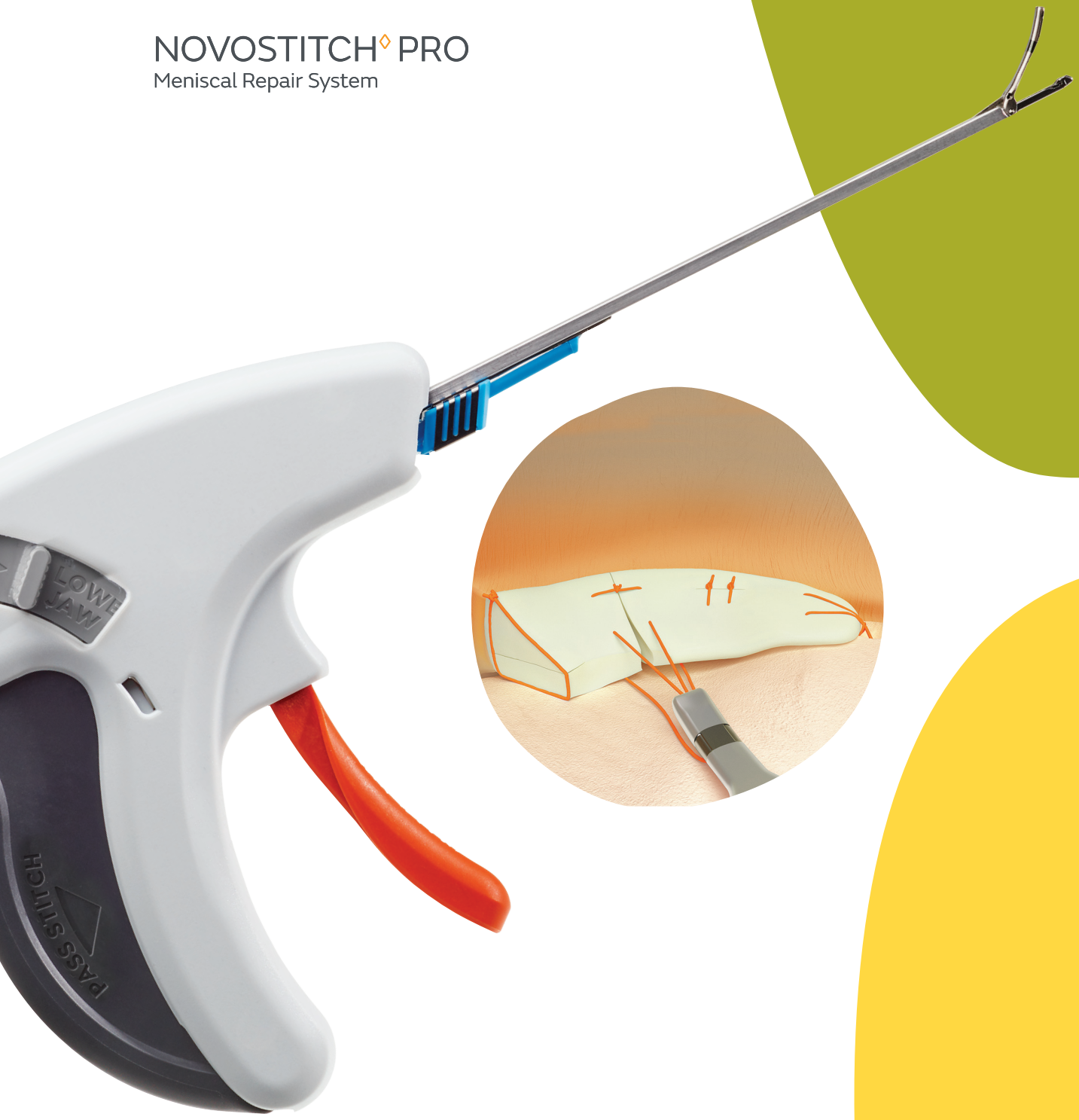
Clinical background

Smith+Nephew

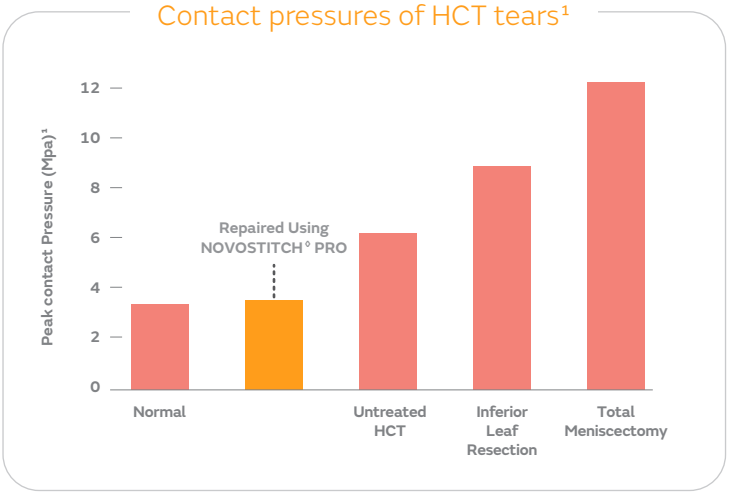
NOVOSTITCH◊ PRO
Meniscal Repair System



Horizontal cleavage tears (HCT)

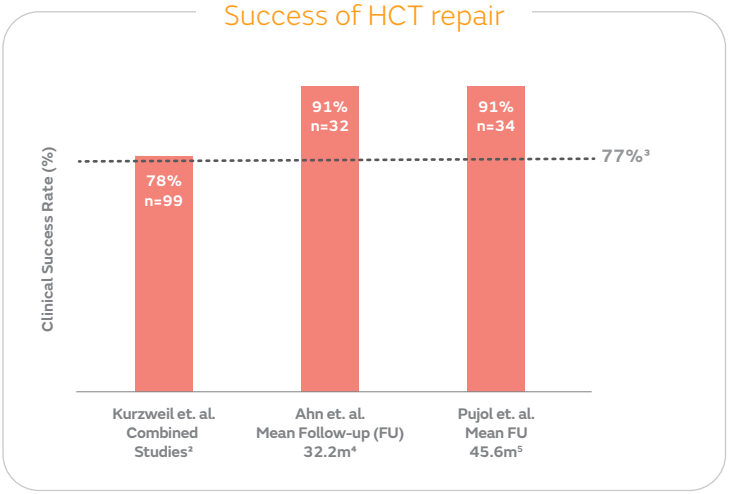
Contact pressures increased by HCT

- Based on in vitro data, pressure from untreated tear increases contact pressures by 70%[1]
- Studies have shown unfavorable results in leaflet resection improving contact pressures[1]
- HCT repair normalizes contact pressures[1]



Successful HCT repair is possible

- 78% clinical success rate of HCT repair upon systematic review[2], similar to other tear types[3]
- 91% success rate in broad age range of patients (14-56) confirmed with second look follow up[4]
- 91% success rate with MRI follow up[5]



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.

✚ The NOVOSTITCH◊ PRO Meniscal Repair Solution

Circumferential stitches enable HCT repair

- Technique articles from leading centers highlight NOVOSTITCH Meniscal Repair System proprietary Circumferential Compression Stitches (CCS) to repair HCTs[6,7,8]
- Use of CCS eliminates posterior incision and minimizes risk of neurovascular injury[6]

