

# Mesenchymal Stem Cell Applications for Joints in the Foot and Ankle



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## KEYWORDS

• Mesenchymal stem cells • MSC • Foot joint pain

## KEY POINTS

- There are limited options for definitive treatment of degenerative joint disease.
- Mesenchymal stem cells (MSCs) have been utilized for the treatment of other types of chronic musculoskeletal pathology.
- The use of MSCs in foot and ankle joint pathology is currently limited.

## INTRODUCTION

Degenerative joint disease presents inherent complexity with treatment because of its progressive nature, and as a result, there are limited options for definitive treatment. Mesenchymal stem cells (MSCs) have been implicated in treatment of such chronic musculoskeletal pathology, but their use in foot and ankle pathology is currently limited because of its relative novel introduction into the foot and ankle literature. This article compiles relevant literature regarding MSC injection for intra-articular pathology of the foot and ankle.

Degenerative changes in the foot and ankle revolve around various types of arthritis. Osteoarthritis frequently occurs in the first metatarsal phalangeal joint and is one of the most commonly attacked joints after the knee. Osteoarthritis also appears in the subtalar, talonavicular, and midtarsal joints. This is further exacerbated by biomechanical abnormalities that add further stress to the joints, such as ankle joint instability that can lead to injury of the joint surface, and cartilaginous degeneration.

Rheumatoid arthritis is characterized by lateral deviation of all five digits at the level of the metatarsal phalangeal joints, similar to the deformity seen in the hand with ulnar

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