Age-reference values for the sitting-rising test derived from 6141 non-athlete adults

Authors:
CGS Araujo1, CL Castro1, JF Franca1, DSMS Araujo1, 1Exercise Medicine Clinic - CLINIMEX - Rio de Janeiro - Brazil,

Topic(s):
Risk Factors and Prevention – Epidemiology

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Background: The sitting-rising test (SRT) was developed in the 1990s as a simple and safe tool to simultaneously evaluate all the non-aerobic components of physical fitness - muscle strength/power, flexibility, balance, and body composition. Recently, the SRT has been shown to be a good predictor of all-cause mortality in subjects aged 51 to 80 years old. Notwithstanding, as the SRT scores tend to diminish with aging, reference values according to age are required for the correct interpretation of SRT scoring.

Purpose: to propose age-reference SRT scores for non-athlete adult men and women.

Methods: a retrospective analysis of SRT results from 6141 non-athlete adults (4101 men; 16-98 years old) evaluated between July/1998 and February/2018. Reference values were obtained separately for sitting on the floor and for rising from the floor. The score for each of the measures could range from 0 to 5, with half-point intervals. Meanwhile, the composite SRT - a sum of the sitting score with the rising score - could range from 0 to 10. A score of 10 meant the ability to sit and to rise from the floor without using any support - hand or knee - and without instability. The results were presented for each of the 15 consecutive age ranges with a five-year interval in colored bands of percentiles (P), being: P1-25 - red, P26-50 - yellow, P51-75 - green and P76-99 - blue.

Results: No clinically relevant intercurrence was recorded in more than 20 years of the routine use of SRT. A score of 10 was the most frequently seen in men aged 16 to 25 years old and in women aged 16 to 40 years old. However, less than 8% of men and women aged >55 years old achieved a score of 10. The SRT was highly discriminative - the presence of all four colored bands of quartile - between 46 to 80 years old in men and between 46 to 75 years of age in women. However, it is possible to discriminate at least two bands - favorable and unfavorable colors - across all age ranges analyzed.

Conclusion: The availability of reference values obtained, under well-controlled conditions, in a large sample of adults from both sexes in a broad age range (16 to 98 years) enables the clinical application of the SRT in the evaluation of non-aerobic physical fitness. Ideally, one should have a SRT value in the green or blue band, that is, equal to or above the median (P50) for a given age range and sex.
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