NOVOSTITCH PRO Meniscal Repair System is designed for HCT repair

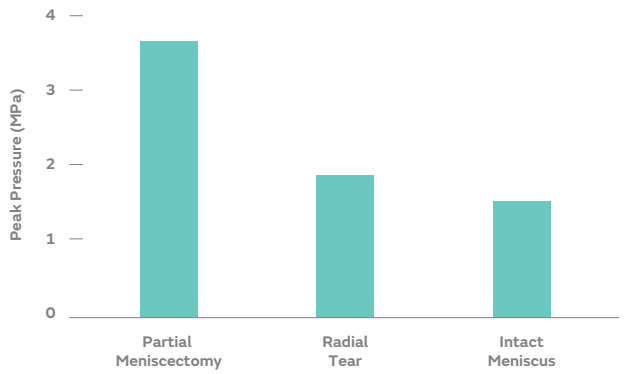
- Low profile (1.6mm) and retractable lower jaw facilitate access to peripheral meniscus[9]
- Curved upper jaw and retractable lower jaw enhance maneuverability for HCT repair vs. other repair methods[9]

Radial tears

Meniscectomy of radial tears increases contact pressure

- Radial tears increase contact pressures within the knee[10], and full-thickness radial tears render the meniscus non-functional[11]
- Meniscectomy of radial tears increases contact pressures by more than 100% over baseline[10]

Contact pressures of radial tears[10]

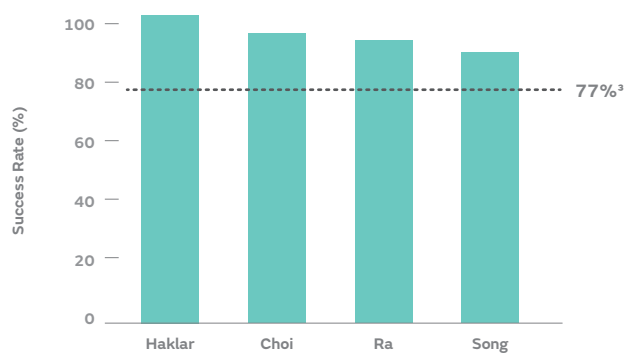


Note: Study data acquired from cadaver knees.

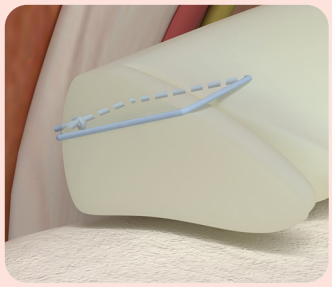
Robust radial repair is possible

- 71-100% radial repair clinical success rates from follow-up results of systematic reviews, similar to other tear patterns.[3]
- Outcomes of full-thickness radial repairs are comparable to bucket handle repairs[11]

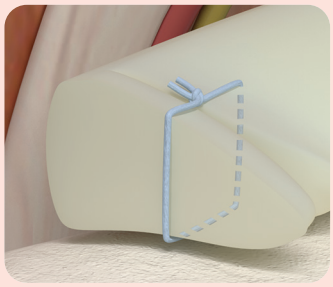
Success of radial repairs[12]



✚ The NOVOSTITCH◊ PRO Meniscal Repair Solution



Inside-out repair

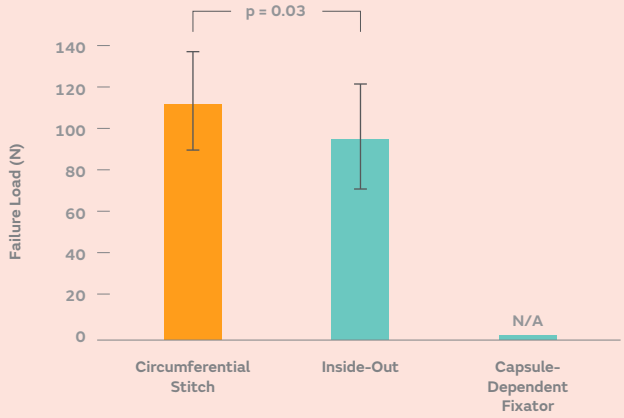


Circumferential compression stitch

Strong radial repair with circumferential compression

- Based on in vitro data, Circumferential Compression Stitches (CCS) are stronger than inside-out for radial repairs[13]
- CCS have less gap formation than inside-out repair for radial tears[13]
- CCS improve repair vectors for radial repairs by creating a stitch straight across the radial tear

