

Pilot Study Analyzing the Effects of Acute Indian Club Swinging on Strength, Endurance, and Mobility

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ABSTRACT

Indian club swinging (ICS) is a training modality with a rich history; however, there is a lack of research demonstrating its physical benefits. **PURPOSE:** This study examined the acute impact of an 8-minute bout of ICS on shoulder mobility, isokinetic strength (IKS) and endurance (IKE). **METHODS:** 7 participants Age: 22.5 (± 2.6)yrs, Height: 166.7 (± 11.7)cm, Weight: 80.3 (± 19.4)kg, without a history of upper extremity injury in the past year attended 8 1-hour practice sessions to introduce proper ICS technique. Participants were familiarized with the testing battery and attended 2 randomized experimental sessions during which participants performed either an 8-min ICS routine or stood comfortably without movement (CON), followed by measures of range of motion for shoulder flexion (SF), abduction (ABD), internal/external rotation (IR/ER) and extension (EXT). A Biodex isokinetic dynamometer was used to assess isokinetic peak torque, relative peak torque, and total work during a D2 diagonal pattern and IR/ER from a modified neutral position with the shoulder at 45° ABD. Statistical analyses were performed using paired samples t-tests. The rate of successful execution of participants was quantified by the number of participants who completed all practice sessions and adequately met the ICS proficiency criteria. **RESULTS:** Peak torque and relative Peak torque during the D2 diagonal pattern away from the body were significantly greater after the IC condition ($p = .050$; $p = .043$, respectively). There was a large effect size for peak torque (Cohen's $d = .920$ 95% CI [-6.188, 0.017]). No significant differences were observed among goniometer measurements or isokinetic IR/ER movements. Seven out of the eight participants (87%) who signed up to participate in the study were able to complete all eight practice sessions and adequately demonstrate ICS proficiency. **CONCLUSION:** Performing ICS before participating in more intense physical activity may enhance isokinetic strength of the shoulder external rotators, horizontal abductors, and flexors. This suggests that ICS exercises can be performed as a warm-up routine for upper extremity athletes including but not limited to throwers. The present study also revealed that it is feasible to teach a beginner to swing ICS successfully using eight 1-hour practice sessions.