

# Slowness of gait can predict risk of frailty in older people

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Credit: Peter Griffin/public domain

Researchers at the Federal University of São Carlos (UFSCar) in the state of São Paulo, Brazil, in partnership with colleagues at University College London in the UK have discovered an efficient, simple and inexpensive method of predicting the risk of functional disability in older people. They analyzed data from more than 3,000 over-sixties living in England and found that slowness of gait alone can be

considered a predictor of loss of the capacity to perform the basic and instrumental activities of daily living (BADL and IADL).

"Our study showed that measuring gait speed alone is sufficient for efficient prediction of loss of functional capacity in older adults. Based on our findings, we can say that slowness of gait precedes this loss by several years. This is an important result because it facilitates monitoring of the problem. It also enables not just physical therapists, clinicians and geriatricians but also any health professional to detect the risk," said Tiago da Silva Alexandre, a professor at UFSCar's Department of Gerontology and principal investigator for the study.

An article on the study is published in the *Journal of Cachexia, Sarcopenia and Muscle*. The study was supported by FAPESP and analyzed data relating to physical condition, overall health and gait for participants in the English Longitudinal Study of Aging (ELSA).

Loss of capacity to perform BADL (getting out of bed, bathing, feeding, walking, dressing, etc.) and IADL (housekeeping, doing laundry, preparing meals, using transportation, shopping, handling finances, managing medications, etc.) may precede or appear at the same time as frailty.

Frailty, a condition found among a large proportion of older people, can be defined as a clinically recognizable state of increased vulnerability resulting from an aging-associated decline in physiological reserve and function, increasing the risk of falls, hospitalization, and death. Diagnosis entails a series of assessments to measure parameters such as gait speed, grip strength, physical activity level, exhaustion, and unintentional weight loss.

"Frailty is not a synonym for disability, but it's a risk factor for loss of functional capacity," Alexandre said. "We assessed frailty syndrome on

the basis of five symptoms or parameters. Subjects with one or two of these were classed as pre-frail and those with three or more as frail. This methodology is complex, requiring equipment and questionnaires. It's not universally used."

The researchers compared overall frailty with each of the five components, concluding that slowness of gait alone was the better predictor of BADL and IADL for both sexes. "It's an early indicator. The finding enables health professionals to detect a problem more easily. They can start sooner to investigate the causes of slowness," said Dayane Capra de Oliveira, first author of the article.

According to Alexandre, the sooner the problem is identified, the more resources and approaches can be brought to bear in treating it. "It's harder to start treatment when a subject already experiences difficulties in several daily activities," he said. "There are options, but the results aren't as good as they can be when the problem is detected early on. That's why it's so important to offer a simpler, safer and cheaper approach to predicting loss of functional capacity."

The authors detected a higher risk of disability in BADL and IADL in pre-frail women than pre-frail men. The incidence of pre-frailty was a predictor of disability only in women. They note that women have been found to have greater physiological reserves than men and to better withstand changes in multiple systems. This may be due to the [higher incidence](#) in men of potentially lethal disorders such as stroke, cancer and lung disease, alongside unhealthy habits such as smoking and drinking, as well as the need to perform exhausting manual labor, while women live longer with debilitating ailments such as arthrosis, depression and high blood pressure.

Previous research highlighted differences in these processes in men and women aged 60 and over, Alexandre noted. "Along similar lines, our

study also suggests that men undergo a very short process of decline toward disability due to these more serious diseases, which can lead to death quite quickly, whereas frailty and disability last longer in women," he said.

For Capra, the study points to a significantly faster route to the early detection of decline and impending loss of capacity to perform daily activities in older people. "This will help implement rapid interventions before disability materializes," he said.

**More information:** Dayane Capra Oliveira et al, Is slowness a better discriminator of disability than frailty in older adults?, *Journal of Cachexia, Sarcopenia and Muscle* (2021). [DOI: 10.1002/jcsm.12810](https://doi.org/10.1002/jcsm.12810)

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