Abstracts

Poster: 0120

Dynamic Strength and Knowledge of Strength Affect Manual Materials Handling Strategy

X Zhang (1) presenting, DB Bartlett (1)

University of Illinois, Urbana, IL, United States (1)

This study investigated (1) whether there is a relation between dynamic (isokinetic) strength and the batch-assorting strategy to initiate a manual materials handling task, and (2) how knowledge of strength influences the relation. Thirty-two participants (16 men and 16 women) were first tested for their isokinetic strengths of trunk extension, knee extension, shoulder extension, and shoulder abduction. The participants were then divided into two groups, each with 8 men and 8 women, such that the between-group strength difference was minimized. One group received knowledge feedback of their strength testing results and the other did not. All participants subsequently performed the same load handling task in which they were asked to carry batches of various weight plates while allowed to assort batches of more than one plate into any combination. Results suggested that people with greater strength tended to adopt a more aggressive handling strategy—heavier load per carry and fewer carries per batch. Receiving knowledge feedback also evoked a tendency of more aggressiveness, which was more salient in the weaker individuals. The research findings lend support to the use of strength testing in identifying higher risk handlers, and have implications for designing repetitive materials handling jobs and proper instructions to promote better strategies of balancing productivity and injury prevention.

NORA Symposium 2006

Research Makes a Difference

April 18-20, 2006

L'Enfant Plaza Hotel

Washington, DC

NORA

CDC Workplace Safety and Health

NIOSH

National Safety Council