

# Mesenchymal Stem Cell Therapy for Non-musculoskeletal Diseases: Emerging Applications

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摘要

## Abstract

Mesenchymal stem cells are stem/progenitor cells originated from the mesoderm and can differentiate into multiple cell types of the musculoskeletal system. The vast differentiation potential and the relative ease for culture-expansion have established mesenchymal stem cells as the building blocks in cell therapy and tissue engineering applications for a variety of musculoskeletal diseases including repair of fractures and bone defects, cartilage regeneration, treatment of osteonecrosis of the femoral head, and correction of genetic diseases such as osteogenesis imperfecta. However, research in the past decade has revealed differentiation potentials of mesenchymal stem cells beyond lineages of the mesoderm, suggesting broader applications than originally perceived. In this article, we review the recent developments in mesenchymal stem cell research with respect to their emerging properties and applications in non-musculoskeletal diseases.