## Abstract #: 1383
## Interaction of cognitive decline and walking ability to influence wandering behavior: a cohort study

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**Background:** Wandering behavior is one of the most troublesome behavioral disturbances in dementia. Though cognitive decline leads to wandering behavior, its effects may vary across walking ability. The purpose of this study was to investigate the joint effect of cognitive decline and walking ability on wandering behavior.

**Methods:** This retrospective cohort study in community analyzed 3920 elderly adults with dementia. The association of cognitive function and walking ability with an incidence of wandering behavior during a 5-year follow-up period were examined using a generalized linear model, and relative excess risk due to interaction was calculated.

**Results:** Compared to 'walk independently', adjusted risk ratios (95% confidence intervals) for 'walk with help' and 'unable to walk' were 0.51 (0.42, 0.63) and 0.21 (0.16, 0.28), respectively ($P$ for trend $< 0.001$). Compared to mild cognitive decline, adjusted risk ratios (95% confidence intervals) for moderate and severe cognitive decline were 1.44 (1.17, 1.77) and 1.73 (1.36, 2.18), respectively ($P$ for trend $< 0.001$). Additionally, some joint effects of cognitive decline and walking ability decline were lower than the sum of its individual effects (relative excess risk due to interaction (95% confidence interval), moderate cognitive decline × 'walk with help': -0.45 (-0.98, -0.01); severe cognitive decline × 'unable to walk': -0.95 (-1.71, -0.37)).

**Conclusions:** Effects of cognitive decline and walking ability on incidence of wandering behavior were observed, and the effects varied depending on their combination.

**Key messages:** Our results help clinicians to predict and manage wandering behavior.