

## Research Article

### Research on Methods of Nutrition after Middle and Long Distance Runners Training of Teenagers

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**Abstract:** This study uses the method of literature research, interview, investigation, mathematical statistics and so on, combined with the actual situation in the teaching and training, analyzing the two main factors to affect the adolescent fatigue of muscles and nervous system after the middle distance race training, exploring the methods and measures of the recovery. Through the data access, our country to the adult middle-long-distance athletes training research has a lot of, but for teenage training, especially (youth physical training methods, characteristics and should pay attention to problem) research is less.

**Keywords:** Adolescent fatigue, athletes training, recovery measures

#### INTRODUCTION

After the great amount of exercise training, the organism will suffer from the severe muscles' fatigue and mental's fatigue, if the fatigue cannot be eliminated timely, it will not only have influence on the persistence and continuity of the training task, but also will affect the athlete's cultural course learning, therefore, the recovery and training is equally important in the process of training as shown in Table 1.

From the recovery time of the adolescent's medium long distance running training, there were three people who arranged the recovery time below 20 min, accounted for 13.64% of the total number, five people arranged between 20-40 min, accounted for 22.73% of the total number, five people arranged between 40-60 min, accounted for 22.73% of the total number, nine people arranged between 60-80 min, accounted for 40.91% of the total number, there was no people who arranged over 80 min, accounted for 0% of the total number. It is not difficult to find out that there is no uniform standard for coaches to arrange the recovery time.

Through the investigation, the reasons for this situation are as the following several points:

**Firstly:** Training time for the athlete is limited, training time cannot be determined, so the recovery time is also not sure

**Secondly:** Coaches do not fully attach importance to the rehabilitation after the training, who only ask the athletes to have jogging and have muscle relax with each players until the end of the training (Guo, 2005).

**Thirdly:** The supervision for the recovery is inadequate, during the period adolescence, the ability of self-controlling is poor, the coaches do not carefully supervise and observe the actual recovery after the training task without careful, which may cause the athletes to have simple chat with each other or have a rest after the training, thus, the exercise recovery cannot be guaranteed.

From the theory of exercise physiology, after the athletes have high intensity training, the accumulation of muscle lactate is serious, which can decrease the muscle capacities and PH values, the strength of muscles are also decreased, if it is only prohibited, the elimination of lactic acid in the muscles is relatively slow, therefore, it can increase the speed of elimination of lactic acid through the effective method of recovery.

#### MATERIALS AND METHODS

**Method of recovering after adolescents' having the training of medium long distance running:** The recovery after the training and competition is an important stage for the athletes. On the basis of training in different period, content, strength and the competition of different levels, size, spacing, methods of recovering the training should have different choices. The restoration movement is a comprehensive managing process, but there is also professional and specific method for the recovery.

**Relaxation activities:** After the medium long running and other high movement intensity trainings and competitions, athletes should do some suitable activities. This is a positive recovery method, which is beneficial to human body's oxygen consumption that

Table 1: Survey of recovery time

| Time                 | Below 20 min | 20-40 min | 40-60 min | 60-80 min | Above 80 min |
|----------------------|--------------|-----------|-----------|-----------|--------------|
| The number of people | 3            | 5         | 5         | 9         | 0            |
| The percentage       | 13.64%       | 22.73%    | 22.73%    | 40.91%    | 0%           |

can be maintained at a high level. For example, the relax running with big pace, massage and shake the muscles of arms and legs, squat and so on. But a greater intensity running practice or aggressive massage is not appropriate, because it will make muscles more tense. After the high movement intensity training, by the end of the competition, athletes put attention on the performance, who often ignore the finishing activities, which made the strenuous exercise suddenly stopped, it is very harmful.

**Hydrotherapy:** Hydrotherapy can be included various forms of bath (leaves of needles, salt water, leaves of eucalyptus), shower, sauna, steam bath, fountain bath, etc. Soaked for 30 min or so in the warm water with 30°C-40°C, which can have a calming effect on the heart and nervous system (Chen, 2009). At the same time, it can remove the dirt of the skin and sweat and keep the skin cleaner. In order to short the recovery process to recover the special working ability, it can use salt bath. Namely, athletes can be soaked in the water with 1/1000 concentration of Sodium Chloride Solution. Using leaves of needles or leaves of eucalyptus to have bath also can achieve the similar effect. After high intensity exercise training or competition, it is suggested to use sauna, with cold, hot water shower and massage. The above hydrotherapy methods can be adopted and alternately combined. The intensity training of the medium long distance running exercise will make heart rate quick and blood circulation quick, after the end of the exercise, the heart rate and cycle turn slow. The metabolism of the body needs a long time to be eliminated. Hydrotherapy method can effectively remove the metabolic products and supply the nutrition, which can accelerate the recovery process.

