THE FATIGUE INDEX: AN OVERLOOKED COMPONENET OF CRITERIA FOR RETURN TO SPORT (RTS) FOLLOWING UPPER EXTREMITY INJURIES AND USING UPPER EXTREMITY FUNCTIONAL PERFORMANCE TESTS (UEFPT)

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Purpose/Hypothesis: There is a lack of evidence on the effects of fatigue on UEFPT which may influence RTS decisions. The purpose was to investigate effects of fatigue on UEFPT. We hypothesized the fatigue protocol would result in decreased performance.

Materials/Methods: Forty-six participants, ages 21-34 years old (22 females) (mean age 24.7, mean weight 74.9 kg, mean height 170.2 cm) completed 3 testing sessions. First session was to establish 10-repetition maximum using seated landmine press, and weight for the fatigue protocol used 70%. The operational definition of fatigue was unable to keep up with the metronome, demonstrated compensations or lacked full range of motion for 3 reps. Sessions 2 and 3 consisted of one of the UEFPT as a pre-test, followed by fatigue protocol, finishing with same UEFPT as a post-test. Randomization determined testing sequence and which arm was tested. The UEFPTs were the closed-kinetic-chain-upper-extremity-stability-test (CKCUEST) and the seated single-arm shotput test (SSASPT).

Results: Using a paired t-test, CKCUEST demonstrated a significant decrease from pre-test to post-test ($p < 0.001$). SSASPT demonstrated significant decreases for both dominant (Dom) and non-dominant (Non-Dom) arms from pre-test to post-test ($p < 0.001$, $p < 0.001$).

Conclusions: Results indicated fatigue significantly reduced the CKCUEST and SSASPT post-test values supporting our hypothesis. The results suggest fatigue plays a role in decreasing performance on the UEFPT and should be considered for RTS.

Clinical Relevance: If the patient performs the UEFPT in a non-fatigue state, passes, re-tests in a fatigue state and passes by not decreasing more than the MDC, we recommend discharging the patient as long as they have met all the other criteria. However, if the patient performs the UEFPT in a non-fatigue state, passes, re-tests in a fatigue state and fails it by decreasing more than the MDC, we recommend continuing rehabilitation to increase endurance and work capacity.

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