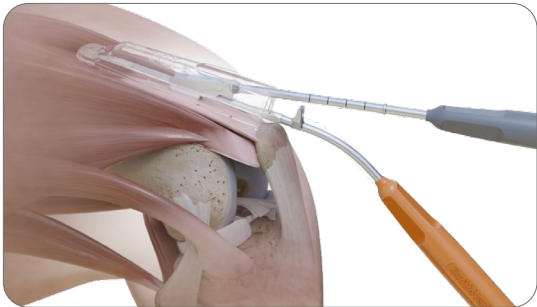
The versatile QUADTRAC Harvest Guide System is the first integrated guide system for minimally invasive quadriceps graft harvesting.¹

The system works for quad tendon or quad tendon with bone¹ and offers the ability to harvest partial or full thickness grafts.²

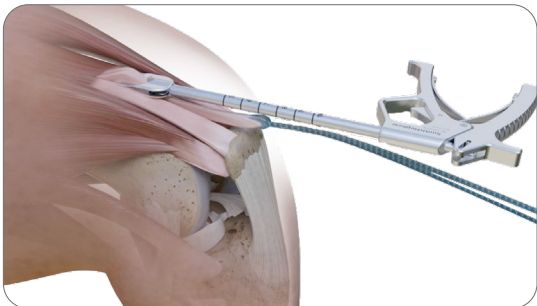
+ Visualize Hands-free, direct tendon visualization^{1,2}



+ Optimize Controlled, guided resection to harvest only desired tissue²



+ Harvest Consistent and reproducible with single-use blades¹⁻⁴



Guide-TRAC

Q-VIEW[®] Retractor



TRAC-Cutters

TRAC-Cutter Blades



QUAD-Cutter

QUAD-Cutter Blade

QUADTRAC[®] System

Q-VIEW[®] Retractor

The Q-VIEW Retractor facilitates operating room efficiency² through **hands-free** tissue retraction to provide **direct visualization** of the quad tendon during the entire harvest procedure through a minimally invasive incision.^{1,2}



QUADTRAC[®] System Guide-TRAC Handle

The Guide-TRAC provides initial blunt dissection and is designed to be paired with:

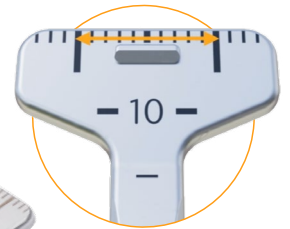
- Q-VIEW[®] Retractor for insertion
- TRAC-Cutters for controlled cuts



Length indicator

Provides graft length estimation and a hard stop to prevent over harvest and incision site injury² in conjunction with the TRAC-Cutter

10mm wide graft



Head

Provides graft width estimation in 1mm increments²

Graft length estimator

Provides the ability to confirm available graft length prior to making the first incision to the graft²

Guide-TRAC

Provides a stable harvest trajectory for the TRAC-Cutter²

QUADTRAC[®] System

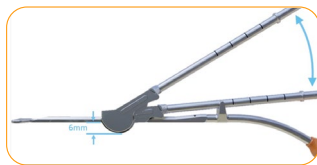
TRAC-Cutter Blade Handles

The TRAC-Cutters, available in 8, 10, and 12mm widths, allow for **guided** cutting of the medial and lateral borders in either a push or pull direction of the graft.



TRAC-Cutter Blades

- Custom, single-use blades provide consistent cutting performance from case to case^{3,4}
- Designed to cut 6mm deep at various handle angles when used with the Guide-TRAC⁵



Handle

Color coded handles provide quick, visual confirmation of graft harvest width

Head

Marked with the graft width and features a standard ISO scalpel blade interface

Length indicator

Provides cut length estimation² while making the medial lateral cuts in combination with the Guide-TRAC

Cut stop

Provides a hard stop at ~10cm in combination with the Guide-TRAC to prevent over harvest²

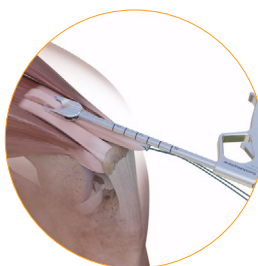
QUADTRAC[®] System

QUAD-Cutter

The QUAD-Cutter allows for **controlled** and **reproducible** quad tendon proximal truncation with a single-use blade for every case when used in conjunction with the QUADTRAC System.²⁻⁴

Graft length estimation

Provides accurate graft length guidance prior to final truncation of the graft²



QUAD-Cutter Blade

- Custom, single-use blade provides consistent cutting performance from case to case^{3,4}
- Provides the ability to strip partial thickness quad grafts²
- Sharpened leading edge can be used to help complete proximal graft separation prior to truncation²

Safety lock trigger

Single-handed safety lock helps prevent early, unwanted truncation of the graft²



Suture

LOOPED SUTURE

on Needle

Designed for smooth passage, low graft disruption and versatility.

- **Smooth** needle throw from swaged suture
- **Optimized** design for minimized graft disruption
- **Versatility** in needle options and suture color choice

	Suture					Needle		Packaged	
	Size	Colors	Length	Knot Pull ⁶	Straight Tensile ⁶	Options	Length		Diameter
LOOPED SUTURE on Needle	#2	<ul style="list-style-type: none"> • Blue • Cobraid 	20" loop	Up to 39.07lbf	Up to 85.20lbf	<ul style="list-style-type: none"> • Straight • Curved, HC5 ½ circle 	<ul style="list-style-type: none"> • 50.8mm (straight) • 25.9mm (curved) 	1.28mm	12 per box

ULTRABRAID[◇]

Suture

ULTRABRAID Suture is composed of an ultra-high molecular weight polyethylene (UHMWPE) fiber and features a braid configuration.

	Suture				Needle		Packaged
	Size	Colors	Length	Options	Length	Diameter	
ULTRABRAID Suture	2-0	<ul style="list-style-type: none"> • White • Cobraid 	24"	N/A	N/A	N/A	10 per box
	#2	<ul style="list-style-type: none"> • White • Cobraid • Blue 	38"	N/A	N/A	N/A	10 per box
ULTRABRAID Suture on Needle	2-0	<ul style="list-style-type: none"> • White • Cobraid 	24"	Curved, HR22 ½ circle	N/A	N/A	10 per box
	#2	<ul style="list-style-type: none"> • White • Cobraid 	38"	Curved, HR27 ½ circle	N/A	N/A	<ul style="list-style-type: none"> • Individual • 10 per box
	#5	<ul style="list-style-type: none"> • White • multi-colored braid 	40"	<ul style="list-style-type: none"> • Straight • Curved, HC5 ½ circle 	50mm (straight)	1.28mm	12 per box



Preview

REGENESORB[◇] BTB ACL Reconstruction Technique
REGENESORB QT-B ACL Reconstruction Technique



Ordering information



Tapes

MINITAPE^o

Suture

MINITAPE Suture is a braided suture tape made from ultra-high molecular weight polyethylene (UHMWPE) fiber. It seamlessly transitions from round suture to flat braid and back to round suture. MINITAPE Suture has a broader footprint and a more uniform distribution of pressure compared to similar sutures.*⁶ This may reduce tissue strangulation and a "cutting effect" in applications where tissue pull-through may be a concern.

	Tape					Options	Needle		Packaged
	Colors	Length	Width	Knot Pull ⁶	Straight Tensile ⁷		Length	Diameter	
MINITAPE Suture	<ul style="list-style-type: none"> • Blue • Cobraid blue • Cobraid white 	39.5"	1.4mm	N/A	50.13lbf	N/A	N/A	N/A	6 per pack
MINITAPE Suture on Needle	<ul style="list-style-type: none"> • White/blue multicolor • Blue 	40"	1.1-1.5mm	~24-28lbf	N/A	<ul style="list-style-type: none"> • Straight • Curved, HC5 ½ circle 	50mm (straight)	1.08mm	12 per box
MINITAPE Looped Suture on Needle	<ul style="list-style-type: none"> • White/blue multicolor • Blue 	20"	1.1-1.5mm	~24-28lbf	N/A	<ul style="list-style-type: none"> • Straight • Curved, HC5 ½ circle 	50.8 mm (straight)	1.28mm	12 per box



Preview

UltraSTAR ACL Reconstruction Technique
 UltraSURE ACL Reconstruction Technique
 REGENESORB^o QT-B ACL Reconstruction Technique

ULTRATAPE^o

Suture

ULTRATAPE Suture is a smooth suture tape, which, when compared to a traditional #2 suture, provides a **75% increase** in contact area and a significantly lower and more evenly distributed level of pressure.**⁸

	Tape			Options	Packaged
	Colors	Length	Width		
ULTRATAPE	<ul style="list-style-type: none"> • Blue • Cobraid 	38"	2mm	N/A	6 per box

*Testing conducted on size 3, 4 and 5 Force Fiber Fusion^o Suture against comparable product in sterilized form. These tests may not be indicative of clinical performance. Testing was performed in 2017 upon sutures manufactured using the same braiding method, materials and equipment as MINITAPE size 2, except on a differing yet representative size. Similar results expected.

**as demonstrated in benchtop testing, p<0.05



Ordering information



Tools

ULTRAGRAB[®] Suture Manager

ULTRAGRAB Suture Manager is designed to shuttle sutures through bone tunnels with its stiffened #2 suture and patient-contacting protective tube. It is available in cobraid- and solid-color versions.

	Suture						Tube		Packaged	
	Size	Colors	Total Length	Stiffened Length	Suture Knot Pull Average ⁹	Suture Straight Pull Average ⁹	Material	Length		Diameter
ULTRAGRAB	#2	• Blue • Cobraid	48"	12"	34.2lbf	74.8lbf	Polypropylene	12"	Inner: 1.5mm Outer: 2.5mm	6 per box

ULTRALOOP[®] Suture Tape Loop

ULTRALOOP Suture Tape Loop features a 1.25" MINITAPE[®] loop on a #2 26" suture tail. It is designed to bring the benefits of suture tape to luggag tag applications. It is available in cobraid- and solid-color versions.

	Suture			Loop			Suture Knot Pull Average ⁹	Suture Straight Pull Average ⁹	Packaged
	Size	Colors	Length	Size	Loop Length	Tape Width			
ULTRALOOP	#2	• Blue • Cobraid	26"	MINITAPE	1.25"	1.5mm	39.0lbf	99.8lbf	12 per box

WHIPKNOT[®] Soft Tissue Cinch

The WHIPKNOT is indicated for use in assisting in the harvest preparation and placement of soft-tissue grafts during ligament reconstructive surgical procedures. The disposable soft-tissue cinch comes pre-assembled in a sterile pack that also includes a disposable cannula.



Graft prep boards

X-WING[®]

Graft Preparation System

The X-WING System is evolving the preparation of hamstring, BTB and quad grafts for ligament reconstruction.



Preview

UltraTRAC QUAD ACL Reconstruction Technique
REGENESORB[®] BTB ACL Reconstruction Technique
UltraSTAR ACL Reconstruction Technique
UltraSURE ACL Reconstruction Technique
REGENESORB QT-B ACL Reconstruction Technique



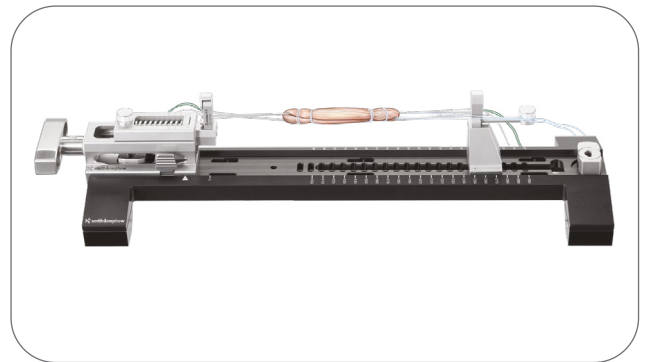
Watch

UltraTRAC QUAD ACL Reconstruction Animation
All-inside ACL Reconstruction animation



Learn

X-WING Graft Preparation System Technique Guide



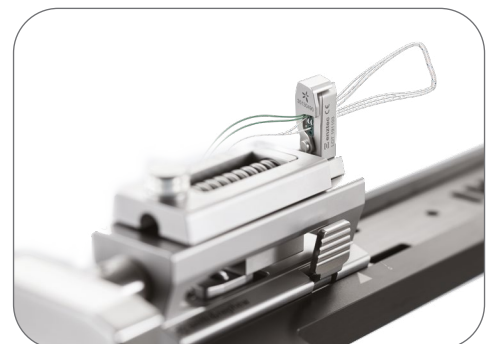
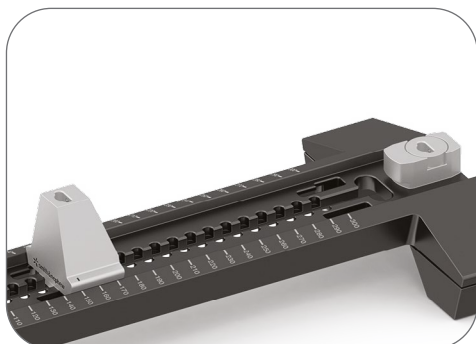
[Click here to enlarge the image](#)

Simplify graft preparation

+ Guided graft length

+ Controlled pre-tensioning

+ Secure button attachment



Inside-out rigid

ACUFEX[®] DIRECTOR ELITE[®] Set

Swing-out drill racks

Tightly organized for operating room efficiency, swing-out racks include slots for virtually every instrument—from whole and half-size drills to aimers and chondral picks. No more searching the bottom tray for an instrument.

Extra room if you need it

In addition to the swing-out racks, the bottom of the tray has more room for loose instruments.

The ACUFEX DIRECTOR ELITE Drill Guide offers:

- A familiar dovetail arm design used for more than a decade in ACUFEX linear instruments
- A simple, self-locking mechanism for one-handed operation of the guide
- A ratchet bullet locking mechanism that self-locks as the surgeon advances the bullet
- Choice of tip-to-tip or tip-to-elbow aimers (depending on surgeon's preferred technique)



Preview

REGENESORB[®] BTB ACL Reconstruction Technique
UltraSTAR ACL Reconstruction Technique
UltraSURE ACL Reconstruction Technique
REGENESORB QT-B ACL Reconstruction Technique



Watch

REGENESORB[®] BTB ACL Reconstruction Animation

Single fluted reamers

Designed to minimize iatrogenic damage on the femoral condyle when entering the joint.



