

Efficacy of Exercise-Based Interventions in the Management of Upper Crossed Syndrome: A Literature Review

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ABSTRACT

Introduction: Upper Crossed Syndrome (UCS) is a musculoskeletal disorder caused by muscle imbalances, leading to forward head posture, rounded shoulders, and scapular winging. It results from hyperactivity of the upper trapezius, levator scapulae, pectoralis major, and suboccipital muscles, along with weakness in the lower trapezius, deep cervical flexors, and serratus anterior. Prolonged screen use and repetitive occupational movements further contribute to its prevalence.

Aim: This review evaluates the efficacy of exercise-based interventions, including muscle energy techniques (METs), neuromuscular and biomechanical exercises, National Academy of Sports Medicine (NASM)-based protocols, and stretching programmes in managing UCS symptoms.

Methodology: A literature review was conducted using databases such as PubMed, ScienceDirect, Scopus and Google Scholar. Keywords included "Upper Crossed Syndrome," "Neck Pain," "Physiotherapy Intervention," and "Posture." Inclusion criteria consisted of peer-reviewed studies published in the last 10 years, focusing on UCS and neck pain, while non-English articles, case reports, and unrelated studies were excluded.

Results: Studies indicate that stretching, METs, and segmental mobilisation significantly alleviate neck pain and disability in UCS patients. METs enhance range of motion, while NASM-based protocols better address pain and functional limitations. Neuromuscular and biomechanical exercises improve scapular strength and posture. High UCS prevalence among athletes highlights the need for corrective training. Meta-analyses confirm that structured strength and stretching programmes, performed at least three times weekly for four weeks, improve posture and function.

Conclusion: Exercise-based interventions effectively enhance mobility, reduce pain, and correct postural imbalances in UCS. Tailored rehabilitation strategies incorporating METs, NASM-based protocols, and biomechanical exercises are recommended.

Implication: Healthcare professionals should implement targeted exercise programmes to restore muscle balance. Future research should explore long-term effectiveness and prevention strategies.

Keywords: Upper crossed syndrome, Neck pain, Physiotherapy intervention

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