**Massage:** Massage is a method to eliminate muscle's fatigue by massaging technique or a specially designed apparatus. Generally, massage should be arranged after the hydrotherapy, in 30 min after exercise. Each massage can keep for 20-40 min. The massage for the medium long distance runners should be focused on back muscle and legs. The time, depth, intensity of the massage should be different for each athlete. The recovery period should be treated with massage and kneading method, which also can be widely used in vibration massage (Hua, 2012). Because the weight and muscles of the athletes is smaller, so the force do the massage should not be too much. The order of the massage general starts with lighter press, gradually to push friction, rubbing, kneading, pressing and percussion. Massage can be adapted to the local jitter and passive activities, which also can be matched with acupuncture and point pressing, so the effect will be better.

**Nutrition supplement:** Adequate nutrition is of great significance for the sports achievements to reach the high level, it can provide energy for the body, which plays an important role in accelerating the recovery speed after the load. The energy consumption is very large after the long distance running, providing sufficient nutrition and food to enable the athletes to get the necessary vitamins, sugar, fat, protein and minerals. Generally the selected foods are: high protein food, chemical plant butter, meat, raw fish, milk, coffee, fresh fruit, vegetables and so on. Improving the cooking method is very important, which should ensure the food to keep vitamins and other nutrients.

**Nutritional supplements:** The special drugs can effectively supply the consumed energy, which can have effect on the regulation of protein biosynthesis and the regulation of contractile protein; stimulate fat metabolism, offer vitamin and mineral supplement for vitamins and minerals that body consumed. So far, it has used as the follows: ginseng extract, royal jelly, the extract of *Acanthopanax senticosus*, the extract of Chinese turtle, Olympia, vitamin mineral nutrient solution, etc. With the development of science and technology, some new nutritious drugs appear constantly, coaches can choose them to be used in practice.

**Sleep:** Lack of sleep will lead to reducing the working capacity. At the same time, sleep is the most effective means of recovery. For the medium long distance athletes, lack of sleep can result in declining the coordination, slowing down the speed of response. In order to ensure the normal sleep, the following items are very useful:

- 1~1.5 h before bedtime to stop the intense activity. The athlete who is easily agitated should not to watch films and television before going to bed, don't read novels or have extremely anxious conversation. Walking before going to bed is very useful.
- Setting the detailed provisions about the food before sleeping, the best arrangement for dinner is in 1.5~2 h before sleeping, athletes should eat soft food as the dinner (too heavy taste will cause disturbed sleep), do not drink stimulating drinks.
- The cold bath can stimulate the body and delay the sleeping time, which should not be used. Too soft or hard bed, too warm bedding and suffocating room will destroy the quality of sleeping. Before going to bed, having a shower with hot water or bath is very helpful.

Table 2: Composition of dietary

| Number of layer  | Food composition               | Daily intake (g)       |
|------------------|--------------------------------|------------------------|
| The first layer  | Cereals                        | 250-400                |
| The second layer | Vegetables, fruits             | 3000-5000              |
| The third layer  | Fishes, poultries, meats, eggs | 125-225                |
| The forth layer  | Milk, beans                    | Milk: 800 Beans: 30-50 |
| The fifth layer  | Oil, salt                      | Oil: 25-30 Salt: 6     |

## RESULTS AND DISCUSSION

**Nutritious dietary supplement:** Adolescents are in the period of growth and development, the metabolism is exuberant, therefore, the need for various nutrients is relatively higher than adults, moreover, when adolescents have large amount of exercise training, they will consume a lot of energy, so after the training, they must have enough nutrition to supply, the malnutrition or lack of nutrition will have influence on the health of the young athletes, which cannot guarantee the normal training, so, scientific nutrition can guarantee the health and sport ability of the young athletes, which is also a key factor to affect the young athletes physical quality and composition, level of training, nutrition and the young athlete's functional state, load capacity and have a direct relationship with the recovery process. The composition of dietary is shown as the Table 2.

The dining time for the adolescent athletes must have a certain interval with the training and competition, the dining time should set a period of time regularly, otherwise, it will easily lead to the disorder of digestion, which will seriously affect the elimination of fatigue after the training of adolescents (Xu, 2005).

## CONCLUSION

The training characteristics of medium long distance running project is the large amount of exercise, a large amount of exercise increases the load of

training, meanwhile, it also increases the degree of the fatigue, the fatigue produced by the body, if it cannot be quickly restored, it will not be able to finish the training task in succession, which will make the training level dropped and will seriously affect adolescent literacy class learning, therefore, we should pay attention to the recovery of the adolescents after the training and put it in an important position. This study analyzes the several recovery methods after the training of the medium long distance running and puts focus on the importance of scientific diet nutritionally. After the adolescent's medium long distance running training, it should be in a comprehensive and systematic way to eliminate the fatigue.

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