

# ArthroFLEX® Dermal Allograft Scientific Update

Foot and Ankle



ArthroFlex dermal allograft is an acellular dermal extracellular matrix intended as supplemental support and covering for soft-tissue repairs. Matrancell® technology, a patented and validated process, 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 and provide a clean scaffold.<sup>1</sup> ArthroFlex grafts are the most widely used soft-tissue augmentation product on the market<sup>2</sup> and have demonstrated success in augmentation of various foot and ankle procedures. ArthroFlex dermal allograft allows patients to retain motion in the affected joint, unlike with fusion.

Bertasi G,  
Cole W,  
Samsell B,  
Qin X,  
Moore M

## Clinical Research on ArthroFLEX® Dermal Allograft Use in Foot and Ankle Surgery

[Biological incorporation of human acellular dermal matrix used in achilles tendon repair.](#)  
*Cell Tissue Bank.* 2017;18(3):403-411. doi:10.1007/s10561-017-9628-3

**Takeaway:** Authors evaluated the biological incorporation of ArthroFlex, a Matrancell-treated acellular dermal matrix (ADM), after a patient re-ruptured an Achilles tendon repair two months postoperative. They then performed a literature review of the case to determine the mechanism of ADM integration into the tendon structure and found that the ADM showed high levels of biocompatibility, evidenced by an absence of inflammation in the graft and host tissue.

Cole W,  
Samsell B,  
Moore MA

[Achilles tendon augmented repair using human acellular dermal matrix: a case series.](#)  
*J Foot Ankle Surg.* 2018;57(6):1225-1229. doi:10.1053/j.jfas.2018.03.006

**Takeaway:** In this paper, the authors present nine cases of patients who underwent Achilles tendon repair augmented with ArthroFlex dermal allograft. After an average follow-up period of 14.4 months, the mean Foot Function Index-Revised long form scale showed improved scores. In addition, no patients re-ruptured the tendon or experienced complications during the observation period.

Berlet GC,  
Hyer CF,  
Lee TH,  
Philbin TM,  
Hartman JF,  
Wright ML

[Interpositional arthroplasty of the first MTP joint using a regenerative tissue matrix for the treatment of advanced hallux rigidus.](#) *Foot Ankle Int.* 2008;29(1):10-21. doi:10.3113/FAI.2008.0010

**Takeaway:** This retrospective review presents a consecutive series of nine patients with Coughlin grade 3 hallux rigidus who underwent interpositional arthroplasty of the 1st MTP joint. At the mean follow-up of 12.7 months, there were no reported complications or failures. The authors state that the “excellent early results and lack of complications” may be due to the minimal bone resection required for the procedure, and conclude that this technique may offer young and active patients with advanced hallux rigidus a promising opportunity to maintain an active lifestyle.



Aynardi MC,  
Atwater L,  
Dein EJ,  
Zahoor T,  
Schon LC,  
Miller SD

Kennedy JG,  
Chow FY,  
Dines J,  
Gardner M,  
Bohne WH

[Outcomes after interposition arthroplasty of the first metatarsophalangeal joint.](#) *Foot Ankle Int.* 2017;38(5):514-518. doi:10.1177/1071100716687366

**Takeaway:** Authors identified 133 patients who underwent interpositional arthroplasty for hallux rigidus and report their outcomes. Overall failure rate was 3.8% (5 of 133 patients). Further, failure rate of the allograft augmentation was similar to reported rates for autograft procedures (3.9% versus 3.6%). In addition, “patient-reported outcome was rated as excellent in 65.4% (87/133) or good in 24.1% (32/133) of patients and fair or poor in 10.5% (14/133) of patients. Of 133 patients, 101 (76%) were able to return to fashionable or regular footwear.”

[Outcomes after interposition arthroplasty for treatment of hallux rigidus.](#) *Clin Orthop Relat Res.* 2006;445:210-215. doi:10.1097/01.blo.0000201166.82690.23

**Takeaway:** This case series examined 18 patients with severe articular cartilage loss who underwent interpositional arthroplasties for advanced hallux rigidus. At mean follow-up of 38 months, all 18 patients had pain relief. The mean postoperative increase in range of motion of the 1st MTPJ was 37 degrees.° Mean American Orthopaedic Foot and Ankle Society (AOFAS) and Short Form 36 scores were 78.4 and 96.3, respectively. These results indicate that interpositional arthroplasty relieves pain and restores motion in patients with advanced hallux rigidus.

## References

1. Moore MA, Samsell B, Wallis G, et al. Decellularization of human dermis using non-denaturing anionic detergent and endonuclease: a review. *Cell Tissue Bank.* 2015;16(2):249-259. doi:10.1007/s10561-014-9467-4
2. SmartTRAK Market Research, OrthoBio, Soft Tissue Augmentation-US, 2019.



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