DOI: 10.7860/JCDR/2025/80478.21759

Effect of Respiratory Muscle Proprioceptive Neuromuscular Facilitation on Respiratory Muscle Strength in Spinal Cord Injury Individuals

Mansi Negi, Postgraduate Student, Department of Physiotherapy, ISIC-Institute of Rehabilitation Sciences, New Delhi, India.
Shambhovi Mitra, Associate Professor, Department of Physiotherapy, ISIC-Institute of Rehabilitation Sciences, New Delhi, India.
Harpreet Singh, Physiotherapist, Department of Neurology, AIIMS, New Delhi, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Shambhovi Mitra,
Associate Professor, Department of Physiotherapy, ISIC-Institute of Rehabilitation Sciences, New Delhi, India.
E-mail: negimansi05@gmail.com

ABSTRACT

Introduction: Spinal Cord Injury (SCI) refers to damage to the spinal cord that results in impairments related to its function, along with some respiratory complications. Inspiratory Muscle Training (IMT) is the most commonly used technique to improve respiratory function in tetraplegia. Respiratory muscle Proprioceptive Neuromuscular Facilitation (PNF) entails the application of manual stimulation to specific regions of the chest wall.

Aim: This study aims to examine the combined effect of PNF and IMT in tetraplegics.

Materials and Methods: This study (CTRI/2024/10/075261) (INSTITUTIONAL ETHICS COMMITTEE -ISIC/RP/2024/020) involved 14 tetraplegic individuals (experimental group: n=7, control group: n=7). Baseline respiratory muscle strength was assessed, then participants were randomly assigned to receive either combined PNF and IMT (experimental group) or sham training (control group) for 4 sessions/week over 4 weeks. Post-intervention respiratory muscle strength was reassessed. The study was single-blinded, with an independent assessor for outcome measurement.

Results: The groups showed significant changes in respiratory muscle strength post intervention.

Conclusion: Combination of PNF and IMT may improve respiratory strength in SCI individuals.

Keywords: Respiratory function, Respiratory muscle training, Respiratory strength