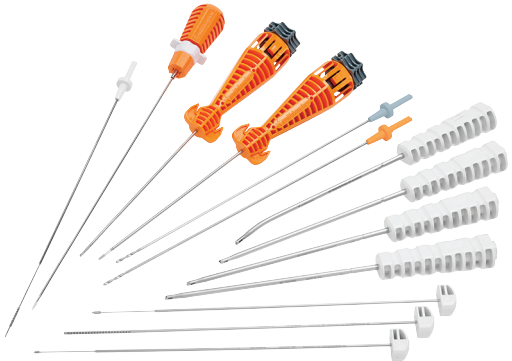
Redefining peak performance

Improved performance[1,2], increased access.
An integral part of Instability Excellence.

Smith+Nephew

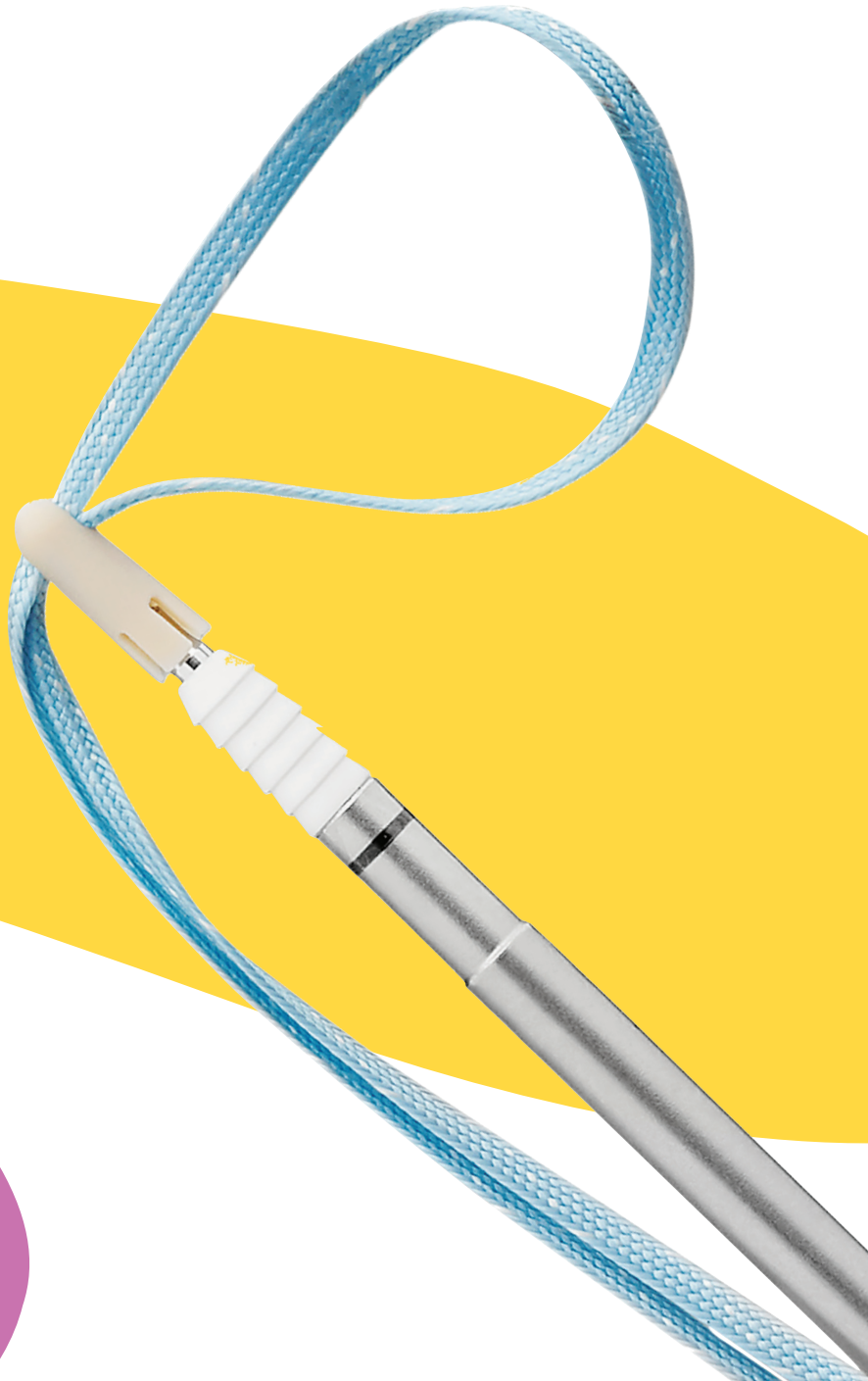


MICRORAPTOR◊
KNOTLESS
Suture Anchor

Improved performance[1, 2]

The MICRORAPTOR◊ Knotless Suture Anchor gives surgeons increased access to previously difficult areas with:

- **Improved off-axis insertion performance**[**1]**
- **Full-length inserter**
- **Rigid implant design**

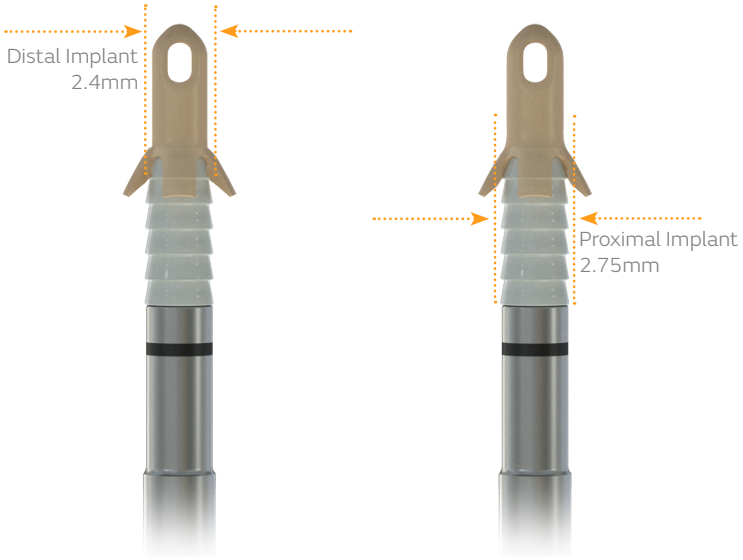


**Demonstrated clinically and in vivo*

***When compared to other commercially available biocomposite knotless anchors.*

MICRORAPTOR◊ KNOTLESS

