

Improve outcomes in rotator cuff repair: reduce re-tear rates by 50%¹

Bone marrow stimulation in the bone footprint allows biologically active cells to infiltrate the repair and results in improved cuff repair integrity.^{2,3}

Smaller, deeper holes in the bone (nanofractures) lead to improved healing at the footprint.¹

SMALLER

Less trauma, greater perforation density^{4,5}

DEEPER

Superior bone marrow access⁶

BETTER

Improved healing at footprint¹



>291,500

Rotator cuff repairs performed in Europe per year⁷



Re-tear rate⁸



Fundamental biological issues related to difficulty of obtaining consistent tendon-to-bone healing

Unstoppable development of tendon degeneration⁹

RCT

71 patients

Control

33 patients

NanoFx

36 patients

2 patients lost to follow up¹

Follow up

12 months

NanoFx Results

Lower re-tear rates than the control group **(7/36 [19.4%] vs 14/33 [42.4%])**

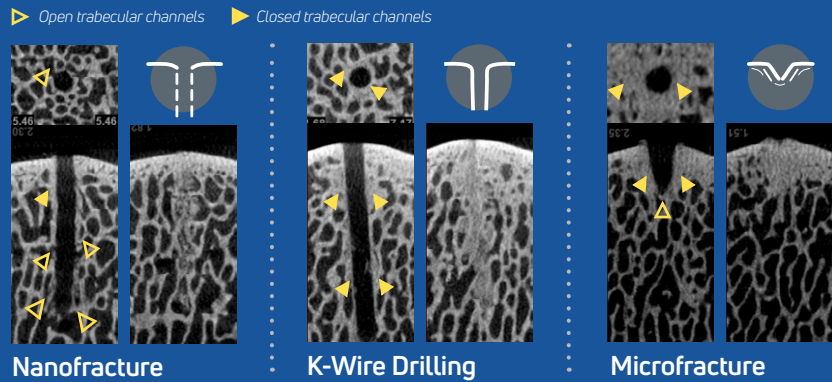
Conclusion

Adding NanoFx at the footprint during an isolated supraspinatus repair lowered the re-tear rate at 12-months follow-up by half, due to improved healing at the footprint.

NanoFx® is different to other bone marrow stimulation techniques

In direct comparison to
K-wire drilling and microfracture,
NanoFx results in:

- Superior bone marrow access via perforations into subchondral bone¹⁰
- Multiple trabecular access channels¹⁰
- Diminished areas of destruction⁴
- Less sclerosis and thickening in regions adjacent to the defect⁴
- Limited amount of perimeter compaction⁴



The Arthrosurface NanoFx instruments consist of a re-usable Hand Instrument, a single use disposable PleuriStik Guide Wire, and a re-usable Thumble Thumb Tab Accessory.



Re-usable Hand Instrument
(5500-1020)



Single use sterile PleuriStik Guide Wire
(FURS-2101)



Re-usable Thumble Thumb Tab Accessory
(FURS-010R)

Surgical technique

Treatment using the Arthrosurface NanoFx instruments will typically be accomplished as part of an arthroscopic or minimal access surgical procedure. No specific or unique surgical incisions are required.



1. Ibán M A R, Alepuz E S, Heredia J D, Hachem A, Bentolila L E, Calvo A, Verdú C, Aznar I, Romagosa F S. Footprint preparation with nanofractures in a supraspinatus repair cuts in half the retear rate at 1-year follow-up. A randomized controlled trial. *Knee Surg Sports Traumatol Arthrosc*. DOI 10.1007/s00167-020-06073-7. 2. Charles MD, Christian DR, Cole BJ (2018) The role of biologic therapy in rotator cuff tears and repairs. *Curr Rev Musculoskelet Med* 11(1):150–161. <https://doi.org/10.1007/s1217-8-018-9469-0>. 3. Taniguchi N, Suenaga N, Oizumi N, Migoshi N, Yamaguchi H, Inoue K, Chosa E (2015) Bone marrow stimulation at the footprint of arthroscopic surface-holding repair advances cuff repair integrity. *J Shoulder Elbow Surg* 24(6):860–866. <https://doi.org/10.1016/j.jse.2014.09.031>. 4. Gianakos et al., The Effect of Different Bone Marrow Stimulation Techniques on Human Talar Subchondral Bone: A Micro eComputed Tomography Evaluation Arthroscopy: The Journal of Arthroscopic and Related Surgery, Vol. -, No. - (Month), 2016: pp 1-8. 5. Benthien et al. Reviewing subchondral cartilage surgery: considerations for standardised and outcome predictable cartilage remodeling. *International Orthopaedics (SICOT)* DOI 10.1007/s00264-013-2025-z. 6. Behrens et al. Bone Marrow Access in Cartilage Repair: Comparison of Microfracture, NanoFracture, K-wire, and Drill in the Adult Ovine Model, e-Poster: P87 Congress: ICRS 2013. 7. iData Research in 2017. 8. Hein J, Reilly JM, Chae J, Maerz T, Anderson K (2015) Retear rates after arthroscopic single-row, double-row, and suture bridge rotator cuff repair at a minimum of 1 year of imaging follow-up: a systematic review. *Arthroscopy* 31(11):2274–2281. <https://doi.org/10.1016/j.arth.2015.06.004>. 9. Chalmers PN, Ross H, Granger E, Presson AP, Zhang C, Tashjian RZ (2018) The effect of rotator cuff repair on natural history: a systematic review of intermediate to long-term outcomes. *JB JS Open Access* 3(1):e0043. <https://doi.org/10.2106/jbjs.oe.1700043>. 10. Walsh et al., Bone Marrow Stimulation in Cartilage Repair Comparing Microfracture, NanoFracture, and K-Wire Perforations., Arthrosurface Clinical Monograph

For complete product information, please visit www.arthrosurface.com/literature-data/instructions-for-use-ifu/

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