

## The research of the college students ' rope training

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### Abstract

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The global obesity population is increasing because of high calorie and high sugar eating habits and a lifestyle that lacks exercise. The results of the Ministry of Education's examination of Chinese students ' physical health showed that the number of obese students increased and the number of sub-health increased. A series of data show that, due to the current deterioration of the national physique of the adverse situation, the national understanding of their own health conditions, the need to learn scientific fitness methods more and more strong. Nowadays, in both professional training and amateur training, a method called high-intensity intermittent training is widely popular.

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### 1. Introduction

The global obesity population is increasing because of high calorie and high sugar eating habits and a lifestyle that lacks exercise. The results of the Ministry of Education's examination of Chinese students ' physical health showed that the number of obese students increased and the number of sub-health increased. A series of data show that, due to the current deterioration of the national physique of the adverse situation, the national understanding of their own health conditions, the need to learn scientific fitness methods more and more strong. Nowadays, in both professional training and amateur training, a method called high-intensity intermittent training is widely popular.

### 2. Results and Discussion

The rope is often used as a high-intensity intermittent training tool to train the athlete's strength, strength, explosive power, and their anaerobic and aerobic endurance. War rope is also a movement intensity can be adjusted, can be designed into high-intensity intermittent movement, can also be considered as a strength training, as early as in the 1930s, the Army for military training precedent, the 1990s first by the comprehensive combat professional boxer widely used in speed explosion and core stability of physical training. Later, more and more sports teams found that rope training can improve the overall physical fitness of athletes, bring about a higher level of sports, gradually accepted by more sports, and provide effective training help for professional athletes.

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The main mechanism of improving aerobic ability is divided into two parts, the first is the central adaptation mechanism. This can be explained mainly by the increase of oxygen transmission efficiency of working muscle, the increase of left ventricular contraction and heart filling layer in the body after the battle rope training, increase the capacity of the terminal diastolic, enlarge the blood volume of the heart, and ultimately improve the oxygen transmission rate of the working muscles. This time, in the battle rope exercise also improve the body's skin blood flow and body sweating rate, making the body heat tolerance greatly improved, thereby increasing aerobic capacity. The peripheral adaptation mechanism is mainly manifested in energy metabolism, skeletal muscle buffering capacity and oxidase activity. Because aerobic capacity and oxygen transmission is very important for athletes, combat rope exercise can improve the athlete's performance by increasing the oxidative energy efficiency and the fat oxidation rate. And the previous study found that HIIT training can better improve the body's skeletal muscle buffering capacity, and combat rope exercise is also within the HIIT range.

And the fight rope exercise relative to other exercise way, lose weight effect of the mechanism is mainly after exercise of excessive oxygen consumption. The classical theory of exercise physiology and exercise biochemistry tells us that fats can only be oxidized by oxygen, and the anaerobic metabolic process cannot use fat as a substrate. In different exercise intensity, fat and sugar utilization ratio and rate are different, when the intensity of exercise  $\geq 85\%$  maximal oxygen uptake, fat almost do not participate in energy, the metabolic energies are almost only from the decomposition of sugar in the body. But recent studies have shown that high-intensity intermittent exercise (HIIT), although less fat in exercise, but excessive oxygen consumption after exercise (EPOC), its long-term weight loss even more than FatMax strength.

Long period of continuous exercise, on the one hand, high time cost, on the other hand, monotonous, so the young people are not attractive, explore new ways to lose weight, the health of young college students is of great significance. Some scholars have studied the effect of progressive strength training on upper limb muscle strength, the influence of the body composition and the circumference, 3 kinds of training load can raise upper limb strength, the maximal strength group enhances the upper limb muscle strength compared to other group obviously, the speed power group enhances the thin soft tissue (Lean mass) to be obvious compared with other group, but the strength endurance group fat reducing effect is obvious. Therefore, the strength exercise, HIIT and other forms of anaerobic exercise can not only effectively increase muscle and strength, its weight-loss fitness effect is also impressive.

Before each exercise by the trainer to guide the subjects to warm up exercise, in order to enhance their athletic ability and reduce the possibility of sports injury, also through the warm-up game to improve the participants' enthusiasm; Explain the method of rope operation, the load of each subject and the precautions to be taken before starting training; To prevent stiff muscle, Aroused their interest in fighting rope exercise, the vision of a good figure; the frequency of the wave, the limit height, the duration of each group and the intermittent mode, intermittent time and other variables should be controlled in the same way. In the course of exercise, we should observe closely the occurrence of the subjects' discomfort, muscle tension and muscle convulsions.

### **3. Conclusion**

At present, in the research of rope exercise, it is impossible to monitor and manage the subjects' exercise and diet, some fitness enthusiasts may have extra fitness, and have some influence on the experimental results. Therefore, I hope to have more research, fighting rope exercise effect has more new breakthroughs, new conclusions.

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