

## عنوان مقاله:

Comparison of Electromyographic Responses of Superficial Neck Muscles in Patients with Chronic Neck Pain and Healthy Subjects During Posterior - Anterior Perturbation

## محل انتشار:

مجله علمی پژوهشی دانشگاه علوم پزشکی زنجان, دوره 16, شماره 63 (سال: 1387)

تعداد صفحات اصل مقاله: 10

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## خلاصه مقاله:

**Background and Objective:** Several studies have reported significant disturbances in vertical posture during various standing and walking conditions, but there is little evidence about the behavior of related muscles in dynamic conditions such as external perturbation, so this study was done to investigate and to compare the delay in response of upper trapezius and sternocleidomastoid muscles as two superficial muscles in the neck area, in posterior-anterior perturbation among patients with chronic neck pain and healthy subjects. **Materials and Methods:** This study was a case-control study with simple nonprobable sampling. 32 subjects (16 healthy subjects and 16 patients with chronic neck pain) participated the study. Data collection was done using questionnaire and test performance. The equipments included dynamometer, chronometer and surface kinesiology electromyography. Dropping the weight equal to 10% of total body weight, performed using electrical magnet, followed by pulling of the trunk inducing perturbation was performed. **Results:** There were significant statistical differences in response onset of upper trapezius ( $p=0.032$ ) and sternocleidomastoid ( $p=0.012$ ) muscles between two groups. This meant the response onset in patients was longer than healthy subjects. **Conclusion:** Pain can change the onset of response of trapezius and sternocleidomastoid muscles and possibly decrease muscle activity in deep muscles and change the pattern of muscle activation and possibly it can increase the risk of injury in patients with chronic neck pain.

## کلمات کلیدی:

Key Words: Fatigue, Pain, Electromyography, External perturbation

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