

## **Quantitative proprioception assessment across the lifespan**

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Falls are the leading cause of hip fractures and injury-related hospitalization among older adults. Proprioception, the body's sense of how it is positioned or moving in space is an integral part of overall postural stability. Previous studies have suggested that proprioception declines with age, but these studies are equivocal. The purpose of this research was to quantitatively assess proprioception across the lifespan.

In an on-going study, forty-two adults (20 young, mean age: 20 years; 16 mid-aged, mean age: 52 years; 6 older, mean age: 74 years) were recruited from the UNC-Asheville community. Hip joint proprioception was measured in the transverse plane; joint position sense (JPS) was determined using the magnitude of error between performance and target location for each trial to the nearest degree. Kinesthesia was measured by accurately detecting random internal or external passive rotation of the hip joint. Although there was a significant increase in proprioception errors in older versus young adults (JPS,  $p=0.0053$ ; kinesthesia,  $p=0.0076$ ), activity level may prove to be a protective factor.