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## Comparing the effect of two combined interventions of exercise-tapping and exercise-splint in women with Hallux valgus deformity

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### ABSTRACT:

**Background and Objectives:** *Hallux valgus is a common foot disorder that interferes with the first metatarsophalangeal (MTP) joint and also results in muscle imbalance between the adductor and the abductor of hallux. This condition has a higher prevalence among women. Studies on the effect of protective methods on hallux valgus are limited and at the same time are inconsistent. Therefore, the aim of this study was to examine the effect of exercise-tapping and exercise-splint intervention on hallux valgus angle and pain in women with hallux valgus deformity. Materials and Methods: Forty five women (mean age: 30.7±8.36; height: 162.16±4.89; weight: 61.22±5.86) with mild and moderate hallux valgus (15 to 30 degree) participated in this study and were randomly divided into 3 groups including exercise-tapping, exercise-splint and control. Hallux valgus angle was determined by the radiography method and pain was assessed using VAS. Participants in exercise-tapping group were bonded by Kinesiology tape for 8 weeks/24 hours and performed two repetitive exercises of the thumb toe, daily. The exercise-splint group performed two types of hallux valgus splints (night and day) as well as toe exercises for 8 weeks. Control group did not receive any intervention during this time period. Study outcomes were assessed again after 8 weeks in three groups. Independent t-test, dependent t-test and ANOVA were used to compare data of the study. P values smaller or equal to 0.05 were considered to be significant. Results: Results showed that there was a significant difference between the pre-test and post-test scores of toe angle in exercise-tapping ( $p=0.001$ ) and exercise-splint ( $p=0.001$ ) groups. Also there were significant differences between pre-test and post-test of pain scales in both experimental groups (exercise-tapping,  $p=0.013$  and exercise-splint,  $p=0.007$ ). This differences were not observed in control group. Result further showed that there was no significant difference between the effect of exercise-tapping and exercise-splint groups on the angle ( $p=0.513$ ) and pain scores ( $p=0.902$ ). Conclusion: The findings of this study suggest using both exercise-tapping and exercise-splint interventions for the correction of hallux valgus disorder in women with mild and moderate hallux valgus. Keywords: Hallux valgus, exercise, tapping, splint.*

### BIOGRAPHY:

*Birehvar has completed his PhD at the age of 37 years from medicine school of Tehran university. He is the teacher of physical education in both school and university. Now is both of football department of Baneh city. He has personal orthosis and prosthetic center. He has published more than 8 papers in reputed conferences in Iran and has edited a book in kids game. He has many championship positions in football and now is the head coach of Baneh football team.*

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