

IMPACTS OF AEROBIC GYMNASTICS ON THEIR PRACTITIONERS

IMPACTOS DA GINÁSTICA AERÓBICA EM SEUS PRATICANTES

IMPACTOS DE LA GIMNASIA AERÓBICA EN SUS PRACTICANTES



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ABSTRACT

Introduction: Aerobics refers to exercise that integrates dance, gymnastics, and technical movements with a hectic pace and high demand for aerobic energy. The practice of this sport can improve cardiopulmonary function and prevent cardiovascular diseases, besides eliminating excess fat and improving body shape. **Objective:** Analyze the body changes caused by aerobic gymnastics in its practitioners. **Methods:** This article analyzes relevant scientific articles to raise a protocol of exercises performed by the experimental test method. The results of the relevant variables went through mathematical statistics, analysis, and confrontation of the research results. **Results:** The comparison of various indicators before and after the intervention showed that the normal range of body composition for women was 0.75 to 0.80; the test results showed that the waist-to-hip ratio of the volunteers decreased from 0.89 to 0.77. **Conclusion:** The aerobic gymnastics protocol performed positively impacted the body composition of its practitioners. In the psychological domain, it also contributed to a correct understanding of the body's physical aesthetics, promoting the achievement of high-level human beauty in its practitioners. **Level of evidence II; Therapeutic studies - investigation of treatment outcomes.**

Keywords: Sports; Body Composition; Physical Education and Training.

RESUMO

Introdução: A ginástica aeróbica refere-se ao exercício que integra dança, ginástica e movimentos técnicos com ritmo agitado e alta demanda de energia aeróbica. A prática desse esporte pode melhorar a função cardiopulmonar e prevenir doenças cardiovasculares, além de eliminar o excesso de gordura e melhorar a forma corporal. **Objetivo:** Analisar as alterações corporais provocadas pela prática da ginástica aeróbica em seus praticantes. **Métodos:** Este artigo efetua uma análise em artigos científicos relevantes para levantar um protocolo de exercícios que são executados pelo método de teste experimental. Os resultados das variáveis pertinentes passaram pelo método de estatística matemática, análise e confronto dos resultados da pesquisa. **Resultados:** A comparação de vários indicadores antes e após a intervenção mostrou que a faixa normal da composição corporal para as mulheres era de 0,75 a 0,80; os resultados dos testes mostraram que a relação cintura/quadril das voluntárias diminuiu de 0,89 para 0,77. **Conclusão:** O protocolo de ginástica aeróbica executado obteve um impacto positivo na composição corporal de seus praticantes. No domínio psicológico, também contribuiu para uma compreensão correta da estética física corporal, promovendo a conquista da beleza humana de alto nível em seus praticantes. **Nível de evidência II; Estudos terapêuticos - investigação dos resultados do tratamento.**

Descritores: Esportes; Composição Corporal; Educação Física e Treinamento.

RESUMEN

Introducción: La gimnasia aeróbica se refiere al ejercicio que integra la danza, la gimnasia y los movimientos técnicos con ritmo agitado y alta demanda de energía aeróbica. La práctica de este deporte puede mejorar la función cardiopulmonar y prevenir enfermedades cardiovasculares, además de eliminar el exceso de grasa y mejorar la forma corporal. **Objetivo:** Analizar los cambios corporales provocados por la práctica de la gimnasia aeróbica en sus practicantes. **Métodos:** Este artículo realiza un análisis en artículos científicos relevantes para plantear un protocolo de ejercicios que se realizan por el método de prueba experimental. Los resultados de las variables relevantes pasaron por el método de la estadística matemática, el análisis y la confrontación de los resultados de la investigación. **Resultados:** La comparación de varios indicadores antes y después de la intervención mostró que el rango normal de composición corporal para las mujeres era de 0,75 a 0,80; los resultados de la prueba mostraron que la relación cintura-cadera de las voluntarias disminuyó de 0,89 a 0,77. **Conclusión:** El protocolo de gimnasia aeróbica ejecutado obtuvo un impacto positivo en la composición corporal de sus practicantes. En el ámbito psicológico, también contribuyó a una correcta comprensión de la estética del cuerpo físico, promoviendo el logro de una belleza humana de alto nivel en sus practicantes. **Nivel de evidencia II; Estudios terapéuticos - investigación de los resultados del tratamiento.**

Descriptor: Deportes; Composición Corporal; Educación y Entrenamiento Físico.



