



ArthroFLEX® Dermal Allograft Scientific Update

Hip

ArthroFlex dermal allograft is an acellular dermal extracellular matrix intended for supplemental support and covering of soft-tissue repairs. Matracell® 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 intended for supplemental support and covering for soft-tissue repair.¹ ArthroFlex grafts are the most widely used soft-tissue augmentation product on the market.² The following published studies highlight ArthroFlex dermal allograft as an effective solution to restore or cover the hip capsule to stabilize the joint.

Sloan M,
Kamath AF

Clinical Reports on ArthroFLEX® Dermal Allograft Use in the Hip

[Capsular augmentation in Colonna arthroplasty for the management of chronic hip dislocation.](#) *J Hip Preserv Surg.* 2018;5(1):34-38. doi:10.1093/jhps/hnx045

Takeaway: Authors present a case of using ArthroFlex dermal allograft to augment the left hip capsule in a 27-year-old female who presented with pain and chronic high femoral head dislocation. The patient underwent a capsular arthroplasty procedure augmented with dermal allograft and, eight months postoperatively, was doing well “with maintenance of reduction and the femoral head centered.” The authors concluded that capsular arthroplasty combined with modern hip preservation techniques “may offer a viable option for chronic hip dislocation, and allograft capsular augmentation may help to address capsular deficiency.”

Chahla J,
Dean CS,
Soares E,
Mook WR,
Philippon MJ

[Hip capsular reconstruction using dermal allograft.](#) *Arthrosc Tech.* 2016;5(2):e365-e369. doi:10.1016/j.eats.2016.01.015

Takeaway: The authors describe their surgical technique of augmenting hip capsule repairs with ArthroFlex dermal allograft, including patient positioning, graft preparation, and arthroscopic technique. In addition, they outline advantages of this technique including restoration of stability, ability to tailor graft size, no donor-site morbidity, and ability to use this technique when the defect is too large to perform a direct capsular plication repair.

Perets I,
Hartigan DE,
Walsh JP,
Chaharbakhshi E,
Close MR,
Domb BG

[Arthroscopic capsular reconstruction of the hip with acellular dermal extracellular matrix: surgical technique.](#) *Arthrosc Tech.* 2016;5(5):e1001-e1005. doi:10.1016/j.eats.2016.05.002

Takeaway: Authors from the American Hip Institute describe a capsular reconstruction surgical technique of the hip using ArthroFlex dermal allograft to regain joint stability. Advantages to this technique include treating hip instability when there is a capsular defect and using allograft, which can reduce donor site complications. The hip capsule is important to treat appropriately because it plays a key role in hip stability.



Pascual-Garrido C,
Schwabe MT,
Chahla J,
Haneda M

[Surgical treatment of gluteus medius tears augmented with allograft human dermis.](#) *Arthrosc Tech.* 2019;8(11):e1379-e1387. doi:10.1016/j.eats.2019.07.014

Takeaway: In this technique paper, the authors describe the surgical technique for the treatment of gluteus medius and minimus tendinopathy and tears using ArthroFlex dermal allograft. These injuries can cause severe hip pain, limp, and abnormal gait. This technique includes covering the gluteus medius tear or defect with ArthroFlex dermal allograft trimmed to the appropriate size, then passing sutures through the tendons and graft to ensure no gap between the tendon and SwiveLock® anchor. Postoperatively, the patient wears a hip brace for six weeks and begins physical therapy at six weeks. The authors note that ArthroFlex dermal allograft can provide immediate strength for the repair to support healing, an advantage over other treatment options.

Rosines E,
Qin X,
Chen S

[In vivo assessment of bacteria infection clearance of an acellular dermal matrix and a synthetic mesh.](#) Paper presented at: Symposium on Advanced Wound Care and Wound Healing Society Annual Meeting. April Apr 23-27, 2014; Orlando, FL.

Takeaway: In a rat model, acellular dermal matrices (ADM) treated with the Matracell process demonstrated resistance to infection, while a polyester mesh matrix did not. Researchers seeded both graft types with *S. aureus* and implanted them into the abdominal wall of a rat. After 28 days, they removed and analyzed the implants. “H&E staining showed complete fibroblast infiltration and minimum neutrophil infiltration in the implanted ADM, while there was a significant quantity of neutrophil appearance around the polyester mesh and bacteria.” The ADM was able to resist the infection and showed “better implant tissue incorporation compared to the synthetic polyester mesh.”

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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