Abstract: 1272

Physical activity and mortality with and without cardiovascular disease

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Topic(s):
Prevention: Exercise

Citation:

Background/Introduction
Physical activity has been shown to reduce mortality in a dose-response fashion. Current guidelines recommend 500 to 1,000 MET-min per week of regular physical activity. However, evidence is limited regarding the specific dose-response relationship in patients with cardiovascular disease.

Purpose
Our aim was to compare the impact of physical activity on mortality in primary versus secondary cardiovascular prevention.

Methods
We analyzed 441,798 individuals with complete information on physical activity levels between 2009 and 2015 were extracted from a population-based cohort (National Health Insurance Service-National Health Screening cohort). Physical activity measured by self-report questionnaires. A rating of 2.9, 4.0, and 7.0 METs were assigned for light-intensity, moderate-intensity, and vigorous-intensity activities, respectively. Physical activity-related energy expenditure (MET-min/week) was calculated by summing the product of frequency, intensity, and duration. The level of physical activity was classified into 0, 0 to 499, 500 to 999, 1,000 to 1,499, and =1,500 MET-min/week. Study participants were stratified by the presence of cardiovascular disease, defined as prior myocardial infarction, ischemic heart disease, prior stroke, and/or chronic heart failure. The main study outcome was all-cause mortality. The median follow-up duration was 5.9 years.

Results
Individuals with cardiovascular disease had lower physical activity levels and a higher risk of mortality than those without cardiovascular disease. There was an inverse relationship between the physical activity level and the mortality risk in both groups. The benefit in the secondary prevention group was shown to be greater than that in the primary prevention group: every 500 MET-min/week increase in physical activity resulted in a 14% and 7% risk reduction in mortality in the secondary and primary prevention groups, respectively (interaction P<0.001). In addition, while individuals without cardiovascular disease benefited the most between 0 and 500 MET-min/week of physical activity, the benefit in those with cardiovascular disease continued above 500 to 1,000 MET-min/week. The adjusted mortality risk of individuals with cardiovascular disease who performed a high level of physical activity (=1,000 MET-min/week) was shown to be comparable to or lower than that of their counterparts without cardiovascular disease.

Conclusion
Individuals with cardiovascular disease may benefit from physical activity to a greater extent than do healthy subjects without cardiovascular disease. Clinicians should encourage patients with cardiovascular disease to maintain a physically active lifestyle as much as possible.
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Interaction P<0.001