Inside-out flexible

CLANCY ANATOMIC CRUCIATE GUIDE Flexible Drill System

One complete system

Featuring flexible reamers and a 42° femoral guide, the CLANCY System offers the necessary tools for the accurate placement and drilling of femoral tunnels.^{10-12,14}

- Reach more inferior and anterior sites on the lateral condyle than conventional instrumentation¹⁰⁻¹²
- No need to hyperflex the knee while drilling through the medial portal which allows for easier positioning and avoidance of fat pad ingress¹¹⁻¹⁴
- Permits an anteromedial approach with 90° of knee flexion allowing for improved visualization^{*10-14}

 [Ordering information](#)



 **Preview**
REGENESORB[®] BTB ACL Reconstruction Technique

 **Watch**
REGENESORB BTB ACL Reconstruction Animation

Retrograde

ACUFEX[®] TRUNAV Retrograde Drills

The ACUFEX TRUNAV Retrograde Drill is the **ONLY** cannulated drill designed for **pin-guided antegrade/retrograde reaming** over a guide wire to deliver precision and control.^{**15-18}

- **Precision:** Precise tunnel planning and placement is facilitated with a 2.4mm guide wire that delivers more than 50% of bone savings during initial tunnel placement^{***17}
- **Control:** Support and control for the establishment of concentric tunnels during antegrade and retrograde drilling are achieved through the drill's cannulated design^{**15,18,19}
- **Performance:** Enhanced drill performance has been shown to create smoother tunnels[†] which may facilitate easier graft passage¹⁹

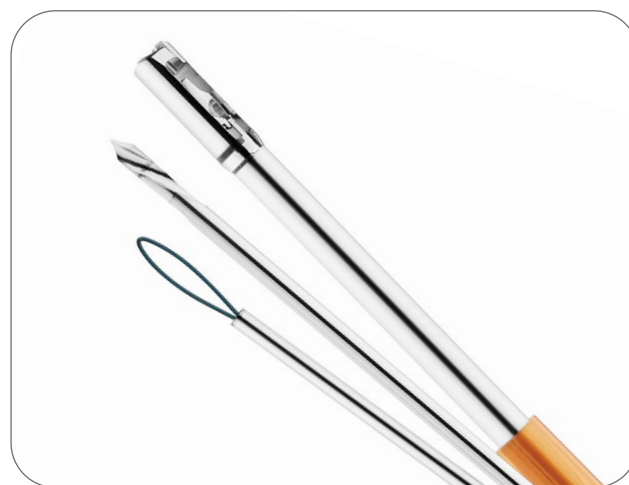
*As compared to rigid drilling systems

**As demonstrated in cadaver and benchtop testing


***As demonstrated in benchtop testing, n=20, compared to FlipCutter™, TWISTR™ and SwitchCut™

†As compared to DePuy Synthes TWISTR™ and Arthrex FlipCutter II, n=6

 [Ordering information](#)



 **Preview**
UltraSURE ACL Reconstruction Technique

 **Watch**
UltraSURE ACL Reconstruction Animation



Outside-in

ACUFEX[®] PINPOINT

Anatomic ACL Guide System

Designed for versatility, the system allows the surgeon to tailor femoral tunnel location.

- Change guide trajectory to achieve desired femoral tunnel lengths and avoid anatomic landmarks, previous tunnels or fixation devices
- Estimate the size and coverage of the native ACL footprint with the concentric single-bundle guides
- Adjust placement of the guide on the condylar wall for stability and control during guide wire placement

 [Ordering information](#)



Extra-articular

ACUFEX EXTRA-ARTICULAR

Reconstruction Guide System

A complete solution for surgical reconstruction of the posterolateral corner (PLC) or medial collateral ligament (MCL).

- Ratcheting guides are designed to clamp onto the patient's knee and stay attached without support. The two-piece design allows for quick assembly and disassembly
- The Offset Guide and the Retractor help further the surgeon's ability to drill tunnels for a PLC reconstruction safely and efficiently



[Click here to see another view](#)

 [Ordering information](#)





ULTRABUTTON®
Adjustable Fixation Device

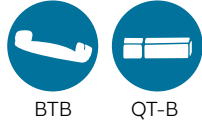
The expanded ULTRABUTTON Device family offers dedicated adjustable fixation solutions for all graft types and anterior cruciate ligament (ACL), posterior cruciate ligament (PCL), extracapsular repair, medial collateral ligament (MCL) and lateral collateral ligament (LCL).



Quadriceps tendon
ULTRABUTTON QUAD Device



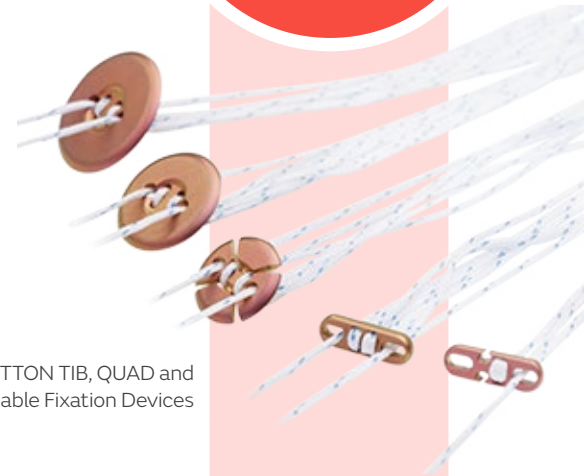
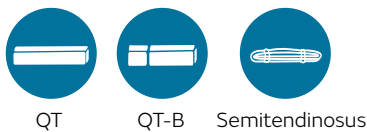
Bone-tendon
ULTRABUTTON BB Device



Hamstring
ULTRABUTTON Device



Tibial fixation
ULTRABUTTON TIB Device



ULTRABUTTON TIB, QUAD and BB Adjustable Fixation Devices



ULTRABUTTON Adjustable Fixation Device



ENDOBUTTON® CL BTB Fixation Device



ENDOBUTTON CL ULTRA Fixation Device



ENDOBUTTON Fixation Device

The ULTRABUTTON Device is indicated for soft tissue to bone fixation and the ULTRABUTTON QUAD, BB, and TIB Device are indicated for soft tissue to bone or bone-tendon to bone fixation to repair or reconstruct.



ULTRABUTTON[®] QUAD Adjustable Fixation Device

The ULTRABUTTON QUAD device features a suturing technique that integrates the device into the graft in only 5 needle passes.²⁰



Average graft preparation time under

4 minutes^{*20}

Reduction limbs

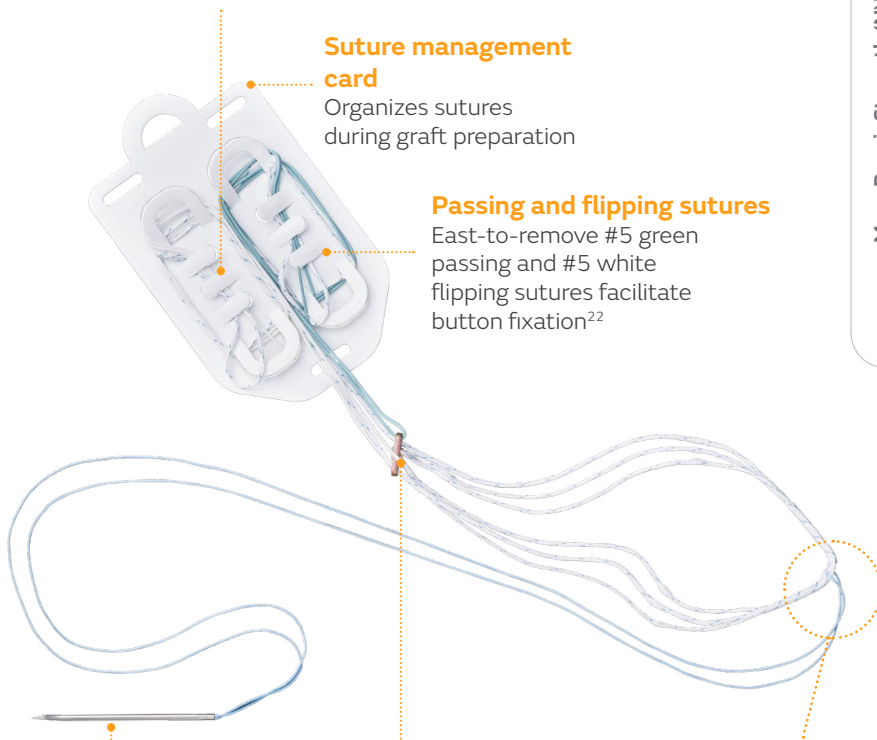
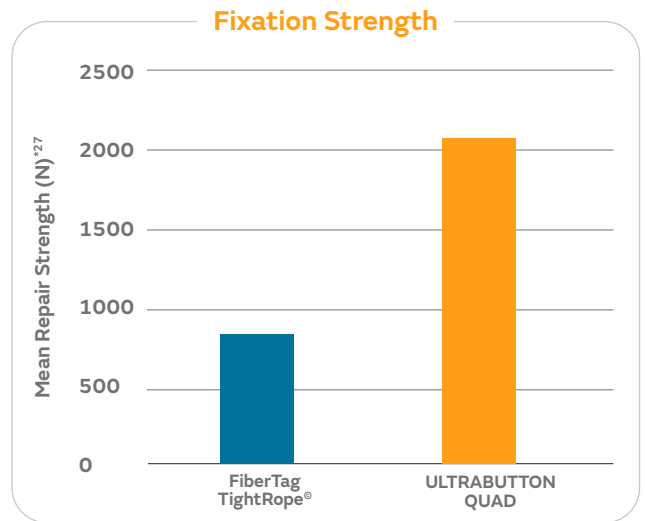
Finger loops can be attached to the provided reduction bar 'J' slots to facilitate one person graft reduction²¹

Suture management card

Organizes sutures during graft preparation

Passing and flipping sutures

East-to-remove #5 green passing and #5 white flipping sutures facilitate button fixation²²



Integration #2

Suture and Needle

Allows for ultra-strong integration of the button into the soft tissue quadriceps graft^{**25,27,28}

Titanium Button

Strong with low profile²³⁻²⁶

Graft Protection Sleeve

- Designed to protect the graft during reduction by minimizing relative motion between the sutures and graft²²
- Split sleeve design aids in graft preparation²²

Reduction Bar

- Enables easy graft reduction²⁰
- Helps to minimize the physical pain of button reduction²⁰



*n=5 cases

**As demonstrated in benchtop testing

ULTRABUTTON[®] BB

Adjustable Fixation Device

The ULTRABUTTON BB features an open loop design to facilitate attachment to BTB or QT-B grafts in **under two minutes**^{*20}



Average graft preparation time under

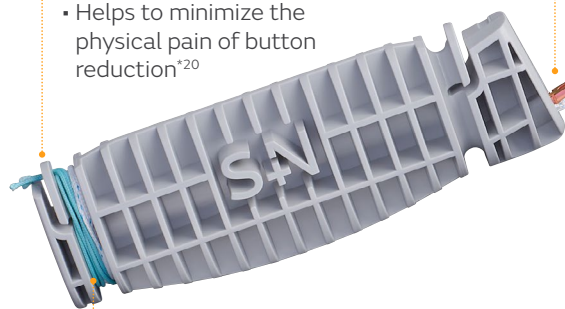
2 minutes^{*20}



Titanium Button
Strong with low profile²³⁻²⁶

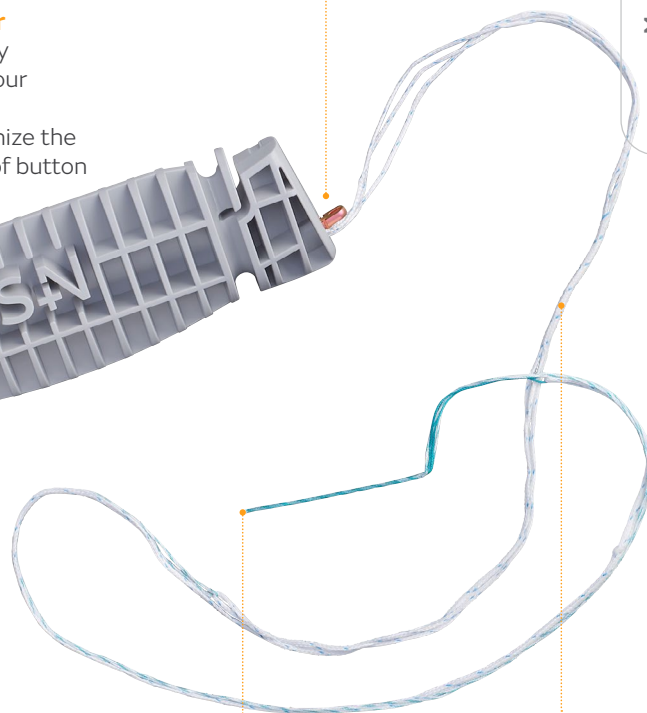
Reduction Bar

- Facilitates easy assembly to your graft²⁰
- Helps to minimize the physical pain of button reduction^{*20}



Flip Suture

Designed for easy removal²²

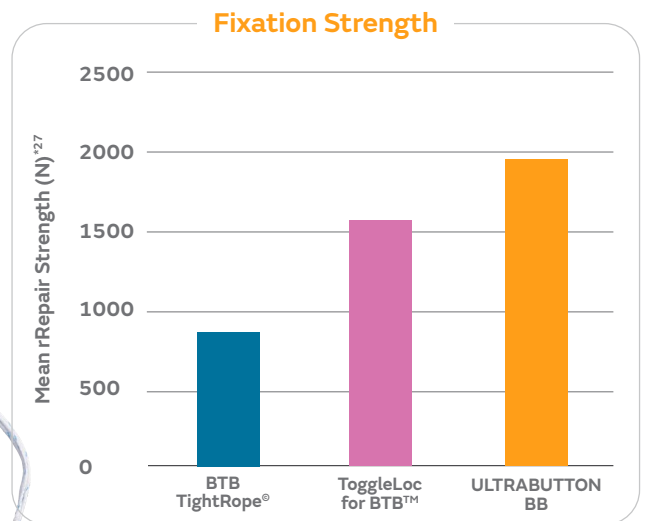


Suture Passer

Stiffened suture passer facilitates suture passage through bone block holes

Graft Protection Sleeve

Designed to protect the graft during reduction by minimizing relative motion between the sutures and graft²²



*n=5 cases



ULTRABUTTON[®] Adjustable Fixation Device

Graft Protection Sleeve

- Designed to protect graft with large contact area²²
- Designed to reduce relative motion and sawing effect between device and graft²²

Interlocking Adjustment

- Maximizes graft in tunnel²⁹
- Requires minimal force to reduce loop²⁹⁻³³

Titanium Button

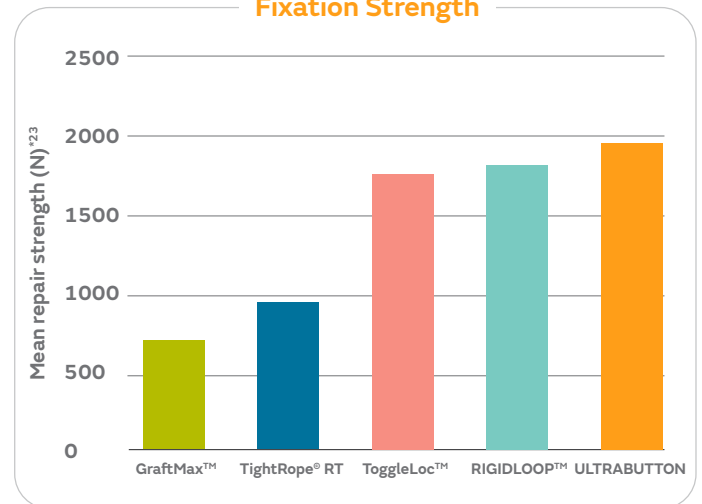
Flip Suture

- Assists controlled button flip
- Designed for easy removal²²

Adjustment Tails

- Designed to enable fine tuning of fixation

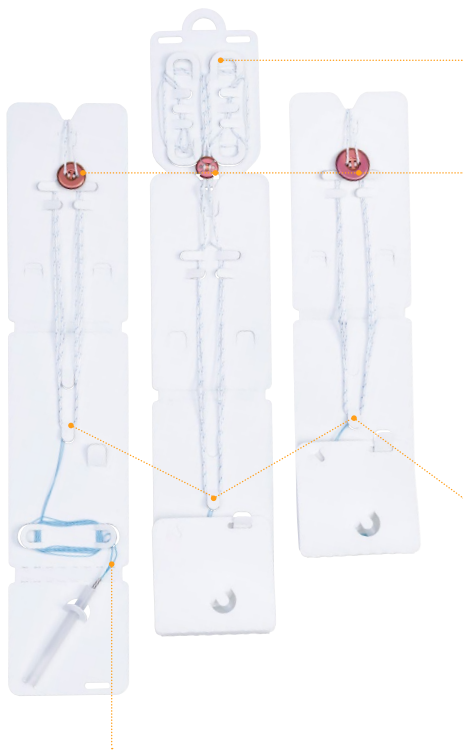
Fixation Strength



*As demonstrated in benchtop testing

ULTRABUTTON[®] TIB Adjustable Fixation Device

ULTRABUTTON TIB Device, available in 3 sizes for common tunnel diameters, facilitates easy graft attachment to quad tendons in only **5 needle passes**²⁰ in an average of under 4 minutes^{*20} and can also be used for hamstring grafts. It features an ultra-low profile which may minimize patient soft tissue irritation.^{†34-36}



