

Comparison of Gait Parameters Between iTUG and Walking in Older Adults

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Abstract

Aging affects the biomechanics of gait and motor skills in older people. The Timed Up and Go test (TUG) is commonly used to assess motor skills. It involves standing up from a chair, walking 3 meters, turning around, returning, and sitting back down. Inertial sensors are increasingly being used to analyze the phases of the test and gait parameters, rather than just the total time. The TUG with IMU sensors is referred to as the Instrumented Test Up and Go (iTUG). The aim of this study was to evaluate the usefulness of iTUG test results for assessing gait in older adults. The study involved 30 older adults aged 60 to 77. The study consisted of two stages. The first stage was the TUG test, and the second was a 10-meter free walk. Temporal-spatial parameters and kinematics were analyzed. Statistically significant differences in parameters were observed in cadence, stride time, and velocity when comparing walking at preferred speed with the walking phase in the TUG test. The results indicate that the iTUG test reflects the natural gait pattern only to a limited extent.