L. MCINNES, P. BRIGGS, L. ROCHESTER, L. LITTLE, A. WATSON, N.HOPLEY. New metrics for exploring the relationship between mobility and successful ageing. Gerontechnology 2010;9(2):309; doi:10.4017/gt.2010.09.02.153.00 **Purpose** Aging is generally associated with a decrease in mobility and social interaction[1]; this decrease can be dependent upon health and social factors. Sustaining levels of activity is important for successful ageing, those with mobility problems suffer in a variety of ways. Social lives become restricted and the less mobile become limited in terms of their access to nutrition, leisure and other activities, leading to dependence on others[2] for visits to shops and to other services[3]. Although mobility is an issue for ageing there are two gaps in knowledge. First, relatively little is known about mobility in the oldest-old and secondly there are methodological problems in that determining the extent to which older people are active in their environment has been limited largely to self-report studies. The aim of this study was to utilise innovative methods (activity monitoring methods combined with data from state-of-art location-aware technologies) in order to develop new metrics for mapping the mobility of the oldest-old members of an existing 20 year longitudinal study of aging[4]. **Method** 86 survivors (aged 72- 92 years old) of a 20 year longitudinal study of aging participated (mean age 79 years). Participants attended two laboratory assessments to assess gait, balance and cognitive ability and then wore an accelerometer and a location-aware device for 7 days. The accelerometer monitored their sitting, stepping and standing movements and the *i-locate* device noted journeys made outside of the home through use of GPS. Participants also provided information on a range of other health and well-being measures and completed time use diaries noting activities and journeys. **Results & Discussion** Cognitive ability, health and well-being measures demonstrated that participants were successfully aging. Activity profiles were comparable to earlier reports for healthy older adults and within recommended physical activity guidelines. Self-reported levels of activity, measured by the CHAMPS questionnaire, were similarly comparable. Regression analyses show that a measure of single leg balance is the best predictor of mobility as measured by both the accelerometer and time use diaries whereas gait speed, health and performance on a 'Timed up and Go' test which measures 'functional mobility' were the best predictors of distance travelled away from home. Further analyses will examine whether data gathered longitudinally over the past 20 years can predict current mobility and successful aging.

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