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DOES A BRISK SIX MINUTE CAUSE UPPER-BODY FATIGUE IN FEMALES?

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BACKGROUND: Non-local performance fatigue (NLPF) can be described as performance decrements occurring for a muscle group that was not directly involved in the fatiguing activity that preceded. Most studies on NLPF involve strenuous exercise of an isolated joint in trained populations, however, little evidence exists on NLPF derived from activities mimicking acts of daily living. Determining whether NLPF exists following brisk walking is worthwhile, and rate of force development (RFD), the rate at which muscle force is produced, may possess increased susceptibility compared to maximal strength. The purpose of our ongoing study is to determine the responses, if any, for maximal strength and RFD of the upper-body after brisk walking in young and middle-aged females. **METHODS:** Eleven untrained, females (31.5 ± 17.7 yrs) completed a testing visit 3-7 days following a familiarization session. Subjects completed handgrip testing before and 3, 7, and 11 min after a brisk 6-min walking task where they were instructed to “cover as much distance as possible”. Subjects were instructed to squeeze the handgrip dynamometer as “hard and fast as possible”. Peak force (i.e., maximal strength), and peak, early (0-50 ms), and late (0-200 ms) RFD were calculated from the force-time curve. One-way ANOVAs with Bonferroni corrected post hoc comparisons were used to assess changes across time. **RESULTS:** RFD 0-200 was decreased at 3 min post ($p = 0.004$), whereas all other measures remained unchanged. **CONCLUSIONS:** Our finding that muscle function (late RFD) is reduced 3 minutes after a brief bout of brisk walking in young, healthy females suggests that RFD is more sensitive to NLPF than maximal strength. Our future analysis will incorporate middle-aged adults to determine if they demonstrate greater fatigue-related decrements, which would likely have greater implications for physical functioning.