



REPRESENTATIVE REPORTS USING ARTHROFLEX®

LifeNet Health distributes more than 20,000 sports medicine allografts annually. We understand that the safety and quality of your allograft implants are critical to you and your patients. We provide high-quality allograft implants with the biomechanical specifications you need to perform successful sports medicine surgeries. LifeNet Health offers a variety of safe and clinically proven decellularized dermal matrix implants, ArthroFlex, to provide soft tissue support and covering soft tissue repairs. The list of articles below demonstrates the efficacy of our ArthroFlex acellular dermal matrix (ADM) implants.

Clinical Reports Using ArthroFLEX

Gilot GJ, Alvarez AM, Barcksdale L, Westerdahl D, Krill M, Peck E. Outcome of Large to Massive Rotator Cuff Tears With and Without Extracellular Matrix Augmentation: A Prospective Comparative Study. Arthroscopy. 2015 Aug;31(8):1459-65.

- This prospective study compares the results of 35 large and massive rotator cuff repairs with and without augmentation using ArthroFlex at two years post-operative. The control group (non-augmented) had a 26% re-tear rate compared to only 10% in the augmented group. Researchers conclude that using ArthroFlex to augment “large to massive rotator cuff reduces the incidence of re-tears, improves patient outcome scores, and is a viable option during complicated cases in which a significant failure rate is anticipated.” [Click here for link.](#) Reprint available upon request.

Hirahara AM, Andersen WJ, Panero AJ. Superior Capsular Reconstruction: Clinical Outcomes After Minimum 2-Year Follow-Up. AJO. 2017 Nov;46(6): 266-272, 278.

- Authors discuss a series of patients undergoing Superior Capsular Reconstruction with ArthroFlex that have a minimum of two year follow up. After two years post-operatively, “mean ASES score improved significantly...and mean VAS pain score decreased significantly.” “Our data showed SCR with dermal allograft effectively restored the superior restraints in the glenohumeral joint and yielded outstanding clinical outcomes even after 2 years, making it an excellent viable alternative to RTSA.”

Hartzler RU and Burkhart SS. Superior Capsular Reconstruction. Orthopedics. 2017 Oct; 40(5): 271-280.

- Authors discuss clinical indication for Superior Capsular Reconstruction as well as some tips for the surgical technique. The senior author (SSB) also discusses his own personal outcomes utilizing ArthroFlex. In 97 patients, 34 have minimum one year follow up. “Only two patients (6%) have had further surgery, both after traumatic reinjury...The remaining 32 patients have all reported satisfaction with the surgery, and there have been no complications.” Authors conclude “Superior Capsular Reconstruction is technically demanding, but early adopters of the procedure are supported by its excellent anatomical, biomechanical, and short-term clinical results.”

Petri M, Warth RJ, Horan MP, Greenspoon JA, Millet PJ. Outcome After Open Revision of Massive Rotator Cuff Tears With Biologic Patch Augmentation. Arthroscopy. 2016 Sept; 32(9): 1752-1760.

- This study evaluates the outcomes of 13 massive rotator cuff revision augmentations using ArthroFlex. MRIs showed intact repairs at a mean 9.9 months post-operative and 1 patient (7.7%) had a documented re-tear at 2 months postoperatively. “Although the pain component of the ASES score and the total ASES did not improve significantly, the function component of the ASES improved significantly when compared with its preoperative baseline.” Researchers conclude using ArthroFlex was “a safe and effective treatment method for patients with massive rotator cuff re-tears with deficient posterolateral rotator cuff tendons in the presence of healthy rotator cuff muscles.” [Click here for link.](#)

Sutter GE, Godin JA and Garrigues GE. All-Arthroscopic Superior Shoulder Capsule Reconstruction with Partial Rotator Cuff Repair. Orthopedics. 2017 July/Aug; 40(4): e735-8.

