

DELAYED ONSET MUSCLE SORENESS AND PROPRIOCEPTION

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Although some effects of delayed onset muscle soreness (DOMS) are well documented, the impact of DOMS on proprioception – awareness of body and limb position in space and time has not yet been investigated. Delayed onset muscle soreness may affect neuromuscular sensory receptors and neural pathways due to microtears in the muscle, which could reduce proprioceptive abilities. **PURPOSE:** Investigate effects of DOMS on three selected measures of proprioception. **METHODS:** Using digital inclinometers, and data acquisition system; proprioception was assessed by participants' (n = 19) ability to actively replicate a target angle (actively-determined reference) and ability to replicate joint angle velocity of knee flexion and extension. Force gradation, the ability to produce a target sub-maximal isometric force (25%, 50%, or 75% maximal voluntary isometric contraction), was assessed via force transducer. All testing trials were conducted in a random and repeated design and without immediate visual or auditory augmented feedback. After establishing baseline sensitivity and proprioceptive abilities, one leg was chosen at random to undergo a customized resistance training regimen, to induce DOMS, using the contralateral leg as the control. Post-testing followed approximately 48hrs post exercise regimen. For each set of proprioceptive test absolute error and percent error (from reference value) were calculated; percent error was used for analysis. **RESULTS:** Two-way repeated measures ANOVA ($\alpha=0.05$) revealed no differences amongst the PrePost, ConExp, or PrePost* ContExp main effects for joint angle replication, joint movement velocity replication, or force gradation.

	Control (CONT)	Experimental (DOMS)
	Pre-test, Post-test	Pre-test, Post-test
Angle Replication (% error)	1.82± 0.84, 1.80 ± 0.52	1.85 ± 0.82, 1.86 ± 0.55
Velocity Replication (% error)	19.89± 5.89, 18.56 ±5.37	20.35 ± 5.33, 20.44 ± 6.09
Force Gradation (% error)	25.75 ± 14.17, 24.07 ± 9.50	24.42 ± 9.57, 23.11 ± 9.71

CONCLUSION: Delayed onset muscle soreness had no effect on ability to replicate a target joint angle, joint velocity, or ability to scale submaximal force.