Achilles Tendon Reinforcement with ArthroFLEX®*
Decellularized Dermis

Surgical Technique
The Achilles tendon is the strongest and thickest tendon in the human body. Rupture of the Achilles tendon is a serious injury and relatively common tendinous lesion.\textsuperscript{1-3} Surgical repair of complete and chronic tears frequently involves working with degenerative, frayed tendon tissue, which may be retracted, unable to sustain the rigors of normal activities, and as with any repair, there is a possibility of revision surgery. The use of ArthroFLEX may provide additional strength for the repair construction. Tendon augmentation can provide a more effective treatment of this chronic condition by creating a stronger repair construct. A stronger repair might allow for more aggressive rehabilitation decreasing postoperative stiffness, call atrophy, and repair site gapping.\textsuperscript{4}

ArthroFLEX is an acellular dermal extracellular matrix intended for supplemental support and covering. Matracell\textsuperscript{®}, a patented and validated process by LifeNet Health\textsuperscript{®}, renders the ArthroFLEX allograft dermis acellular, without compromising biomechanical or biochemical properties. This process allows the matrix to retain its growth factors, native collagen scaffold, and elastin, which are required for healing. ArthroFLEX is treated with Preservon\textsuperscript{®}, a proprietary and patented preservation technology that allows the graft to be fully hydrated at room temperature.

Features and Benefits
- Biocompatible: >97% DNA removed
- Sterile (\(10^{-6}\) Sterility Assurance Level)
- Room temperature storage
- Ready to use
- Retains growth factors, elastin, and natural collagen matrix
- Three year shelf life
- Excellent strength and suture retention properties

Achilles Tendon Analysis\textsuperscript{*}

**Strength**
Elastin and collagen provide unparalleled strength for supplemental support and covering for soft tissue repair.

* Data on file at Arthrex
With the patient in a prone position, a posteromedial incision is made and a layered tissue dissection is performed down to the paratenon (deep crural fascia).

With the dermal (shiny) side of the ArthroFLEX placed against the Achilles tendon, wrap the ArthroFLEX around the Achilles and secure it with eight mattress sutures passed through both the ArthroFLEX and the body of the tendon using #2 FiberWire with a tapered needle. Place four mattress sutures proximal to the repaired tear and four mattress sutures distally.

The paratenon is incised longitudinally and reflected to expose the Achilles tendon and rupture. Use caution to avoid injuring the sural nerve and the lesser saphenous venous plexus.

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After the repair, the paratenon is reapproximated with an absorbable suture, especially over the tendon repair site. This is important for both healing and prevention of adhesions. The subcutaneous tissue is closed in layers.

ArthroFLEX® can be secured to the Achilles tendon as either an onlay augmentation or as a circumferential wrap augmentation. Steps 4-5 describe two techniques that may be used to firmly affix the ArthroFLEX Decellularized Dermis to the repaired Achilles tendon.
**Ordering Information**

<table>
<thead>
<tr>
<th>Product Description</th>
<th>Size</th>
<th>Order Code</th>
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<tbody>
<tr>
<td><strong>ArthroFLEX 0.5 mm (Thickness = 0.3 mm - 1.0 mm)</strong></td>
<td>Decellularized Dermis with Matracell 30 x 40 mm</td>
<td>AFLEX500</td>
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<tr>
<td><strong>ArthroFLEX 1.0 mm (Thickness = 0.76 mm - 1.24 mm)</strong></td>
<td>Decellularized Dermis with Matracell 40 x 40 mm</td>
<td>AFLEX400</td>
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<td>Decellularized Dermis with Matracell 40 x 70 mm</td>
<td>AFLEX401</td>
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<tr>
<td><strong>ArthroFLEX 1.5 mm (Thickness = 1.26 mm - 1.74 mm)</strong></td>
<td>Decellularized Dermis with Matracell 40 x 70 mm</td>
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<td></td>
<td>Decellularized Dermis with Matracell 50 x 90 mm</td>
<td>AFLEX103</td>
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<td><strong>ArthroFLEX 2.0 mm (Thickness = 1.76 mm - 2.24 mm)</strong></td>
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<td>AFLEX201</td>
</tr>
</tbody>
</table>

*ArthroFLEX® should be ordered through LifeNet Health Customer Service at 888-847-7831*

**References**


5. Barber FA, Aziz-Jacobo J. Biomechanical Testing of Commercially Available Soft-Tissue Augmentation Materials. Arthroscopy 2009; 25: 1233-1239. Selected data was derived from Figure 3 (Suture Pull-out) and Table 1 (Ultimate Tensile Strength) of this reference. The two studies were performed at different points in time; however, the exact same methods, fixtures, material testing machine, and facility were used for both studies.

LifeNet Health helps to save lives, restore health and give hope to thousands of patients each year. We are the world’s most trusted provider of transplant solutions, from organ procurement to new innovations in bio-implant technologies and cellular therapies – a leader in the field of regenerative medicine, while always honoring the donors and health care professionals that allow the healing process.

*ArthroFLEX®, Matracell® and Preservon® are registered trademarks of LifeNet Health® (68-40-146.01)*

This description of technique is provided as an educational tool and clinical aid to assist properly licensed medical professionals in the usage of specific Arthrex products. As part of this professional usage, the medical professional must use their professional judgment in making any final determinations in product usage and technique. In doing so, the medical professional should rely on their own training and experience and should conduct a thorough review of pertinent medical literature and the product’s Directions For Use.