- The authors describe a technique for arthroscopic superior capsular reconstruction with a dermal allograft (ArthroFlex) with a concomitant partial rotator cuff repair. “The authors believe that the described SCR and partial repair work in concert to restore the mechanics of the glenohumeral joint. This is a reproducible technique that improves pain and strength while potentially delaying shoulder arthroplasty.” [Click here for link.](#)

Pogorzelski J, Hussain ZB, Lebus GF, Fritz EM, Millett PJ. Anterior Capsular Reconstruction of Irreparable Subscapularis Tears. Arthrosc Tech. 2017 Jul 3; 6(4): e951-e958.

- The authors discuss their surgical technique using an ADM, ArthroFlex, for the treatment of irreparable subscapularis tears in anterior capsular reconstruction. The pearls and pitfalls of the technique are discussed. The authors acknowledged several advantages of using ArthroFlex, such as faster recovery, more anatomic reconstruction, lower risk of neurovascular injury, and better cosmetic outcomes. The authors concluded that using ArthroFlex “may be a reasonable treatment option in younger patients with irreparable subscapularis tears”; however, further clinical trials are needed in determining the long-term benefit of the technique. [Click here for link.](#)

Petri M, Greenspoon JA, Millet PJ. Arthroscopic Superior Capsule Reconstruction for Irreparable Rotator Cuff Tears. Arthroscopy. 2015 Nov 30; 4(6):e751-5.

- Authors describe their surgical technique using ArthroFlex, highlighting pitfalls and pearls to the technique. They summarize that SCR “may be a reasonable treatment option in younger patients with irreparable posterosuperior rotator cuff tears wishing to avoid tendon transfer or reverse total shoulder arthroplasty.” [Click here for link.](#)

Hirahara AM, Adams CR. Arthroscopic Superior Capsular Reconstruction for Treatment of Massive Irreparable Rotator Cuff Tears. Arthrosc Tech., 2015 Dec; 4(6):e637-641.

- This article describes an arthroscopic reconstruction of the superior capsule using ArthroFlex. The authors discuss advantages of SCR which include easy graft passage, reliable suture placement, and very strong repairs. They found this technique using a strong, thick dermal graft “allows for faster mobilization postoperatively” and “more accurate measurement and placement of the graft.” [Click here for link.](#)

Tokish JM, Beicker C. Superior Capsule Reconstruction Technique Using an Acellular Dermal Allograft. Arthrosc Tech. 2015 Dec; 4(6): e833 – 839.

- Authors present their surgical technique for superior capsule reconstruction using ArthroFlex, as well as describe “an advantage of SCR is that it provides an option to restore and rebalance the force couples necessary for dynamic shoulder function and does not sacrifice any future treatment options.” “The clinical outcomes at our institution are relatively short-term but have shown early promising results.” [Click here for link.](#)

Millett PJ, Hussain ZB, Fritz EM, Warth RJ, Katthagen JC, Pogorzelski J. Rotator Cuff Tears at the Musculotendinous Junction: Classification and Surgical Options for Repair and Reconstruction. Arthrosc Tech. 2017 Jul 24; 6(4): e1075-e1085.9090i

- In this article the authors define the major medial tear patterns of the rotator cuff at the musculotendinous junction (MTJ) and describe their preferred repair techniques. Type B tears are identified when the medial torn rotator cuff tendon length is insufficient, yet the muscle remains healthy. The authors propose tendon augmentation with an acellular dermal matrix (ArthroFlex). Type C tears are identified as tears in which muscle quality is poor in addition to fatty infiltration and deficient medial tendon. Authors state that SCR with allograft augmentation (ArthroFlex) is their preferred technique for type C repairs. The authors discuss the importance of recognizing the tear patterns to avoid more revision surgeries. [Click here for link.](#)

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. Arthroscopy Techniques 2016. DOI: <http://dx.doi.org/10.1016/j.eats.2016.05.002>

- Authors from the American Hip Institute describe a capsular reconstruction surgical technique of the hip using ArthroFlex to regain joint stability. “Current literature suggests that microinstability may play a role in the development of labral tears and ultimately arthritis. It is vital to treat the hip capsule appropriately because of its key role in instability.” [Click here for link.](#)

Petri M, Greenspoon JA, Bhatia S, Millet PJ. Patch-Augmented Latissimus Dorsi Transfer and Open Reduction — Internal Fixation of Unstable Os Acromiale for Irreparable Massive Posterosuperior Rotator Cuff Tear. Arthrosc Tech. 2015 Sep 28;4(5):e487-92.

