

# Aging Workforce Costly

## Employee Selection and Placement thru Safety Solutions HR Ergonomic Program



We are observing more than usual upper extremity workers' compensation claims due to improper employee testing and placement. This observation is reflective in our aging and younger workforce. This is not a body mechanics issue but a bio-mechanics lack of assessment and training.

Overexertion, physical demands of the job, involves lifting, push/pull, forward reaching, overhead reaching, carrying, bending, squatting and other physically demanding job tasks.

Shoulder Muscle Fatigue Development in Young and Older Female Adults During a Repetitive Manual Task *Ergonomics*, 57(8), 1201-1212, 2014

**Authors:** Jin Qin, Jia-Hua Lin, Bryan Buchholz, and Xu Xu

### Abstract.

Age may modify the association between occupational physical demand and muscle loading, and ultimately increase the risk of musculoskeletal disorders. The goal of this study was to investigate age-related differences in shoulder muscle fatigue development during a repetitive manual task. Twenty participants in two age groups completed an 80-minute simulated low-intensity assembly task. Electromyography (EMG) manifestation of muscle fatigue was observed in the upper trapezius, deltoid and infraspinatus muscles in both age groups, and coincided with an increase in the subjective ratings of perceived exertions. Compared with the younger group, older group showed a more monotonic decrease in EMG power frequency in the upper trapezius and deltoid muscles. However, the age-related difference in EMG amplitude was less consistent. Relative rest time of the upper trapezius muscle in the older group was less than the young group throughout the task. The observed patterns of EMG measures suggest that older participants may have disadvantages in fatigue resistance in the upper trapezius and posterior deltoid muscles during the simulated repetitive manual task.

### Practitioner Summary.

A rapidly aging workforce in the USA and other countries poses new challenges for preventing work-related injuries. This study showed that during an 80-minute repetitive light manual work, older adults exhibited more consistent patterns of electromyography manifestation of shoulder muscle fatigue and less rest in the upper trapezius muscle than young adults.