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Comparison of Gait Patterns and Everyday Dual-Tasks in College Students

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Performing a dual-task (DT), such as texting and walking, has been shown to negatively impact gait patterns. Additionally, cognitive thinking and carrying tasks have also been linked to increases in step width and decreases in stride length and gait speed. **PURPOSE:** To compare the impact of everyday tasks on selected gait parameters in a college-aged sample. **METHODS:** Thirteen (7 females and 6 males) subjects ($M \pm SD$ age: 20.28 ± 1.50 years, body mass index: 26.88 ± 5.16 kg/m², height: 171.16 ± 8.00 cm, mass: 78.90 ± 18.94 kg) completed three trials for each DT condition. The conditions were control (CON), carrying groceries (CG), texting (TEX), and cognitive thinking (CT). Subjects were instructed to walk at their habitual walking pace for 15 m and a gait mat was placed in the middle of the walkway. Gait speeds (GS) were calculated for 5 m, 10 m, and 15 m. Statistical analysis for stride length (SL) was completed using 9 subjects due to missing data. Data were analyzed using a repeated measures ANOVA. **RESULTS:** The repeated measures ANOVA yielded a statistically significant difference for the calculated GS at 5 m ($F = 6.21$, $p = .028$), 10 m ($F = 28.18$, $p < .01$), and 15 m ($F = 36.061$, $p < .01$). Texting GS at 15 m decreased ($M \pm SD = 1.15 \pm 0.08$ m/s) by 14.2% as compared to the CON 15 m GS ($M \pm SD: 1.34 \pm 0.11$ m/s). A similar trend was noted during the CT ($M \pm SD: 1.11 \pm 0.12$ m/s); whereas GS decreased by 17.2%. SL ($F = 12.63$, $p < .01$) decreased when the subjects completed the TEX ($M \pm SD: 127.47 \pm 6.63$ cm) and CT ($M \pm SD: 124.67 \pm 11.93$ cm) DT conditions by 9.22% and 11.22% as compared to CON ($M \pm SD: 140.43 \pm 10.86$ cm). A statistically significant difference was also noted for cadence ($F = 11.27$, $p < .01$). Cadence decreased during the TEX ($M \pm SD: 109.88 \pm 4.69$ steps/min vs. CON: 114.96 steps/min) and CT ($M \pm SD: 107.22 \pm 8.66$ steps/min vs. CON: 114.96 steps/min) DT conditions. No differences were found between the CON conditions and CG or TEX and CT ($p > .05$) on the selected gait variables. **CONCLUSION:** Subjects walked slower, decreased their stride length and cadence when texting and computing basic math problems while walking. However, the selected gait variables were not negatively impacted by carrying groceries. These findings suggest college-aged students tend to focus more on certain tasks more than the motor skill.