- Authors describe a patch augmented latissimus dorsi tendon transfer with the use of ArthroFlex for the treatment of an irreparable massive posterosuperior rotator cuff tear. The authors suggest this technique “is reasonable for younger patients with previous failed repairs, and without glenohumeral osteoarthritis.” They conclude that this treatment option allows for “improved biomechanical stability, coverage of the rotator cuff defect, and stability to the os acromiale. [Click here for link.](#)

Levenda AC & Sanders NR. A Simplified Approach for Arthroscopic Repair of Rotator Cuff Tear with Dermal patch Augmentation. Advances in Orthopedic Surgery. 2015, Article ID 423949

- This article describes a surgical technique to arthroscopically augment a standard rotator cuff tear with ArthroFlex. Authors also present an informal case series of the technique used on 12 patients with 2-4 cm large tears. Patients showed both an increased range of motion and increased strength” and have “experienced a significant decrease in pain.” Of the 12 patients, 2 patients suffered re-tears due to falls. However, upon second look during arthroplasty, the graft and repair were still intact. [Click here for link.](#)

Katthagen JC, Tahal DS, Millett PJ. Arthroscopic Capsule Reconstruction for Irreparable Rotator Cuff Tears. Orthopedics Today. 2016 Mar;36(3):13-15.

- Authors describe surgical technique using ArthroFlex and comment on their early results that are “18 months from surgery with excellent clinical and structural results.” Postoperative radiographs show cases of re-centering of the humeral head. Patients note pain relief and return of function by 3 months post-op. Authors also report “no complications or adverse events.” [Click here for link.](#)

Adams CR, Denard PJ, Brady PC, Hartzler RU and Burkhart SS. The Arthroscopic Superior Capsular Reconstruction. American Journal of Orthopedics. 2016;45(5):320-4.

- Authors describe their surgical technique for superior capsular reconstruction using ArthroFlex and “believe SCR is as a viable alternative” to reverse shoulder arthroplasty. They discuss that “reconstruction of the superior capsule has been shown to restore the normal restraint to superior translation of the humeral head and reestablish a stable fulcrum at the glenohumeral joint.” “The short-term results of this novel procedure have been encouraging, including our own series of patients, in which most patients have had a significant reduction in pain, improvement in function, and very few complications.” [Click here for link.](#)

Petri M, Greenspoon JA, Moulton SG and Millett PJ. Patch-Augmented Rotator Cuff Repair and Superior Capsule Reconstruction. The Open Orthopaedics Journal, 2016, 10, (Suppl 1: M7) 315-323.

- Authors report on their personal surgical experience and selective literature search for rotator cuff repair and superior capsule reconstruction. “Several case studies have reported promising clinical outcomes for patch-augmented rotator cuff repair.” “Superior capsule reconstruction appears to be an emerging solution when even a partial repair and patch-augmentation are no longer feasible. This technique has been reported biomechanically to restore almost normal glenohumeral kinematics.” [Click here for link.](#)

Lederman E, Softic D, Qin X, Samsell B, and Dorfman A. Biological Incorporation of ArthroFlex in Superior Capsular Reconstruction for Irreparable Rotator Cuff Repair. LifeNet Health White Paper 68-20-168. 2016.

- Investigators performed histological analysis of an explanted ArthroFlex SCR that had failed as a result of a fall at 10 weeks post-operative. Recellularization and blood vessel formation was observed in addition to tendon-like remodeling on the medial aspect of the graft and fibrocartilage on the inferior surface. “The fibroblast infiltration, neovascularization and tissue remodeling seen here demonstrated that ArthroFlex can adapt to the local environment and have good incorporation following SCR.” White Paper available upon request.

Gilot GJ, Attia AK, Alvarez AM. “Arthroscopic Repair of Rotator Cuff Tears using Extra-Cellular Matrix (ECM) graft.” Arthrosc Tech.. 2014 Aug; 3(4):e487-9.

