

Investigation on dietary nutrition of college basketball players

Zhang Chi

Central South University, Yuelu District, Changsha, 410000, China

Abstract: Basketball sport has the characteristics of high intensity, long time, high density, fierce confrontation, and reasonable dietary nutrition supplement can improve the athletes' physical level, athletic ability, eliminate sports fatigue. The nutrition of basketball players mainly consists of sugar, water and electrolytes, protein, creatine and vitamins. This paper analyzes the dietary nutritional status of college basketball players. The results show that there are several problems in the players' diet: insufficient total energy intake, insufficient carbohydrate intake, excessive fat and protein intake, insufficient intake of some vitamins and minerals, unreasonable distribution of calories in three meals. In this paper, the dietary structure of Chinese college basketball players is basically consistent with the composition of balanced diet pagoda of Chinese residents. The types of food are reasonable, but the amount of food is low and the eating behavior is unreasonable. Nutrition education should be strengthened to promote the balanced diet of students.

Keywords: Basketball; Energy supply; Nutritional requirement

1. Introduction

In recent years, the final ceremony of the national key university basketball League has attracted the attention of many basketball enthusiasts. Basketball players in these universities struggle hard on the court to win the honor belonging to the winner. However, the important factor supporting these basketball players to fight hard on the court is not only their inner fire. It must also rely on the energy assistance provided by a proper diet and nutrients. Basketball players in colleges and universities have to go through a lot of training before they can play the game, and the fierce battle on the court also requires them to have a strong body, which makes the athletes have a great demand for dietary nutrition, such as the supplement of protein, electrolyte, memory vitamins, etc., is a matter that should be paid attention to in the daily diet. Only reasonable dietary nutrition collocation in order to provide college basketball players with daily training and competition needed physical strength. Therefore, athletes need a scientific and systematic theoretical system of nutrition supplement to provide effective guidance for their daily diet nutrition and nursing.

2. The characteristics of basketball and it's energy supply

Basketball has high requirements on the athletes' special speed, special endurance, jumping and overall strength, and the main way of movement is the combination of behaviors involving high-intensity muscle activities such as dribbling, passing, attack, defense, breakthrough and shooting. It has the characteristics of confrontation, fierce, changeable, collective and comprehensive, and it is provided with intermittent aerobic and anaerobic energy^[1]. It is mainly anaerobic. During high-intensity exercise, the oxygen intake of human body cannot fully meet the oxygen demand, and the energy supply can only maintain 9-16s according to the ATP-CP system, which can make the muscle contract strongly by 50-100m. However, the content of ATP in human body is very small, which can only be guaranteed by decomposition and synthesis. Although CP in the ATP-CP system can be converted into ATP, the amount of ATP in the human body is 1/3 of CP, so it is impossible to realize a basketball game with CP alone^[2]. Athletes' choice of training intensity depends on their own physical strength and energy characteristics. Basketball is mainly anaerobic training, and long-term training causes lactic acid accumulation of basketball players, fatigue. At this time, the excited state of the brain is reduced to a certain extent. If the nutritional supplement and fatigue elimination are not paid attention to, the fatigue will be aggravated and the sports performance will be affected.

3. Dietary nutrition status of college basketball players

However, according to the current investigation and research, there are insufficient intake of carbohydrates and excessive intake of fat and protein in many projects. Basketball players also have the problem of inappropriate intake ratio of three major energy substances. However, since there is no dietary investigation for basketball teams, especially the national team, we do not know the specific situation. In addition to the imbalance in the intake of the three major nutrients, the current study also found that the athletes' energy intake is also unreasonable, mainly manifested by the widespread neglect of breakfast. Breakfast is a very important eating period for any athlete. The dining habits of many athletes in Chinese sports still adhere to the traditional three meals a day. Foreign studies believe that basketball players should add 2-3 extra meals on the basis of the original three meals due to their high energy consumption, and some studies believe that basketball players should have 4 meals a day before extra meals. At present, the investigation of the three meals of national men's basketball players is a blank, so that we can not accurately understand the problems in the diet of men's basketball players. The intake of vitamins and minerals is also an important part of an athlete's diet. People think that they are closely related to the sports ability of basketball players through the study of vitamins: vitamin C as an important vitamin in the body antioxidant and improve the body's immune ability, vitamin E is related to the body's antioxidant degree. At the same time, it is also recognized that iron and calcium are also important for the athletic ability of basketball players^[3]. All studies believe that attention should be paid to the supplement of vitamins and minerals for basketball players, but this is just a theoretical deduction. There is almost no investigation on the dietary intake of vitamins and minerals by basketball players, especially for the national team. There is no first-hand data to analyze and research Chinese basketball players, especially high-level players. In the study of football players' diet scholars point out that athletes' dietary needs should be determined according to their different training and competition stages, which can be used for reference.

Current research status: There has not been a detailed dietary survey of basketball players, either to learn from the findings of other projects to study basketball issues, or basketball is only a component of a large-scale survey and not representative. This study takes the first-line players of the national men's basketball team as the investigation object, conducts an in-depth and detailed investigation into the dietary and nutritional status of the national men's basketball team members, finds out the problems, and solves the problems of the basketball itself in a targeted way to promote the improvement of the national team level. Diet is the most important material basis to ensure the nutritional needs of athletes and maintain the athletic ability, but at present many sports team members have dietary problems. The purpose of this study is to investigate the diet of national men's basketball players, analyze and find the problems, and provide scientific basis and guidance for men's basketball players to eat scientifically and reasonably and to balance the diet.