Suture management card

Organizes sutures during graft preparation

Low profile titanium button design

- Available in 3 sizes for tunnels from 4.9mm to 13mm
- Medium and large sizes come preassembled for less surgical steps
- Small size facilitates all-inside techniques

Graft protection sleeve

- Designed to protect the graft during reduction by minimizing relative motion between the sutures and graft
- Split sleeve design aids in graft preparation²²

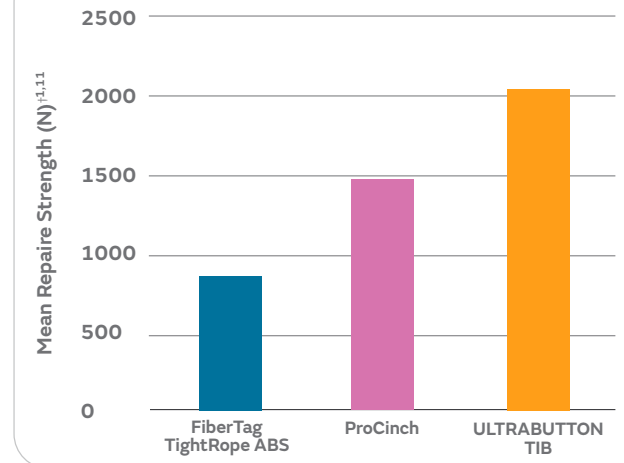
Integration #2 Suture and Needle

- Allows for ultra-strong integration of the button into the soft tissue quadriceps graft^{*25,27,28}
- Easily removed for use with hamstring graft

*As demonstrated in benchtop testing
**n=5 cases

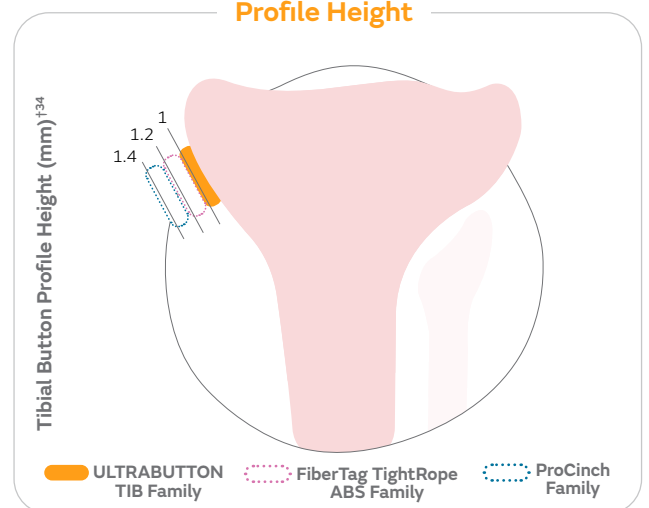
 [Ordering information](#)

Fixation Strength



Button size	Inner peg diameter	Tunnel diameter
small (12mm)	4.4mm	4.9mm–7mm
medium (15mm)	7mm	7.5mm–10mm
large (18mm)	10mm	10.5mm–13mm

Profile Height



†ULTRABUTTON TIB Adjustable Fixation Device compared to Arthrex FiberTag[®] TightRope[®] ABS Implant with Concave TightRope ABS Button ø11mm, Round and Stryker ProCinch[™] Open Loop no button with 11mm Round Concave Button in benchtop testing



XTENDOBUTTON[®] Adjustable Fixation Device

Enhance your cortical fixation options.

XTENDOBUTTON oval + round

Designed to extend button fixation and available in small, medium and large sizes.

XTENDOBUTTON Oval Fixation Devices are designed to nestle onto native anatomy.

XTENDOBUTTON Round Fixation Devices are designed to provide extended surface area.

- Peg design centers the button in the tunnel
- Suture management holes provide additional suture tie locations



Preview

UltraSTAR ACL Reconstruction Technique

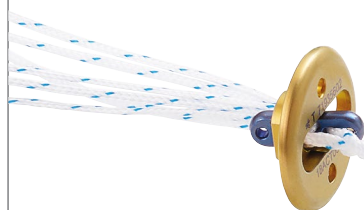


Simple to connect without removing graft

1. Feed



2. Pass



3. Seat



BIOSURE[®] REGENESORB[®]

Interference Screw

Enhance your cortical fixation options.

The innovative BIOSURE REGENESORB Screw is the first interference screw made of the unique REGENESORB advanced biocomposite material with an open-architecture design to allow for bone ingrowth^{*37,43-45}, which also provides the kind of fixation strength expected with a solid, absorbable interference screw.^{**38,39}

Advanced material

REGENESORB material is an advanced biocomposite shown to be absorbed and effectively replaced by bone within 24 months in clinical and pre-clinical studies.⁴⁰⁻⁴²

Approximately 50% bone volume is restored by new bone within center cannulation at 12 weeks, as demonstrated in a pre-clinical study.^{*37,43-45}



Preview

REGENESORB BTB ACL Reconstruction Technique
UltraSURE ACL Reconstruction Technique
REGENESORB QT-B ACL Reconstruction Technique

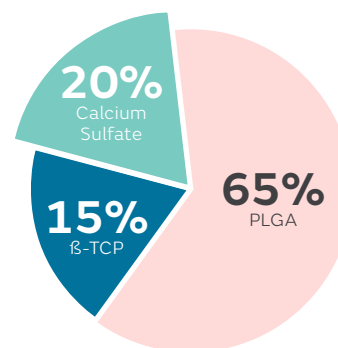


Watch

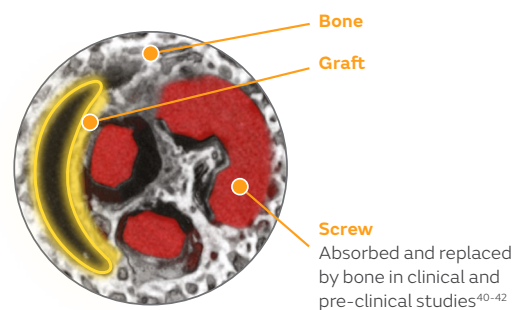
REGENESORB BTB ACL Reconstruction Animation



Advanced Material



Circumferential graft-to-bone integration^{*37}



BIOSURE REGENESORB Screw has been shown to allow integration of bone on all sides of the graft, a key aspect of the ligament healing process.^{*37,43-45}

*As demonstrated in vivo

**Compared to BIOSURE HA Interference Screws; as demonstrated in benchtop testing

Ordering Information

Meniscal Repair

All-inside

Inside-out

Outside-in

Root Repair

Ligament

Graft Harvest

Graft Preparation

Guide Systems + Tunnel Drilling

Pins, Guide Wires, PACs

Fixation

✦ Click on a section to jump to those SKUs



Meniscal Repair: All-inside

NOVOSTITCH® PRO Meniscal Repair System

Reference	Description
CTX-A003	NOVOSTITCH PRO Meniscal Repair System (2-0)
CTX-A004	NOVOSTITCH PRO Meniscal Repair System (0)
CTX-R001	NOVOSTITCH Cartridge (2-0)
CTX-R002	NOVOSTITCH Cartridge (0)

FAST-FIX® FLEX Meniscal Repair System

72205324	FAST-FIX FLEX Curved Inserter, bend tool, cannula set
72205325	FAST-FIX FLEX Reverse Curved Inserter, bend tool, cannula set
72205676	FAST-FIX FLEX, curved
72205677	FAST-FIX FLEX, reverse curved

FAST-FIX 360 Meniscal Repair System

72202467	FAST-FIX 360, straight
72202468	FAST-FIX 360, curved
72202469	FAST-FIX 360, reverse curved
72202674	FAST-FIX 360 Knot Pusher/Suture Cutter and Slotted Cannula
72202675	FAST-FIX 360 Curved Knot Pusher/Suture Cutter and Slotted Cannula

ULTRA FAST-FIX Meniscal Repair System

72201490	ULTRA FAST-FIX, straight
72201491	ULTRA FAST-FIX, curved
72201492	ULTRA FAST-FIX, reverse curved
72201493	ULTRA FAST-FIX AB, straight
72201494	ULTRA FAST-FIX AB, curved
72201495	ULTRA FAST-FIX AB, reverse curved
72201537	Knot Pusher/Suture Cutter
7210977	Slotted Cannula, reusable

FIRSTPASS® MINI Family of Suture Passers

72290128	FIRSTPASS MINI Suture Passer
72290129	FIRSTPASS MINI Left-Curved Suture Passer
72290130	FIRSTPASS MINI Right-Curved Suture Passer

NOVOCUT® Suture Manager

CTX-C001	NOVOCUT Suture Manager
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Additional Instruments

015186	Meniscal Depth Probe, reusable
014549	45° Diamond Rasp, reusable
014550	90° Diamond Rasp, reusable



NOVOSTITCH PRO
Meniscal Repair System



FAST-FIX FLEX
Meniscal Repair System



Meniscal Repair: Root Repair, Outside-In, and Inside-Out

MENISCAL ROOT Repair System

Reference	Description
7193J001	MENISCAL ROOT Repair System

System includes

71935072	Meniscal Root Repair Angled Bullet
71935073	Meniscal Root Repair Drill Guide Handle
71935071	Open Curette
71935076	Meniscal Root Repair Offset Guide
71935074	Aimer Guide Curve, left
71935075	Aimer Guide Curve, right

MENISCAL ROOT Repair Kits

71935070	Kit with ULTRABRAID [®] Suture
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Kit includes

013186	ENDOBUTTON [®] Fixation Device, 4.0mm x 12mm
72201361	ACCU-PASS [®] Suture Shuttle Monofilament
71935069	Cannulated Drill Pack (2 sheaths and 1 drill)
72200887	#2 ULTRABRAID [®] Suture, cobraid
72202465	#2 ULTRABRAID Suture, cobraid-blue

71935068	Kit with ULTRATAPE [®] Suture
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Kit includes

013186	ENDOBUTTON Fixation Device, 4.0mm x 12mm
72201361	ACCU-PASS Suture Shuttle Monofilament
71935069	Cannulated Drill Pack (2 sheaths and 1 drill)
72203896	ULTRATAPE [®] Suture, blue, qty 1
72203897	ULTRATAPE Suture, cobraid, qty 1

71935360	Instrument Kit
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Kit includes

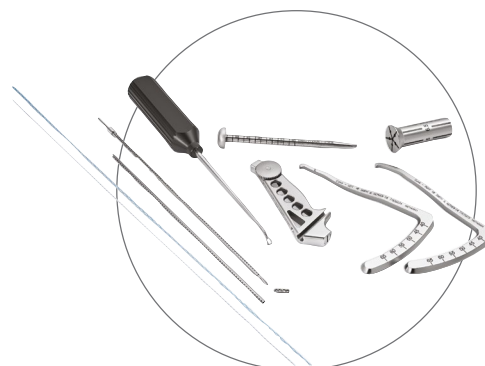
72201361	ACCU-PASS Suture Shuttle Monofilament
71935069	Cannulated Drill Pack (2 sheaths and 1 drill)

MENISCUS MENDER II Repair System

Reference	Description
7209485	MENISCUS MENDER II Disposable Set

MENISCAL STITCHER Repair System

012600	MENISCAL STITCHER Set
012615	Ti-Cron™ 10 swaged needles with #2-0, 30" long suture, 12 per box



MENISCAL ROOT Repair System



NOVOCUT



Graft Harvest

Hamstring Tendon Strippers	
Reference	Description
013550	Tendon Stripper, closed, 6.4mm I.D. x 12" working length
013554	Tendon Stripper, slotted, 5mm I.D. x 12" working length
7207179	Large Tendon Stripper, closed, 7.4mm I.D. x 13.5" working length
QUADTRAC [®] Quadriceps Tendon Harvest Guide System	
Reference #	Description
72205580	QUADTRAC Quadriceps Tendon Harvest Guide System Disposable Kit
72205764*	QUADTRAC Quadriceps Tendon Harvest Guide System Reusable Instruments
Includes one of each	
72205581	GUIDE-TRAC
72205583	TRAC-CUTTER, 8mm x 6mm
72205584	TRAC-CUTTER, 10mm x 6mm
72205585	TRAC-CUTTER, 12mm x 6mm
72205610	QUAD-CUTTER
72205564	Sterilization Tray



QUADTRAC
Quadriceps Tendon
Harvest Guide System

*Placing an order with this code will order individual units of all QUADTRAC System components referenced within. Devices are not provided kitted or part of a system, and all devices are individually packaged with their own instructions for use, as applicable.

