



Role of Physical Exercise in Reducing Risk of Cardiovascular Diseases

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DESCRIPTION

Regular exercise has long been known to be cardio protective and Sedentariety, on the other hand, is a known risk factor for cardiovascular disease. Furthermore, multiple indicators imply that exercise capacity is a substantial predictor of mortality from any cause in both healthy and cardiovascular disease patients. However, the particular methods by which regular physical exercise protects the heart and circulatory system remain unknown. Exercise most likely has several effects. Regular exercise may alter gene expression, resulting in changes in the production of bioactive molecules such as proteins and enzymes; another potential site of action is on the mechanisms of cardiovascular regulation during effort, which improve after periods of training; and finally, exercise may affect endothelial and platelet functions, lowering the risk of atherosclerosis and, as a result, the risk of infarction and stroke.

According to the American Heart Association, a sedentary lifestyle is one of the five primary risk factors for cardiovascular disease (together with high blood pressure, abnormal blood lipids, smoking, and obesity). Many scientific studies demonstrate that lowering these risk factors lowers the risk of having a heart attack or another cardiac event, such as a stroke, and lowers the likelihood of requiring a coronary revascularization operation (bypass surgery or coronary angioplasty). Many of the identified risk factors for cardiovascular disease are improved by regular exercise. Exercising, for example, can help you lose weight and lower your blood pressure. Exercise can lower "bad" cholesterol levels (Low-Density Lipoprotein (LDL) level) as well as total cholesterol levels in the blood, while also raising "good" cholesterol levels (the High-Density Lipoprotein level (HDL)). Regular exercise improves the body's capacity to use insulin to manage blood glucose levels in diabetes people. Although the effect of an exercise program on any single risk factor may be minimal, when coupled with other lifestyle changes (such as the

adequate diet, smoking cessation, and medication usage), the effect of continuous, moderate exercise on total cardiovascular risk can be profound. The production of triglycerides within non-adipose tissue cells, which normally contain just a little amount of fat, is known as ectopic fat. Ectopic fat is usually seen in the visceral tissues, liver, heart, and/or muscle. Epicardial fat is associated to increases in visceral fat, insulin resistance, triglyceride levels, and blood pressure, as well as the metabolic syndrome in general. The pathogenesis of cardiovascular diseases is linked to epicardial fat buildup. They looked at the effects of cardiovascular exercise (without a food limitation) on ventricular epicardial fat thickness and found that it was considerably decreased following aerobic exercise training, and that it was also linked to reductions in visceral adipose tissue. Exercise resulted in a higher reduction in epicardial fat than it did in terms of BMI and body weight. Even in the absence of any weight reduction, exercise decreases waist circumference and promotes declines in abdominal and visceral fat in both men and women of all ages. As a result, increasing physical activity reduces pro-inflammatory adipokine release, which is linked to a reduction in the amount of fat deposited in abdominal depots. In lean and overweight normoglycemic people, exercise has a comparable effect on cardiovascular benefits. A 16–20 percent increase in energy expenditure (any form of exercise) with no diet intervention resulted in a 22.3 percent decrease in body fat mass and lower LDL cholesterol, total cholesterol/HDL ratio, and C-reactive protein concentrations, all risk factors associated with CVD, in a one-year study of non-obese individuals. When compared to inactive adults, 7–9 months of low-intensity exercise (walking 19 km per week at 40–55 percent VO_2 peak) significantly improved cardiorespiratory fitness. These findings suggest that exercise programs can reduce the risk or severity of cardiovascular disease in people who are lean, obese, or have type 2 diabetes.

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