

Aerobic Exercise And Mechanisms Associated With Improving Cardiovascular Health

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Abstract

Cardiac attacks and cardiomyocyte damage prevail in society and mainly affect the adult population. It also vigorously causes diabetes and obesity with reduced oxygen intake, accumulation of fat over the heart, stiffness of vessels, and abrupt blood pressure. Though cardiac transplant, insulin vaccination, and body fat removal are some possible solutions, they are expensive, limited, and highly risky. Aerobic exercise on a regular basis for some prolonged period can achieve health goals efficiently. The aerobic training program can improve cardiovascular health in diabetic as well as obese persons with the passage of time.

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Introduction

Cardiac problems and issues are swelling in society day by day irrespective of the age strata of citizens, i.e., either young or old. Similarly, improving cardiovascular health and cardiac circulation in humans is equally recommended and required for healthful persons or diseases like diabetes and obesity. Specific reasons have been quoted for such damage, and top-ranking among them is diminished regeneration of healthy tissues and lessened availability of oxygen to the human body. Aerobic exercise, usually termed cardio exercise, is highly appreciated in this context. These exercises cause the contraction of large body muscles, resulting in high efficiency in the cardiovascular system in humans. Aerobic exercises provide an ample quantity of oxygen to body muscles and improve heart functioning, blood circulation, and the efficiency of blood vessels, as well as activate cardiac regeneration genes. Meanwhile, they are beneficial for persons suffering from diabetes and obesity. Aerobic exercise is a blessing for such personals, and it is noteworthy that the number of persons with these issues is on the rise in our society rapidly with the passage of time.

Discussion

Heart failure plays a reasonable role in increasing mortality worldwide. Overall structural and functional abnormalities in the myocardium and its respective parts, such as the valves, pericardium, and endocardium, are peculiar reasons for this failure. About 50% of the patients die within five years of diagnosis. In addition, the loss of cardiomyocytes and respective tissues is the main cause of heart failure, even in adults. Meanwhile, several studies show that cardiac regeneration is an option in humans other than a heart transplant. In this context, various DNA isotope quantitative research concluded that cardiac regeneration is the fastest in childhood and ultimately reduces to 1% with an increase in age, i.e., adulthood. However, cardiovascular functions can be improved and enriched with repetitive, regular aerobic exercises instead of applying such unique techniques. Many years of aerobic exercise can replace these sufferings for healthy body function. Various studies reported that aerobic exercise could improve cardiac output and cardiac dilation by 10–20%. Besides good impacts on physiological and pathological settings, aerobic exercises enhance myocardial mass. Such rigorous exercises improve the flow of blood and oxygen in all parts of the body. Further, the regeneration of cardiac genes also owes their execution to aerobic exercises in the long run (Bo et al., 2021).

Furthermore, some other severe and harmful diseases are rising in number in the country with time, along with cardiovascular malfunctions. For example, diabetes type II is alarming in the country, with 30.3 million affected people. Due to cardiovascular issues, hardening and constriction of blood vessels are commonly aroused problems even among adults. Ultimately, it leads to diabetes type II disease due to heart muscle problems and peripheral blood vessels. Meanwhile, insulin resistance and β cell dysfunction contribute to this disease along with genetic factors. In addition, macrovascular complications and coronary artery stroke have become the leading death cause in diabetic patients with a 200–400% risk. It is significant to mention that about 25% of new diabetic patients have cardiovascular issues and disease (Stewart, 2004).

Moreover, multiple studies recommend that aerobic exercise can provide sustainable benefits in type II diabetic patients in this context. National Health Interview Survey inferred that even proper and regular walking could reduce the death rate in cardiac and diabetic patients by 34% and 39%, respectively. Similarly, the cardiovascular health of these patients can be improved by potential mechanisms. Amongst these are arterial stiffness, vascular inflammation, endothelial vasodilator, and ventricle diastolic function. Furthermore, regular exercise training mediates the improvement in insulin activity and also maintains stable blood pressure. The increased intake of oxygen by the body due to exercise training helps to maintain normal sugar levels. About 20 per cent of oxygen intake is reduced in diabetic patients, which can be restored along with improved cardiovascular functioning.

However, another major problem being faced by the American nation is obesity. In this regard, the main strata of the affected population are adults, with 71.6 per cent. Obesity leads to severe complications in the human body as fat develops over the heart, and ultimately, serious cardiovascular disease sprouts. Studies have shown that aerobic exercise can play a pivotal role in decreasing obesity among the public. Studies have shown that moderate-intensity or maximal

strength training programs can reduce the oxidized LDL (low-density lipoprotein) levels. Aerobic walking or running maintain heart rate at 85–95%, however moderate intensity can maintain the value of maximal heart rate at 60–70% (Schjerve et al., 2008).

Conclusion

Hence, present-day humans suffer from multiple severe cardiovascular diseases along with diabetes and obesity. All these malfunctions of the human body are interconnected to some extent with each other. Massive and grim effects have been imposed on the population, especially the adult slot. However, regular aerobic exercise training can be proved as a helpful tool to enhance the capacity of the human body. Aerobic exercise can enhance oxygen uptake and maintain cardiac muscle functioning, regulate blood pressure, and effective insulin interaction.

References

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