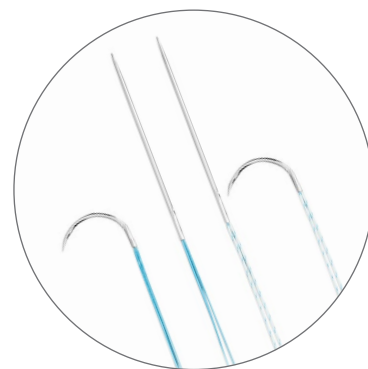


Graft Preparation

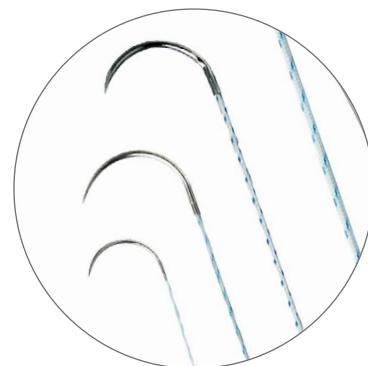
Suture Solutions

SUTURES

LOOPED SUTURE on Needle	
Reference	Description
72205181	LOOPED SUTURE on Needle, #2, straight needle, cobraid, 20", 12 per box
72205182	LOOPED SUTURE on Needle, #2, straight needle, blue, 20", 12 per box
72205183	LOOPED SUTURE on Needle, #2, curved needle, cobraid, 20", 12 per box
72205184	LOOPED SUTURE on Needle, #2, curved needle, blue, 20", 12 per box
ULTRABRAID [®] Suture	
72204327	ULTRABRAID Suture on Needle, 2-0, white, 24", 10 per box
72204328	ULTRABRAID Suture on Needle, 2-0, cobraid, 24", 10 per box
72204329	ULTRABRAID Suture, 2-0, white, 24", 10 per box
72204330	ULTRABRAID Suture, 2-0, cobraid, 24", 10 per box
72200886	ULTRABRAID Suture, #2, white, 38", 10 per box
72200887	ULTRABRAID Suture, #2, cobraid, 38", 10 per box
72202965	ULTRABRAID Suture, #2, blue, 38", 10 per box
7211080	ULTRABRAID Suture on Needle, #2, white, 38"
7211081	ULTRABRAID Suture on Needle, #2, cobraid, 38"
7210914	ULTRABRAID Suture on Needle, #2, white, 38", 10 per box
7210915	ULTRABRAID Suture on Needle, #2, cobraid, 38", 10 per box
72205429	ULTRABRAID Suture on Needle, #5, curved needle, multi-colored braid, 40", 12 per box
72205430	ULTRABRAID Suture on Needle, #5, curved needle, white, 40", 12 per box
72205431	ULTRABRAID Suture on Needle, #5, straight needle, multi-colored braid, 40", 12 per box
72205432	ULTRABRAID Suture on Needle, #5, straight needle, white, 40", 12 per box



LOOPED SUTURE on Needle



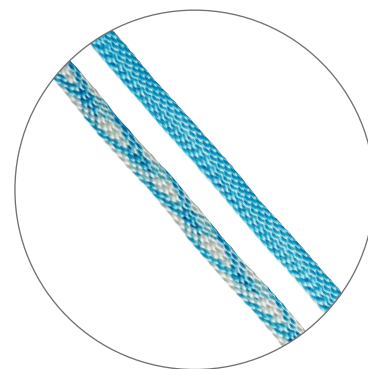
ULTRABRAID Suture Family



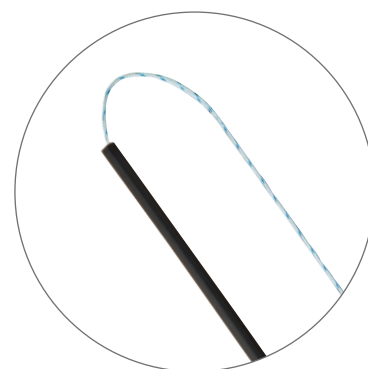
Graft Preparation

Suture Solutions

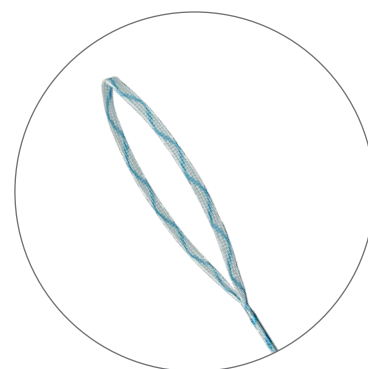
TAPES	
MINITAPE [®] Looped Suture + MINITAPE Suture on Needle	
Reference	Description
72205427	MINITAPE Suture on Needle, straight needle, multi-colored braid, 40", 12 per box
72205128	MINITAPE Suture on Needle, straight needle, blue, 40", 12 per box
72205433	MINITAPE Suture on Needle, curved needle, multi-colored braid, 40", 12 per box
72205434	MINITAPE Suture on Needle, curved needle, blue, 40", 12 per box
72205435	MINITAPE Looped Suture on Needle, curved needle, multi-colored braid, 20", 12 per box
72205436	MINITAPE Looped Suture on Needle, curved needle, blue, 20", 12 per box
72205437	MINITAPE Looped Suture on Needle, straight needle, multi-colored braid, 20", 12 per box
72205438	MINITAPE Looped Suture on Needle, straight needle, blue, 20", 12 per box
MINITAPE Suture	
72205127	MINITAPE Suture, blue, 39.5", 6 per box
72205128	MINITAPE Suture, cobraid-blue, 39.5", 6 per box
72205129	MINITAPE Suture, cobraid-white, 39.5", 6 per box
ULTRATAPE [®] Suture	
72203896	ULTRATAPE Suture, blue, 38", 6 per box
72203897	ULTRATAPE Suture, cobraid-blue, 38", 6 per box
SUTURE TOOLS	
WHIPKNOT Soft Tissue Cinch	
7211015	WHIPKNOT Soft Tissue Cinch, #5, 1 per box
ULTRAGRAB [®] Suture Manager	
72205439	ULTRAGRAB Suture Manager: #2 suture with stiffened end in tube, cobraid, 48", 12" heated, 6 per box
72205440	ULTRAGRAB Suture Manager: #2 suture with stiffened end in tube, blue, 48", 12" heated, 6 per box
ULTRALOOP [®] Suture Loop	
72205445	ULTRALOOP Suture Loop: #2 suture and MINITAPE Loop, 1.4mm wide, cobraid, 26", 1.25" loop, 12 per box
72205446	ULTRALOOP Suture Loop: #2 suture and MINITAPE Loop, 1.4mm wide, blue, 26", 1.25" loop, 12 per box



MINITAPE Suture



ULTRAGRAB Suture Manager



ULTRALOOP Suture Loop



Graft Preparation

Suture Solutions

PASSERS

FIRSTPASS[®] MINI Family of Suture Passers

Reference	Description
72290128	FIRSTPASS MINI Suture Passer, straight
72290129	FIRSTPASS MINI Suture Passer, left-curved
72290130	FIRSTPASS MINI Suture Passer, right-curved

ACCU-PASS[®] DIRECT Suture Passer

23-2005	ACCU-PASS DIRECT Crescent XL Suture Passer
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ACCU-PASS Suture Shuttle

7210423	ACCU-PASS Suture Shuttle, 45° left curve
7210424	ACCU-PASS Suture Shuttle, 45° right curve
7210425	ACCU-PASS Suture Shuttle, 45° up
7210426	ACCU-PASS Suture Shuttle, straight
7210427	ACCU-PASS Suture Shuttle, crescent
72200419	ACCU-PASS Suture Shuttle, 70° up
72200418	ACCU-PASS, big curve
72201361	ACCU-PASS Suture Shuttle Monofilament #1

Additional Passers

013593	Suture Retriever, sterile, 6 per box
7209950	Suture Threaders, sterile, 10 per box



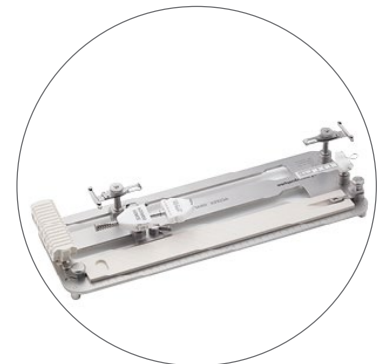
Graft Preparation

Graft Preparation Boards

X-WING [®] Graft Preparation System	
Reference	Description
72205269*	X-WING Graft Preparation System
System includes	
72205270	X-WING Base
72205271	X-WING Tensioner
72205272	X-WING Sliding Base
72205275	X-WING Tray
72205424	X-WING Lid
72205273	Button Holder**
72205274	Button Holder – Suture Management**
Recommended accessories	
72202317	ACUFEX [®] GRAFTMASTER III Cutting Strip
72202315	ACUFEX GRAFTMASTER III Tissue Grasper, 2 per box
72202319	ACUFEX GRAFTMASTER III Slotted Sizing Block
Compatible with	
7207342	ACUFEX GRAFTMASTER III Tensioning Post
ACUFEX GRAFTMASTER III Graft Preparation System	
72202788	ACUFEX GRAFTMASTER III Graft Preparation System
System includes	
72202316	GRAFTMASTER III Sliding Base, 2 per box
72202315	GRAFTMASTER III Tissue Grasper, 2 per box
72202317	GRAFTMASTER III Cutting Strip
72202453	GRAFTMASTER III BTB Holder
72202452	GRAFTMASTER III Preparation Board
72202319	GRAFTMASTER III Slotted Sizing Block
72202441	GRAFTMASTER III System Sterilization Tray
014415	ENDOBUTTON [®] Holder
014413	Suture Vise
Optional components	
014414	Suture Vise with Tensiometer (Allows pre-tensioning of grafts)



X-WING Graft Preparation System



ACUFEX GRAFTMASTER III

*Placing an order with this code will order individual units of all X-WING components referenced within. Devices are not provided kitted or part of a system and all devices are individually packaged with their own instructions for use, as applicable.

**Compatible with the GRAFTMASTER III



Graft Preparation

Accessories

Compaction Pliers	
Reference	Description
7209441	Compaction Pliers, 7mm
7209442	Compaction Pliers, 8mm
7209443	Compaction Pliers, 9mm
7209446	Compaction Pliers, 10mm
7209447	Compaction Pliers, 11mm
7209448	Compaction Pliers, 12mm
Graft Sizing Tubes	
7207499	Graft Sizing Tube, 5mm
7207500	Graft Sizing Tube, 5.5mm
013522	Graft Sizing Tube, 6mm
7207163	Graft Sizing Tube, 6.5mm
013523	Graft Sizing Tube, 7mm
7207164	Graft Sizing Tube, 7.5mm
013524	Graft Sizing Tube, 8mm
7207165	Graft Sizing Tube, 8.5mm
013525	Graft Sizing Tube, 9mm
7207501	Graft Sizing Tube, 9.5mm
013526	Graft Sizing Tube, 10mm
7207502	Graft Sizing Tube, 10.5mm
013527	Graft Sizing Tube, 11mm
7207503	Graft Sizing Tube, 11.5mm
013528	Graft Sizing Tube, 12mm
7207504	Graft Sizing Tube, 12.5mm
013529	Graft Sizing Tube, 13mm
7207505	Graft Sizing Tube, 13.5mm
013540	Graft Sizing Tube, 14mm



Guide Systems and Tunnel Drilling

Rigid Drilling

ACUFEX [®] DIRECTOR ELITE [®] System	
Reference	Description
ACL Guides	
7205517	ACUFEX DIRECTOR Drill Guide
7205518	ACUFEX DIRECTOR ACL Elbow Aimer
7205519	ACUFEX DIRECTOR ACL Tip Aimer
7205524	ACUFEX DIRECTOR ACL Angled Bullet
7205525	ACUFEX DIRECTOR ACL 4-Point Bullet
72201732	Universal Endofemoral Aimer Handle
72201737	Endofemoral Aimer Arm, no offset
72201713	Endofemoral Aimer Arm, 3mm offset
72201714	Endofemoral Aimer Arm, 4mm offset
72201715	Endofemoral Aimer Arm, 5mm offset
72201716	Endofemoral Aimer Arm, 6mm offset
72201717	Endofemoral Aimer Arm, 7mm offset
Cannulated Drills	
013498	Cannulated Drill, 5mm
7207491	Cannulated Drill, 5.5mm
013542	Cannulated Drill, 6mm
7207483	Cannulated Drill, 6.5mm
013543	Cannulated Drill, 7mm
7207484	Cannulated Drill, 7.5mm
013544	Cannulated Drill, 8mm
7207485	Cannulated Drill, 8.5mm
013545	Cannulated Drill, 9mm
7207486	Cannulated Drill, 9.5mm
013546	Cannulated Drill, 10mm
7207487	Cannulated Drill, 10.5mm
013547	Cannulated Drill, 11mm
7207488	Cannulated Drill, 11.5mm
013548	Cannulated Drill, 12mm

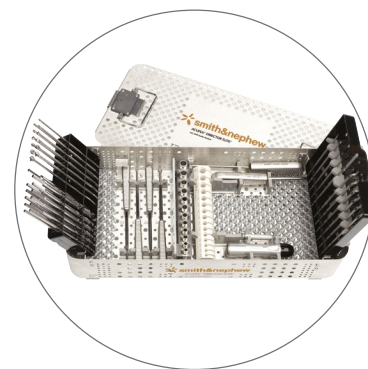
7207489	Cannulated Drill, 12.5mm
013549	Cannulated Drill, 13mm
7207490	Cannulated Drill, 13.5mm
Single Fluted Endoscopic Drills	
3134179	Single Flute Cannulated Drill Bit, 5.5mm
3134180	Single Flute Cannulated Drill Bit, 6mm
3134181	Single Flute Cannulated Drill Bit, 6.5mm
3134182	Single Flute Cannulated Drill Bit, 7mm
3134183	Single Flute Cannulated Drill Bit, 7.5mm
3134184	Single Flute Cannulated Drill Bit, 8mm
3134185	Single Flute Cannulated Drill Bit, 8.5mm
3134186	Single Flute Cannulated Drill Bit, 9mm
3134187	Single Flute Cannulated Drill Bit, 9.5mm
3134188	Single Flute Cannulated Drill Bit, 10mm
3134189	Single Flute Cannulated Drill Bit, 10.5mm
3134190	Single Flute Cannulated Drill Bit, 11mm
3134191	Single Flute Cannulated Drill Bit, 11.5mm
3134192	Single Flute Cannulated Drill Bit, 12mm
3134193	Single Flute Cannulated Drill Bit, 12.5mm
3134194	Single Flute Cannulated Drill Bit, 13mm



Guide Systems and Tunnel Drilling

Rigid Drilling

ACUFEX [®] DIRECTOR ELITE [®] System	
Reference	Description
Endoscopic Cannulated Drills (Acorn)	
7208686	Endoscopic Cannulated Drill, 5mm
7207482	Endoscopic Cannulated Drill, 5.5mm
013499	Endoscopic Cannulated Drill, 6mm
7207492	Endoscopic Cannulated Drill, 6.5mm
013660	Endoscopic Cannulated Drill, 7mm
7207493	Endoscopic Cannulated Drill, 7.5mm
013661	Endoscopic Cannulated Drill, 8mm
7207494	Endoscopic Cannulated Drill, 8.5mm
013662	Endoscopic Cannulated Drill, 9mm
7207495	Endoscopic Cannulated Drill, 9.5mm
013663	Endoscopic Cannulated Drill, 10mm
7207496	Endoscopic Cannulated Drill, 10.5mm
013664	Endoscopic Cannulated Drill, 11mm
7207497	Endoscopic Cannulated Drill, 11.5mm
013665	Endoscopic Cannulated Drill, 12mm
7207498	Endoscopic Cannulated Drill, 12.5mm
013666	Endoscopic Cannulated Drill, 13mm
Accessories	
72201883	Chondral Pick, small, 20°
72201884	Chondral Pick, large, 20°
72201885	Chondral Pick, small, 40°
72201886	Chondral Pick, large, 40°
72201736	Chondral Pick, small, 90°
72201735	Bone Tunnel Plug, 5–6mm
72201733	Half-round Rasp, 5mm
72201734	Half-round Rasp, 6mm
7205521	2-5mm Offset Guide
7205622	NOTCHMASTER [®] 8mm Curette
7209214	Slotted Sizing Block
72201731	Sterilization Tray



