Effect of Texting While Walking on Reactions, Attention and Gait

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The dramatic increase in cellular device usage has significant impacts on daily living. The dangers of distracted driving have been well documented, but this interest has yet to shift to distracted walking. There has been a substantial rise in injuries being reported due to texting while walking (TWW). Whether this rise in injury rates is due to being distracted or because of altered gait mechanics, which can negatively affect reactions, remains unclear. This study was performed to examine the effect TWW has on selected parameters of gait, attention to the surrounding environment, and if texting increases the potential to put a pedestrian in an adverse position to react to harmful stimuli. Forty healthy participants (15 male, 25 female, 22.27 ± 2.54 years) participated in the study. Participants performed two trials while walking on a treadmill at a self-selected speed: one walking trial and one TWW trial. Participants were instructed to verbally react to visual stimuli that appeared on a projection screen 8 feet in front of them. For half of the participants, a researcher holding a 4-foot stuffed animal walked directly in front of the treadmill during the texting trial. The OWL camera system and motion analysis software were used to study gait biomechanics, reflective marker coordinates were utilized to calculate lower extremity joint ranges of motion using the Canadian Society of Biomechanics model, and a post study questionnaire was issued to examine attention to the manipulated environment in which participants were placed. We hypothesized that there would be a change in gait mechanics, especially total range of motion of the lower extremity joints, during the texting trial. We also postulated that attention to the environment would be substantially reduced. Results suggest that texting while walking has no significant effect on gait mechanics, particularly total range of motion at the ankle, knee, or hip. There was a significant reduction in attention to the environment, with participants of the texting trial missing approximately 10% of visual stimuli. Of the 20 participants that a researcher walked in front of, only 3 could recall a person walking in front of them, and no participant could name the object being carried. This information leads us to the conclusion that being distracted may be to blame for the increase in accidents while texting, not changes in gait mechanics. This requires further investigation.