

# Efficacy of Multiwave Locked System Laser on Pain and Function in Patients with Chronic Neck Pain: A Randomized Placebo-Controlled Trial

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## Abstract

**Background:** Multiwave locked system (MLS) laser therapy utilizes the synchronized emission of an 808 nm continuous laser and a 905 nm pulsed laser. It is postulated that MLS enables greater penetration and therapeutic benefit than single-wavelength low-level laser therapy (LLLT). **Objective:** The aim of this research was to evaluate the efficacies of MLS laser therapy and the 830 nm laser in the treatment of patients with chronic neck pain (CNP). **Materials and methods:** Seventy-five patients with CNP (mean age 46.28 ± 5.89, weight 83.78 – 5.65 kg, height 1.72– 4.96 m, and duration of illness of 5.98– 1.44 months). They were randomized into three groups. Group I received MLS laser therapy and exercises, Group II received LLLT and exercises, and Group III received placebo laser therapy plus exercises (PL+ EX). Neck pain levels and neck function were measured using the visual analogue scale (VAS) and neck disability index (NDI), respectively. **Results:** Both VAS and NDI were significantly reduced post-treatment for all treatment groups. After 6 weeks of treatment, MLS plus exercise showed a significantly greater decrease in pain and disability score (VAS (6.68) and D NDI (39.84)) compared to both LLLT plus exercise group (D VAS (5.72) and D NDI (37.88)) and PL + EX (D VAS (4.84) and D NDI (36.68)). **Conclusions:** MLS laser therapy in conjunction with exercises decreased pain and increased functional activity following 6 months of therapy. MLS laser therapy in combination with exercises is a more effective therapy for CNP compared to exercise plus LLLT or exercise alone.

**Keywords:** chronic neck pain, MLS laser therapy, neck disability index

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