ACUFEX DIRECTOR ELITE System



Guide Systems and Tunnel Drilling

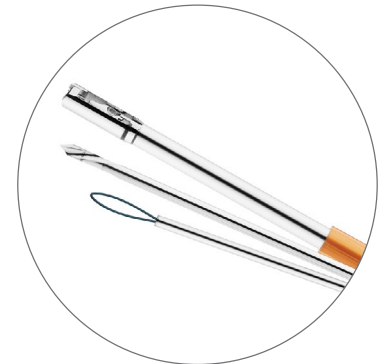
Retrograde Drilling

ACUFEX® TRUNAV Retrograde Drill
(Includes Retrograde Drill, 2.4mm Guide Wire and Suture Retriever)

Reference	Description
72204037	ACUFEX TRUNAV Retrograde Drill, 5.5mm
72204038	ACUFEX TRUNAV Retrograde Drill, 6mm
72204039	ACUFEX TRUNAV Retrograde Drill, 6.5mm
72204040	ACUFEX TRUNAV Retrograde Drill, 7mm
72204041	ACUFEX TRUNAV Retrograde Drill, 7.5mm
72204042	ACUFEX TRUNAV Retrograde Drill, 8mm
72204043	ACUFEX TRUNAV Retrograde Drill, 8.5mm
72204044	ACUFEX TRUNAV Retrograde Drill, 9mm
72204045	ACUFEX TRUNAV Retrograde Drill, 9.5mm
72204046	ACUFEX TRUNAV Retrograde Drill, 10mm
72204047	ACUFEX TRUNAV Retrograde Drill, 10.5mm
72204048	ACUFEX TRUNAV Retrograde Drill, 11mm
72204049	ACUFEX TRUNAV Retrograde Drill, 11.5mm
72204050	ACUFEX TRUNAV Retrograde Drill, 12mm

ACUFEX Guide Systems

72205038	ACUFEX PINPOINT® Adapter
7205517	ACUFEX DIRECTOR Drill Guide
72203450	ACUFEX PINPOINT 4-Point Bullet, 6.5", long
72203433	ACUFEX PINPOINT Single-bundle Guide, 6mm
72203434	ACUFEX PINPOINT Single-bundle Guide, 7mm
72203435	ACUFEX PINPOINT Single-bundle Guide, 8mm
72203436	ACUFEX PINPOINT Single-bundle Guide, 9mm
72203437	ACUFEX PINPOINT Single-bundle Guide, 10mm
72203169	ACUFEX Tunnel Gauge



ACUFEX TRUNAV
Retrograde Drill



ACUFEX PINPOINT

Drilling and Tunnel Preparation

Flexible Drilling

CLANCY Anatomic Cruciate Guide Flexible Drill System	
Reference	Description
72203086	CLANCY Anatomic Cruciate Guide Flexible Drill System A
System includes	
72202971	CLANCY Flexible Drill, 4.5mm
72202972	CLANCY Flexible Drill, 5.0mm
72203161	CLANCY Flexible Drill, 5.5mm
72202594	CLANCY Flexible Drill, 6.0mm
72203162	CLANCY Flexible Drill, 6.5mm
7209008	CLANCY Flexible Drill, 7.0mm
72203163	CLANCY Flexible Drill, 7.5mm
7209737	CLANCY Flexible Drill, 8.0mm
72203164	CLANCY Flexible Drill, 8.5mm
7209738	CLANCY Flexible Drill, 9.0mm
72203165	CLANCY Flexible Drill, 9.5mm
7209739	CLANCY Flexible Drill, 10.0mm
72203166	CLANCY Flexible Drill, 10.5mm
72203090	CLANCY Flexible Drill, 11.0mm
72203167	CLANCY Flexible Drill, 11.5mm
72203091	CLANCY Flexible Drill, 12.0mm
72203170	CLANCY Curved Femoral Guide, 42°
72203085	CLANCY System Sterilization Tray
72203252	BIOSURE [®] Flexible Tap, 6mm
72203253	BIOSURE Flexible Tap, 7mm
72203254	BIOSURE Flexible Tap, 8mm
72203255	BIOSURE Flexible Tap, 9mm
72203256	BIOSURE Flexible Tap, 10mm
72203168	BIOSURE Flexible Driver (requires 7207707)
7207707	Ratcheting Handle with Hudson Adapter
Passing Pin	
72201594	CLANCY Flexible Passing Pin, 2.4mm x 13.5", 5 per package



CLANCY System



Guide Systems and Tunnel Drilling

Outside-in Drilling

ACUFEX [®] PINPOINT Anatomic ACL Guide System	
Reference	Description
72203454	ACUFEX PINPOINT Anatomic ACL Guide System
System includes	
72203433	Single-bundle Guide, 6mm
72203434	Single-bundle Guide, 7mm
72203435	Single-bundle Guide, 8mm
72203436	Single-bundle Guide, 9mm
72203437	Single-bundle Guide, 10mm
72203438	Double-bundle Guide, left, 5-6mm
72203439	Double-bundle Guide, left, 5-7mm
72203440	Double-bundle Guide, left, 6-7mm
72203441	Double-bundle Guide, left, 6-8mm
72203442	Double-bundle Guide, left, 7-8mm
72203443	Double-bundle Guide, right, 5-6mm
72203444	Double-bundle Guide, right, 5-7mm
72203445	Double-bundle Guide, right, 6-7mm
72203446	Double-bundle Guide, right, 6-8mm
72203447	Double-bundle Guide, right, 7-8mm
72203425	Outside-in Aimer Arm, left
72203426	Outside-in Aimer Arm, right
72203432	Inside-out Handle
72203427	Double-bundle Bullet Support, 5-6mm
72203428	Double-bundle Bullet Support, 5-7mm
72203429	Double-bundle Bullet Support, 6-7mm
72203430	Double-bundle Bullet Support, 6-8mm
72203431	Double-bundle Bullet Support, 7-8mm
72203448	System Sterilization Tray
72203453	ACUFEX Insertion Site Marking Awl, 45°
72203450	4-point Bullet, 6.5", 2 per package



ACUFEX PINPOINT Guide System

Guide Systems and Tunnel Drilling

Extra-articular Drilling

ACUFEX® EXTRA-ARTICULAR Reconstruction Guide System	
Reference	Description
72205196	EAR Guide System
System includes	
72205114	Fibular Guide
72205115	Tibial Guide
72205116	Femoral Guide
72205117	Offset Guide
72205118	Retractor
72205122	Short Bullet
72205123	Long Bullet
72205139	System Tray

Tunnel Dilation

Tunnel Dilator System	
Reference	Description
7207878	Tunnel Dilator System
System includes	
7207640	Tunnel Dilator, 6mm
7207641	Tunnel Dilator, 6.5mm
7207642	Tunnel Dilator, 7mm
7207643	Tunnel Dilator, 7.5mm
7207644	Tunnel Dilator, 8mm
7207645	Tunnel Dilator, 8.5mm
7207646	Tunnel Dilator, 9mm
7207647	Tunnel Dilator, 9.5mm
7207648	Tunnel Dilator, 10mm
7207649	Tunnel Dilator, 11mm
7207650	Tunnel Dilator, 12mm
7207638	Sizing Block
7207639	Slaphammer
7207637	Tray

Drilling Accessories	
Reference	Description
014477	Bone Tunnel Plug, Cannulated, 7–12mm tunnels, latex-free, 6 per box
014723	ACUFEX SMOOTHER Crucial Tool, 7.9mm, sterile
014724	ACUFEX SMOOTHER Crucial Tool, 9.5 mm, sterile



ACUFEX EXTRA-ARTICULAR System



Guide Systems and Tunnel Drilling

Pins, Guide Wires + PACs

ULTRABUTTON® + ENDOBUTTON® DRILLS	
Reference	Description
7207315	ENDOBUTTON Drill, 4.5mm, cannulated, 1 per package
Passing Pins	
72202009	Drill Tip Passing Pin, 2.7mm x 15", graduated, 6 per package
014508	Drill Tip Passing Pin, 2.7mm x 15", 6 per package
7208678	Drill Tip Passing Pin, 2.4mm x 15", graduated, 1 per package
014395	Trocar-Tip Passing Pin, 2.4mm x 11", 1 per package
7207220	Trocar-Tip Passing Pin, 2.4mm x 17", 1 per package
72202815	Trocar-Tip Beath Pin, 2.4mm x 11.5", double eyelet, 1 per package
72202814	Spade-Tip Passing Pin, 3mm head, 2.4mm x 11" shaft
72201594	CLANCY Flexible Passing Pin, 2.4mm x 13.5", 5 per package
Guide Wires	
014396	Drill-Tip Guide Wire, 2.4mm x 10", 1 per package
7207221	Drill-Tip Guide Wire, 2.4mm x 12", 1 per package
7207284	PCL Safety Guide Wire, 2.4mm x 10", 1 per package

ENDOBUTTON PACS	
Reference	Description
72202799	1.2 ENDOBUTTON CL ULTRA PAC
Includes one of each	
7207315	ENDOBUTTON Drill, 4.5mm, cannulated
72202009	Drill Tip Passing Pin, 2.7mm x 15", graduated
7207221	Drill Tip Guide Wire, 2.4mm x 12"
7211138	Guide Wire, 1.2mm x 12"
014477	Cannulated Bone Tunnel Plug, latex free
72200948	TRUKOR Gauge
7209216	ENDOBUTTON CL PAC
Includes one of each	
7207315	ENDOBUTTON Drill, 4.5mm, cannulated
014508	Drill Tip Passing Pin, 2.7mm x 15"
014396	Drill Tip Guide Wire, 2.4mm x 10"
014477	Cannulated Bone Tunnel Plug, latex free
-	ENDOBUTTON CL Sizing Chart
7209204	ENDOBUTTON PAC A
Includes one of each	
7207315	ENDOBUTTON Drill, 4.5mm, cannulated
014508	Drill Tip Passing Pin, 2.7mm x 15"
014396	Drill Tip Guide Wire, 2.4mm x 10"



Guide Systems and Tunnel Drilling

Pins, Guide Wires + PACs

RAP-PAC ^o	
Reference	Description
72202796	1.2 RAP-PAC A, latex free
PAC includes	
7207221	Drill Tip Guide Wire, 2.4mm x 12"
72202009	Drill Tip Passing Pin, 2.7mm x 15", graduated
7211138	Guide Wire, 1.2mm x 12"
014477	Cannulated Bone Tunnel Plug, latex free
72200948	TRUKOR Gauge
72202797 [†] 1.2 RAP-PAC B, latex free	
PAC includes	
7207221	Drill Tip Guide Wire, 2.4mm x 12"
7208678	Drill Tip Passing Pin, 2.4mm x 15", graduated
7211138	Guide Wire, 1.2mm x 12"
014477	Cannulated Bone Tunnel Plug, latex free
72200948	TRUKOR Gauge
72202798 [†] 1.2 RAP-PAC C, latex free	
PAC includes	
7207221	Drill Tip Guide Wire, 2.4mm x 12"
7208678	Drill Tip Passing Pin, 2.4mm x 15", graduated
72201201	Guide Wire, 1.2mm x 18"
014477	Cannulated Bone Tunnel Plug, latex free
72200948	TRUKOR Gauge

RAP-PAC ^o	
Reference	Description
7209217 [†]	RAP-PAC 1.5, latex free
PAC includes	
014508	Drill Tip Passing Pin, 2.7mm x 15"
014396	Drill Tip Guide Wire, 2.4mm x 10"
7207775	CANNU-FLEX Screw Guide Wire, 1.5mm x 15"
014477	Cannulated Bone Tunnel Plug, latex free
7209218 [†] RAP-PAC 2, latex free	
PAC includes	
014508	Drill Tip Passing Pin, 2.7mm x 15"
014396	Drill Tip Guide Wire, 2.4mm x 10"
7207222	CANNU-FLEX Screw Guide Wire, 2mm x 15"
014477	Cannulated Bone Tunnel Plug, latex free

[†]Not available globally. Please contact your Smith+Nephew representative if you have questions about availability.



Guide Systems and Tunnel Drilling

Pins, Guide Wires + PACs

RAP-PAC ^o	
Reference	Description
7207738	Pin and Wire PAC A
PAC includes	
7207220	Trocar Tip Passing Pin, 2.4mm x 17"
7207221	Drill Tip Guide Wire, 2.4mm x 12"
014859	CANNU-FLEX ^o Screw Guide Wire, 1.5mm x 12"
7207925 [†]	Pin and Wire PAC B
PAC includes	
7207220	Trocar Tip Passing Pin, 2.4mm x 17"
7207221	Drill Tip Guide Wire, 2.4mm x 12"
7207222	CANNU-FLEX Screw Guide Wire, 2mm x 15"
7207940 [†]	Pin and Wire PAC D
PAC includes	
014508	Drill Tip Passing Pin, 2.7mm x 15"
7207221	Drill Tip Guide Wire, 2.4mm x 12"
014859	CANNU-FLEX Screw Guide Wire, 1.5mm x 12"
014477	Cannulated Bone Tunnel Plug, latex free
7209313 [†]	Pin and Wire PAC F (made to order)
PAC includes	
7207220	Trocar Tip Passing Pin, 2.4mm x 17"
7207221	Drill Tip Guide Wire, 2.4mm x 12"
014859	CANNU-FLEX Screw Guide Wire, 1.5mm x 12"
014477	Cannulated Bone Tunnel Plug, latex free

[†]Not available globally. Please contact your Smith+Nephew representative if you have questions about availability.



Fixation

Button Fixation

ULTRABUTTON[®] Adjustable Fixation Device

Reference	Description
72290003	ULTRABUTTON Adjustable Fixation Device
72205443	ULTRABUTTON QUAD Adjustable Fixation Device
72205444	ULTRABUTTON BB Adjustable Fixation Device

ULTRABUTTON TIB Adjustable Fixation Device

72205600	4.9–7mm ULTRABUTTON TIB Small, 12mm o, 4.4mm peg
72205601	7.5–10mm ULTRABUTTON TIB Medium, 15mm o, 7mm peg
72205602	10.5–13mm ULTRABUTTON TIB Large, 18mm o, 10mm peg

ENDOBUTTON[®] CL ULTRA Fixation Devices

72203331	ENDOBUTTON CL ULTRA, 10mm
72200146	ENDOBUTTON CL ULTRA, 15mm
72200147	ENDOBUTTON CL ULTRA, 20mm
72200148	ENDOBUTTON CL ULTRA, 25mm
72200149	ENDOBUTTON CL ULTRA, 30mm
72200150	ENDOBUTTON CL ULTRA, 35mm
72200151	ENDOBUTTON CL ULTRA, 40mm
72200152	ENDOBUTTON CL ULTRA, 45mm
72200153	ENDOBUTTON CL ULTRA, 50mm
72200154	ENDOBUTTON CL ULTRA, 55mm
72200155	ENDOBUTTON CL ULTRA, 60mm

ENDOBUTTON CL BTB Fixation Devices

72203330	ENDOBUTTON CL BTB, 15mm
7210080	ENDOBUTTON CL BTB, 20mm
7210081	ENDOBUTTON CL BTB, 25mm
7210082	ENDOBUTTON CL BTB, 30mm
7210085	ENDOBUTTON CL BTB, 45mm
7210086	ENDOBUTTON CL BTB, 50mm
7210087	ENDOBUTTON CL BTB, 55mm
7210088	ENDOBUTTON CL BTB, 60 mm

ENDOBUTTON Fixation Device

013186	ENDOBUTTON, 4.0mm x 12mm
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ENDOBUTTON Accessories

Reference	Description
72202544	ENDOBUTTON Indicator
014868 [†]	ENDOBUTTON TAPE with Passing Needle, 12 per box
7207315	ENDOBUTTON Drill, 4.5mm, cannulated
015185	ENDOBUTTON Depth Probe
7209951	ENDOBUTTON Adjustable Knob for Depth Probe

XTENDOBUTTON[®] Fixation Devices

Reference	Tunnel Diameter	Description
72200134	6-10mm	XTENDOBUTTON Fixation Device, 5.5 x 20mm
71935601	4-7mm	Round 15mm ø, small
71935602	7.5-9.5mm	Round 17mm ø, 7.5mm peg, medium
71935603	10-13mm	Round 21mm ø, 10mm peg, large
71935604	4-7mm	Oval 9 x 16mm, small
71935605	7.5-9.5mm	Oval 11 x 18mm, 7.5mm peg, medium
71935606	10-13mm	Oval 15 x 21mm, 10mm peg, large

Not available globally. Please contact your Smith+Nephew representative if you have questions about availability.



