BioCartilage® Extracellular Matrix Scientific Update



BioCartilage extracellular matrix (ECM) is intended to serve as a scaffold over a properly prepared articular cartilage defect. BioCartilage is a cartilage-scaffold that can fill a cartilage defect. Difficult-to-reach focal defects can be addressed either open or arthroscopically with a unique delivery system. BioCartilage matrix contains the extracellular matrix that is native to articular cartilage.

Scientific articles highlighting the benefits of BioCartilage extracellular matrix:

2016

Fortier LA, Chapman HS, Pownder SL, et al.

BioCartilage improves cartilage repair compared with microfracture alone in an equine model of full-thickness cartilage loss. *Am J Sports Med.* 2016;44(9):2366-2374. doi:10.1177/0363546516648644

- In an equine animal study comparing microfracture to BioCartilage extracellular matrix, it was shown that BioCartilage matrix with PRP safely improved the cartilage repair.
- Outcome measures in the study included ICRS repair score, histologic scores for repair-host integration, base integration, and formation of type II collagen, as well as MRI analysis. The histological scores comparing BioCartilage extracellular matrix to microfracture indicated how it can improve the quality of repair tissue in a properly prepared articular cartilage defect.

2014

Desai S

Treatment of osteochondral lesions of the talus with marrow stimulation and micronized allograft cartilage matrix: an all arthroscopic technique. *Techniques Foot Ankle Surg.* 2014;13(3):167-173. doi:10.1097/BTF.0000000000000056

- This publication is a case series that highlights several key aspects of the procedure, technique pearls, rehabilitation protocol and clinical outcomes.
- With an average follow-up of 12 months, 7 of 9 patients reported "excellent" outcomes with no functional limitations. Two patients reported "good" results but had occasional pain; however, neither required further surgical intervention.

2013

Abrams GD, Mall NA, Fortier LA, Roller BL, Cole BJ

BioCartilage: background and operative technique. *J Operative Techniques in Sports Medicine.* 2013;21(2):116-124. doi:10.1053/j.otsm.2013.03.008

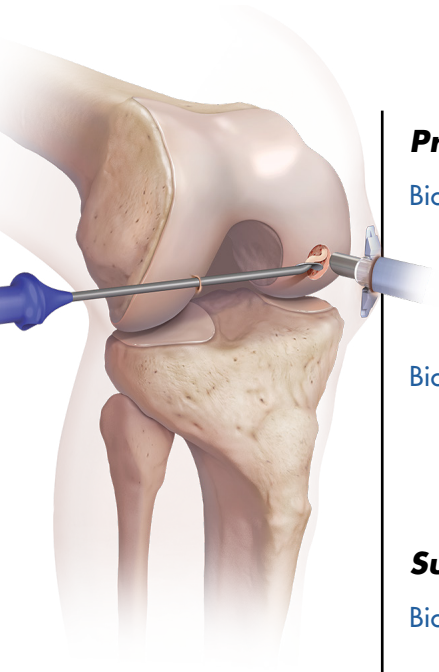
- This article highlights the limitations of microfracture and the premise of using a biologic, allogeneic scaffold to augment microfracture procedures.
- Key discussion points are introduced, including the product features and handling characteristics; surgical technique pearls, rehabilitation protocols, and frequently asked questions.

2009

Mithoefer K, McAdams T, Williams RJ, Kreuz PC, Mandelbaum BR

Clinical efficacy of the microfracture technique for articular cartilage repair in the knee: an evidence-based systematic analysis. *Am J Sports Med.* 2009;37(10):2053-2063. doi:10.1177/0363546508328414

- In this review article, the authors present 28 studies describing 3122 patients treated with microfracture. The average follow-up was 41 months, with 5 studies reporting outcomes of 5 years or more.
- Mithoefer, et al found that microfracture alone provides effective short-term functional improvement of knee function with several shortcomings including limited hyaline repair tissue, variable repair cartilage volume and tissue deterioration over time. While underreported in low level studies, Level 1 clinical studies indicate microfracture failure rates are greater than 25%.
- The authors further state the following, leading us to conclude that BioCartilage extracellular matrix is an excellent option that may improve the long term outcomes of microfracture by improving the tissue quality that forms in an articular cartilage defect.
  —"Repair cartilage quality significantly reduced the risk for subsequent revision and no revisions were required in knees with the best histological repair cartilage quality."



Procedure Videos

BioCartilage® Mixing and Delivery Advancements in the Knee

- Jason M. Scopp, MD, (Salisbury, MD) demonstrates the updated BioCartilage Extracellular Matrix Mixing and Delivery Kit. The new components aid in the visualization of the joint, preparation of the lesion and arthroscopic delivery of BioCartilage extracellular matrix.

BioCartilage® Mixing and Delivery Advancements in the Ankle

- James McWilliam, MD, (New York, NY) demonstrates the updated BioCartilage Mixing and Delivery Kit. The new components aid in the visualization of the joint, preparation of the lesion and arthroscopic delivery of BioCartilage extracellular matrix.

Surgical Technique Animations

BioCartilage® Cartilage Extracellular Matrix

- This animation shows how BioCartilage extracellular matrix may interact and potentially signal autologous cellular interactions to improve the degree and quality of tissue healing within a properly prepared articular cartilage defect.

BioCartilage® Utilization within the Knee

- The principle of BioCartilage extracellular matrix is to serve as a scaffold over a microfractured defect, providing a tissue network that can potentially signal autologous cellular interactions and improve the degree and quality of tissue healing within a properly prepared articular cartilage defect.

Product and Technique Highlights

Fat Pad Retractor

- The Fat Pad Retractor is compatible with the PassPort Button™ cannula and is an ideal tool for creating working space when implanting BioCartilage extracellular matrix or performing other arthroscopic procedures in the knee or ankle.

Patient Education Animations

Ankle Cartilage Repair with BioCartilage® Technique
Knee Cartilage Repair with BioCartilage® Technique

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