

Effect of Core Stability Exercises on Trunk Proprioception in Healthy Adult Individuals

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Abstract : Background: Core stability training has recently attracted attention for improving muscle performance. Purpose: This study investigated the effect of beginners' core stability exercises on trunk active repositioning error at 30° and 60° trunk flexion. Methods: Forty healthy males participated in the study. They were divided into two equal groups; experimental "group I" and control "group II". Their mean age, weight and height were 19.35±1.11 vs 20.45±1.64 years, 70.15±6.44 vs 72.45±6.91 kg and 174.7±7.02 vs 176.3±7.24 cm for group I vs group II. Data were collected using the Biodex Isokinetic system at an angular velocity of 60°/s. The participants were tested twice; before and after a 6-week period during which group I performed a core stability training program. Results: The Mixed 3-way ANOVA revealed significant increases ($p<0.05$) in the absolute error (AE) at 30° compared with 60° flexion in the pre-test condition of group I and II and the post-test condition of group II. Moreover, there were significant decreases ($p<0.05$) in the AE in the post-test condition compared with the pre-test in group I at both 30° and 60° flexion with no significant differences for group II. Finally, there were significant decreases ($p<0.05$) in the AE in group I compared with group II in the post-test condition at 30° and 60° flexion with no significant differences for the pre-test condition Interpretation/Conclusion: The improvement in trunk proprioception indicated by the decrease in the active repositioning error in the experimental group recommends including core stability training in the exercise programs that aim to improve trunk proprioception.

Keywords : core stability, isokinetic, trunk proprioception, biomechanics

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