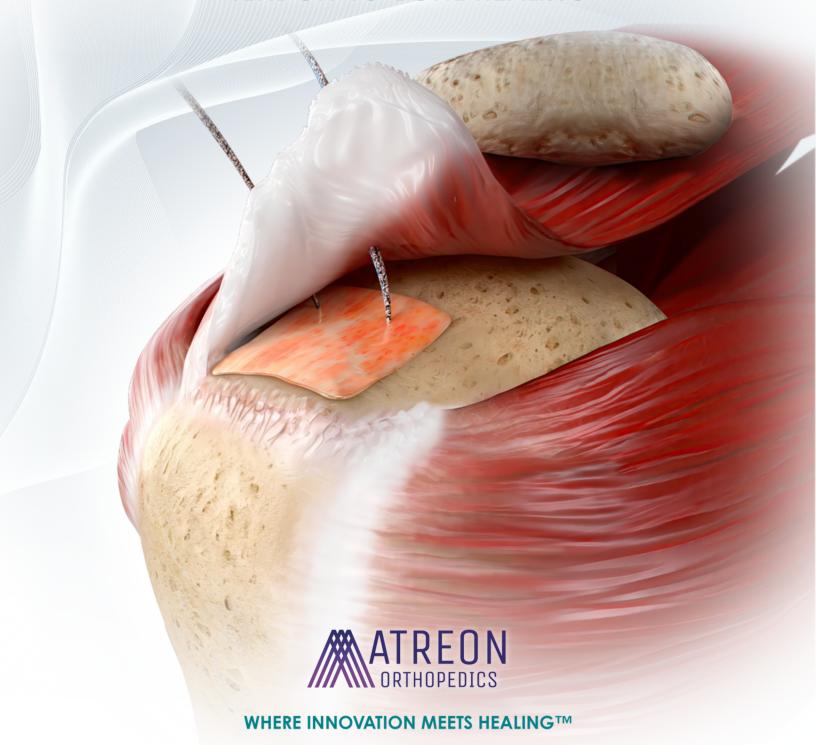


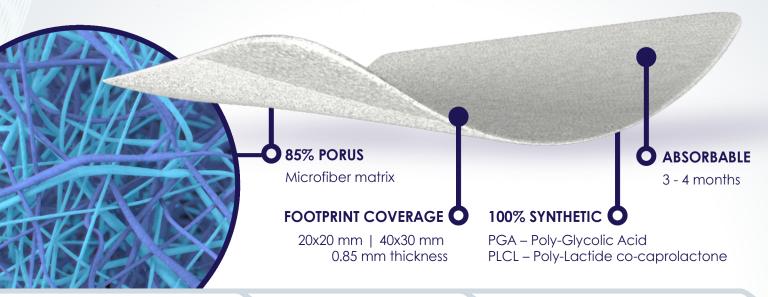
# ADVANCING THE JOURNEY OF TENDON-TO-BONE HEALING





**ROTIUM®** is a bioresorbable wick placed at the tendonbone interface designed to address the biologic environment for better support of the healing cascade, remodeling of healthy tissue and improvement in longterm outcomes after rotator cuff repair.

#### **DESIGNED AS A SCAFFOLD**



HARNESS AUTOLOGOUS
BIOLOGY

IMPROVE TENDON HEALING

REMODEL A HEALTHY ENTHESIS

#### THE BIOLOGIC CHALLENGE

Scar tissue formation without a healthy enthesis may increase the chance of biologic failure and lead to inferior healing or inconsistent functional outcomes.



35% AVERAGE RETEAR RATE

#### A BREAKTHROUGH HEALING SOLUTION



#### **INTERPOSITIONAL WICK**

Mimics extracellular matrix (ECM) & holds active biology at the repair site Kickstarts a pro-healing environment



#### SYNTHETIC & BIORESORBABLE

Biphasic absorption encourages cellular integration & proliferation

Degradants known to facilitate healthy tissue remodeling



## SMART ECONOMICS & SIMPLIFIED TECHNIQUE

Priced for use on every repair

Easily incorporated into current RTC surgeries without disposables



### REPRODUCIBLE CLINICAL SUCCESS

Promotes the natural healing process

Delivers consistent long-term results & restoration of function

#### THE POWER OF HEALTHY INTERFACE

#### >> IMPROVED OUTCOMES

#### **RETROSPECTIVE STUDY** (OJSM)⁴

- 33 Patients
- Small Large Tear Sizes
- 91% Success Rate

#### **PROSPECTIVE STUDY** (JOEI)<sup>2</sup>

- 30 Patients Randomized
- Small Large Tear Sizes
- 93% Success Rate

#### RETEAR RATE

**50%** 

WITHOUT ROTIUM®

07%

WITH ROTIUM®



#### >> IMPROVED HEALING

#### SHEEP CSU STUDY (JSES)<sup>3</sup>

- Development of Sharpey's like fibers at the tendon-bone interface (vs. the control group)
- Remodeled enthesis with characteristics similar in thickness & organization to native tendon



Repair with ROTIUM®





#### >> IMPROVED STRENGTH AND CONSISTENCY

#### SAFE AND EFFECTIVE

- Increased strenath with reproducible repair outcomes
- Synthetic polymers have demonstrated excellent biocompatibility & no reported adverse effects