- This technique article demonstrates the use of ADM augmentation using ArthroFlex in the arthroscopic repair of large to massive rotator cuffs. ECM scaffold grafts can decrease failure of the repair as a result of decreased gap formation at the repair site and improved load sharing. In addition, improved success rates are possible in patients who receive ECM augmentation, as shown by the revision rate and results of shoulder questionnaires. Our findings support the principle of rotator cuff repair with ECM.” [Click here for link.](#)

Mirzayan R, Conroy C, Sethi P. Distal Biceps Repair With Acellular Dermal Graft Augmentation. Techniques in Shoulder & Elbow Surgery. Sept 2015;16(3):89-92.

- Authors describe a technique to repair a ruptured distal bicep tendon using ArthroFlex to augment the repair. Senior “author has performed over 40 repairs with the above technique. There have been no retears, no synostosis, no infections, no inflammatory responses, and no reoperations.” [Click here for link.](#)

Lee B, Acevedo D, Mirzayan R. Reconstruction of the Acromioclavicular Joint, its Superior Capsule, and Coracoclavicular Ligaments Using an Interpositional Acellular Dermal Matrix and Tibialis Tendon Allograft. Techniques in Shoulder & Elbow Surgery. 2014;15(3):79-86.

- This technique article describes a biologic and anatomic reconstruction for the coracoclavicular ligaments and AC joint using ArthroFlex and an anterior tibialis tendon. “ The senior author (R.M.) has performed 12 reconstructions with this technique. There was only 1 failure (8%) at 2 months postoperatively when the patient attempted to do a push up.” [Click here for link.](#)

Atzei A & Bertasi G. “Repair of Distal Triceps Tendon Rupture with a Human Acellular Dermal Matrix (ADM).” 2013 White Paper (68-20-097)

- Case study describes the surgical technique and outcome for use of Dermacell in a successful distal triceps tendon repair.
- NOTE: Dermacell is another trade name for ArthroFlex.
- White paper available upon request.

Atzei A & Bertasi G. “Reconstruction of Finger Flexor Tendon and Pulley Repair with Human Acellular Dermal Matrix (ADM).” 2013 White Paper (68-20-098)

- Case study describes a successful outcome by using Dermacell to augment the flexor digitalis profundus tendon and pulley repair in a 16 year-old male.
- NOTE: Dermacell is another trade name for ArthroFlex.
- White paper available upon request.

Atzei A & Bertasi G. “Matracell®-Processed Dermis Augments Finger Extensor Tendon Reconstruction.” 2015 White Paper (68-20-159)

- Case study describes the surgical technique and outcomes using Matracell processed dermis to augment the extensor tendon in a 40 year-old male.
- NOTE: Matracell processed dermis is another trade name for ArthroFlex.

Acevedo DC, Shore B, Mirzayan R. Orthopedic Applications of Acellular Human Dermal Allograft for Shoulder and Elbow Surgery. Orthop Clin N Am. 2015 Jul;46(3):377-388.

- Authors review the basic science, rationale for use, and surgical applications of human dermal allograft, such as ArthroFlex, in various shoulder and elbow injuries. They conclude that “ADM plays a role in a variety of applications for shoulder elbow surgery. There is a reasonable amount of evidence supporting its use along with good short-term outcomes, particularly in the shoulder. ADM appears to be safe for implantation with a low risk of rejection, infection, or inflammatory response.” [Click here for link.](#)

Hirahara, A. SpeedBridge Rotator Cuff Repair Augmented with ArthroFlex Acellular dermal extracellular matrix. YouTube. 2013. [Click here for video.](#)

Hirahara AM. Biologics – Arthroscopic shoulder rotator cuff repair with ArthroFlex graft. [Click here for video.](#)

Hirahara AM. ECM Patches. [Click here for link.](#)

Animal and Non-Clinical Reports Using ArthroFLEX

Capito, A.E., Tholpady, S.S., Agrawal, H., Drake, D.B. & Katz, A.J. “Evaluation of Host Tissue Integration, Revascularization, and Cellular Infiltration Within Various Dermal Substrates.” *Annals of Plastic Surgery*. 2012 Oct; 68(5):495-500. doi: 10.1097/SAP.0b013e31823b6b01.

