The association between cardiovascular risk and physical performance in individuals wit obesity: a cross-sectional study focusing on the 5 x sit-to-stand test.

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Introduction: although it is established that individuals with obesity are at increased risk of cardiovascular events, the relationship between cardiovascular risk and physical function in this population is still a topic of discussion. The objectives of the present study were: to check the association between cardiovascular risk and physical performance through physical-functional tests and to identify cutoff points for functional tests to be used for the definition of high cardiovascular risk.

Methods: a cross-sectional study included adults, both sexes, with obesity. Dual X-ray absorptiometry was used to assess body composition, Jamar® dynamometer to assess handgrip strength, and the sit-to-stand test to a chair with 5 repetitions and 60 s for physical performance analysis. The Framingham global risk score was used to determine cardiovascular risk.

Results: the sample consisted of 192 individuals with obesity, aged between 20 and 74 years (mean ± SD: 42.6 ± 12.7 years). The group with high cardiovascular risk presented worse values of handgrip strength and physical performance ($p < 0.05$). After adjusting for age, the 5× sit-to-stand test was associated (β = 0.21; OR = 1.24 [95 %CI = 1.05-1.45]; $p = 0.007$) with high cardiovascular risk, and the cutoff point of 16 s for performing the test was found to be discriminatory of high cardiovascular risk in obesity.

Conclusion: the findings indicate that clinical assessment tools, specifically those that assess the functionality of individuals with obesity, are related to an increased risk of cardiovascular events. The 5× sit-to-stand test showed good diagnostic accuracy in this context.