

**Walking while wearing a google glass - what have we learnt? A Pilot study**

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**Abstract:**

To investigate if performing a single or dual task while walking affects gait. Single tasks were either auditory (listening to an experimenter-selected song) or visual (watching a video on Google Glass). Dual tasks included both the auditory and visual tasks concurrently. Methods: Thirty participants without marked gait deviations or prior injuries that would affect gait agreed to participate. A GAITRite mat was used to measure gait speed, gait velocity, step length, and stride length. First, each participant performed three trials on the GAITRite with no auditory or visual tasks to serve as a control condition. Second, for the single task participants walked with either the auditory task or visual task for five trials. Third, for the dual task, each participant walked with both the auditory task and the visual task for five trials. Results: Thirty subjects (15 men, 15 women) with a mean age of 24.1 years (SD 3.2), satisfied the eligibility criteria and were randomized into either the visual or the auditory single task group. One-way repeated measures ANOVAs were used to assess differences in gait performance across the three conditions within the two groups. Results showed statistically significant changes between control, auditory and single task groups in velocity, step length, cadence, and stance time, and between single and dual task groups in velocity, step length, and stance ( $P < 0.05$ ). Statistically significant differences were noted between visual control and single task groups in velocity and right stance time and between single and dual task groups in step length, cadence, and right stance time ( $P < 0.05$ ). Conclusion: Both visual and auditory single tasks can result in changes in gait. Therefore, this study can be used in clinical practice by physical therapists with individuals with certain balance, gait, and lower extremity pathologies to enhance function and safety in real world scenarios.