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A VIBROTACTILE DEVICE TO HELP OLDER PEDESTRIANS TO GET AROUND SAFELY

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Old pedestrians are overrepresented in fatal accidents. Many studies have consistently shown slower decision making, wrong time estimation, slower walking speed and navigation difficulties that lead to dangerous pedestrian behaviors and/or travel reduction with aging. In this context, the present study aims at developing and assessing the efficiency of a vibrotactile navigation assistance to support old pedestrians to cross the street and get around safely.

To this end, 40 old participants aged between 70 and 80 and 20 young adults take part in two simulated pedestrian tasks. The first one is a street crossing task where participants actually cross a two-way experimental road in a virtual environment. The second one is a navigation task where participants have to go from point A to point B in a virtual city. Each task is performed with and without a vibrotactile wristband delivering alert messages (street crossing) and directional messages (navigation).

Data are currently being collected. We hypothesize that both young and old pedestrians will benefit from the vibrotactile aid system, with fewer dangerous street crossing decisions and more efficient navigation patterns. We expect a stronger effect in the old participants' group.

If such a vibrotactile device offsets difficulties related to cognitive and perceptual decline in old pedestrians, it can contribute to maintaining their travel autonomy and reduce the risk of fatal accidents.

[Thematic area: D. Work and organization](#) – [Topic: J. Traffic and transportation](#)