

ALEX FRANKE, SKYLAR CARRINGTON, LAUREN WELSH, CAMERON KALINSKI and NATALIA OMELCHENKO, Department of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV 26074. Muscle Fatigue: Gender Differences.

Numerous studies have shown women have a greater resistance to fatigue than men; therefore, women are able to sustain continuous and intermittent muscle contractions at low to moderate intensities longer than men. Here we revisited this question for continuous contraction of maximum intensity. The parameters of muscle activities (max strength and half-max fatigue times) were recorded in male and female healthy volunteers (19-23 years old) using iWorx Stations and LabScribe2 software. During the experiment the subjects were asked to squeeze the bulb of the hand dynamometer as tightly and as long as possible in an attempt to fatigue the muscles of the forearm. As time passes, the subject's muscle force decreased to 25% of the original force, and we told the subject to take a 5-minute break. After that the subject was asked to squeeze the bulb of the hand dynamometer as tightly and as long as possible again. The experiment was concluded when the subject's muscle force was decreased to 25% the second time. The changes in relative strength and electrical activity in each forearm between the first and second activities were measured and compared to 1) subject hand diameter, 2) hand dominance; 3) max strength of the hand; and 3) gender of the subject. Differences in muscle mass, utilization of foodstuffs during metabolism (reactions to produce ATP), and neuromuscular activation are discussed as contributors to the fatigue differences between the sexes.