Commentary on Viewpoint: Exercise and cardiovascular risk reduction: Time to update the rationale for exercise?

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TO THE EDITOR: Exercise training reduces cardiovascular morbidity and mortality in the general population. In the Journal of Applied Physiology, Green and colleagues (2) report that these beneficial effects of exercise should be, at least in part, due to exercise-induced augmentation or improvement of vascular function and structure. Several investigators, including us, have shown that moderate intensity exercise augments or improves endothelial function in healthy subjects as well as in patients with cardiovascular disease (3, 4). Indeed, guidelines for prevention of atherosclerosis recommend aerobic exercise of moderate intensity. Although exercise intensity is most important, appropriate duration, frequency, and kind of exercise should also be kept in mind. Guidelines for hypertension recommend exercise at an intensity of ~50% of maximum oxygen consumption (moderate intensity exercise) for 30 min per time and five to seven times per week for patients (1, 5). In accordance with these guidelines, reduction in blood pressure by exercise appears after 10 wk when patients perform exercise for at least 30 min per time and at least three times per week. However, the most appropriate intensity, duration, frequency, and kind of exercise for anti-atherosclerosis, including augmentation or improvement of vascular function and structure, are unclear. Intense exercise and long duration (several hours) of exercise per time can be hazardous to human vessels. In addition, at present, there is the question of how long the beneficial effects of exercise on vascular function and structure continue after exercise cessation. Future studies should also focus on these issues.

REFERENCES