

# Gait abnormalities as early signs of DEMENTIA

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With aim to evaluate spatiotemporal gait parameters as predictor of EARLY DEMENTIA in a population based cohort of 4000 men and women

Gait disorders are frequent in individuals with cognitive disorders. However, the profile of spatiotemporal gait parameters in the different cognitive status in aging (from normal cognition to dementia) has been poorly studied. Determining this profile associated with the severity of cognitive disorders may be helpful to understand the complex interplay between gait and cognitive disorders and, thus, may have important implication for the diagnosis process of patients with and without dementia. For instance, defining a motor phenotype of the severity of cognitive disorders by using quantitative gait measurements could be used to improve the prediction and the diagnosis of dementia.

The study population will consist of 4000 individuals, from the Healthy Ageing Initiative at Umea University, Sweden ([www.healthyageinginitiative.com](http://www.healthyageinginitiative.com)). The inclusion criteria for this study is 1) residence in the Umea municipal area and 2) age of exactly 70 years at the time of testing. Gait measurements are obtained using the validated GAITRite system (CIR Systems, Sparta, NJ, USA), an 8.6-m-long and 0.88-m-wide electronic walkway containing sensors situated 1.27 cm apart. The GAITRite system measures temporal and spatial gait parameters, with automatic initiation of the gait sequence from the first footfall contact and termination after the last. Cognitive function is measured at baseline using the MMSE-scale. Dementia during follow up is tracked in national registers.

The overall purpose of the present study is to increase the understanding about changes in gait, cognitive function and development of dementia in older people.