

TRUNK FLEXION STRATEGIES DURING SUDDEN LOADING

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Sudden loading has been shown through epidemiological studies to be linked with onset of low back disorders. The objective of this work was to identify response strategies used by individuals when subjected to sudden loading of the torso and determine the biomechanical consequences of the strategies employed. Eighteen subjects experienced "expected" and "unexpected" loadings while holding either an empty box or a pre-loaded a box. Dependent measures were comprised of kinematic and electromyographic data. Based on trunk flexion measurements subgroups were subgroups using stiff and flexible response strategies were identified. Those using the flexible strategy had greater posterior muscle response (agonist) and less antagonistic response from the anterior muscles. This finding suggest that those employing a flexible strategy may ultimately have a greater risk of over-exertion injury during sudden perturbations