Fixation

Screw Fixation

BIOSURE [®] REGENESORB [®] Interference Screw	
Reference	Description
72204389	BIOSURE REGENESORB, 5mm x 20mm
72204390	BIOSURE REGENESORB, 5mm x 25mm
72204391	BIOSURE REGENESORB, 6mm x 20mm
72204392	BIOSURE REGENESORB, 6mm x 25mm
72204393	BIOSURE REGENESORB, 6mm x 25mm, reverse thread
72204394	BIOSURE REGENESORB, 7mm x 20mm
72204395	BIOSURE REGENESORB, 7mm x 25mm
72204396	BIOSURE REGENESORB, 7mm x 25mm, reverse thread
72204397	BIOSURE REGENESORB, 7mm x 30mm
72204398	BIOSURE REGENESORB, 8mm x 20mm
72204399	BIOSURE REGENESORB, 8mm x 25mm
72204400	BIOSURE REGENESORB, 8mm x 25mm, reverse thread
72204401	BIOSURE REGENESORB, 8mm x 30mm
72204402	BIOSURE REGENESORB, 8mm x 35mm
72204403	BIOSURE REGENESORB, 9mm x 20mm
72204404	BIOSURE REGENESORB, 9mm x 25mm
72204405	BIOSURE REGENESORB, 9mm x 30mm
72204406	BIOSURE REGENESORB, 9mm x 35mm
72204407	BIOSURE REGENESORB, 10mm x 20mm
72204408	BIOSURE REGENESORB, 10mm x 25mm
72204409	BIOSURE REGENESORB, 10mm x 30mm
72204410	BIOSURE REGENESORB, 10mm x 35mm
72204411	BIOSURE REGENESORB, 11mm x 25mm
72204412	BIOSURE REGENESORB, 11mm x 30mm
72204413	BIOSURE REGENESORB, 11mm x 35mm
72204414	BIOSURE REGENESORB, 12mm x 35mm

BIOSURE HA Interference Screw	
Reference	Description
72201768	BIOSURE HA, 6mm x 20mm
72201769	BIOSURE HA, 6mm x 25mm
72201770	BIOSURE HA, 6mm x 25mm, reverse thread
72201771	BIOSURE HA, 7mm x 20mm
72201772	BIOSURE HA, 7mm x 25mm
72201773	BIOSURE HA, 7mm x 25mm, reverse thread
72201774	BIOSURE HA, 7mm x 30mm
72201775	BIOSURE HA, 8mm x 20mm
72201776	BIOSURE HA, 8mm x 25mm
72201777	BIOSURE HA, 8mm x 25mm, reverse thread
72201778	BIOSURE HA, 8mm x 30mm
72201779	BIOSURE HA, 8mm x 35mm
72201780	BIOSURE HA, 9mm x 20mm
72201781	BIOSURE HA, 9mm x 25mm
72201782	BIOSURE HA, 9mm x 30mm
72201783	BIOSURE HA, 9mm x 35mm
72201784	BIOSURE HA, 10mm x 20mm
72201785	BIOSURE HA, 10mm x 25mm
72201786	BIOSURE HA, 10mm x 30mm
72201787	BIOSURE HA, 10mm x 35mm



Fixation

Screw Fixation

BIOSURE [®] PK Interference Screw	
Reference	Description
72202259	BIOSURE PK, 6mm x 20mm
72202260	BIOSURE PK, 6mm x 25mm
72202261	BIOSURE PK, 6mm x 25mm, reverse thread
72202262	BIOSURE PK, 7mm x 20mm
72202263	BIOSURE PK, 7mm x 25mm
72202264	BIOSURE PK, 7mm x 25mm, reverse thread
72202265	BIOSURE PK, 7mm x 30mm
72202266	BIOSURE PK, 8mm x 20mm
72202267	BIOSURE PK, 8mm x 25mm
72202268	BIOSURE PK, 8mm x 25mm, reverse thread
72202269	BIOSURE PK, 8mm x 30mm
72202270	BIOSURE PK, 8mm x 35mm
72202271	BIOSURE PK, 9mm x 20mm
72202272	BIOSURE PK, 9mm x 25mm
72202273	BIOSURE PK, 9mm x 30mm
72202274	BIOSURE PK, 9mm x 35mm
72202275	BIOSURE PK, 10mm x 20mm
72202276	BIOSURE PK, 10mm x 25mm
72202277	BIOSURE PK, 10mm x 30mm
72202278	BIOSURE PK, 10mm x 35mm
BIOSURE SYNC Tibial Fixation System	
72202744	BIOSURE SYNC Device, 5-6mm
72202745	BIOSURE SYNC Device, 7-8mm
72202746	BIOSURE SYNC Device, 9-10mm
72202747	BIOSURE SYNC Device, 11-12mm



BIOSURE PK Interference Screw



BIOSURE SYNC Tibial Fixation System

Fixation

Screw Fixation

BIOSURE[®] Drivers

Reference	Description
72201887	BIOSURE Driver
72204647	BIOSURE Driver, 5mm
72203168	BIOSURE Flexible Driver (requires 7207707)
72201888	BIOSURE Ratchet Driver (requires 7207707)
7207707	Ratcheting Handle with Hudson Adapter

BIOSURE Taps

72201941	BIOSURE TAP System
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System includes

72201889	BIOSURE Tap, 6mm
72201890	BIOSURE Tap, 7mm
72201891	BIOSURE Tap, 8mm
72201892	BIOSURE Tap, 9mm
72201893	BIOSURE Tap, 10mm
72201887	BIOSURE Driver
72201938	BIOSURE Tap Tray

BIOSURE EASY Taps

72201942	BIOSURE EASY TAP System
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System includes

72201190	BIOSURE EASY Tap, 6mm
72201191	BIOSURE EASY Tap, 7mm
72201192	BIOSURE EASY Tap, 8mm
72201193	BIOSURE EASY Tap, 9mm
72201194	BIOSURE EASY Tap, 10mm
72201888	BIOSURE Ratchet Driver
7207707	Ratcheting Handle with Hudson Adapter
72201939	BIOSURE EASY Tap Tray

BIOSURE Flexible Taps

Reference	Description
72203252	BIOSURE Flexible Tap, 6mm
72203253	BIOSURE Flexible Tap, 7mm
72203254	BIOSURE Flexible Tap, 8mm
72203255	BIOSURE Flexible Tap, 9mm
72203256	BIOSURE Flexible Tap, 10mm

BIOSURE Guide Wires

7211137	Guide Wire, 1.2mm x 9", sterile, 5 per box
7211138	Guide Wire, 1.2mm x 12", sterile, 5 per box
72201201	Guide Wire, 1.2mm x 18", sterile, 5 per box

BIOSURE SYNC Instrument System

72202843	BIOSURE SYNC Instrument System
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System includes

72202752	BIOSURE SYNC Inserter
72202754	BIOSURE SYNC Tensioner
72202755	BIOSURE SYNC Dilator, 5-6mm
72202756	BIOSURE SYNC Dilator, 7-8mm
72202757	BIOSURE SYNC Dilator, 9-10mm
72202758	BIOSURE SYNC Dilator, 11-12mm
72202753	BIOSURE SYNC Instrument Tray



Fixation

Screw Fixation

RCI Screws, 2.0 Cannulation	
Reference	Description
7207030	RCI Scre, 7/8 x 25mm
7207247	RCI Screw, 7 x 25mm, reverse thread
7209409	RCI Screw, 7/8 x 35mm
7207250	RCI Screw, 7 x 40mm
7207248	RCI Screw, 8 x 25mm
7209410	RCI Screw, 8 x 25mm, reverse thread
7209411	RCI Screw, 8 x 35mm
7207249	RCI Screw, 8 x 40mm
7207301	RCI Screw, 9 x 25mm
7209412	RCI Screw, 9 x 35mm
7209779	RCI Screw, 10 x 25mm
7209413	RCI Screw, 10 x 30mm
7209414	RCI Screw, 10 x 35mm
7209415	RCI Screw, 11 x 30mm
7209416	RCI Screw, 11 x 35mm
RCI Screw Guide Wire	
72202881	CANNU-FLEX [®] Screw Guide Wire, 2mm x 12", stainless steel, 6 per package
7205659	CANNU-FLEX Screw Guide Wire, 2mm x 12", blunt tip, 1 per package
7207222	CANNU-FLEX Screw Guide Wire, 2mm x 15", blunt tip, 1 per package

RCI Screw Instruments	
Reference	Description
7207170	RCI Screw System
System includes	
7207163	Graft Sizing Tube, 6.5mm
013523	Graft Sizing Tube, 7mm
7207164	Graft Sizing Tube, 7.5mm
013524	Graft Sizing Tube, 8mm
7207165	Graft Sizing Tube, 8.5mm
7207167	Tibial Stepped Router, 6.5mm
7207168	Tibial Stepped Router, 7mm
7207171	Tibial Stepped Router, 7.5mm
7207172	Tibial Stepped Router, 8mm
7207173	Tibial Stepped Router, 8.5mm
7207174	Femoral Stepped Router, 6.5mm
7207175	Femoral Stepped Router, 7mm
7207176	Femoral Stepped Router, 7.5mm
7207177	Femoral Stepped Router, 8mm
7207178	Femoral Stepped Router, 8.5mm
7207193	3.5mm Hex Driver, 2mm, cannulation
7207169	RCI Screw System Sterilization Tray



Fixation

Screw Fixation

SOFTSILK [®] 1.5 Fixation Screws	
Reference	Description
7207001	SOFTSILK 1.5 Screw, 7mm x 20mm
7207002	SOFTSILK 1.5 Screw, 7mm x 25mm
7207003	SOFTSILK 1.5 Screw, 7mm x 30mm
7207004	SOFTSILK 1.5 Screw, 8mm x 20mm
7207005	SOFTSILK 1.5 Screw, 8mm x 25mm
7207006	SOFTSILK 1.5 Screw, 8mm x 30mm
7207007	SOFTSILK 1.5 Screw, 9mm x 20mm
7207008	SOFTSILK 1.5 Screw, 9mm x 25mm
7207009	SOFTSILK 1.5 Screw, 9mm x 30mm
72202507	SOFTSILK 1.5 Screw, 10mm X 20mm
7210760	SOFTSILK 1.5 Screw, 10mm X 25mm
7210762	SOFTSILK 1.5 Screw, 11mm X 25mm
7210764	SOFTSILK 1.5 Screw, 12mm X 25mm

SOFTSILK 1.5 Fixation Screws (Sheathed in CLEAR-TRAC [®] Cannula, Latex Free)	
7205640	SOFTSILK 1.5 Screw, 7mm x 20mm
7205643	SOFTSILK 1.5 Screw, 7mm x 25mm
7205644	SOFTSILK 1.5 Screw, 7mm x 30mm
7205641	SOFTSILK 1.5 Screw, 8mm x 20mm
7205645	SOFTSILK 1.5 Screw, 8mm x 25mm
7205646	SOFTSILK 1.5 Screw, 8mm x 30mm
7205642	SOFTSILK 1.5 Screw, 9mm x 20mm
7205647	SOFTSILK 1.5 Screw, 9mm x 25mm
7205648	SOFTSILK 1.5 Screw, 9mm x 30mm

SOFTSILK 1.5 Screw Instruments	
72202428	Instrument Tray
014815	3.5mm Hex Driver, 1.5mm cannulation
014851	TRAILBLAZER, 1.5mm cannulation

SOFTSILK 1.5 Guide Wires + Accessories	
Reference	Description
72202810	CANNU-FLEX Screw Guide Wire, 1.5mm x 9", 6 per package
014859	CANNU-FLEX Screw Guide Wire, 1.5mm x 12", 1 per package
7207227	CLEAR-TRAC Screw Cannula, 7mm, latex free, 10 per box
7207228	CLEAR-TRAC Screw Cannula, 8mm, latex free, 10 per box
7207229	CLEAR-TRAC Screw Cannula, 9mm, latex free, 10 per box

