Xenograft Implantation - Single Service

Clinical Guidelines for Medical Necessity Review

Version: 2
Effective Date: April 26, 2024

Important Notices

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Guideline Information:

Specialty Area: Diseases & Disorders of the Musculoskeletal System (M00-M99)
Guideline Name: Xenograft Implantation - Single Service

Literature review current through: October 6, 2023
Document last updated: April 26, 2024
Type: [**X**] Adult (18+ yo) | [**X**] Pediatric (0-17yo)

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Medical Necessity Criteria

Service: Xenograft Implantation

General Guidelines

- **Units, Frequency, & Duration:** This service is unproven and not medically necessary.
- **Criteria for Subsequent Requests:** This service is unproven and not medically necessary.
- **Recommended Clinical Approach**[1]: Xenograft implantation has been proposed as a type of bone, cartilage, or soft-tissue graft used to replace natural existing tissue damaged by trauma or disease. While there are several different types of bone grafts currently in use or under study, the xenograft is a category that is obtained by a non-human animal or plant species[2].
- **Exclusions:** This service is unproven and not medically necessary.

Medical Necessity Criteria

Indications

➔ **Xenograft implantation** is considered appropriate if **ALL** of the following are **TRUE**[3-4]:

- ◆ This procedure is unproven and not medically necessary. There is insufficient evidence of their effectiveness for these indications.

Non-Indications

➔ **Xenograft implantation** is not considered appropriate if **ALL** of the following are **TRUE**:

- ◆ This procedure is unproven and not medically necessary. There is insufficient evidence of their effectiveness for these indications.

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (HCPCS/CPT)

HCPCS/CPT Code	Code Description

0737T	Xenograft implantation into the articular surface

Medical Evidence

Moyad et al. (2011) reviewed the literature regarding cartilage injuries in the adult knee and the workup and management techniques in current use. In the past, autologous chondrocyte implantation often resulted in complications from hypertrophy of the periosteal graft. Porcine tissue xenografts have been studied and found to have lower complication rates.

Anderson et al. (2022) reviewed studies related to NeoCart, a third-generation autologous chondrocyte (ACI) therapeutic. Phased clinical trials began in 2003, and it was found that the control microfracture procedure demonstrated the most pain relief and functional improvement depending on the size of the patient's lesion. The study was terminated in Phase III, and the therapy was not approved for use.

Sutherland et al. (2015) examined the use of cartilage matrix including its promise as a biomaterial for enhanced cartilage regeneration. Such materials provide for enhanced cartilage regeneration due to ability to provide stem cells with physical attachment sites, as well as mechanical and chemical signals.

References

1. Sutherland AJ, Converse GL, Hopkins RA, Detamore MS. The bioactivity of cartilage extracellular matrix in articular cartilage regeneration. Adv Healthc Mater. 2015;4(1):29-39. doi:10.1002/adhm.201400165
2. Anderson D., Gridley A., Crawford D. *Next Generation Cartilage Repair and the Pre-Arthroplasty Patient.* Operative Techniques in Sports Medicine, (2022), 30(4). Elsevier.org. 2022.
3. Murphy MP, Koepke LS, Lopez MT, et al. Articular cartilage regeneration by activated skeletal stem cells. Nat Med. 2020;26(10):1583-1592. doi:10.1038/s41591-020-1013-2
4. Bracey DN, Cignetti NE, Jinnah AH, et al. Bone xenotransplantation: A review of the history, orthopedic clinical literature, and a single-center case series. Xenotransplantation. 2020;27(5):e12600. doi:10.1111/xen.12600

Clinical Guideline Revision History/Information

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Review History	
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