Radial – Load to failure[13]



NOVOSTITCH PRO Meniscal Repair System designed for radial repair

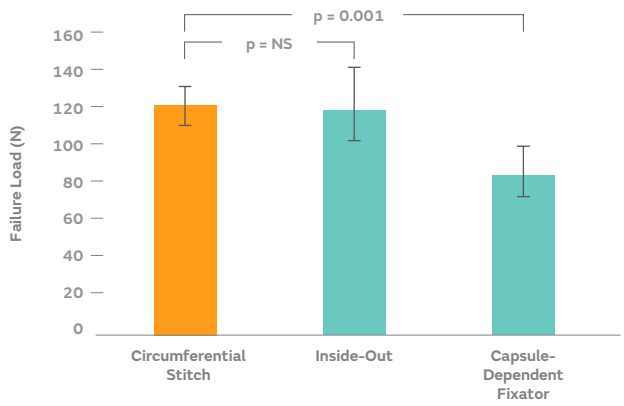
- Low profile (1.6mm) and retractable lower jaw facilitate access to peripheral meniscus[9]
- Curved upper jaw and retractable lower jaw enhance maneuverability for radial repair vs. other repair methods[9]
- Cartridges enable placement of complete stitches without removing the device from the joint

Vertical Tears

Stronger Vertical Repairs Possible with Circumferential Compression Stitches

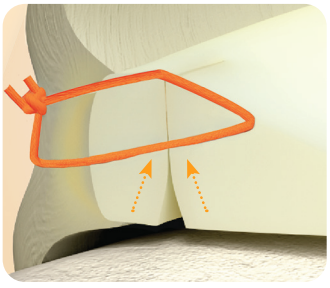
- Based on in vitro data, Circumferential Compression Stitches (CCSs) are ~50% stronger than fixators in biomechanical studies of vertical tears[14]

Vertical – Load to Failure[14]



Circumferential Compression Stitches Prevent Tibial Gapping

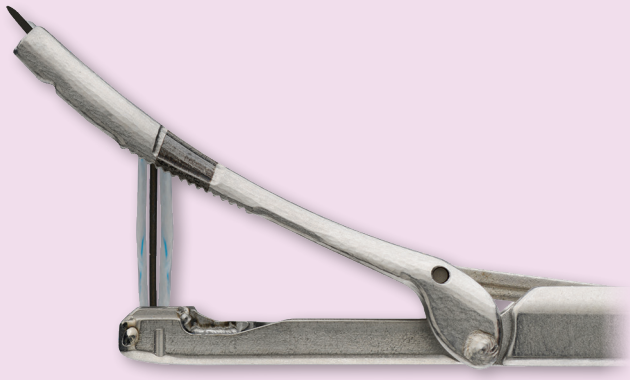
- CCSs provide tibial-sided compression and anatomically reduce the entire tear
- Based on in vitro data, CCSs produce less tibial gapping than inside-out[14]
- CCSs facilitate treatment of tibial-sided tears



✚ The NOVOSTITCH◊ PRO Meniscal Repair Solution

NOVOSTITCH PRO Meniscal Repair System Enables Safe Vertical Stitches

- Passing suture from bottom to top enables a meniscus-to-meniscus CCS placement with an all suture implant
- Needle remains inside the capsule to minimize risk to neurovascular structures
- Cartridges enable placement of complete stitches without removing the device from the joint

