

Meniscal Tear Repair: What's New in the Literature?

Purpose/Hypothesis: Meniscal tears are among the most common knee injuries and represent a significant clinical and economic burden. Historically managed with partial or total meniscectomy, contemporary evidence emphasizes meniscal preservation to maintain knee biomechanics and prevent early osteoarthritis. This review aims to synthesize current evidence on the classification, management, and evolving treatment strategies for meniscal tears, with particular focus on repair techniques, biologic augmentation, salvage procedures, and rehabilitation. We hypothesized that meniscal preservation strategies, when appropriately selected, provide superior functional and long-term outcomes compared with meniscectomy.

Methods: A systematic quantitative review was conducted according to PRISMA guidelines. Searches of PubMed, MEDLINE, Cochrane Library, and Scopus were performed without initial restrictions, with emphasis on studies published between 2014 and 2024. Comparative and observational studies (levels I–IV) evaluating conservative and surgical management of meniscal tears in adults were included. Case reports, animal studies, biomechanical studies, and non-English articles were excluded. Of 948 records identified, 46 studies met inclusion criteria and were analyzed.

Results: Evidence consistently supports meniscal repair over meniscectomy when feasible, particularly for tears in vascular zones. Inside-out, outside-in, and all-inside suture-based repairs demonstrate favorable healing rates, with lower failure rates compared to rigid fixation devices. Biologic adjuncts such as platelet-rich plasma show potential to reduce repair failure, though functional benefits remain inconsistent. Salvage techniques, meniscal scaffolds, and allograft transplantation provide alternatives for irreparable tears but are limited by indications, cost, and long-term data. Rehabilitation protocols significantly influence outcomes.

Conclusions: Meniscal preservation and repair should be prioritized whenever anatomically and biologically feasible. Advances in repair techniques, biologics, and salvage strategies offer promising options for complex tears, though high-quality, long-term comparative studies are needed to refine indications and optimize individualized treatment algorithms.