



The Influence of Physical Activity on the Blood Circulation and Cardiovascular System of the Student's Organism

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Abstract

Physical activity has a positive effect on the cardiovascular system of the students' organism, it is a kind of "antidepressant", reduces stress levels, promotes better heart function. The risk of premature death is significantly lower with sufficient physical activity, since movement is an activator of the body's vital processes.

Keywords: Physical activity, Health, Cardiovascular system, Blood pressure, Diabetes

Introduction

This paper examines the relationship between physical activity, blood circulation and the health of the cardiovascular system. Physical activity is considered an important factor in a healthy lifestyle and is known for its beneficial effects on the cardiovascular system.

During physical exercise, blood flow to the coronary system increases significantly, myocardial vessels dilate, the number of functioning capillaries increases, and redox processes are enhanced, which leads to an improvement in trophic processes in the heart muscle. Regular physical activity helps to keep the heart muscle

strong and work with high efficiency, and the vessels become more flexible and elastic, which is especially important for controlling blood pressure. During physical exercise, a person's heart rate increases. This is due to the fact that muscle tissues require more oxygen and additional substances for their active activity. Accordingly, in the body this is done by increasing heart rate [1-4].

Research Objective

To identify the impact of physical exercise on blood circulation and the cardiovascular system of higher education students.

Research Methods

Physical exercise method, verbal, visual, analysis of the data obtained.

Presentation of the Main Material

When performing physical exercises, heat is generated in the muscles, to which the body responds by sweating. During physical exertion, blood flow increases: blood brings oxygen and nutrients to the muscles, which are broken down during vital activity, releasing energy. Physical exercises improve trophic processes in the heart and throughout the body. They increase blood supply to the heart by increasing coronary blood flow, opening reserve capillaries and developing collaterals, and activate metabolism. All this stimulates regenerative processes in the myocardium, increasing its contractile capacity [2-5].

Let's consider several key aspects of this effect.

Improving Heart Function

Regular physical activity strengthens the heart muscle, improves its efficiency and ability to pump blood around the body. This reduces the risk of developing heart diseases, such as coronary heart disease and heart attack.

Blood Pressure Control

Physical activity helps lower blood pressure, which is an important aspect of preventing hypertension. This reduces the risk of complications such as stroke and heart disease.

Weight Control and Diabetes Prevention

Physical activity helps maintain optimal body weight and maintain normal blood sugar levels, which is important for preventing diabetes.

Increasing Vascular Elasticity

Regular physical activity improves vascular elasticity, reducing the risk of atherosclerosis and other circulatory disorders.

Improving Overall Health

Physical activity contributes to overall physical and mental health, reducing stress, improving mood and improving sleep quality [3].

Conclusions

Based on the main material, we can conclude that physical activity has a positive effect on heart health and blood circulation. It improves the condition of the cardiovascular system; lowers blood pressure; reduces the risk of stroke, coronary heart disease, hypertension, breast and colon cancer, diabetes, and depression.

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Conflicts of Interest

None.

References

1. Grynko V, Shepelenko T, Sapegina I, Dorosh M (2023) V Correspondence International Scientific and Practical Conference "Scientific researches and methods of their carrying out: world experience and domestic realities. Austria P: 754-756.
2. Grynko VM (2015) Aerobic exercises and their possible impact on the level of general and special endurance of students. Scientific journal of the National Polytechnic University 12(67): 42-45.
3. Grinko V, Kudelko V, Bodrenkova I, Dorofieeva T, Nazarenko I, Pidsytkov I, et al. (2024) Therapeutic physical education in institutions of higher education in Ukraine. Austria 35: 634.
4. Grinko V, Sapehina I (2022) Analysis of Students' Education on the Principle of Consent with Nature on the Example of Physical Education. Biomed J Sci & Tech Res 46(2): 37297-37300.
5. Grinko V, Shepelenko T, Kudelko V, Shaposhnyk A, Slastina O, et al. (2023) Dovzhenko S. Construction of a 15-second dynamic running model for groups with different training programs. Its dynamics and prediction. FOURRAGES Journal 256(11).