

Research Article

Table Tennis Sports Fatigue Recovery and Dietary Improvement

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Abstract: The study is explaining briefly about the supplement for the physical fatigue during the process of the movement, putting forward the effective recovery means for the fatigue caused by physical fitness through the principle of physical fitness, so that the exercise fatigue can be quickly recovered and people can have scientific physical exercise and fitness. Table tennis game is a non-cyclical sports item, with the characteristics of high intensity motion, high density, long time, fierce confrontation, etc. Generally speaking, Modern Ping-pang games ask players to have higher overall quality with the special speed, overall strength, stamina, bounce force, etc.

Keywords: Effective recovery means, physical exercise, table tennis game

INTRODUCTION

Physical stamina is the basis for ping-pong players to use the tactics and techniques, reasonably using nutrition as the supplement is the effective means to eliminate exercise fatigue for the ping-pong athletes during the high load of training, The reason why physical fitness can improve physical quality and enhance physical and mental health is mainly because it obeys the principle of super compensation. During the period of doing fitness, because of the consumption of nutrients and the accumulation of the metabolites out of the movement, it will inevitably lead to the decrease of the exercise capacity, causing exercise fatigue. Nutrition refers to the substance that can go on with digestion and absorption in the body, supply heat, constitute the body's tissues and regulate physiological function, which is necessary for the normal metabolism of the body. The nutrients that the body need can be included seven categories: sugar, fat, protein, vitamins, minerals, water and dietary fiber, etc.

For physical fitness participants, water is the most important nutrient. The relevant data showed us that: if people lose 5% of the body water, it will lead to fatigue, feebleness, etc. While if people lose 15% of the body water, it may lead to death. All important life processes of the body cannot be without water, especially in the physical training process, water will be excreted accompanied by a large number of sweat (Ming and Zhang, 2010). If it cannot be promptly added, it will cause the body not to operate normally and the exercise ability dropped rapidly. Therefore, during the period of physical exercise or after the exercise, people must have enough water, which can guarantee the normal operation of the physiological function and promote the recovery of physical fatigue.

MATERIALS AND METHODS

The reasonable collocation of three major nutrients: Sugar, fat and protein is known as the three major nutrients because of its special status and function. Sugar is the most important source of energy for physical fitness, which is one of the main energy supply for muscle contraction. And fat is the effective forms of energy storage, which is "the fuel base" for the body. Although the main function of protein is not the supplement of energy, it is the main material of the cells of the body, which also is the necessary material for constituting enzymes, antibodies, hormones and other vital substances, because its basic structural unit is amino acids. In physical training, three major nutrients can mainly provide energy supply (Liu, 2009). The ratio of carbohydrates for energy is 50-60%, the energy that fat provided accounted for 25%, while the energy that protein provided should occupy 12-15% of the total heat energy. Enough carbohydrate intake can have the most important effect on physical exercises. The ratio of the three major nutrients can affect the human body's metabolism and exercise ability. Thus the ratio of the three major nutrients should be appropriate during arranging the diet for the physical trainers to make better use of their exercise capacities and promote the rapid recovery after exercise.

Adequate vitamin: Although the amount of vitamin that human body needed is a little and excessive supplement will cause poisoning, but it still occupies an important position in sports nutrition. Data showed us that sports can promote the process of lipid's peroxidation and promote to produce the active oxygen and free radicals of the body. The excessive free radicals can damage the lipids and protein of the body cells, which can directly affect the supplement for the

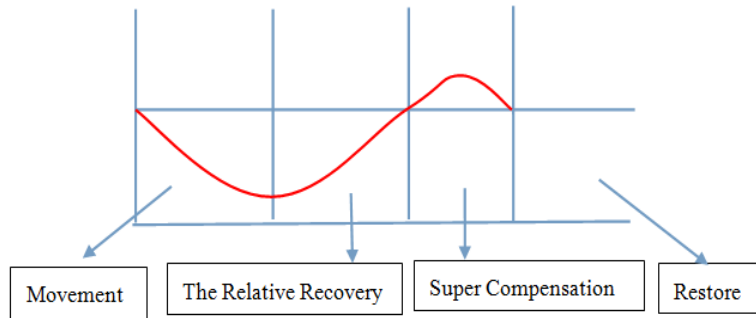


Fig. 1: Schematic diagram of super compensation

body's energy during the movement. Vitamin C is not only the strong antioxidant molecule, but also as an important reducing agent, it can stimulate the cerebral oxygen utilization and increase the amount of oxygen in the brain, thereby improve the body's hypoxia tolerance, which has special significance for the sportsman. So it is not babe more supplement for vitamin, the better for the sportsman, which should be used according to the actual situation, as well as the special characteristics of different items, under the guidance of doctors to have appropriate supplement. The aim of the supplement is to make the amount of vitamin in vivo remain saturated state, moreover, the comprehensive supplement is better than single supplement.

