

**JRF ORTHO**

OCA CLINICAL SNAPSHOT: KEY FINDINGS FROM RECENT LITERATURE

Regional Variation in Distal Femur Subchondral Bone Mineral Density: An In Vitro Human Cadaveric Model

J Orthop. 2025 Aug

Zittel KW, Zielinski KP, Thompson MC, Postma WF, Murray RS, Cunningham BW

- The purpose of this study was to characterize regional variation in subchondral bone mineral density (BMD) of the distal femur using an in vitro human cadaveric model.
- No differences in BMD were found in allografts harvested from the medial or lateral condyle.

JRF ORTHO TAKEAWAY:

Size-matched OCAs remain a critical factor in successful OCA transplantation. The absence of BMD differences between medial and lateral femoral condyles provides further validation that contralateral femoral condyles are suitable for medial defects. Flexibility in allograft selection ultimately allows for quicker matches for surgeons and patients alike.

Comparison of Snowman and Single-Plug Circular Osteochondral Allograft Transplantation Techniques for Similarly Sized Defects: A Matched Cohort Analysis

Am J Sports Med. 2025 Aug

Mufti YN, Sachs JP, Franzia CH, Bouftas F, Wagner K, Cotter EJ, Cole BJ

- The purpose of this study was to compare PROs and clinical outcomes at a 2-year time point between patients undergoing a single circular plug and snowman OCA.
- No difference in failure rates, reoperations comma or achievement of clinically significant outcomes at a 2 year follow up was observed between single circular or snowman OCA.

JRF ORTHO TAKEAWAY:

Comparable outcomes between snowman and single circular OCA transplantation suggest that defect shape, rather than size should influence selection of technique. The snowman technique may be advantageous for longer defects to minimize the removal of healthy tissue.

Clinical Factors Affecting Outcomes of Osteochondral Allograft Transplantation: A Multivariable Analysis of 560 Knees

Am J Sports Med. 2025

Wang T, Dees RL, Görtz S, McCauley JC, Bugbee WD

- This study used a large, long-term registry to identify clinical factors associated with osteochondral allograft (OCA) failure through multivariable analysis of 560 knees.
- After controlling for confounding variables, patient age greater than 30 years, body mass index (BMI) greater than 30, the presence of degenerative joint disease, and allograft size greater than 8 cm² were each independently associated with an increased risk of treatment failure.

JRF ORTHO TAKEAWAY:

Ten-year allograft survivorship of 83% reinforces OCA transplantation as an effective treatment for osteochondral defects. These findings emphasize that optimizing patient selection plays a critical role in patient success.

Donor-Recipient Sex Mismatch Does Not Affect Graft Survivorship After Knee Osteochondral Allograft Transplantation

Knee. 2025 Oct

Lott A, Triana J, Sandoval CG, Sundaram V, Gonzalez-Lomas G, Alaia MJ, Jazrawi LM, Strauss EJ, Campbell KA

- This study looked at 285 patients undergoing OCA transplantation with a mean follow up of 4.9 years.
- No significant differences were noted in patient reported outcomes or allograft survival rate when considering donor-recipient sex mismatch.

JRF ORTHO TAKEAWAY:

These findings indicate that donor-recipient sex mismatch does not adversely affect OCA survivorship or clinical outcomes. This evidence supports greater flexibility in donor selection without compromising patient outcomes. Broadening specific criteria may facilitate quicker and more precise OCA size matching.

Simultaneous ACL Reconstruction and Osteochondral Allograft Transplantation for Lateral Femoral Condyle Impaction Fractures: A Case Report

JBJS Case Connect. 2025 Aug

Prigmore B, Fullmer D, Carlson C, Crawford DC

- This case series is the first to describe OCA transplantation for the treatment of lateral femoral condyle impaction fractures (LFC-IF). Simultaneous OCA and ACL reconstruction allowed for single-stage management, eliminating the need for multiple surgeries.

JRF ORTHO TAKEAWAY:

In this series, both hemi condyles and precut cores were utilized to treat patients with LFC-IF osteochondral injuries. These findings demonstrate that careful preoperative planning can enable the use of multiple allograft sources, including precut cores, to address complex knee pathologies.