

## THE IMPACT OF WALKER STYLE ON GAIT CHARACTERISTICS IN NON-ASSISTIVE DEVICE DEPENDENT OLDER ADULTS

Platz K, Hutchins T, Bennett M

St. Catherine University

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**BACKGROUND AND PURPOSE:** Approximately 24% of adults over 65 have reported using an assistive device (AD), and this number is expected to rise in the next 25 years. Although ADs are used to improve balance and increase independence, the impact of ADs on gait characteristics needs further exploration. The purpose of this study was to compare the impact of different ADs on gait characteristics in non-AD dependent, community-dwelling older adults.

**SUBJECTS:** 28 subjects completed the study, with 6 subjects being male.

**METHODS AND MATERIALS:** The BTS G-Walk was used to measure gait characteristics during four separate conditions: walking without an AD, using a two wheeled walker (2WW), using a four wheeled walker (4WW), and using a novel device known as the Gaiter. Subjects completed three trials of each condition in random order along a 100 foot walkway.

**ANALYSES:** A one-way ANOVA was used to analyze data for differences in gait speed, stride length, double limb support, and pelvic rotation between conditions.

**RESULTS:** The results of the one-way ANOVA showed a significant difference in double limb support. No significant differences were noted in stride length, gait speed, or pelvic rotation. However, gait speed approached significance when any AD was used. Gait speed was slowest with 2WW and 4WW. A post-hoc analysis revealed an increase in double limb support when subjects ambulated with a 4WW compared to no AD.

**CONCLUSION:** These results suggest that walker style does not significantly impact most gait characteristics in older individuals that are not dependent on an AD. The variable most impacted was double limb support. Increased double limb support has been shown to decrease gait speed and increase risk of falls.

**IMPLICATIONS:** This study holds clinical significance in that the prescription of a walker in this population has the potential to negatively impact gait.