Inorganic salts and trace elements should have moderate supplement: Inorganic salts are chemical elements to maintain normal physiological function, which have played a great role in maintaining nerve impulse, muscle contraction, the function of enzyme, the balancer of water and some other body functions. During the process of having physical fitness, a large amount of inorganic salts are excreted with the sweat together. If the body is lack of inorganic salts, the metabolism and physiological function will be affected, which even can cause diseases, if the intake of inorganic salts is too much, it will be harmful to human body also. Therefore, supplying inorganic salts must be appropriate.

Principle of having physical fitness: It is well known that physical fitness will raise the level of movement, enhance the physique and promote the health. The principle of super compensation can clearly explain the law that physical fitness can promote human health.

From the view of athletic physiology, when people have physical exercises, the energy consumption of material is in the movement with the accumulation of metabolites, thus the level of exercise is gradually decreased, but after exercises, it can not only be restored to the original level, but also can improve more than the original level. Accordingly, the functional abilities of each human organs and systems can be more

than the original level, which is called the super compensation (Fig. 1).

According to the principle of super compensation, the process of physical fitness can be divided into three stages: Namely, the declining stage of the working abilities of each organ and system during doing exercises; the recovery stage of the working abilities after exercises; the stage of super compensation of the working abilities (Jiang, 2001). The process of having exercise is along with the chain of "consumption--recovery--super compensation" and continues to move in circles and gradually adapt, so as to enhance the effect of physical fitness.

RESULTS AND DISCUSSION

Rule of load intensity: Starting from the view of super compensation, only the human body is under a certain exercises' load and stimulation, can it cause some reactions and cause the body's super compensation, so as to get the effect of promoting health. The amount of the load intensity should obey the rule of load intensity. The so-called rule of load intensity refers that the response of the body is proportional to the amount of stimulus in the physical limit. From Fig. 2, we can see, only in a certain physiological range, the greater the amount of the load is, the stronger the adaptability is, the bigger effect of the super compensation is; the smaller the amount of the load is, the smaller effect of the adaptive changes caused by the body is, which is the essence of the rule of load intensity (Yang, 2002). No matter how much the load intensity is it will bring about the physical fatigue. In order to achieve better super compensation and improve the effect of exercise capacity, the positive means of recovery and reasonable nutrition is very important.

Means for recovering fatigue caused by physical fitness: It mainly refers to physical therapy, massage and enough sleep, etc. After a strenuous exercise, through the methods of hot compress or warm water therapy, etc, it can effectively accelerate the blood circulation, accelerate the excretion of metabolic waste, fully improve the nutritional status of the nerve and

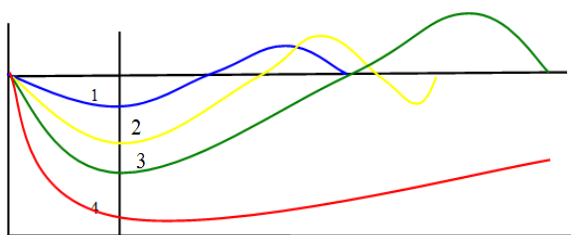


Fig. 2: Schematic diagram of rule of load intensity

muscle, so as to alleviate the discomfort caused by physical fatigue. In addition, after having physical fitness, proper massage can effectively eliminate the stiff of the muscles and relieve the part of the fatigue. Moreover, maintaining adequate sleep can also promote the functions of the organs have fast recovery, which can provide adequate time and conditions for the body to reserve energy, acting as one of the important means of recovering physical fatigue.

There is a close relationship between the nutritional supplement for recovering the fatigue and the nutrition supplement for promoting the health of human body (Lu, 2000). Nutritional supplement is an important means for the fast recovery of the body, the key to recover the physical fatigue is the recovery of body's energy reserves, therefore, using nutrients can be fully supply the consumed substances caused by the motion and repair the mechanism of body's injury, helping to eliminate the physical fatigue and promote the recovery of physical fatigue of the athletes, so as to improve the athletic performance.

The reasonable collocation of the major three nutrients: sugar, fat and protein can promote the rapid restoration of them, as the three major nutrients, they have great influence on the human body's metabolism and exercise ability, which cannot be neglected. Sugar is one of the most important sources for exercise energy, which is the main energy supply of muscle contraction.

CONCLUSION

The mainest and directest aim of participating in ping-pang sports activities is to promote physical and mental health. But physical fatigue is an inevitable product of fitness activities. Only reasonable nutrition supplement and active recovery means can achieve the ideal effect of super compensation and constantly improve the exercising capacity, so as to promote physical and mental health ultimately.

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