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Induced pluripotent stem cells in cartilage repair

Steven A Lietman

Abstract:

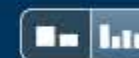
Background: Articular cartilage repair techniques are ineffective.

Human embryonic stem (ES) and induced human pluripotent stem cells (iPS) cells theoretically provide an unlimited number of specialized cells which could be used in articular cartilage repair. However thus far chondrocytes from iPS Cells (iPSCs) have been created primarily by viral transfection and with the use of feeder cells. In addition chondrocytes derived from iPSCs have been formed in condensed cell bodies (resembling embryoid bodies) that then require dissolution with consequent substantial loss of cell viability and phenotype. All of these current techniques used to derive chondrocytes from iPSCs are problematic but solutions to these problems are on the horizon.

Key Words: iPS cells, articular cartilage, cartilage repair, stem cells

Nearly 1 in 2 people develop symptomatic knee OA by age 85 years, two in three people who are obese develop symptomatic knee OA in their lifetime, and 1 in 4

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