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Impact of Neuromuscular Exercises in Management of Tibiofemoral Osteoarthritis: A Narrative Review

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ABSTRACT

Knee osteoarthritis (OA) is a widespread degenerative joint condition that affects approximately 53% of individuals with self-reported symptomatic OA, primarily older adults. Characterised by pain, functional limitations, and reduced quality of life, it often targets the medial tibiofemoral compartment, making daily activities increasingly challenging. Neuromuscular exercises have gained attention as a therapeutic intervention to address these issues, improving biomechanics, functional performance, and muscle activation patterns.

This review evaluates the impact of neuromuscular exercises on pain relief and physical function in patients with medial knee OA. A systematic search of Scopus, PEDro, and PubMed databases covering studies from 2015 to 2024, identified five studies that met the inclusion criteria.The findings reveal that neuromuscular exercises are highly effective in reducing pain and enhancing mobility in individuals with tibiofemoral OA. These exercises improve joint stability, strengthen surrounding musculature, and optimise movement patterns, contributing to better overall function and quality of life. However, the limited number of studies on this subject underscores the need for further research to validate these benefits and explore the full potential of neuromuscular exercise as a treatment option.This review highlights the promising role of neuromuscular exercises in managing tibiofemoral OA and encourages continued exploration to provide more robust evidence for integrating these interventions into standard care protocols for osteoarthritis management.

Keywords: Neuromuscular exercises, Pain, Quality of life.