Suture Anchor features



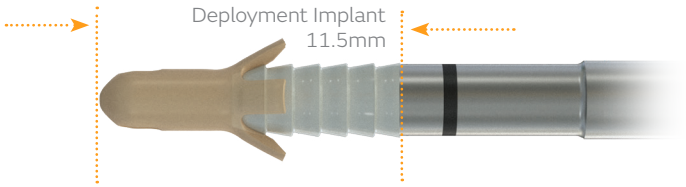
**REGENESORB◊ Implant in deployed state*

Less volume[3]

Less overall implant volume when compared to Arthrex® Pushlock PEEK suture anchor and Stryker® CinchLock SS Knotless Anchor.[3]

Shorter length[3]

Shorter overall construct length post-anchor deployment compared to the Arthrex® PushLock Biocomposite Anchor, Short Arthrex® PushLock BioComposite Anchor and Stryker® CinchLock SS Knotless Anchor.[3]



**REGENESORB◊ Implant in deployed state*

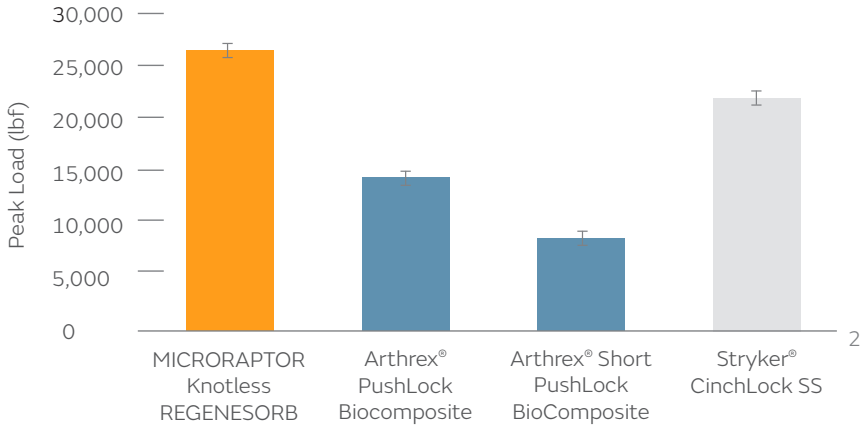
Superior strength*[2]

