

## The Effect of Six-Weeks of Elastic Exercises with Reactionary Ropes on Nerve Conduction Velocity and Balance in Females with Multiple Sclerosis

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**Abstract :** Multiple Sclerosis is considered as diseases related to central nerve system, the chronic and progressive disease impress on sensory and motor function of people. Due to equilibrium problems in this patients that related to disorder of nerve conduction transmission from central nerve system to organs and the nature of elastic bands that can make changes in neuromuscular junctions and momentary actions, the aim of this research is evaluate elastic training effect by reactionary ropes on nerve conduction velocity (in lower and upper limb) and functional balance in female patients with Multiple Sclerosis. The study was a semi-experimental study that was performed based on pre and post-test method, The statistical community consisted of 16 women with MS in the age mean 25-40yrs, at low and intermediate levels of disease EDSS 1-4 (Expanded Disability Status Scale) that were divided randomly into elastic and control groups, so the training program of experimental group lasted six weeks, 3 sessions per week of elastic exercises with reactionary ropes. Electroneurography parameters (nerve conduction velocity- latency) of Upper and lower nerves (Median, Tibial, Sural, Peroneal) along with balance were investigated respectively by the Electroneurography system (ENG) and Timed up and go (TUG) functional test two times in before and after the training period. After that, To analyze the data were used of Dependent and Independent T-test (with sig level  $p < 0.05$ ). The results showed significant increase in nerve conduction velocity of Sural ( $p=0.001$ ), Peroneal ( $p=0.01$ ), Median ( $p=0.03$ ) except Tibial and also development Latency Time of Tibial ( $p=0$ ), Peroneal ( $p=0$ ), Median ( $p=0$ ) except Sural. The TUG test showed significant decreases in execution time too ( $p=0.001$ ). Generally, based on what the obtained data can indicate, modern training with elastic bands can contribute to enhanced nerve conduction velocity and balance in neurosis patients (MS) so lead to reduce problems, promotion of mobility and finally more life expectancy in these patients.

**Keywords :** balance, elastic bands, multiple sclerosis, nerve conduction, velocity

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