4. Dietary nutrition problems of college basketball players

For the special group of college basketball players, in order to their healthy growth and development and achieve good training results, they must be provided with adequate nutrition, if the nutritional supplement is not guaranteed, it will affect the physical recovery, resulting in body function decline or more serious consequences. This study found that the dietary status of basketball players in colleges and universities has not only improved nutrition, but also some unreasonable food consumption phenomenon, which may cause adverse effects on health. There is a gap with the recommended intake of Chinese residents' dietary pagoda, and it is far from the recommended intake standards of dietary nutrients and food for Chinese athletes. The energy and nutrient intake of this group is between that of ordinary college students and professional athletes.

4.1 Low intake and frequency of certain food groups

Although the dietary structure of the survey subjects basically conforms to the composition of the balanced dietary pagoda of Chinese residents, the intake of some types of food did not reach the recommended amount of the dietary pagoda. College basketball players need more nutrients than ordinary college students because of training and competition. Therefore, on the one hand, the intake of all kinds of food should be increased, especially dairy products, fish and shrimp, soy products, fresh vegetables and fresh fruits. On the other hand, the survey found that only 55% of students eat fruit more than 5 days a week, and 70% of students eat fish and shrimp less than once a week on average, so the frequency of consumption should be increased. At the same time, the survey also found that 16% of

male students are overweight, and 89% of male students eat pork almost every day from the perspective of eating behavior. Therefore, male students should appropriately reduce the intake of pork, increase the intake of other livestock and poultry meat, and at the same time prevent the total intake of meat too much.

4.2 Insufficient intake and poor sources of major nutrients

Minerals play a very important role in the body, which has a positive significance for maintaining the exercise ability of the exercisers. This study found that the calcium intake of college basketball players was seriously insufficient. Although calcium from milk was higher, it still could not meet the needs of the body. Female pig iron intake is seriously insufficient, girls should take in more food containing heme iron is higher, general animal food iron content and absorption rate are high, such as animal liver, animal whole blood, livestock meat and so on. The intakes of other micronutrients, such as B vitamins and vitamin C, are insufficient or severely insufficient, which may be related to the low amount and variety of cereals, refined cereals, and the low intake of other animal foods and dairy foods with high vitamin B1 content in college students. In addition, the sources of protein and fat that boys consume more need to be improved. Girls had higher carbohydrate and lower fat energy ratios than the appropriate recommended intakes. In addition, the Chinese Dietary Guidelines recommend that normal adults consume 25 to 30 g of dietary fiber per day. However, this survey found that the daily intake of dietary fiber of male college basketball players is 5.9g and that of female basketball players is 5.2g, which is far lower than the recommended intake. Therefore, both male and female students should increase the intake of foods rich in dietary fiber, such as grains, vegetables and fruits.

5. Suggestions

5.1 It is suggested to set up sports dietitians to popularize sports nutrition knowledge to team members and related personnel

Dietitians are provided for the national men's Basketball team and its related canteens. Dietitians are responsible for carrying out nutrition survey, nutrition research of men's basketball team members, formulating athletes' recipes, and promoting nutrition knowledge to players, administrators and cooks. Specially for team members, managers, chefs to hold lectures, teaching scientific dining, scientific ordering and scientific cooking knowledge, correct wrong dietary concepts.

5.2 Make meals scientifically and reasonably according to the nutritional needs of athletes in different periods

Athletes in different periods have different energy consumption and different needs for good food nutrition. Therefore, nutrition during training, heavy exercise training and competition should be considered separately, and nutritional feeding plans for different periods should be formulated. The cooking method of the chef should also be improved, to use less hot oil frying, frying and other cooking methods, should be used more steam, pay attention to the use of low salt (less than 15 grams per day), meat to stew is appropriate; Should increase the total type of raw vegetables to eat, staple food should increase color varieties, improve the practice of staple food, increase the attraction of staple food. Cereals, dairy products, rolls, sports drinks and liquid meals can be provided for breakfast. Athletes who do not feel hungry or have no appetite for breakfast can be offered high-sugar liquid meals instead of breakfast. According to the training situation, the team members should be provided with food that is easy to digest and can timely supplement their energy consumption, preferably liquid food.

5.3 Propose improvement methods for the dietary problems of the investigated team members found in this survey

For the problem of insufficient intake of carbohydrates and lack of attention to breakfast among team members, besides improving staple food and enriching breakfast varieties, the education of team members should be strengthened to enhance their attention to breakfast and staple food. According to the insufficient multivitamin intake of some athletes in the survey, they should be encouraged to eat more raw vegetables, eat more fresh fruits, and increase the intake of staple food, so as to increase the intake of insufficient vitamins. If dietary supplements still cannot be resolved, they can be

supplemented with vitamin tablets. In view of individual athletes insufficient potassium intake, they should be allowed to expand the types of food, not partial food. For some team members whose calcium intake is low, they should be reminded to increase their intake of milk and dairy products or legumes. In view of the low zinc intake of individual team members, they should be reminded to increase their intake of beans and soy products, vegetables and seafood to supplement zinc. In order to solve the problem of unreasonable proportion of three meals, in addition to improving the food collocation of three meals, the energy distribution ratio of three meals should also be instilled into the team members.

6. Conclusion

In order to improve the diet structure of college basketball players, it is suggested to strengthen nutrition intervention and health education: through lectures and other ways, using dietary guidelines and other materials to educate coaches and athletes about sports nutrition knowledge. Make them understand the dietary nutrition characteristics of basketball program exercisers, according to the actual situation of different kinds of food reasonable collocation, improve the overall nutritional value of food to increase the investment in the nutrition research of basketball players in colleges and universities, and formulate the recommended dietary intake.

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