Superior fixation strength compared to other commercially available knotless anchors.[2]

On average, MICRORAPTOR Knotless Suture Anchor provides:

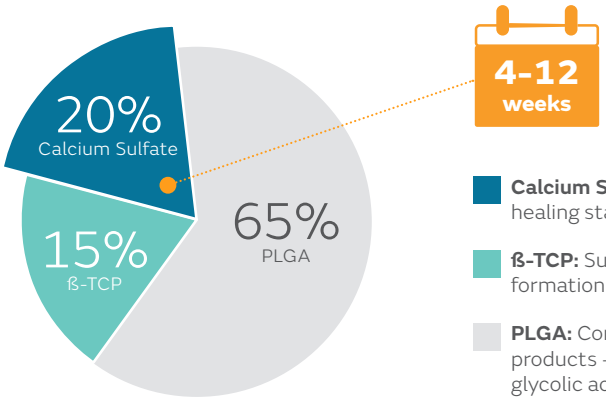
- **71%** higher anchor fixation strength than Arthrex® Short PushLock BioComposite
- **47%** higher anchor fixation strength than Arthrex® PushLock BioComposite
- **21%** higher anchor fixation strength than Stryker® CinchLock SS knotless anchor

Fixation in 15 pounds per cubic foot with 95% CI Error Bar



Designed to provide a jump start in bone healing

REGENESORB◊ Material

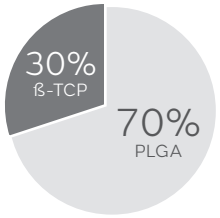


Calcium Sulfate: Works in early healing stages at 4-12 weeks[8-10]

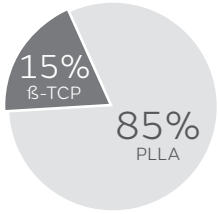
ß-TCP: Sustained bone formation for up to 2 years[11, 12]

PLGA: Comprised of natural products – lactic acid and glycolic acid[13, 14]

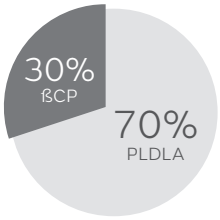
Most biocomposite materials rely solely on the osteoconductive properties of ß-TCP. REGENESORB material contains two osteoconductive components – ß-TCP and calcium sulfate – which act during different stages in the bone healing process and through different mechanisms of action, physical and biochemical. REGENESORB Material is unique in this regard. No other biocomposite material can claim this.[15-17]



Mitek Biocryl™[18]



Arthrex® BioComposite™ Anchor[19]



Arthrex® BioComposite™ Screw[19]

Replaced by bone[4, 5]

Smith+Nephew REGENESORB material is designed to remain mechanically stable for a minimum of six months* before being absorbed and replaced by bone within 24 months.**[4-7]