Secondary Fixation

Suture Washers	
72202990	Suture Washer, 15mm
72202992	Suture Washer, 17mm



Meniscal repair solutions: tear types

References

1. Milliron EM, Magnussen RA, Cavendish P, Quinn J, DiBartola AC, Flanigan DC. Repair of radial meniscus tears results in improved patient-reported outcome scores: a systematic review. *Arthrosc Sports Med Rehabil*. 2021;3:e967-e980.
2. Nepple J, Dunn W, Wright R. Meniscal repair outcomes at greater than five years. *J Bone Joint Surg Am*. 2012;94(24):2222.
3. Wu I, Hevesi M, Desai V, et al. Comparative outcomes of radial and bucket-handle meniscal tear repair. *Am J Sports Med*. 2018;46(11):2653-2660.
4. Moulton S, Bhatia S, Civitaresse D, et al. Surgical techniques and outcomes of repairing meniscal radial tears: a systematic review. *Arthroscopy*. 2016;22(5):400-404.
5. Oosten J, Yoder R, DiBartola A, et al. Several techniques exist with favorable biomechanical outcomes in radial meniscus tear repair—a systematic review. *Arthroscopy*. 2022;38(8):2557-2578.
6. Bedi A, Kelly N, Baad M, et al. Dynamic contact mechanics of the medial meniscus as a function of radial tear, repair, and partial meniscectomy. *J Bone Joint Surg*. 2010;92(6):1398-408.
7. Beuflis P, Pujol N. Management of traumatic meniscal tear and degenerative meniscal lesions. Save the meniscus. *Orthop Traumatol Surg Res*. 2017;103(8S):S237-S244.
8. Wasserburger J, Shultz C, Hankins D, Korcek L., Martin D, et al. Long-term national trends of arthroscopic meniscal repair and debridement. *Am J Sports Med*. 2021;49(6):1530-1537.
9. Feng H, Hong L, Geng X, Zhang H, Wang X, Jiang X. Second-look arthroscopic evaluation of bucket-handle meniscus tear repairs with anterior cruciate ligament reconstruction: 67 consecutive cases. *Arthroscopy*. 2008;24(12):1358-1366.
10. Morris JH, Magnussen RA, DiBartola AC, et al. Patient outcomes after horizontal cleavage tear repair: a systematic review. *Arthroscopy*. 2020;36:2316-2331.
11. Kurzweil P, Lynch N, Coleman S, Kearney B. Repair of horizontal meniscus tears: a systematic review. *Arthroscopy*. 2014;30(11):1513-9.
12. Ahn JH, Kwon OJ, Nam TS. Arthroscopic repair of horizontal meniscal cleavage tears with marrow-stimulating technique. *Arthroscopy*. 2014;31(1):92-8.
13. Pujol N, Salle De Chou E, Boisrenoult P, Beuflis P. Platelet-rich plasma for open meniscal repair in young patients: any benefit? *Knee Surg Sports Traumatol Arthrosc*. 2015;23(1):51-8.
14. Beamer BS, Walley KC, Okajima S, et al. Changes in contact area in meniscus horizontal cleavage tears subjected to repair and resection. *Arthroscopy*. 2017;33:617-624.
15. Cinque M, Chahla J, Moatshe G, Faucett S, Krych A, LaPrade R. Meniscal root tears: a silent epidemic. *Br J Sports Med*. 2018;52:872-876.
16. Kim S, Ha J, Lee S, et al. Medial meniscus root tear refixation: comparison of clinical, radiologic, and arthroscopic findings with medial meniscectomy. *Arthroscopy*. 2011;27(3):346-354.
17. Krivcich L, Kunze K, Parvaresh K, Jan K, DeVinney A, Vadhera A, LaPrade R, Chahla J. Comparison of long-term radiographic outcomes and rate and time for conversion to total knee arthroplasty between repair and meniscectomy for medial meniscus posterior root tears. *Am J Sports Med*. 2021;50(7):2023-2031.
18. Faucett S, Geisler B, Chahla J, Krych A, Kurzweil P, Garner A, et al. Meniscus root repair vs meniscectomy or nonoperative management to prevent knee osteoarthritis after medial meniscus root tears: clinical and economic effectiveness. *Am J Sports Med*. 2019;47(3):762-769.
19. Perry A, Lavoie-Gagne O, Knapik D, Maheshwer B, et al. Examining the efficacy of medial meniscus posterior root repair: a meta-analysis and systematic review of biomechanical and clinical outcomes. *Am J Sports Med*. 2022;1-13.
20. Ishibashi, Y. Meniscus repair versus meniscectomy for medial meniscus posterior root tears: a meta-analysis on development of osteoarthritis and total knee arthroplasty. Poster presented at: Asia-Pacific Knee, Arthroscopy and Sports Medicine Society and Thai Orthopedic Society for Sports Medicine; September 2022.
21. Chung K, Ha J, Yeom C, et al. Comparison of clinical and radiologic results between partial meniscectomy and refixation of medial meniscus posterior root tears: a minimum 5-year follow-up. *Arthroscopy*. 2015;31(10):1941-1950.
22. Bumberger A, Koller U, Hofbauer M, Tiefenboeck T, Hajdu S, Windhager R, Waldstein W. Ramp lesions are frequently missed in ACL-deficient knees and should be repaired in case of instability. *Knee Surg Sports Traumatol Arthrosc*. 2020;28(3):840-854.
23. Taneja A, Miranda F, Rosemberg L, Santos D. Meniscal ramp lesions: an illustrated review. *Insights into Imaging*. 2021;12:134.
24. Choi K, Koh I, Kim M, In Y. Medial meniscal ramp lesion repair through anterior portals using a medial collateral ligament pie-crusting technique. *Arthrosc Tech*. 2021;10(4):e1073-e1077.
25. Guimaraes J, Schwaiger B, Gersing A, Neumann J, Facchetti L, Li X, Joseph G, Link T. Meniscal ramp lesions: frequency, natural history, and the effect on knee cartilage over 2 years in subjects with anterior cruciate ligament tears. *Skeletal Radiol*. 2020;50:551-558.
26. McDermott I, Amis A. Review article: the consequences of meniscectomy. *J Bone Joint Surg*. 2006;88-B:1549-1556.
27. Hoser C, Fink C, Brown C, Reichkendler M, Hackl W, Bartlett J. Long-term results of arthroscopic partial lateral meniscectomy in knees without associated damage. *J Bone Joint Surg Br*. 2001;83-B:513-516.
28. Cerciello S, Ollivier M, Kocaoglu B, Khakha RS, Seil R, The ESSKA U45 Committee. ACL surgical trends evolve in the last five years for young European surgeons: results of the survey among the U45 ESSKA Members. *Knee Surg Sports Traumatol Arthrosc*. 2022.
29. Claramunt R, Morales-Avalos R, Perelli S, Padilla-Medina JR, Monllau JC. Good clinical outcomes can be expected after meniscal allograft transplant at 15 years of follow-up. *Knee Surg Sports Traumatol Arthrosc*. 2022.
30. Carter TR and Brown MJ. Meniscal allograft survivorship and outcomes 20 years after implantation. *Arthroscopy*. 2020;36:2268-2274.
31. Wang, D., Lee, C., Zhang, B., Li, Y., Meng, X., Jiang, D., Yu, J.. The immediate meniscal allograft transplantation achieved better chondroprotection and less meniscus degeneration than the conventional delayed transplantation in the long-term. *Knee Surgery, Sports Traumatology, Arthroscopy*. 2022; 30: 3708-3717.

Meniscal repair solutions: product portfolio

References

1. Smith+Nephew 2021. Validation, FAST-FIX FLEX. Internal Report. 15010267 Rev A.
2. Smith+Nephew 2021. Validation, FAST-FIX FLEX. Attachment B. Internal Report. 15010267 Rev A.
3. Smith+Nephew 2021. FAST-FIX FLEX Surgeon Surveys. Internal Memo.
4. Metcalf MH, Barrett GR. Prospective evaluation of 1485 meniscal tear patterns in patients with stable knees. *Am J Sports Med*. 2004;32(3):675-680.
5. Smith+Nephew 2021. Competitive, FAST-FIX FLEX Dimensional Analysis. Internal Report. 15010919 Rev A.
6. Smith+Nephew 2020. Biomechanical Testing, FAST-FIX FLEX. Internal Report. 15010180 Rev A.
7. Smith+Nephew 2019. Patient Reported Outcome Measures Related to the Use of FAST-FIX. Internal Report. EO/SPM/FASTFIX/003/v2.
8. Smith+Nephew 2019. Identification of Clinically Relevant Reports for Competitor Devices of All-inside Meniscal Repair. Internal Report. EA/SPM/FASTFIX/004/v1.
9. Smith+Nephew 2019. Evidence Outcomes Reports EO/SPM/FASTFIX/002/v2 and EO/SPM/FASTFIX/003/v2.
10. Briggs KK, Steadman JR, Hay CJ, Hines SL. Lysholm score and tegner activity level in individuals with normal knees. *Am J Sports Med*. 2009;37:898-901.
11. Smith+Nephew 2019. Success Rates Related to the Use of FAST-FIX. Internal Report. EO/SPM/FASTFIX/002/v1.
12. Erquicia JI, Ibañez M, Perelli S, Masferrer-Pino Á, Gelber PE, Monllau JC. Clinical outcomes in meniscal allograft transplantation using FASTFIX 360. Abstract presented at: ISAKOS, and Orthopaedic Sports Medicine; November 27-28, 2021; virtual.
13. Saliman, JD. Circumferential compression stitch for meniscus repair. *Arthrosc Tech*. 2013;V2(3):e257-262.
14. Woodmass J, Johnson J, Wu I, Saris D, Stuart M, Krych A. Horizontal cleavage meniscus tear treated with all-inside circumferential compression stitches. *Arthroscopy*. 2017;6(4):e1329-e1333.
15. Laidlaw M, Gwathmey F. Circumferential suture repair of isolated horizontal meniscal tears augmented with fibrin clot. *Arthroscopy*. 2017;6(5):e1567-e1572.
16. Brooks K. Vertical lasso and horizontal lasso sutures for repair of horizontal cleavage and horizontal oblique meniscal tears: surgical technique and indications. *Arthroscopy*. 2017;6(5):e1767-e1773.
17. Beamer B, Masoudi A, Walley K, et al. Analysis of a new all-inside versus inside-out technique for repairing radial meniscal tears. *Arthroscopy*. 2015;31(2):293-8.
18. Ceterix Orthopaedics 2018. Meniscal Repair System Product Definition PS-0018 Rev B.
19. Anz AW, Branch EA, Saliman JD, Biomechanical comparison of arthroscopic repair constructs for meniscal root tears. *Am J Sports Med*. 2014;42(11):2699-706.
20. Moulton S, Bhatia S, Civitaresse D, et al. Surgical techniques and outcomes of repairing meniscal radial tears: a systematic review. *Arthroscopy*. 2016;22(5):400-404.
21. Askew N, Nherera L, Searle R. Cost-effectiveness of meniscus repair when compared to partial meniscectomy for horizontal cleavage tears. Poster presented at: Professional Society for Health Economics and Outcomes Research; May 2022.
22. Moatshe G, Chahla J, Slette E, Engebretsen L, LaPrade RF. Posterior meniscal root injuries: a comprehensive review from anatomy to surgical treatment. *Acta Orthop*. 2016;87(5):452-458.
23. ArthroCare Corporation 2017. Report: FirstPass Mini Suture Passer Design Verification. Internal Report. P/N 90445-01 Rev B.
24. Smith+Nephew 2018. Report: FirstPass Mini Suture Passer Design Verification (Left and Right Versions). Internal Report. P/N 90445-03 Rev A.
25. ArthroCare Corporation 2017. Report: FirstPass Mini Design Validation. Internal Report. P/N 91840-01 Rev A.
26. Smith+Nephew 2018. Report: FirstPass Mini L&R Design Validation. Internal Report. P/N 91840-02 Rev A.
27. Nelson C, Bonner K. Inside-out meniscus repair. *Arthrosc Tech*. 2013;2(4):e453-e460.
28. Cohen DB, Wickiewicz TL. The outside-in technique for arthroscopic meniscal repair. *Oper Tech Sports Med*. 2003;11:91-103.
29. Johnson, D., Souter, P., Sedgwick, M. Clinical Performance of an All-inside Meniscal Repair Device: A Systematic Literature Review with Meta-analysis. ISAKOS. 2023.
30. ArthroCare Corporation 2017. FirstPass Mini Human Factors Validation. Internal Report. P/N 94006-01 Rev A.
31. Menge TJ, Dean CS, Chahla J, Mitchell JJ, Laprade RF. Anterior Horn Meniscal Repair Using an Outside-In Suture Technique. *Arthrosc Tech*. 2016;5(5):e1111-e1116.
32. Elmallah R, Jones LC, Malloch L, Barrett GR. A Meta-Analysis of Arthroscopic Meniscal Repair: Inside-Out versus Outside-In versus All-Inside Techniques. *J Knee Surg*. 2018 Aug 21. [Epub ahead of print].



Meniscal repair evidence

References

1. Konan S, Haddad F. Outcomes of meniscal preservation using all-inside meniscus repair devices. *Clin Orthop Relat Res.* 2010;468:1209–1213.
2. Fairbank T. Knee joint changes after meniscectomy. *J Bone Joint Surg.* 1948;30:664–670.
3. McDermott I, Amis A. Review article: the consequences of meniscectomy. *J Bone Joint Surg.* 2006;88-B:1549-1556.
4. Mordecai SC, Al-Hadithy N, Ware HE, Gupta CM. Treatment of meniscal tears: an evidence-based approach. *World J Orthop.* 2014;5:233–241.
5. Arno S, Bell CP, Uquillas C, Borukhov I, Walker PS. Tibiofemoral contact mechanics following a horizontal cleavage lesion in the posterior horn of the medial meniscus. *J Orthop Res.* 2015;33:584–590.
6. Beamer BS, Walley KC, Okajima S, et al. Changes in contact area in meniscus horizontal cleavage tears subjected to repair and resection. *Arthroscopy.* 2017;33:617–624.
7. Barber-Westin SD, Noyes FR. Clinical healing rates of meniscus repairs of tears in the central-third (red-white) zone. *Arthroscopy.* 2014;30:134–146.
8. Persson F, Turkiewicz A, Bergkvist D, Neuman P, Englund M. The risk of symptomatic knee osteoarthritis after arthroscopic meniscus repair vs partial meniscectomy vs the general population. *Osteoarthritis Cartil.* 2018;26:195–201.
9. Smith+Nephew 2021. Meniscal Repair vs. Meniscectomy: A Systematic Literature Review with Meta-analysis of Comparative Clinical Studies.
10. Park C, Ryoo S, Choi M, Lee S, Yoo J, Kim H. Total knee replacement after arthroscopic meniscectomy in knee osteoarthritis: a nationwide population-based cohort study. *J Korean Med. Sci.* 2023;38(1):e6.
11. Rongen J, Rovers M, van Tienen T, Buma P, Hannink G. Increased risk for knee replacement surgery after arthroscopic surgery for degenerative meniscal tears: a multi-center longitudinal observational study using data from the osteoarthritis initiative. *Osteoarthritis Cartilage.* 2017;25(1):23–29.
12. Hagmeijer MH, Hevesi M, Desai VS, et al. Secondary meniscal tears in patients with anterior cruciate ligament injury: relationship among operative management, osteoarthritis, and arthroplasty at 18-year mean follow-up. *Am J Sports Med.* 2019;47:1583–1590.
13. Cerciello S, Ollivier M, Kocaoglu B, Khakha RS, Seil R, The ESSKA U45 Committee. ACL surgical trends evolve in the last five years for young European surgeons: results of the survey among the U45 ESSKA Members. *Knee Surg Sports Traumatol Arthrosc.* 2023;31(2):619-625.
14. Lee WQ, Gan JZ, Lie DTT. Save the meniscus - clinical outcomes of meniscectomy versus meniscal repair. *J Orthop Surg (Hong Kong).* 2019;27:2309499019849813.



