

Study reveals association between physical function and neurological disease

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A new study, based on data from the Framingham Heart Study (FHS) suggests a simple test of physical functioning may be able to help physicians identify individuals who are at a higher risk for developing Alzheimer's disease and stroke.

These findings, which appear in the *Journal of Alzheimer's Disease*, provide hope that there are easy-to-test clinical markers that will help physicians identify individuals who are at increased risk for common age-related neurological diseases.

It is known that as people age, there is a decline in physical capability, [muscle strength](#) and aspects of the nervous system that regulate and guide motor function and balance. Studies from recent years have shown that slow walking and weak [grip strength](#) can suggest that a person is in poor health and can even show that the individual is at high risk for poor health and disability in the future. Based on this information, researchers at Boston University School of Medicine (BUSM) were interested to learn whether the same measures of slow walking and weak grip could also predict the risk of common age-related neurological diseases.

FHS participants between the ages of 35 and 84 years were asked to walk a certain distance as fast as they could without running, and the time taken to complete the walk was recorded. Researchers also recorded the participant's maximum force on an object to estimate their handgrip strength. These participants were followed for up to 11 years.

After analyzing the results, the researchers found that individuals who had slow walking speeds and weak grip strength had a significant increase in risk of Alzheimer's disease. Additionally, participants older than 65 years had a higher risk of stroke if their hand grip strength was weak. "These findings suggest that measuring walking speed and handgrip strength can help predict who is at a higher risk of Alzheimer's disease and stroke. If

these findings are confirmed, these measures can serve as additional tools to screen people for stroke or dementia," explained corresponding author Galit Weinstein, PhD, adjunct assistant professor of neurology at BUSM.

The FHS consistently has been shown to be a reliable source of data. The authors admit, however, that the sample population is overwhelmingly of European ancestry and that further studies are needed to extend the findings to other populations. Regardless, there was still a strong association and these measures are simple, cheap and easy to perform and therefore could one day be used in any clinical setting," added Weinstein.

Provided by Boston University Medical Center

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