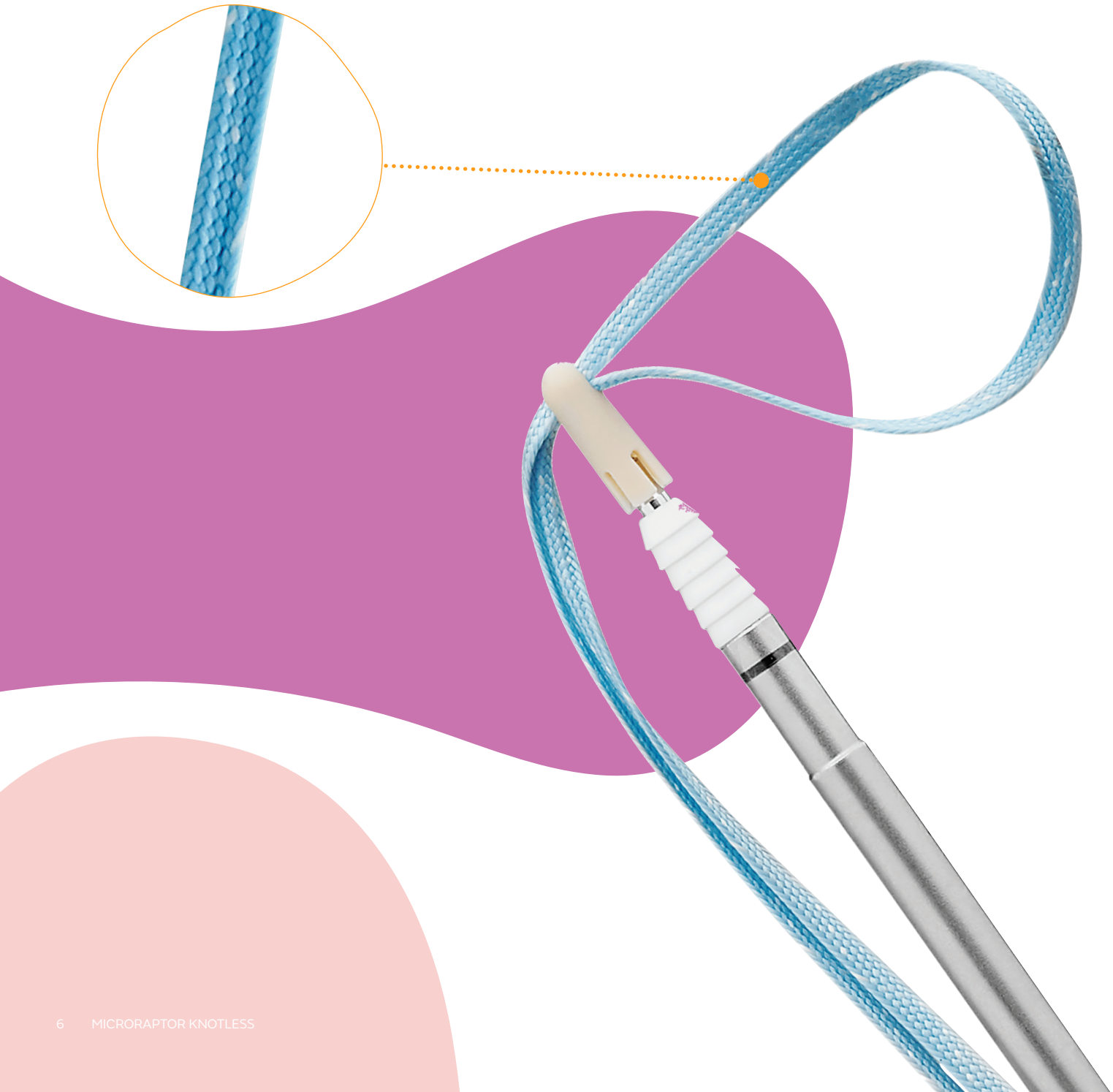
In vivo animal testing has demonstrated that the composite material is bioabsorbable and is replaced by bone. Results of in vivo simulation have not been shown to quantitavely predict clinical performance. Data based on micro CT. As demonstrated *in vitro*

**Compared to competitive biocomposite materials, based on unpublished data. Demonstrated clinically and *in vitro*

A smooth suture tape

MINITAPE◊ offers a low profile and is designed to evenly distribute pressure.[20]

- The coreless design results in a smooth and uniform feel
- Tapers into #2 sutures for ease of use
- Conveniently available in single packs



