The immediate effects of a Total Motion Release® warm-up on active rotational hip range of motion in overhead athletes

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ABSTRACT

Background: Reductions in hip range of motion (ROM) correlate with lower extremity injury and alterations in shoulder mechanics in overhead athletes. Such shifts in kinetic-chain dynamics may lead to additional stresses at common injury sites of the upper and lower extremities. Researchers have suggested that Total Motion Release® (TMR®) increases shoulder ROM more effectively than traditional warm-up methods. It is plausible that similar methods may produce increases in ROM at the hip.

Purpose: To explore the effects of a TMR® based intervention on active hip rotational ROM in overhead athletes compared to a traditional athletic warm-up.

Study Design: Randomized Control Trial.

Methods: Twenty-two secondary school, NCAA Division I, III, and Club student-athlete participants (sex: 13 females, 9 males; sport: 9 javelin, 7 volleyball, 7 baseball; age = 19.3 ± 1.1 years; height = 178 ± 11.4 cm; weight = 76.4 ± 11.2 kg.) were randomly assigned to TMR® (TMRG; n=11) and traditional warm-up (TWG; n=11) groups. The TMRG performed three sets of forward flexed trunk twist and seated straight leg raise held for 20 seconds each to the side of ease with a 30-second rest interval. Active hip internal and external rotation was measured using the Clinometer smartphone application immediately before and after intervention.

Results: The TMRG experienced significant immediate increases in active dominant hip ER, active nondominant hip ER, active dominant total hip rotational ROM, and active nondominant total hip rotational ROM (mean change = +6.27°, +12.2°, +4.8, and +11.9°), compared to the TWG (mean change = +0°, +1.9°, -1°, and 1°) respectively.

Conclusion: Using TMR® motions and principles as a warm-up produced meaningful changes in active hip rotational ROM bilaterally in overhead athletes.

Level of Evidence: IIb

Key words: Contralateral exercise, hip range of motion, overhead athletes, movement system, warm up

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