

H-W. Wahl, F. Oswald, E. Voss, O. Schilling, T. Freytag. Tracking technology as a means to learn about outdoor mobility in cognitively impaired older adults. *Gerontechnology* 2008; 7(2):237. One of the behavioral manifestations of age-related cognitive impairment is severe problems with out-of-home mobility. The assessment of outdoor mobility usually relies on reports of family caregivers and institutional staff, using observational approaches, activity monitoring, or behavioral checklists. The recently started project 'SenTra', a German-Israeli cooperation funded by the German-Israeli project coordination, intends to measure outdoor mobility by taking advantage of tracking technology in an interdisciplinary project involving researchers from Geography, Social Work, Gerontology, Psychology, and Medicine (Figure 1). The focus is to assess mobility patterns of urban living cognitively impaired persons as well as unimpaired controls over a period of three years. The explicit consideration of ethical aspects involved in the use of tracking technology is a substantial component throughout the project. Main objectives are (i) to assess positive and negative evaluations of technology use among participants with different levels of cognitive functioning, (ii) to assess differences in daily outdoor mobility patterns of participants with different levels of cognitive functioning, and (iii) to analyze how participant's mobility patterns are related to their own well-being and that of their families. **Method** Data were drawn from the German SenTra pilot study completed in 2007<sup>1</sup>. A wide range of psychiatric, personality-related, and environment-related variables was assessed in a group of 19 men and women, 63-80 years old (6 demented, 6 mildly cognitive impaired, 7 healthy). To gather information on the spatial activity of participants the project utilizes the Global Positioning System (GPS) as the chosen location technology. Participants wear a monitoring unit and a watch. The high resolution spatial and temporal data, obtained with GPS devices enables analysis of the average pace of walking in different segments of the path, the time spent in different places, the total length of the trip, etc. Finally, qualitative evaluations on the ease of use of the tracking kits were systematically collected. **Results** Preliminary pilot findings revealed the feasibility of the rather complex data assessment approach used in SenTra. However, there is the need to improve the involvement of the participant's immediate social network and to keep in close contact with the person to maintain his/her commitment and interest, particularly among the cognitively impaired groups. Moreover, participants reported gains and challenges of the use of tracking technologies in all groups of participants. **Conclusion** In conclusion, pilot findings revealed that a technology-based fine-tuned assessment of outdoor mobility patterns in cognitively impaired older adults is possible. An optimized assessment procedure has been implemented in the now started main data collection phase.

### References

1. Shoval N, Auslander GK, Freytag T, Landau R., Oswald F, Seidl U, Wahl H-W, Werner S, Heinik J. *BMC Geriatrics*; in press

**Keywords:** tracking technology, outdoor mobility, dementia, mild cognitive impairment

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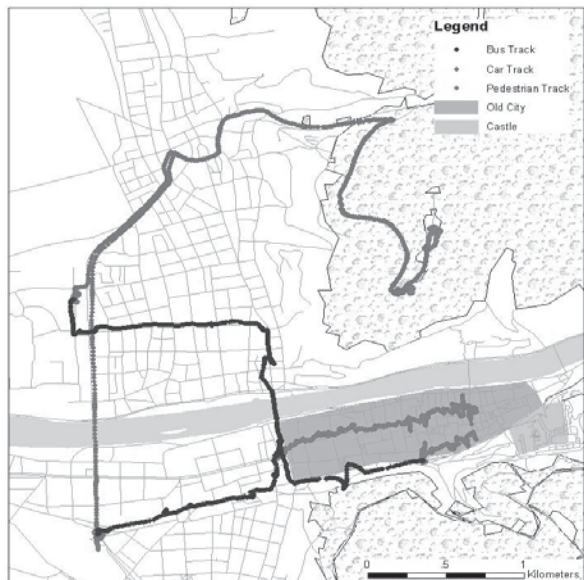


Figure 1 A tracking example