

Ability to sit and rise from the floor is closely correlated with all-cause mortality risk

December 13 2012

A simple screening test of musculo-skeletal fitness has proved remarkably predictive of all-cause mortality in a study of more than 2000 middle-aged and older men and women. The study, performed in Brazil by Dr Claudio Gil Araújo and colleagues at the Clinimex - Exercise Medicine Clinic in Rio de Janeiro, is reported today in the *European Journal of Cardiovascular Prevention*.

The test was a simple assessment of the subjects' ability to sit and then rise unaided from the floor. The assessment was performed in 2002 adults of both sexes and with ages ranging from 51 to 80 years. The subjects were followed-up from the date of the baseline test until the date of death or 31 October 2011, a median follow-up of 6.3 years.

Before starting the test, they were told: "Without worrying about the speed of movement, try to sit and then to rise from the floor, using the minimum support that you believe is needed."

Each of the two basic movements were assessed and scored out of 5, with one point being subtracted from 5 for each support used (hand or knee, for example). Subjects were thus assessed by a composite score of 0 to 10, which, for the sake of the analysis, was ranked as four categories (C1, 0 C2, 3.5-5; C3, 6.5; and C4, 8).

A film of the sitting-rising test can be seen below:

Over the study period 159 subjects died, a mortality rate of 7.9%. The

majority of these deaths occurred in people with low test scores - indeed, only two of the deaths were in subjects who gained a composite score of 10. Analysis found that survival in each of the four categories differed with high [statistical significance](#). These differences persisted when results were controlled for age, gender and [body mass index](#), suggesting that the sitting-rising [test score](#) is a significant predictor of all-cause mortality; indeed, subjects in the lower score range (C1) had a 5-6 times higher risk of death than those in the reference group (C4).

Commenting on the results, the investigators said that a high score in the sitting-rising test might "reflect the capacity to successfully perform a wide range of activities of daily living, such as bending over to pick up a newspaper or a pair of glasses from under a table".

However, in this study a composite score below 8 (that is, requiring more than one hand or knee support to sit and rise from the floor in a stable way) were associated with 2 fold higher death rates over the 6.3 year study period. By contrast, scores in the range of 8 indicated a particularly low risk of death during the tracking period. "Even more relevant," reported the investigators, "is the fact that a 1-point increment in the [sitting-rising] score was related to a 21% reduction in mortality." They added that this is the first study to demonstrate the prognostic value of the sitting-rising test.

Offering an explanation for the close correlation between the test scores and survival, Dr Araújo said: "It is well known that aerobic fitness is strongly related to survival, but our study also shows that maintaining high levels of body flexibility, muscle strength, power-to-body weight ratio and co-ordination are not only good for performing daily activities but have a favourable influence on life expectancy.

"When compared to other approaches to functional testing," added Dr Araújo, "the sitting-rising test does not require specific equipment and is

safe, easy to apply in a short time period (less than 2 minutes), and reliably scored. In our clinical practice, the test has been shown over the past ten years to be useful and practical for application to a large spectrum of populations, ranging from paediatric to geriatric."

Dr Araújo emphasised the great potential of the sitting-rising [test](#) among primary care physicians looking for a quick appraisal of musculo-skeletal fitness in clinical or industrial settings. "If a middle-aged or older man or woman can sit and rise from the floor using just one hand - or even better without the help of a hand - they are not only in the higher quartile of musculo-skeletal fitness but their survival prognosis is probably better than that of those unable to do so."

More information: Brito LBB, Ricardo DR, Araujo DSMS, et al. Eur J Prevent Cardiol 2012; [DOI: 10.1177/2047487312471759](https://doi.org/10.1177/2047487312471759)

Provided by European Society of Cardiology

Citation: Ability to sit and rise from the floor is closely correlated with all-cause mortality risk (2012, December 13) retrieved 11 May 2024 from <https://medicalxpress.com/news/2012-12-ability-floor-all-cause-mortality.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--