

Ankle Sprain: Mechanisms, Management and Rehabilitation

Faculty of Health Sciences, University of Cape Town, South Africa

Ankle sprains are among the most prevalent musculoskeletal injuries, commonly affecting individuals of various ages and activity levels. This research article explores the mechanisms, clinical presentation, management strategies, and rehabilitation protocols associated with ankle sprains. Understanding the pathophysiology and treatment options is crucial for healthcare providers to effectively manage and rehabilitate patients with ankle sprains, thereby minimizing long-term complications and optimizing recovery.

Keywords: Ankle sprain; ligament injury; Rehabilitation, Sports medicine; musculoskeletal injury.

Introduction

Ankle sprains are frequent injuries characterized by damage to the ligaments surrounding the ankle joint, often resulting from excessive or abnormal twisting motion. These injuries vary widely in severity, from mild stretching of ligaments to complete tears, and are commonly encountered in both athletic and everyday settings. The ankle's complex anatomical and biomechanical structure plays a significant role in the types and outcomes of ankle sprains, influencing management approaches and rehabilitation strategies. Ankle sprains typically occur when the ankle undergoes an inversion (inward rolling) or eversion (outward rolling) for beyond its normal range of motion. This leads to stretching or tearing of the ligaments that stabilize the joint, namely the anterior talo-fibular ligament (ATFL), the calcaneofibular ligament (CFL), and the posterior talo-fibular ligament (PTFL). The severity of injury depends on factors such as the direction and magnitude of force, prior injury history, and individual anatomical variations [1].

The clinical presentation of ankle sprains varies from mild discomfort and swelling to severe pain, bruising, and functional impairment. Patients often report a sudden onset of pain at the time of injury, accompanied by swelling and difficulty bearing weight on the affected ankle. Physical examination typically reveals localized tenderness, instability, and sometimes joint laxity, which aids in diagnosing the severity and extent of ligamentous damage. Initial management of ankle sprains focuses on the RICE protocol (Rest, Ice, Compression, and Elevation) to reduce pain and swelling. Nonsteroidal anti-inflammatory drugs (NSAIDs) may be used to alleviate pain and inflammation. Depending on the severity, immobilization with a brace or splint may be necessary initially. For moderate to severe sprains, early rehabilitation involving gentle range of motion exercises, proprioceptive training, and strengthening exercises is crucial to restore joint stability and function [2].

Rehabilitation protocols for ankle sprains typically progress through phases, starting with passive range of motion exercises and gradually advancing to weight-bearing exercises and functional activities. Proprioceptive training, which improves joint position sense and stability, plays a vital role in reducing the risk of recurrent sprains.

Functional rehabilitation focuses on restoring strength, flexibility, and neuromuscular control to enable a safe return to normal activities, including sports participation. While most ankle sprains heal well with conservative management, complications such as chronic ankle instability, recurrent sprains, and post-traumatic osteoarthritis can occur, particularly with inadequate rehabilitation or premature return

to activities. Long-term outcomes are generally favorable with proper management, emphasizing the importance of patient education, compliance with rehabilitation protocols, and gradual return to pre-injury levels of activity [3,4].

Ankle sprains are among the most common musculoskeletal injuries encountered in clinical practice and sports medicine. They affect individuals of all ages and activity levels, with a peak incidence observed in adolescents and young adults participating in recreational and competitive sports. Epidemiological studies indicate that ankle sprains account for a significant proportion of sports-related injuries, particularly in activities involving jumping, cutting, and sudden changes in direction. Several intrinsic and extrinsic factors predispose individuals to ankle sprains. Intrinsic factors include anatomical variations (e.g., high arches, excessive foot pronation), previous ankle injuries, joint laxity, and muscle weakness or imbalance around the ankle joint. Extrinsic factors encompass environmental conditions (e.g., uneven terrain, inappropriate footwear), inadequate warm-up or conditioning, and participation in high-risk sports or activities without proper training or supervision [5].

The cornerstone of treatment for most ankle sprains involves the

Themba Jacobs, Faculty of Health Sciences, University of Cape Town, South Africa, E-mail: smarais749@gmail.com

01-June-2024, Manuscript No: crfa-24-140247; 04-June-2024, PreQC No: crfa-24-140247(PQ); 18-June-2023, QC No: crfa-24-140247; 25-June-2024, Manuscript No: crfa-24-140247(R); 28-June-2024, DOI: 10.4172/2329-910X.1000548

Themba J (2024) Ankle Sprain: Mechanisms, Management and Rehabilitation. Clin Res Foot Ankle, 12: 548.

© 2024 Themba J. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

