IMMEDIATE EFFECTS OF A PRE-PERFORMANCE PREVENTATIVE ANKLE REHABILITATION PROGRAM ON ANKLE BALANCE AND PROPRIOCEPTION IN TAPE AND UNTAPED CONDITIONS

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Context: Many athletic training programs require student-athletes receiving prophylactic ankle taping to perform rehabilitation exercises prior to being taped. It is unclear whether performing exercise is associated with immediate deficits in balance or ankle proprioception. Deficits in balance and proprioception could lead to injury.

Objective: To determine if performing ankle rehabilitation exercises prior to being taped is associated with immediate deficits in balance and proprioception. Design: 2 X 2 factorial design with random assignment of order to assess the main and interactive effects of two treatment variables [tape or no tape (T, NT) and exercise or no exercise (E, NE)] on the following outcomes: stability index (SI), joint reposition sense at 5° (JRS5) and 15° (JRS15) of ankle inversion. Setting: Athletic training lab. Patients or Other Participants: Seventeen (10 female, 7 male) college students (age 21.12 ± 1.65), with no history of lower extremity injury or surgery within 6 months of testing participated in the study. Intervention: All subjects completed four treatment conditions in randomly assigned order (NTNE, TNE, NTE, TE) over a 4 week period. The subject’s dominant leg was used for the experiment. Standard ankle taping was employed. Exercise consisted of slant board stretching 3 x 20 sec, 4 direction theraband 3 x 30 reps each direction and wobble board 3 x 30 sec (clockwise, counter clockwise). After completing each treatment condition, balance and proprioception were assessed within 10 minutes. Testing order was randomized to control for ordering effect. ANOVA was used to examine main and interactive effects of tape and exercise on balance and proprioception. Main Outcome Measure(s): Stability Index (SI) was produced by the Biodex Balance System. High stability index scores indicated poor balance. Joint reposition sense (JRS) was used to assess proprioception using the Biodex System 3. JRS was measured in degrees from the two target positions of 5 and 15 degrees of ankle inversion. Results: There were no significant main or interactive effects of the tape and exercise on SI, JRS5 and JRS15. The SI for each condition were (NTNE 2.91±1.52, TNE 2.65±1.11, NTE 3.48±2.64, TE 3.17±1.54) The JRS5 for each condition were (NTNE 3.08±2.09°, TNE 3.53±3.08°, NTE 3.10±2.07°, TE 3.35±3.01°). The JRS15 for each condition were (NTNE 3.72±2.33°, TNE 3.53±3.45°, NTE 4.29±4.09°, TE 5.19±5.58°). Conclusion: These data suggest that proprioception and balance are not altered by exercise and tape. Based on our results, it does not appear that performing rehabilitation exercise prior to being taped for activity is detrimental to balance or proprioception.