

Muscular strength decrease and maximum endurance time assessment for a simulated truck pulling task / Can-Nan Yi, Fan Tang, Kai Way Li

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Abstrak

ABSTRACT

Assessing both the muscular strength decrease and maximum endurance time (MET) is essential in job design in industry. The objective of this study was to assess the muscular fatigue progress in simulated truck pulling tasks via examining the decrease in the pulling strength and the MET of tasks. The pulling strengths and subjective ratings of physical exertion of 20 male subjects were measured after they pulled a simulated truck stick under two loaded and time period conditions. Exponential function-based models of muscular strength and MET were established. The pulling strength after handling the simulated truck stick was significantly affected by the load ($p < 0.001$) and time period ($p < 0.0001$). The MET values between the two loaded conditions were significantly different ($p < 0.0001$). The pulling strength were negatively correlated ($r = -0.45$) with the subjective ratings of physical exertion. Developing of muscular fatigue in simulated truck pulling was discussed.