

ABSTRACT

MUSCLE FIBER TYPE ESTIMATION IN AN ISOTONIC LEG EXTENSION TEST

The validity of using repetition range in an isotonic leg extension test to estimate muscle fiber composition was investigated. Eleven healthy, low-risk males (22.5 ± 2.29 yrs.) performed a drop-set isotonic protocol to volitional exhaustion. The results of the isotonic test were correlated with muscle fiber composition estimated by the performance of a Thorstensson Fatigue Test. A non-significant correlation ($r=.451$, $p>.10$) was found between isotonic 1RM (35.12 ± 1.92 kg.) and %FT fibers (49.81 ± 11.51). The correlation between reps performed at 80% 1RM (10.19 ± 2.72) and %FT fibers was non-significant ($r=.450$, $p>.10$). The relationship between reps performed at 60% 1RM (6 ± 1.73) and %FT fibers was also non-significant ($r=-.024$, $p>.10$). The total number of isotonic reps (16.18 ± 2.44) was correlated with %FT fibers and found to be insignificant ($r=.374$, $p>.10$). The results of this study determined that isotonic repetition range is an invalid method for fiber type estimation.

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