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## The effects of combining traditional physical therapy exercises with sensorimotor training on clinical outcomes of patients with chronic non-specific neck pain: A double-blind, randomized controlled trial

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**Objective:** This study examined the effects of combining traditional physical therapy exercises with sensorimotor trainings on joint position sense, pain, muscle endurance, balance and disability in patients with chronic non-specific neck pain.

**Design:** Double-blind, randomized controlled trial.

**Subjects & Interventions:** A total of 53 patients with chronic non-specific neck pain were randomized to either traditional or combined exercise groups. All patients received 12 sessions supervised intervention, 3 times per week. The traditional group received traditional exercises but the combined exercise group performed sensorimotor training in addition to traditional exercises.

**Outcome measures:** Joint position sense, pain, neck flexor muscle endurance test, 10 Meter Walk Test, step test, and Neck Disability Index

**Results:** The combined exercise group showed significantly greater improvement at joint position sense in extension, flexion, right rotation, 10 meter walk test with head turn and step test compared with the traditional group. Pain intensity, muscle endurance, and disability improved in both groups. However, the effect size of muscle endurance was large for the combined exercise group whereas moderate for traditional group.

**Conclusions:** Combination of sensorimotor training to the traditional physical therapy exercises could be more effective than traditional exercises alone in improving joint position sense, endurance, dynamic balance and walking speed.

### Biography

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