

## **Influence of Peripheral Vision Restrictions on the Walking Trajectory When Texting While Walking**

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**Abstract :** One major problem related to the use of smartphones is texting while simultaneously engaging in other things, resulting in serious road accidents. Apart from texting while driving being one of the most dangerous behaviors, texting while walking is also dangerous because it narrows the pedestrians' field of vision. However, many of pedestrian text while walking very habitually. Smartphone users often overlook the potential harm associated with this behavior even while crossing roads. The successful texting while walking make them think that they are safe. The purpose of this study is to reveal of the influence of peripheral vision to the stability of walking trajectory with texting while walking. In total, 9 healthy male university students participated in the experiment. Their mean age was 21.4 years, and standard deviation was 0.7 years. They attempted to walk 10 m in three conditions. First one is the control (CTR) condition, with no phone and no restriction. The second one is the texting while walking (TWG) with no restrictions. The third one is restriction condition (PRS), with phone restricted by experimental peripheral goggles. The horizontal distances (HDS) and directions are measured as the scale of horizontal stability. The longitudinal distances (LDS) between the footprints were measured as the scale of the walking rhythm. The results showed that the HDS of the footprints from the straight line increased as the participants walked in the TWG and PRS conditions. In the PRS condition, this tendency was particularly remarkable. In addition, the LDS between the footprints decreased in the order of the CTR, TWG, and PRS conditions. The ANOVA results showed significant differences in the three conditions with respect to HDS. The differences among these conditions showed that the narrowing of the Pedestrian's vision because of smartphone use influences the walking trajectory and rhythm. It can be said that the pedestrians seem to use their peripheral vision marginally on texting while walking. Therefore, we concluded that the texting while walking narrows the peripheral vision so danger to increase the risk of the accidents.

**Keywords :** peripheral vision, stability, texting while walking, walking trajectory

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