

Article title: Contralateral Repeated Bout Effect in the Triceps Surae After Unilateral Heel Drop Exercise at 2- and 7-Day Interbout Intervals

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Online Resource 1. Exercise task characteristics during the first (ECC1) and second (ECC2) eccentric exercise bouts in the 2-day (2D) and 7-day (7D) interbout interval groups.

Eccentric Exercise Task Characteristics

The eccentric phase of each heel drop was identified from the ankle angle signal as the descending portion of the movement. The duration of this phase was defined as the time under tension. Impulse was calculated as the integral of the vGRF over the same period. Mechanical work was approximated as a within-participant work index from the synchronised vGRF and ankle angle data, computed as:

$$\text{Work Index} = \text{mean vGRF} \times \text{Achilles tendon moment arm} \times \text{angular displacement}$$

where angular displacement was expressed in radians.

A constant Achilles tendon moment arm of 0.05 m was applied to all participants as an order-of-magnitude estimate consistent with in vivo MRI-based adult values (approximately 52.5 ± 5.6 mm) (Alexander et al., 2017). Achilles tendon moment arm is known to vary with ankle angle and to increase during strong plantar flexion activation compared with rest (Maganaris et al., 1998). Accordingly, this work index was used only to assess the within-participant consistency of task execution across bouts and was not intended to quantify absolute musculotendinous work. Angular displacement was calculated for each participant as the mean ankle joint angular excursion during the eccentric phase, which was derived directly from the electrogoniometer signal. Mean values across all valid repetitions were obtained for each bout. These variables served as indicators of task execution consistency, rather than experimental outcomes.

Supplementary Table S1. Exercise task characteristics during the first (ECC1) and second (ECC2) eccentric bouts in the 2-day (2D) and 7-day (7D) interbout interval groups. Values are mean $\pm$ SD. The 95% confidence intervals (CI) represent the within-group standardised mean change (d_z) from ECC1 to ECC2 and are provided to aid interpretation of the bout-to-bout consistency in task execution.

Variable	Group	ECC1 Mean $\pm$ SD	ECC2 Mean $\pm$ SD	95% CI (standardised change)
Total Time Under Tension (s/bout)	2D	873 $\pm$ 136	832 $\pm$ 93	[-1.05, 0.24]
	7D	916 $\pm$ 46	904 $\pm$ 93	[-1.04, 0.41]
Time Under Tension (s/rep)	2D	3.84 $\pm$ 0.63	3.69 $\pm$ 0.43	[-1.04, 0.26]
	7D	4.12 $\pm$ 0.32	4.01 $\pm$ 0.36	[-1.57, 0.26]
Range of Motion ($^{\circ}$/rep)	2D	51.7 $\pm$ 11.1	44.6 $\pm$ 15.7	[-1.74, -0.50]
	7D	46.9 $\pm$ 6.0	45.9 $\pm$ 4.8	[-0.80, 0.46]
Vertical Ground Reaction Force (N/rep)	2D	718 $\pm$ 149	761 $\pm$ 166	[0.29, 2.45]
	7D	713 $\pm$ 178	730 $\pm$ 192	[-0.38, 0.95]
Impulse (N·s/rep)	2D	2688 $\pm$ 473	2767 $\pm$ 514	[-0.44, 0.85]
	7D	2931 $\pm$ 845	2935 $\pm$ 864	[-0.87, 0.51]
Estimated Work Index (J/bout)	2D	7175 $\pm$ 1369	6469 $\pm$ 2323	[-1.1, 0.12]
	7D	6420 $\pm$ 1452	6515 $\pm$ 1426	[-0.45, 1.01]

References

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