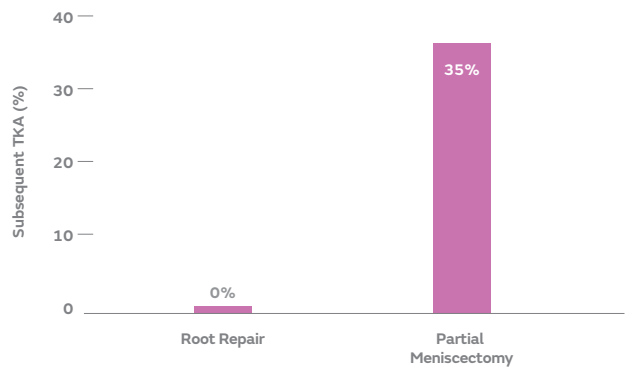


Root tears

Meniscectomy for root tears increases osteoarthritis (OA)

- 35% of meniscectomy patients in root tear studies advanced to total knee arthroplasty (TKA) within 5 years[15]
- Meniscectomy to treat meniscal root avulsions leads to significant joint space narrowing within 5 years[16]

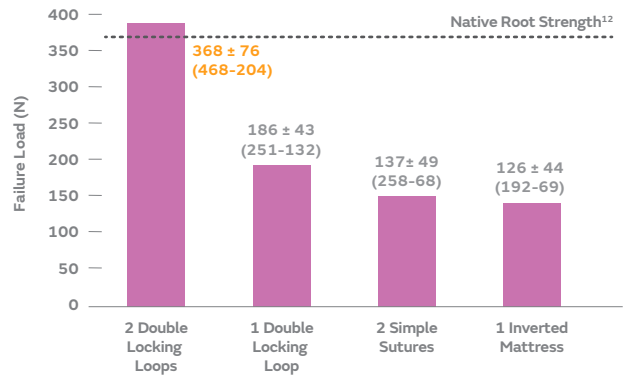
TKA after root tear treatment[15]



Stitch construct impacts root repair strength

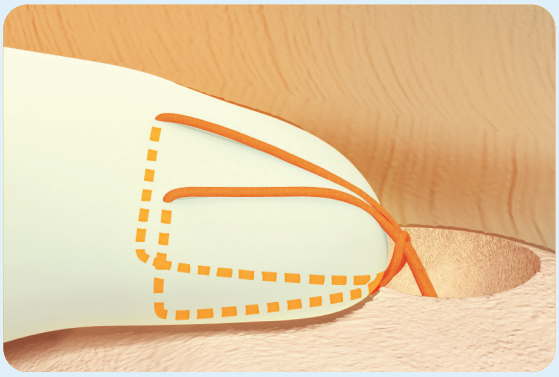
- Most often root repairs fail due to suture pulling through tissue[17]
- One stitch with cross-fiber purchase and multiple points of fixation is stronger than two stitches without[17,18]
- Placing stitches 5-7mm from the edge of the meniscus generates stitches that are 38-78% stronger[19]

Root – Load to failure[18]



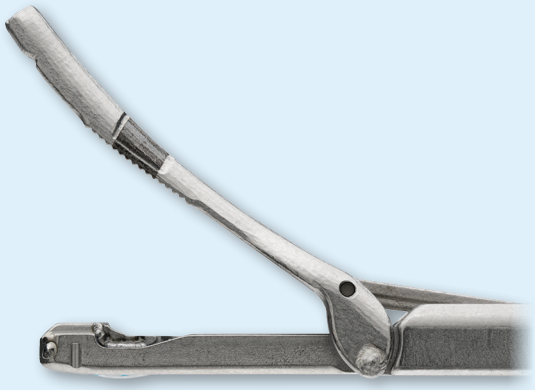
Note: Study data based on ex vivo analysis with cadaveric knees.