- The purpose of this study is to determine and compare these properties of 4 different acellular dermal matrices (AlloDerm, Dermacell, DermaMatrix, and Integra) in an *in vivo* rat model. Tissue specimens were obtained at various time points. Histology and immunohistologic assays were used to quantify the extent of cellular infiltration and revascularization within the various matrices. A bimodal cellular response was observed in all products except for Dermacell. Cellular infiltration was highest in Dermacell and lowest in AlloDerm, and angiogenesis was evident by day 7.
- NOTE: Dermacell is another tradename for ArthroFlex.
- Reprint available upon request. [Click here for link](#).

Rosines E, Qin X, Chen S. “In Vivo Assessment of Bacteria Infection Clearance of an Acellular Dermal Matrix and a Synthetic Mesh.” A Symposium on Advanced Wound Care and Wound Healing Society, 27th Annual Meeting. Apr 23-28, 2014.

- Matracell treated dermis demonstrated resistance to infection in a rat model where a polyester mesh did not. Both types of grafts were seeded with *S. aureus* and implanted into the abdominal wall of a rat. After 28 days, the implants were removed and analyzed. “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.”

Rosines, E. & Lin, Q. “Analysis of the Acellular Matrix, Growth Factors, and Cytokines Present in ArthroFlex®” 2012. Available upon request.

- Human skin is a complex tissue containing various extracellular matrix molecules, growth factors, and cytokines. The purpose of this study was to ensure that ArthroFlex, a minimally manipulated human skin product, retains the components of healthy human skin relevant to the structural support of damaged soft tissue. “Findings suggest that ArthroFlex retains a broad array of extracellular matrix components, matrikines, growth factors, and cytokines present in healthy human skin and provides structural ECM components that can help prevent re-tearing of surgically attached tendons.” “ArthroFlex provides the collagens that supplement structural integrity and mechanical strength to surgically attached tendons, aiding in the prevention of a re-tear.”

Moore, M.A. “Inactivation of enveloped and non-enveloped viruses on seeded human tissues by gamma irradiation.” 2012. *Cell Tissue Bank*. 13(3):401-7. doi: 10.1007/s10561-011-9266-0.

- Author studied effect of low dose gamma irradiation on viruses seeded onto human tissue. “...Data presented here indicate that terminal sterilization using a low temperature, low dose gamma irradiation process inactivates both enveloped and non-enveloped viruses containing either DNA or RNA, thus providing additional assurance of safety from viral transmission.” [Click here for link](#).

LifeNet Health Research and Development “Analysis of DNA Residuals in ArthroFLEX Tissue” 2013 White Paper. Available upon request.

- Paper shows that “MatrACELL processing effectively removes DNA and cellular components from human dermis, potentially improving graft incorporation, healing, and biocompatibility by decreasing or eliminating cellular immune response.”

Moore MA, Samsell B, Wallis G, Triplett, S, Chen S, Linthurst Jones A, Quiz X. “Decellularization of Human Dermis Using Non-Denaturing Anionic Detergent and Endonuclease: A Review.” *Journal of Cell and Tissue Banking*.

- “MatrACELL process effectively removes cellular material, including DNA and immunogenic components, yielding an acellular dermis, which retains biomechanical strength and is biocompatible. Both preclinical and clinical results support the use of this allograft tissue in a myriad of clinical applications.” [Click here for link](#).

Agrawal H, Tholpady SS, Capito AE, Drake DB, Katz AJ. “Macrophage phenotypes correspond with remodeling outcomes of various acellular dermal matrices.” *Journal of Regenerative Medicine*. 2012. Vol 1, No. 3, pp 51-59.

- Results of study demonstrate that ADM’s, particularly Dermacell, with a higher ration of M2 to M1 were associated with a more constructive tissue remodeling outcome. Greater M2 activity promoted cell proliferation and tissue repair. ADM’s with more M1 activity showed more inflammatory tissue remodeling, which inhibits cell proliferation and causes tissue damage.
- NOTE: Dermacell is another trade name for ArthroFlex. [Click here for link](#).

