

## **The Neuromuscular and Muscle Damage Responses to the Farmers Walk: A Pilot Study**

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### **ABSTRACT**

The Farmer's Walk (FW) has been suggested as a useful supplement to resistance training due to its premise as a functional training tool. Minimal information is available concerning biochemical and neuromuscular responses associated with performing the FW. Current literature regarding risks of muscle damage associated with the FW are limited impacting possible use in exercise prescription and application. **PURPOSE:** The purpose of the study was to investigate the neuromuscular and biochemical responses to the FW when compared to an individual's unloaded walking pattern (Non-weighted condition; NWC). **METHODS:** Fifteen participants (Mean  $\pm$  SEM; age:  $21.6 \pm 0.5$ yo; ht:  $172.5 \pm 2.4$ cm; wt:  $81.8 \pm 4.0$ kg; body fat:  $28.8 \pm 2.1$ %; relative 1RM (lean body mass):  $2.2 \pm 0.1$ ) completed an initial session which involved collection of body composition via DXA (iDXA, Lunar Prodigy; GE Healthcare, Madison, WI), lower body power via countermovement jump (CMJ) (Just Jump System; Probiotics, Huntsville, AL), and lower body strength via high-handled hex-bar deadlift (Rogue Fitness, Columbus, OH). Participants then completed two counter-balanced conditions which included questionnaires (Visually Perceived Muscle Soreness; VPMS), blood draws (PRE, IP, R30, and R60), and an exercise protocol performed either carrying weight (FWC) or not (NWC). Blood draws, CMJ height, and VPMS scores were collected at three recovery time points (R24h, R48h, and R72h) for both protocols. **RESULTS:** Significant differences were observed between conditions for overall, upper body, and specific lower body VPMS measurements ( $p = 0.00-0.035$ ), but no significant differences were observed for vertical jump height. Biochemical analysis (Creatine Kinase and Myoglobin) will be completed when assay kits are received. **CONCLUSION:** Self-reported measurements of muscle damage were significantly different between the FWC and NWC, however these subjective reports of soreness did not seem to relate with the limited effects seen on indirect indices of neuromuscular measurements of performance.