BioCartilage extracellular matrix was designed to provide a reproducible, simple and inexpensive method to augment traditional microfracture procedures. BioCartilage matrix is developed from allograft cartilage and contains the extracellular matrix that is native to articular cartilage including key components such as type II collagen, proteoglycans and additional cartilaginous growth factors. The principle of BioCartilage 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.

Scientific articles highlighting the benefits of BioCartilage extracellular matrix:

2016


- 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


- 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


- 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


- 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 I 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**

**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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