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KAPPA DELTA ELIZABETH WINSTON LANIER AWARD WINNING RESEARCH

Osteochondral Allograft Transplantation in Cartilage Repair: Graft Storage Paradigm, Translational Models, and Clinical Applications

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This publication highlights research spanning over two decades that was responsible for establishing osteochondral allograft (OCA) transplantation as an effective treatment method for cartilage restoration.

Developments in research include:

1. Helped tissue banks develop a standard method to process and deliver viable tissue to surgeons and patients
    - Optimum tissue culture medium is supplemented with Fetal Bovine Serum to preserve chondrocyte viability
    - Facilitated an increased supply, now OCAs are available commercially
2. Further understanding of in vivo changes occurring to bone and cartilage after transplantation through the use of animal models
    - Introduced a validated MRI scoring system for OCA
    - Identified PRG4 as a biomarker of OCA health and performance
3. Instituted effective surgical techniques and pitfalls
    - Articles describing technical, logistical and surgical details to achieve reproducible results and minimize early graft failure
    - Established clinical parameters for different locations and sizes of lesions
    - Determined excessive impact when inserting allograft into the joint damages chondrocytes
4. Clarified clinical indications and outcomes
    - OCAs are useful for a wide spectrum of knee joint pathology
    - Outcomes show significant improvement in pain and function with high satisfaction
    - Effective treatment option for young adolescents and in OCA revisions
    - Acceptable primary treatment for lesions that are large ($\geq$ 10 cm^2)

Take Away: OCA transplantation is a uniquely useful treatment for articular cartilage injury and disease. These studies have provided a basis for application and spurred the potential for further studies in the future.