

Ergonomics Laboratory – Biomechanics At York

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The Ergonomics Laboratory creates healthier workplaces by reducing individuals' risk of developing musculoskeletal injuries such as carpal tunnel syndrome, muscle strains and sprains, or low-back pain. These injuries are known to have large economic and social consequences.

Moore's team seeks to understand the mechanisms by which inappropriate interaction between a worker and their workspace leads to injury. How humans use their muscles, the postures they assume, the direction of joint movement and the forces they generate all affect the muscles' ability to use the rest available while working. The team continues to collect and analyze data in the laboratory with the ultimate goal of optimizing muscle recovery given the needs of the job to prevent muscle fatigue and injury. Lack of complete muscle recovery time is known to lead to muscle pain and lost time.

The researchers also develop exposure measurements that allow for meaningful risk assessment and incorporate these measurements into the workplace design process, emphasizing injury prevention.

For example, one study examines musculoskeletal loading during construction, which was measured in a field study using state-of-the-art sensors to measure postures of the trunk and arms throughout a full workday. Pilot studies and data analysis were all performed in the laboratory.

Another study examines the effect of visual requirements on neck and shoulder postures adopted during high-precision assembly tasks as subjects performed electronics assembly on an adjustable work surface.