Biomechanical or Literature Reports Using ArthroFLEX

Ely E, Figueroa, N, Gilot G. “Biomechanical Analysis of Gap Formation and Ultimate Tensile Failure Loads of Rotator Cuff Repairs with Extracellular Matrix Graft Augmentation.” ORTHOPEDICS. 2014;37(9):608-614.

- Authors performed a biomechanical study to evaluate gap formation and ultimate tensile failure loads of a RTC repair augmented with ArthroFlex. “This study showed that RTC repair with human dermal allograft ECM increased ultimate load to failure by 29% and decreased gap formation by 21% compared with non-augmented controls.” [Click here for link.](#)

Van der Meijden, O.A., Wijdicks, C.A., Gaskill, T.R., Jansson, K.S., & Millett, P.J. “Biomechanical analysis of two tendon posterosuperior rotator cuff tear repairs: extended linked repairs and augmented repairs.” Arthroscopy. 2013 Jan;29(1):37-45. doi: 10.1016/j.arthro.2012.07.012.

- Investigators compared single-row (SR), extended double-row (DR), and augmented, extended double row (aDR) in 20 cadaveric shoulders. ArthroFlex was used for the aDR group. Authors conclude that “augmentation with a collagen patch (aDR) did not influence biomechanical repair qualities in this model, but did result in less variability in failure load and more consistency in the mode of failure.” [Click here for link.](#)

Beitzel K, Chowaniec DM, McCarthy MB, Cote MP, Russell RP, Obopilwe E, Imhoff AB, Arciero RA, Mazzocca AD. Stability of Double-Row Rotator Cuff Repair Is Not Adversely Affected by Scaffold Interposition Between Tendon and Bone. AJSM. 2012 May;40(5): 1148-54.

- Investigators used 25 cadaveric shoulders to evaluate strength of rotator cuff repairs without augmentation and augmentation using Viscogel, Mucograft, and ArthroFlex interpositionally, as well as augmentation on top of repair (5 groups). Authors conclude that “an increased ultimate load to failure was observed for 2 of the augmentation methods compared with the non-augmented repair (collagen patch as interposition and decellularized dermis patch on top of the reconstruction).” [Click here for link.](#)

Ehsan A, Lee DG, Bakker AJ, Huang JI. Scapholunate ligament reconstruction using an acellular dermal matrix: a mechanical study. J Hand Surg AM. 2012 Aug; 37(8):1538-42.

- Investigators compared reconstruction of the scapholunate ligament using 1.0 mm-thick and 1.5 mm- thick ArthroFlex grafts to the intact native ligament in 15 cadaveric specimens. The authors conclude that “scapholunate ligament reconstruction using acellular dermal matrix and suture anchors demonstrated similar biomechanical properties to previously described techniques” and “warrants clinical investigation as a potential treatment option for chronic scapholunate instability.” [Click here for link.](#)

Arthrex Research and Development. Biomechanical Properties of Tendon Augmentation Materials. 2011. White Paper (LA0822A)

- Ultimate load to failure and suture retention strength testing were performed on ArthroFlex as described by Barber et al in 2012. These results were compared to the published results and performance of the ArthroFlex is just as well as or better than OrthADAPT equine pericardium, SportsMesh synthetic matrix, or GraftJacket human dermal matrix.

Other Articles Using Acellular Dermal Matrices

Cooper J and Mirzayan R. Acellular Dermal Matrix in Rotator Cuff Surgery. American Journal of Orthopedics. 2016;45(5):301-5.

- Authors performed a review of current literature regarding rotator cuff repairs to determine if there is support for augmentation using acellular dermal matrices. They conclude that “the biomechanical and clinical studies summarized support the use of ADM in RC surgery.” [Click here for link.](#)

Parks RM, Parks SM. Lateral Ankle Stabilization Using Acellular Dermal Allograft Augmentation. J Am Podiatr Med Assoc. 2015 May; 105(3):209-217.