**MEDIAN ULTIMATE BREAKING STRENGTH** (N) AT 12 WEEKS<sup>3</sup>

**INCREASE** 

#### CONFIDENCE IN SYNTHETICS

**ROTIUM®** aims to solve the ROOT CAUSE of tendon failures and is designed for widespread case use for all tear sizes by addressing the weak link in tendon-bone healing. Degradative polymer contributions:

#### GLYCOLIC ACID<sup>6,7,9</sup>

- Anti-Inflammatory properties
- Increases fibroblast proliferation & production of collagen & HA

#### LACTIC ACID<sup>5,8,10</sup>

- Stimulates VEGF & collagen gene expression
- Modulates inflammation & accelerates cellular migration
- Promotes ECM deposition & reparative angiogenesis

#### CAPROIC ACID<sup>7</sup>

- Anti-microbial properties
- Anti-inflammatory properties

#### **VERSATILE & SIMPLIFIED TECHNIQUE**



Pass suture through scaffold

Taco & push through cannula

Position on the repair footprint

Complete repair with cuff over **ROTIUM®** 

# the regeneration of the bone-to-tendon interface (Sharpey's fibers) which PRP, stem cells and dermal allografts have never been able to do. 99 Anthony A. Romeo, MD

and enhances native biological activity at the repair site, is quick & easy to apply, and significantly improves the biological integrity of my repairs.

Brian L. Badman, MD

#### **CONTACT YOUR ATREON REPRESENTATIVE**

Ask for the detailed ROTIUM Surgical Technique Guide. A manuscript of this surgical procedure can also be found in the Techniques in Arthroscopy Techniques Journal<sup>1</sup>

PART #	DESCRIPTION	QTY	UNIT OF MEASURE
FG-0007	ROTIUM® Bioresorbable Wick Implant - 2cm x 2cm	1	Each
FG-0043	ROTIUM® Bioresorbable Wick Implant - 4cm x 3cm	1	Each

#### **INDICATIONS**

The **ROTIUM®** Bioresorbable Wick is intended to be used in conjunction with suture anchors for the reattachment of tendon to bone in rotator cuff repairs. Please refer to the instructions for use for a complete list of indications, contraindications, warning and precautions.

#### WARNING

Please also refer to the package insert(s) or other labeling associated with the devices identified in this brochure for additional information.

**CAUTION:** Rx Only



RIGHT ENVIRONMENT RIGHT BIOLOGY





Legal Manufacturer: Nanofiber Solutions Distributed by: Atreon Orthopedics 5164 Blazer Pkwy. Dublin, OH 43017 USA 614-429-1471 | www.atreonortho.com

- 1. Beleckas, C. M., Bishai, S.K., & Badman, B. L. (2021). Rotator Cuff Repair Augmented with Interpositional Nanofiber Scaffold. Arthroscopy Techniques. https://doi.org/10.1016/j.eats.2022.08.061
- 2. Beleckas, C. M., Minetos, P., & Badman, B. L. (2023). Short-term radiographic and clinical outcomes of arthroscopic rotator cuff repair with and without augmentation with an interpositional nanofiber scaffold. Journal of Orthopaedic Experience & Innovation. https://doi.org/10.60118/001c.84269
- 3. Romeo, A., Easley, J., Regan, D., Hackett, E., Johnson, J., Johnson, J., Puttlitz, C., & McGilvray, K. (2022). Rotator cuff repair using a bioresorbable nanofiber interposition scaffold: A biomechanical and histologic analysis in sheep. Journal of Shoulder and Elbow Surgery, 31(2), 402–412. https://doi.org/10.1016/j.jse.2021.07.018
- 4. Seetharam A, Abad J, Baessler A, Badman BL. Use of a Nanofiber Resorbable Scaffold During Rotator Cuff Repair: Surgical Technique and Results After Repair of Small- to Medium-Sized Tears. Orthop J Sports Med. 2022 May 13;10(5):23259671221094848. doi: 10.1177/23259671221094848. PMID: 35601733; PMCID: PMC9118444.
- 5. Beckert, S., et al., Lactate stimulates endothelial cell migration. Wound Repair Regen, 2006. 14(3): p. 321-4.
- 6. Green, B.A., R.J. Yu, and E.J. Van Scott, Clinical and cosmeceutical uses of hydroxyacids. Clin Dermatol, 2009. 27(5): p. 495-501.
- 7. Huang, C.B., et al., Short- and medium-chain fatty acids exhibit antimicrobial activity for oral microorganisms. Arch Oral Biol, 2011. 56(7): p. 650-4.
- 8. Sun, S., et al., Lactic Acid: No Longer an Inert and End-Product of Glycolysis. Physiology (Bethesda), 2017. 32(6): p. 453-463. 9. Tang, S.C. and J.H. Yang, Dual Effects of Alpha-Hydroxy Acids on the Skin. Molecules, 2018. 23(4).
- 10 Zhang, D., et al., (2020). Endothelial Lactate Controls Muscle Regeneration from Ischemia by Inducing M2-like Macrophage Polarization. Cell Metab. 31. 1136-1153 e7
- $\Diamond$  All claims supported by data on file  $\S$  References available upon request
- © 2025 Atreon Orthopedics
- View U.S. patent information at https://nanofibersolutions.com/technology/