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Relationship of performance on the sensory organization test to landing characteristics

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ABSTRACT

Jump landing tasks have been used to assess landing characteristics and require significant sensorimotor feedback to maintain functional joint stability (FJS) throughout the task. Postural stability (PS) also requires significant sensorimotor feedback and control and would seemingly involve similar sensory feedback pathways. However, previous literature clarifying the relationship between these two processes, maintaining FJS and PS, is limited. 80 Special Tactics Operators. PS was assessed using the Sensory Organization Test (SOT). SOT variables included: Composite, Somatosensory, Visual, Vestibular, and Preference scores. Landing characteristics were assessed using motion analysis during a double-legged (DLSJ) and single-legged (SLSJ) stop jump task. Pearson's correlation coefficients were calculated to assess the relationship between SOT scores and landing characteristics ($\alpha < .05$). For the DLSJ, significant correlations were found between: Composite and peak posterior ground reaction forces (−.257), Vestibular and peak knee abduction moment (−.237), and Preference and initial contact hip flexion (−.297), peak hip flexion (−.249). For the SLSJ, significant correlations were found between: Somatosensory and peak vertical ground reaction forces (−.246); Preference and initial contact hip flexion (−.295), peak hip flexion (−.262). The results indicate that the SOT may not be a sensitive enough tool to assess sensorimotor control in a healthy, athletic population.

KEYWORDS: Postural stability, stop-jump, landing mechanics, sensory organization test, SOT

Additional information

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