INTRODUCTION

Aerobic aerobics refers to the strong rhythmic set dance performed by the human body under the condition of aerobic energy supply, gymnastics and technical movements as one practice. Adhering to aerobic aerobics exercise can eliminate excess body fat, reduce body fat, improve body shape, and strengthen the beautification of human body posture and the cultivation of temperament. According to the physiological characteristics of human beings, reasonable exercise content is formulated, and targeted guidance is provided to achieve the purpose of shaping the body, improving the health level, and adhering to a persevering style of life and study. The change of the mean value before and after exercise was performed by the t-test method. The statistical results were taken as $P < 0.05$ as the standard of significance, and $P < 0.01$ as the standard of high significance. In order to study the effect of aerobic aerobics exercise on human physique and physique, we conducted a 16-week teaching experiment on athletes, and measured their body shape, physiological function, body composition and sports quality and other indicators, the effect of participating in aerobic aerobics exercise is discussed, and the influence of aerobic aerobics exercise on physical fitness and physical beauty is analyzed, in order to provide a scientific basis for the theory and practice of aerobic aerobics exercise.

RESEARCH METHODS

Documentation method

Checked a large number of relevant journal articles, and strived to fully grasp the research results related to the research. Aerobics integrates gymnastics, dance and music, but it is different from dance.¹ Aerobic aerobics is the pursuit of self-improvement through physical exercises, and ultimately achieve the goal of fitness, bodybuilding and heart health. Aerobics integrates music, because doing aerobics with music accompaniment can inspire and help practitioners to practice more effectively, the practitioners are happy to practice with the frequency and rhythm of the music, which can enhance cardiovascular and respiratory functions, promote the decomposition of glycogen, improve the blood and nutrient supply to the brain, thereby helping to eliminate fatigue and develop intelligence.² Modern aerobics not only retains various types of basic movements in freehand exercises, but also absorbs many movements from various dances and martial arts, and makes them unique movements of aerobic aerobics after processing and refining.³ It is often accompanied by movements such as waist, hip, knee, ankle and head, which not only doubles the number of activities of each joint of the body, but also can change the combination form to form a variety of movements, which is conducive to improving and improving the coordination of the body. In addition, with more than 30 minutes of aerobic exercise, it can decompose and reduce excess fat, and finally achieve healthy beauty.⁴

Experimental test method

Through experimental research, it was found that, after primary school students have undergone aerobic aerobic exercise for about 10 weeks, their BMI and body fat percentage have decreased, and there have been obvious differences.⁵ This is mainly because in the process of carrying out aerobic gymnastics exercise, it usually takes about 12 minutes of continuous exercise, these continuous exercises have the characteristics of low intensity, long time, uninterrupted and rhythmic, and speed up blood flow, help the body to metabolize energy substances, burn students' body fat, improve students' energy metabolism rate, and finally achieve the purpose of increasing muscle and reducing fat. At the same time, with the improvement of my country's overall economic level and the continuous enrichment of material living conditions, while people's food, clothing, housing and transportation are being satisfied, more and more people have the problem of weight gain and obesity.⁶ By carrying out aerobic aerobics, it is possible to control the body fat

rate based on its own long-term, uninterrupted concentrated exercise, and the control effect of the body fat rate will be directly reflected in the weight of the students, so as to avoid people being too obese. adverse effects.⁷ Figure 1 shows the energy metabolism curve of aerobic aerobics for 10 weeks.

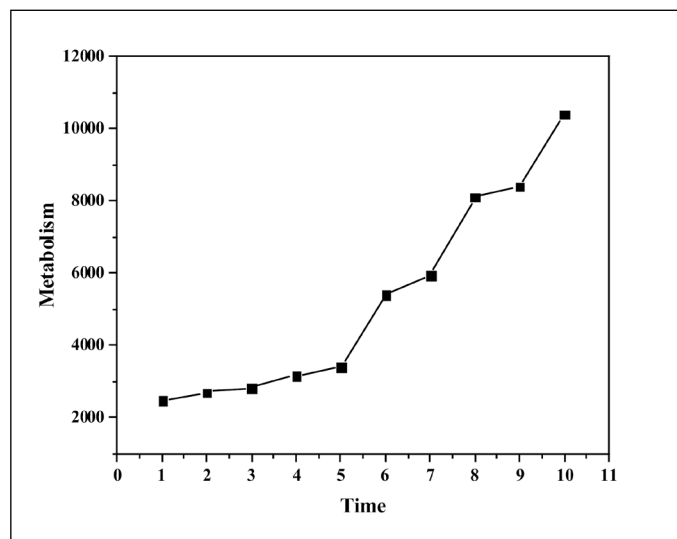


Figure 1. 10-week aerobic aerobics energy metabolism curve.