✚ The NOVOSTITCH◊ PRO Meniscal Repair Solution



Successful root repair is possible

- 0% of root repair patients advanced to TKA within 5 years, compared to 35% for meniscectomy[15]
- Root repair patients had greater function, less pain, and greater joint space compared to patients who received meniscectomy[16]



NOVOSTITCH PRO Meniscal Repair System enables strong root construct

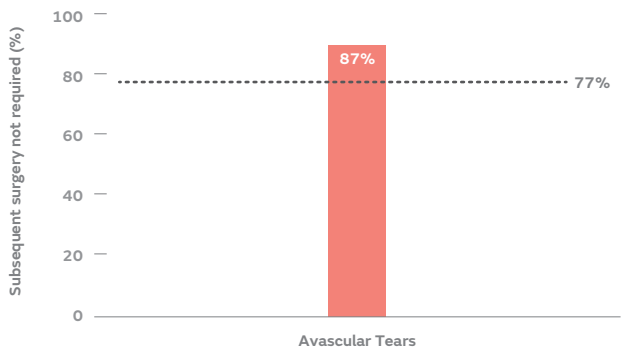
- Cartridges with size 0 suture enable stitches with two points of fixation to create a double modified locking loop without removing the device from the joint
- Curved upper jaw and retractable lower jaw enhance maneuverability for root repair

Avascular tears

Successful avascular tear repair is possible

- 87% of repaired tears extending into avascular zone were asymptomatic upon follow-up[20]
- Patients in the Noyes study were all 40+ years of age[20]

Outcomes in avascular tears[20]

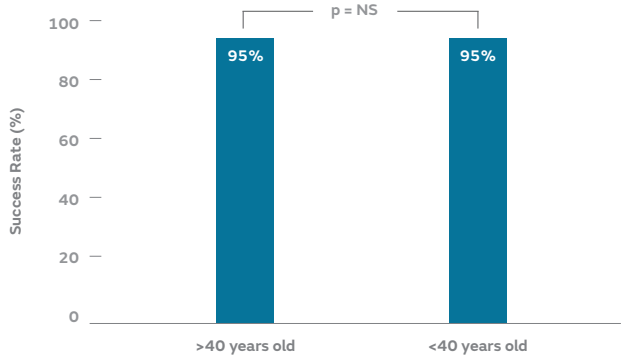


Older patients

Age doesn't matter

- Two systematic reviews found no difference in repair success between patients over and under 40 years of age[21,22]
- Case review showed no difference in repair success in patients over and under 40 years of age[23]
- Steadman also demonstrated a 94.7% success rate of repair in patients over 40[23]

Repair success rates by age[23]

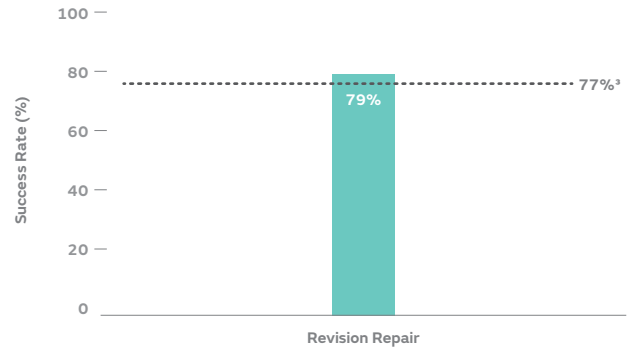


Revision repairs

Successful revision repair is possible

- 79% of revision meniscus repairs were pain-free at a mean of 6 years follow-up[24]
- Failure of repair still resulted in more tissue preservation and less tissue removal during secondary meniscectomy procedures[24,25]

Repair success in revision surgery[24]



Ordering information

NOVOSTITCH® PRO	
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)
CTX-C001	NOVOCUT Suture Manager

Refer to the Instructions for Use for device-specific indications, adverse effects, warnings and precautions.

Learn more at **AllTearsAllRepairs.com**

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The NOVOSTITCH PRO Meniscal Repair System is manufactured by Ceterix Orthopaedics, Inc., 6500 Kaiser Drive, Suite 120, Fremont, CA 94555, USA.

NOVOSTICH PRO Meniscal Repair System is 510(k) cleared. NOVOSTITCH PRO may not be available in all markets because product availability is subject to the regulatory and/or medical practices in individual markets. Please contact your Smith+Nephew representative if you have questions about the availability of Smith+Nephew products in your area.

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