

Associations of Walking with Sarcopenic Obesity and Cardiovascular Disease Risk Factors in Older Adults

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Objectives: To investigate the associations of walking (steps/day) with sarcopenic obesity (SO) and cardiovascular disease (CVD) risk factors in older adults.

Methods: This cross-sectional study included 297 older adults aged ≥ 65 years (mean age 72, ranged 65-95). Walking was assessed using an accelerometer (Omron HJ-321) and categorized into thirds (tertile) based on the average daily steps. SO was defined based on physical function (gait speed), muscle strength (handgrip strength), and muscle mass (appendicular lean mass [ALM] index) according to the Foundation for the National Institutes of Health Sarcopenia Project diagnostic criteria, and % body fat (obesity as $\geq 25\%$ in men and $\geq 30\%$ in women) using Dual Energy X-Ray absorptiometry.

Results: Each 10,000 steps/day increase was associated with improved SO variables and CVD risk factors, specifically with 0.008 faster gait speed (m/s), 0.006 higher muscle mass index (ALM/BMI), 0.59 lower % body fat (%), and 0.68 lower fasting glucose (mg/dl) (all $p < 0.05$) in the linear regression after adjusting for age, sex, smoking status, and alcohol intake. Compared to low walking group, odds ratios (ORs) (95% confidence intervals [95% CIs]) in moderate and high walking groups were 0.18 (0.02-1.54) and 0.22 (0.03-2.01) for slow walking, 0.42 (0.14-1.30) and 0.34 (0.09-1.29) for weak handgrip strength, 0.45 (0.23-0.87) and 0.44 (0.22-0.88) for low muscle mass, 0.58 (0.13-2.57) and 0.46 (0.11-2.06) for high % body fat, and 0.62 (0.17-2.28) and 0.21 (0.02-1.78) for SO, respectively, in the multivariable logistic regressions. Compared to individuals without SO, ORs (95% CIs) in individuals with SO were 2.04 (0.58-7.18) for hypertension, 1.27 (0.39-4.22) for hypercholesterolemia, and 1.87 (0.37-9.45) for type 2 diabetes in the multivariable logistic regression. However, these associations appeared to be weaker after further adjustment for walking (steps/day).

Conclusion: This study suggests that walking in older adults is associated with lower risks of SO and CVD risk factors.