Mathematical Statistics

After 16 weeks of aerobic exercise in the experimental group, the quality of the subjects was significantly improved, indicating that long-term adherence to aerobic exercise can effectively improve muscle strength and enhance the coordination relationship between various muscle groups, improve the conversion ability of excitation and inhibition of cerebral cortex motor center.⁸ It should be noted that the strength of the lower limbs in the experimental group improved significantly, but the improvement of the strength of the upper limbs was not very obvious, indicating that aerobics exercise has deficiencies in the overall development of the human body, therefore, the intensity of upper body strength training should be increased when arranging aerobics movements. From the analysis of statistical data such as standing long jump, after one semester of aerobic exercise, the physical fitness indicators of the subjects were significantly improved ($P < 0.01$ level).^{9,10} (Figure 2)

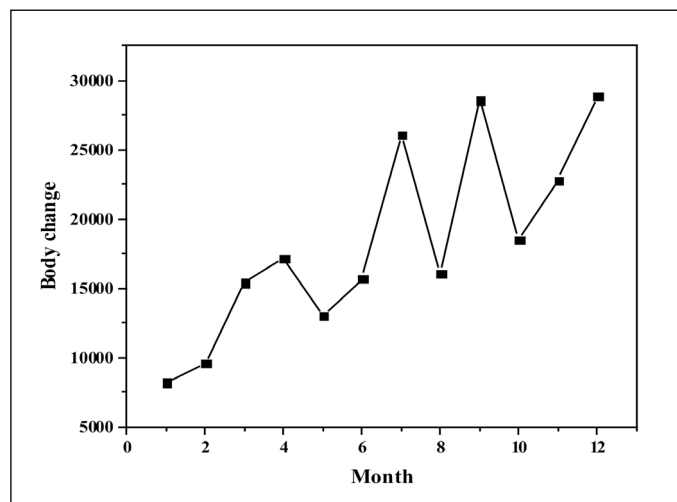


Figure 2. The curve of the gymnastics shape change after the test.

ETHICAL COMPLIANCE

Research experiments conducted in this article with animals or humans were approved by the Ethical Committee and responsible authorities of

RESULTS

The young women who participated in aerobic exercise for more than 6 months increased their lung capacity, decreased their resting heart rate, and significantly improved their step index, indicating that aerobic exercise has a positive effect on improving the physiological function of the body.^{11,12} According to the theory of exercise physiology, the low-intensity and long-duration aerobic exercise completed by the human body under the condition of aerobic energy supply can improve the oxygen exchange function of the respiratory system, increase the capacity and ventilation of the lung, and improve the function of the lung.¹³ At the same time, through this kind of aerobic exercise, the heart returns to the heart, the initial length of myocardial cells increases, the contraction is more powerful, and the cardiac output increases, thereby improving the function of the cardiovascular system. Figure 3 shows the improvement curve of physical function after exercise. The sebum thickness of the

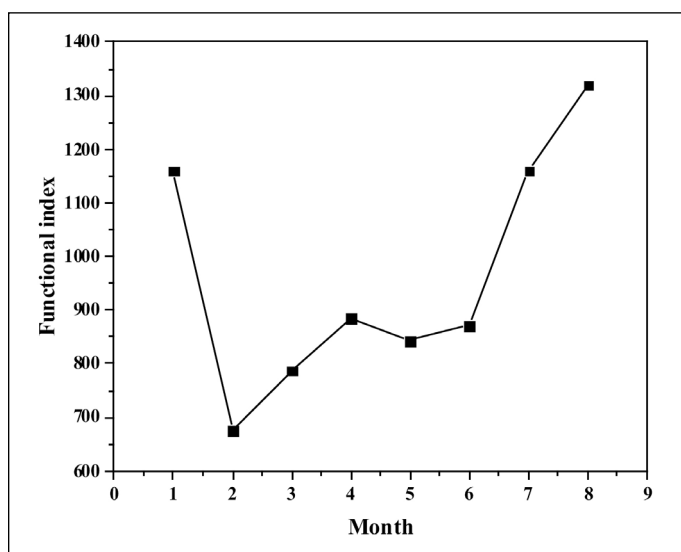


Figure 3. Fitness function improvement curve of aerobics.