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1. Data on file at Smith + Nephew, report number 15008464, 2019. **2.** Data on file at Smith + Nephew, report number 15008252, 2019. **3.** Data on file at Smith + Nephew, report number 15008255, 2019. **4.** Vonhoegen J, John D, Hägermann C. Osteoconductive resorption characteristics of a novel biocomposite suture anchor material in rotator cuff repair. *Orthop Traumatol Surg Res.* 2019;14(1):12. **5.** 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. **6.** Smith + Nephew 2019 Verification, Microraptor Knotless Real Time Degredation. Revision B. Internal Report 15007134. **7.** Smith + Nephew 2019. Verification, Microraptor Knotless Accelerated Degredation. Internal Report 15007045. **8.** Constantino, Friedman. Synthetic Bone Graft Subsitutes. Otolaryngol Clin North Am. 1994 27(5):1037-1074 **9.** Calori GM, Mazza E, Colombo M, Ripamonti C. The use of bone-graft substitutes in large bone defects:Any specific needs? Injury. 2011;42(2):S56-S63 **10.** Walsh WR, Morberg P, Yu Y, et al. Response of a calcium sulfate bone graft substitute in a confined cancellous defect. *Clin Orthop Relat Res.* 2003(406):228-236. **11.** Arai E, Nakashima H, Tsukushi S, et al. Regenerating the fibula with beta-tricalcium phosphate minimizes morbidity after fibula resection. *Clin Orthop Relat Res.* 2005(431):233-237. **12.** Gaasbeek RD, Toonen HG, van Heerwaarden RJ, Buma P. Mechanism of bone incorporation of betaTCP bone substitute in open wedge tibial osteotomy in patients. Biomaterials. 2005;26(33):6713-6719. **13.** Park K, Skidmore S, Hadar J, et al. Injectable, long-acting PLGA formulations: Analyzing PLGA and understanding microparticle formation. *J Control Release.* 2019;304:125-134. **14.** Chu C-C. Section IV:44, Biodegradable Polymeric Biomaterials: An Updated Overview. In: The Biomedical Engineering Handbook: Bronzino JD Ed. CRC Press; 1995. **15.** Allison DC, Lindberg AW, Mirzayan R, Samimi B, Menendez LR. A Comparison of Mineral Bone Graft Substitutes for Bone Defects. US Oncology and Hematolog. 2011. **16.** Walsh WR, Morberg P, Yu Y, et al. Response of a calcium sulfate bone graft substitute in a confined cancellous defect. *Clin Orthop Relat Res.* 2003(406):228-236. **17.** Ogose A, Kondo N, Umezu H, et al. Histological assessment in grafts of highly purified beta-tricalcium phosphate (OSferions) in human bones. Biomaterials. 2006;27(8):1542-1549. **18.** Milewski MD, et al. Bone replacement of fast-absorbing biocomposite anchors in arthroscopic shoulder labral repairs, AJSM. 2012 **19.** Arthrex Inc. BioComposite SutureTak, BioComposite Corkscrew FT and BioComposite PushLock: An In Vitro Degradation Study, 2009. **20.** Analytical Answers, 18 January 2019. Report: 74463.

Ordering information

MICRORAPTOR® Knotless Suture Anchor and Guide System	
Reference #	Description
MICRORAPTOR Knotless Implants	
72205020	MICRORAPTOR Knotless REGENESORB®
72205021	MICRORAPTOR Knotless PEEK
MICRORAPTOR Knotless Drill Bits	
72205022	MICRORAPTOR Knotless Drill Shoulder, 2.2mm
72205169	MICRORAPTOR Knotless Drill Hip, 2.6mm
MINITAPE®	
72205129	MINITAPE COBRAID White
72205128	MINITAPE COBRAID Blue
72205127	MINITAPE Blue
MICRORAPTOR Drill Guides	
72204991	MICRORAPTOR Drill Guide, Crown Tip
72204992	MICRORAPTOR Drill Guide, Spike Tip
72204995	MICRORAPTOR Drill Guide, Fishmouth Tip
MICRORAPTOR Obturators	
72204999	MICRORAPTOR Obturator, Blunt Tip
72205000	MICRORAPTOR Obturator, Blunt Tip, Cannulated
72205001	MICRORAPTOR Obturator, Trocar Tip

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Printed in USA. 29091 V4 03/21