References

1. Smith+Nephew 2022. TRAC-Cutter Push-Pull Cut Force DV Protocol. Internal Report. 15011552 Rev A.
2. Smith+Nephew 2022. QUAD-Cutter Force to Cut Design Verification. Internal Report. 15011559 Rev A.
3. Smith+Nephew 2022. User Evaluation, UBX Competitive Device Comparison 15012018 Rev A.
4. Arthrocare Corporation 2016. Test Report: Comparative Testing of Ultrabutton Adjustable Fixation Device to Competitive Devices P/N 69889-01 C. NOTE: The results of in vitro simulation testing have not been proven to predict clinical performance.
5. Ahmad SS, Hirschmann MT, Voumard B, et al. Adjustable loop ACL suspension devices demonstrate less reliability in terms of reproducibility and irreversible displacement. *Knee Surg Sports Traumatol Arthrosc.* 2018;26(5):1392-1398.
6. Shelburne KB, Pandey MG, Anderson FC, Torry MR. Pattern of anterior cruciate ligament force in normal walking. *J Biomech.* 2004;37(6):797-805.
7. Smith+Nephew 2022. Comp, UBX Cyclic and Repair Strength Testing. 15012185 Rev A.
8. Smith+Nephew 2022. Validation, QUADTRAC. Internal Report. 15011575 Rev A.
9. Smith+Nephew 2022. QUADTRAC Marketing Claims. Internal Report. 15011572 Rev A.
10. Sengoku T, Nakase J, Asai K, et al. The effect of gracilis tendon harvesting in addition to semitendinosus tendon harvesting on knee extensor and flexor strength after anterior cruciate ligament reconstruction. *Arch Orthop Trauma Surg.* 2022;142(3):465-470.
11. Sherman O. Editorial Commentary: Multiple-strand hamstring autografts for anterior cruciate ligament reconstruction: if graft diameter is at least 8 millimeters, bigger may not be better. *Arthrosc.* 2021;37:586-587.
12. Snaebjornsson T, Senorski E, Ayeni O, et al. Graft diameter as a predictor for revision anterior cruciate ligament reconstruction and koos and eq-5d values. *Am J Sports Med.* 2017;45:2092-2097.
13. Spragg L, Chen J, Mirzayan R, Love R, Maletis G. The effect of autologous hamstring graft diameter on the likelihood for revision of anterior cruciate ligament reconstruction. *Am J Sports Med.* 2016;44:1475-1481.
14. Arthrocare Corporation 2018. Test Report: Comparative Testing of ULTRABUTTON Adjustable Fixation Device to Competitive Devices. P/N 69889-01 F.
15. Arthrocare Corporation 2018. Test Report: Comparative Testing of ULTRABUTTON Adjustable Fixation Device to Competitive Devices P/N 69889-01 D.
16. Smith+Nephew 2022. Verification: UBX TIB Cyclic & Repair Strength Test 15011545 Rev A.
17. Smith+Nephew 2022. Verification: UBX Button Cyclic & Repair Strength Test 15011463 Rev A.
18. Smith+Nephew 2019. TRUNAV Design Validation. Internal Report. 15007793 Rev B.
19. Nuelle CW, Cook JL, Gallizzi MA, Smith PA. Posterior single-incision semitendinosus harvest for a quadrupled anterior cruciate ligament graft construct: determination of graft length and diameter based on patient sex, height, weight, and body mass index. *Arthrosc.* 2015;31(4):684-690.
20. Smith+Nephew 2020. MAP 627: 2019 New Zealand ACL Registry Implant Report.
21. Kim JG, Chang MH, Lim HC, et al. An in vivo 3D computed tomographic analysis of femoral tunnel geometry and aperture morphology between rigid and flexible systems in double bundle anterior cruciate ligament reconstruction using the transportal technique. *Arthrosc.* 2015;31(7):1318-1329.
22. Smith+Nephew 2012. Validation, CLANCY Anatomic Flexible Drill Guide System. Internal Report. 15001409 Rev A.
23. Bedi A, Altchek DW. The "footprint" anterior cruciate ligament technique: an anatomic approach to anterior cruciate ligament reconstruction. *Arthrosc.* 2009;25(10):1128-1138.
24. Rasmussen JF, Lavery KP, Dhawan A. Anatomic anterior cruciate ligament reconstruction with a flexible reamer system and 70° arthroscope. *Arthrosc Tech.* 2013;2(4):e319-e322.
25. Cerulli G, Placella G, Sebastiani E, et al. ACL reconstruction: choosing the graft. *Joints.* 2013;1(1):18-24.
26. West RV, Harner CD. Graft selection in anterior cruciate ligament reconstruction. *J Am Acad Orthop Surg.* 2005;13(3):197-207.
27. Slone H, Romine S, Premkumar A, Xerogeanes J. Quadriceps tendon autograft for anterior cruciate ligament reconstruction: a comprehensive review of current literature and systematic review of clinical results. *J Arthrosc Relat Surg.* 2015;31(3):541-554.
28. Buerba RA, Boden SA, Lesniak B. Graft selection in contemporary anterior cruciate ligament reconstruction. *J Am Acad Orthop Surg Glob Res Rev.* 2021;5(10).
29. Salmon LJ, Russell VJ, Refshauge K, et al. Long-term outcome of endoscopic anterior cruciate ligament reconstruction with patellar tendon autograft: minimum 13-year review. *Am J Sports Med.* 2006;34(5):721-32.
30. Lebel B, Hulet C, Galaud B, Burdin G, Locker B, Vielpeau C. Arthroscopic reconstruction of the anterior cruciate ligament using bone-patellar tendon-bone autograft: a minimum 10-year follow-up. *Am J Sports Med.* 2008;36(7):1275-82.
31. Smith+Nephew 2015. BIOSURE REGENESORB® Ovine ACL Implantation Study NCS250.
32. Smith+Nephew 2014. Verify, BIOSURE HA Screw Fixation Strength and Insertion 15002832 Rev A.
33. Smith+Nephew 2017. Verification & Validation, BIOSURE REGENESORB Interference Screws 15004843 Rev F.
34. Silver AG, Kaar SG, Grisell MK, et al. Comparison between rigid and flexible systems for drilling the femoral tunnel through an anteromedial portal in anterior cruciate ligament reconstruction. *Arthrosc.* 2009;26(6):790-795.
35. Tibor L, Chan P, Funahashi T, et al. Surgical technique trends in primary ACL reconstruction from 2007 to 2014. *J Bone Joint Surg Am.* 2016;98:1079-89.
36. Mariscalco MW, Flanigan DC, Mitchell J, et al. The influence of hamstring autograft size on patient-reported outcomes and risk of revision after ACL reconstruction: a multicenter orthopaedic outcomes network (MOON) cohort study. *J Arthrosc Relat Surg.* 2013;29(12):1948-1953.
37. Widner M, Dunleavy M, Lynch S. Outcomes following ACL reconstruction based on graft type: are all grafts equivalent? *Curr Rev Musculoskelet.* 2019;12:460-465.
38. Smith+Nephew 2016. Tier 1 Customer Preference Evaluation Report: ULTRABUTTON Adjustable Fixation. Report 68688-01 B.
39. Vonhoegen J, John D, Hagermann C. Osteoconductive resorption characteristics of a novel biocomposite suture anchor material in rotator cuff repair. *Orthop Traumatol Surg Res.* 2019;14(1):12.
40. Smith+Nephew 2010. Micro-CT and Histological Evaluation of Specimens from Resorbable Screw Study (RS-II / OM1-08) 24-Month Post-Implantation. Internal Report WRP-TE045-700-08.
41. Smith+Nephew 2016. HEALICOIL® REGENESORB Suture Anchor – A Study to Assess Implant Replacement by Bone Over a 2 Year Period. NCS248.
42. Lund B, Nielsen T, Faunø P, Christiansen SE, Lind M. Is quadriceps tendon a better graft choice than patellar tendon? a prospective randomized study. *Arthrosc.* 2014;30(5):593-598.
43. Malinowski K, Paszkowski J, Mostowy M, Goralczyk A, Laprade RF, Hermanowicz K. Quadriceps tendon-bone full-thickness autograft: reproducible and easy harvesting technique using simple surgical tools. *Arthrosc Tech.* 2021;10(4).
44. Todor A, Nistor DV, Catev S. Clinical outcomes after ACL reconstruction with free quadriceps tendon autograft versus hamstring tendons autograft. A retrospective study with a minimal follow-up two years. *Acta Orthop Traumatol Turc.* 2019;53(3):180-183.
45. Runer A, Csapo R, Hepperger C, Herbort M, Hoser C, Fink C. Anterior cruciate ligament reconstructions with quadriceps tendon autograft result in lower graft rupture rates but similar patient-reported outcomes as compared with hamstring tendon autograft: a comparison of 875 patients. *Am J Sports Med.* 2020;48(9).
46. Barrett AM, Craft JA, Replogle WH, et al. A comparison of graft type based on age and tegner activity level. *Am J Sports Med.* 2011;39(10):2194-98.
47. Cavaignac E, Coulin B, Tscholl P, et al. Is quadriceps tendon autograft a better choice than hamstring autograft for anterior cruciate ligament reconstruction? a comparative study with a mean follow-up of 3.6 years. *Am J Sports Med.* 2017;45(6):1326-1332.
48. Kobayashi E, Tang K, Grant J. Is ACL repair really back? A review of modern techniques. *Oper Tech Sports Med.* 2021;29(2):1-11.
49. DiFelice G, Villegas C, Taylor S. Anterior cruciate ligament preservation: early results of a novel arthroscopic technique for suture anchor primary anterior cruciate ligament repair. *Arthrosc.* 2015;31(11):2162-2171.
50. Arthrocare Corporation 2018. Test Report: Comparative Testing of ULTRABUTTON Adjustable Fixation Device to Competitive Devices P/N 69889-01 C.
51. van der List JP, DiFelice GS. Range of motion and complications following primary repair versus reconstruction of the anterior cruciate ligament. *The Knee.* 2017;24(4):798-807.



References

1. Smith+Nephew 2022. Validation, QUADTRAC. Internal Report. 15011575 Rev A.
2. Smith+Nephew 2022. QUADTRAC Marketing Claims. Internal Report. 15011572 Rev A.
3. Smith+Nephew 2022. TRAC-Cutter Push-Pull Cut Force DV Protocol. Internal Report. 15011552 Rev A.
4. Smith+Nephew 2022. QUAD-Cutter Force to Cut Design Verification. Internal Report. 15011559 Rev A.
5. Smith+Nephew 2022. QUADTRAC Tolerance Analysis and Technical Report. Internal Report. 15011568 Rev A.
6. Teleflex Product Claims Sheet 2021.
7. Smith+Nephew 2017. MINITAPE Testing. Internal Report. 15005671 Rev A.
8. Smith+Nephew 2013. ULTRATAPE Report 15001847.
9. Riverpoint Medical R&D Test Report "ULTRAGRAB AND ULTRALOOP TEST REPORT" Rev A.
10. Silver AG, Kaar SG, Grisell MK, et al. Comparison between rigid and flexible systems for drilling the femoral tunnel through an anteromedial portal in anterior cruciate ligament reconstruction. *Arthrosc.* 2009;26(6):790-795.
11. Kim JG, Chang MH, Lim HC, et al. An in vivo 3D computed tomographic analysis of femoral tunnel geometry and aperture morphology between rigid and flexible systems in double-bundle anterior cruciate ligament reconstruction using the transportal technique. *Arthrosc.* 2015;31(7):1318-1329.
12. Bedi A, Altchek DW. The "footprint" anterior cruciate ligament technique: an anatomic approach to anterior cruciate ligament reconstruction. *Arthrosc.* 2009;25(10):1128-1138.
13. Smith+Nephew 2012. Validation, CLANCY Anatomic Flexible Drill Guide System. Internal Report. 15001409 Rev A.
14. Rasmussen JF, Lavery KP, Dhawan A. Anatomic anterior cruciate ligament reconstruction with a flexible reamer system and 70° arthroscope. *Arthrosc Tech.* 2013;2(4):e319-e322.
15. Smith+Nephew 2019. ACUFEX® TRUNAV Report 15007793.
16. Smith+Nephew 2019. ACUFEX TRUNAV Reports 15007628.
17. Smith+Nephew 2019. ACUFEX TRUNAV Report 15008563.
18. Smith+Nephew 2019. ACUFEX TRUNAV Report 15008565.
19. Smith+Nephew 2019. ACUFEX TRUNAV Report 15008567.
20. Smith+Nephew 2022. User Evaluation, UBX Competitive Device Comparison 15012018 Rev A.
21. Smith+Nephew 2022. Validation, ULTRABUTTON Extension (UBX) 15011969 Rev A.
22. Smith+Nephew 2022. ULTRABUTTON EXTENSION Marketing Claims Memo.
23. Arthrocare Corporation 2016. Test Report: Comparative Testing of ULTRABUTTON Adjustable Fixation Device to Competitive Devices P/N 69889-01 C.
24. Ahmad SS, Hirschmann MT, Voumard B, et al. Adjustable loop ACL suspension devices demonstrate less reliability in terms of reproducibility and irreversible displacement. *Knee Surg Sports Traumatol Arthrosc.* 2018;26(5):1392-1398.
25. Smith+Nephew 2022. UBX & UB Cyclic and Repair Strength 15012076.
26. Smith+Nephew 2022. UBX Feature & Dimensional Analysis 15011883 Rev A.
27. Smith+Nephew 2022. Comp, UBX Cyclic and Repair Strength Testing 15012185 Rev A.
28. Smith+Nephew 2022. ULTRABUTTON Soft tissue Attachment Strength 15011394 Rev A.
29. Smith+Nephew 2016. Tier 1 Customer Preference Evaluation Report: ULTRABUTTON Adjustable Fixation Device P/N 68688-01 B.
30. Arthrocare Corporation 2015. Adjustable Loop Button (P/N 65203) Design Verification and T=0 Packaging Validation P/N 65492-01 B.
31. Smith+Nephew 2022. UBX TIB Reduction Force Testing 15011670 Rev A.
32. Smith+Nephew 2022. ULTRABUTTON BONE BLOCK Reduction Force 1501147 Rev A.
33. Smith+Nephew 2022. ULTRABUTTON SOFT TISSUE Reduction Force 15011448 Rev A.
34. Smith+Nephew 2022. Comp, UBX Dimensional Analysis 15012083 Rev A.
35. MacLean IS, Frank RM, Trenhaile SW. Arthroscopically assisted acute acromioclavicular joint reconstruction using the infinity-lock button system. *Arthrosc Tech.* 2020;9(12):e2047-e2050.
36. Dittrich M, Wirth B, Freisleder F, Bellmann F, Scheibel M. Arthroscopically assisted stabilization of chronic bidirectional acromioclavicular joint instability using a low-profile implant and a free tendon graft. *Obere Extremität.* 2020;15(2):118-121.
37. Smith+Nephew 2015. BIOSURE® REGENESORB® Ovine ACL Implantation Study NCS250.
38. Smith+Nephew 2014. Verify, BIOSURE HA Screw Fixation Strength and Insertion 15002832 Rev A.
39. Smith+Nephew 2017. Verification & Validation, BIOSURE REGENESORB Interference Screws 15004843 Rev F.
40. Vonhoegen J, John D, Hagermann C. Osteoconductive resorption characteristics of a novel biocomposite suture anchor material in rotator cuff repair. *Orthop Traumatol Surg Res.* 2019;14(1):12.
41. Smith+Nephew 2010. Micro-CT and Histological Evaluation of Specimens from Resorbable Screw Study (RS-II / OM1-08) 24-Month Post-Implantation. Internal Report WRP-TE045-700-08.
42. Smith+Nephew 2016. HEALICOIL REGENESORB Suture Anchor – A Study to Assess Implant Replacement by Bone over a 2 Year Period. NCS248.
43. Prodromos C, Brown C, Fu F, et al. The Anterior Cruciate Ligament: Reconstruction and Basic Science. Philadelphia, PA: Saunders; 2007.
44. Kuang GM, Yau WP, Lu WW, Chiu KY. Osteointegration of soft tissue grafts within the bone tunnels in anterior cruciate ligament reconstruction can be enhanced. *Knee Surg Sports Traumatol Arthrosc.* 2010;18(8):1038-1051.
45. Siebold R, Dejour D, Zaffagnini S, eds. Anterior Cruciate Ligament Reconstruction: A Practical Surgical Guide. Springer; 2014.



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