upper arm, scapula, iliac, and abdomen, the main parts of body fat distribution, was significantly reduced after exercise.¹⁴ The percentage of body fat was 27.06% before exercise and 23.15% after exercise; The body fat weight was 16.43kg before exercise and 13.56kg after exercise; While the lean body mass was 38.18kg before exercise and 40.26kg after exercise, all three indicators were highly significant Sex difference ($P < 0.01$). It can be seen that continuous aerobic exercise can consume fat and reduce body fat. Some data show that aerobic exercise can significantly increase the activity of lipoproteinase (LPL), and the increased activity of LPL can promote the decomposition of fat in the body after exercise, neutralization and exercise, and increase the utilization of fat as energy.¹⁵ Figure 4 shows the trend of the number of gymnastics participants and the change in body shape.

DISCUSSION

After participating in the aerobics exercise, the cardiopulmonary function of the experimental group was significantly improved, and the

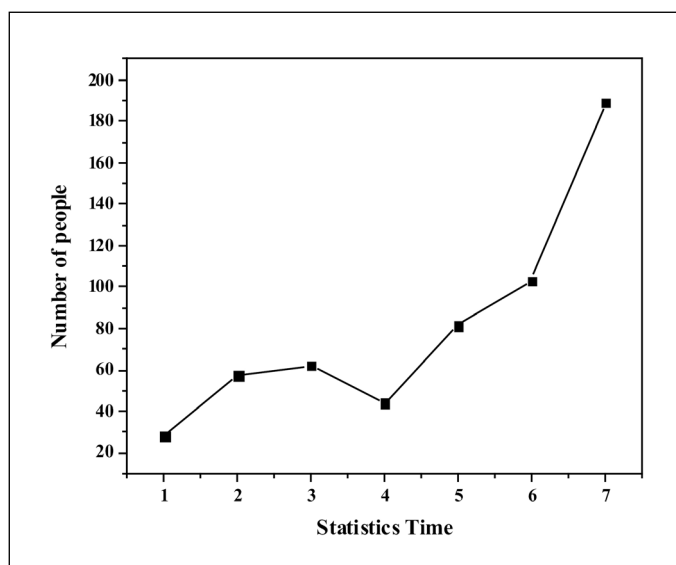


Figure 4. The trend of the number of aerobics participants and the change of body shape.

specific performance was that the resting heart rate decreased, the vital capacity was significantly increased, and the cardiovascular function and respiratory function were also significantly improved. According to our measurement, the heart rate can reach about 150 beats/min immediately after practicing aerobics, exercising at this intensity can enhance the strength of the respiratory muscles, increase the content of hemoglobin and increase the maximum oxygen intake, so the aerobic endurance of the human body can be significantly improved. improve. Aerobics exercise also has a significant effect on the improvement of cardiac function. Long-term moderate-intensity exercise can enhance its contractility, make myocardial capillaries proliferate, and provide sufficient nutrition. The heart volume expands, the ventricular wall thickens, and the heartbeat is slow and powerful. Before and after the experiment, the cardiovascular function of those who insisted on aerobic exercise was significantly improved, and some subjects had sinus bradycardia, indicating that long-term adherence to aerobics exercise did have a significant promoting effect on enhancing human physiological function.

CONCLUSION

The research experiment of aerobic exercise found that the exercise intensity of aerobics exercise is more suitable, which can keep the heart rate within the aerobic working range for a long time. Long-term adherence to aerobics exercise can enhance cardiovascular and respiratory system functions, and significantly improve various physical qualities, especially lower limb strength and aerobic endurance. Aerobics exercise can achieve a larger exercise load in the beautiful music accompaniment and a relaxed and happy atmosphere, consume excess body fat, improve body shape and body composition, and help teenagers maintain a healthy body and healthy physique. After participating in aerobics exercise, the cardiopulmonary function was significantly improved, and the specific performance was that the resting heart rate decreased, the vital capacity increased significantly, and the cardiovascular function index and respiratory function index also improved significantly.

The author declares no potential conflict of interest related to this article.

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