**ABSTRACT**

Muscle activation was assessed by electromyography (EMG) using surface electrodes (sEMG) affixed to forearms of ten male volunteers (age = 21.1±2 years) volunteering to participate in the present study. All subjects served in Bout 2 suggests interference in excitation-contraction coupling while fatigue within each bout appears to be dominated by neural factors. Decrease in muscle activity within each bout suggests Phase 1 fatigue is the result of neural impairment. Consequently, recovery from exhaustion is not simply a function of metabolic changes, but involves a “central” motor drive. The results indicate that muscle activation was reduced during Phase 1 fatigue, and there was no evidence of muscular fatigue with potentiation being equally evident in the bout and recovers slower between bouts. Consequently, recovery from muscle contractions has been shown to be phasic in that there is dissociation between mechanical and metabolic recovery (Brechue et al., 1992; Miller et al., 1987). Studies have shown cases where metabolic changes and contractile changes that might be occurring in the excitation-contraction coupling (Brechue et al., 1992; Miller et al., 1987). In these cases, recovery from exhaustion is not simply a function of metabolic changes, but involves a “central” motor drive. The results indicate that muscle activation was reduced during Phase 1 fatigue, and there was no evidence of muscular fatigue with potentiation being equally evident in the bout and recovers slower between bouts.

**RESULTS**

Data are presented as means. Standard deviations are not shown for clarity but are less than 10% of the mean.

- Force generation decreased ~85% during Bout 1 and decreased 75% during Bout 2. Initial force of Bout 2 was ~80% of Bout 1 (see Figure 1).
- Phase 1 slopes were greater than Phase 2; slope of Phase 1 was similar between bouts as were the slopes of Phase 2.
- Initial MPF was greater in Bout 2 than in Bout 1 and similar thereafter (see Figure 4A, B, C, D).
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**REFERENCES**