- Authors used various ADM's to augment Brostrom-type procedures in 33 patients. “All of the patients were satisfied with their results, with no recurrent instability.” “Ease of operation, consistent results, and limited patient morbidity should allow surgeons to use this procedure independently or adjunctively to improve surgical outcomes.” [Click here for link.](#)

Barber, F.A., Burns, J.P., Deutsch, A., Labbé, M.R., & Litchfield, R.B. “A prospective, randomized evaluation of acellular human dermal matrix augmentation for arthroscopic rotator cuff repair.” *Arthroscopy*. 2012 Jan;(1):8-15. doi: 10.1016/j.arthro.2011.06.038.

- Authors prospectively evaluated the safety and effectiveness of arthroscopic rotator cuff repairs using acellular dermal matrix. Study included 42 patients, 22 of which were in the augmented group. “Clinical outcomes measured by ASES and Constant scores were statistically better for the augmented group than the nonaugmented group.” “MRI scans showed intact cuff repairs in 85% of the augmented group but only 40% of nonaugmented repairs.” [Click here for link.](#)

Barber, F.A., Herbert, M.A. & Boothby, M.H. “Ultimate tensile failure loads of a human dermal allograft rotator cuff augmentation.” *Arthroscopy*. 2008 Jan;24(1):20-4. doi: 10.1016/j.arthro.2007.07.013.

- Investigators examined failure mode of supraspinatus tendon repairs with and without human dermal allograft augmentation in 10 matched pairs of human cadaveric supraspinatus muscles and tendons. The mean failure load of the control was 273 N, while the mean of the augmented group was 325 N. “These findings in these 2 groups were statistically significantly different.” Authors conclude these findings “support the hypothesis that a human dermal allograft would significantly increase the strength of a repaired tendon.” [Click here for link.](#)

Lee, D.K. “A preliminary study on the effects of acellular tissue graft augmentation in acute Achilles tendon ruptures.” *J Foot Ankle Surg*. 2008 Jan-Feb;47(1):8-12. [Click here for link.](#)

- Author evaluated the effectiveness of an acellular human dermal tissue matrix as an augmentation material in acute Achilles tendon repairs in 11 patients. At 20-month postoperative follow-up, there have been no cases of re-rupture or recurrent pain. Clinical results suggest “that with an acellular human dermal tissue matrix to augment acute Achilles tendon, primary repair offers a desirable return-to- activity time without any re-rupture or complications.” [Click here for link.](#)

Rao BM, Kamal TT, Vafaye J, Taylor L. Surgical repair of hip abductors. A new technique using Graft jacket allograft acellular human dermal matrix.

- Authors used a human ADM in 12 patients for repair of gluteus medius and minimus insertions. AT mean follow up of 22 months, “pain improved in all patients with mean VAS score.” “All the patients had improvement in their abductor strength.” “All patients had improvement in gait.” “Overall this procedure appears to be safe and associated with high patient satisfaction, without the morbidity of any tendon or muscle transfers.” “The described procedure appears to enhance the mechanical strength of repaired tendon immediately following surgery.” [Click here for link.](#)

Surgical Technique Guides Featuring ArthroFLEX

- Arthrex surgical technique guides, videos and presentations featuring ArthroFlex. [Click here for link.](#)
- Arthrex Superior Capsular Reconstruction for Massive Irreparable Rotator Cuff Tears Surgical Technique. Available upon request.
- Arthrex Achilles Tendon Reinforcement with ArthroFlex Decellularized Dermis Surgical Technique. Available upon request.
- Suture Retention Strength of ArthroFlex by Raffy Mirzayan. [Click here for video.](#)

1864 Concert Drive
Virginia Beach, VA 23453
Phone: U.S. 1-888-847-7831 ☐ 1-757-464-4761 x2000 (OUS)
Fax: U.S. 1-888-847-7832 ☐ 1-757-464-6439 (OUS)

LifeNetHealth.org

The LifeNet Health logo is a registered trademark of LifeNet Health.
ArthroFlex, Dermacell, and Matracell are registered trademarks of LifeNet Health.



©2018 LifeNet Health, Virginia Beach, VA. All rights reserved.

68-20-085 .05

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 healthcare professionals that allow the healing process.