

## Research Article

### Investigation on the Dietary and Nutritional Status of the Individual High Jump Athletes

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**Abstract:** In this research the dietary nutrition survey used 3-day dietary records during the competition and food frequency and combined the questionnaires to investigate the eating habits and some nutritional knowledge. In order to rectify the ill eating habits of each athlete via the conclusion of this research and guide the athletes' diet and make a little real contribution for their heightening of athletic results.

**Keywords:** Dietary and nutritional status, high jump athletes, nutrition survey

#### INTRODUCTION

Reasonable dietary nutrition, refers to provide consistent with a balanced diet hygiene requirements for the human body, the quality of dietary must meet the physiological, life, the working needs of the human body. As for the athlete proper nutrition is one of the important factors to achieved outstanding athletic performance, only a reasonable diet nutrition, can promote the healthy development of athlete body, eliminate motion fatigue, improve the athletes' sports ability, so as to lay a solid material foundation for the excellent results achieved (Özçelik *et al.*, 2007).

Diet is the most important material foundation that the high jump athletes maintain physical fitness and basic nutrition, athletes dietary nutrition has been attracted much attention in sports scientific research personnel for a long time, America sport nutrition experts James Hickson emphasized that solve the problems of nutrition will be the man who explore one of the field of sports final, however, the main way to obtain comprehensive nutrition of athletes is to supply a balanced diet, dietary nutrition of athletes in different sports items should have its particularity, should conform to the characteristics of the movement project, so as to meet the need of athletes high-intensity training or competition and promote the level of physical fitness of athletes of different sports items, reasonable nutrition and balanced diet is the basic guarantee of high jumpers to obtain good athletic ability, at the same time, reasonable nutrition is also an important factor to influence the physical fitness of athletes, Although dietary nutrition not a substitute for genetic or training, but combine reasonable the nutrition with scientific training, can effectively improve the athlete's physical ability, can effectively improve the competitive ability, especially in high strength, large amount of training or during the period of competition, high jump athlete

body in tension stress state, the body will produce a series of change, such as: energy of the material energy consumption, increased activity of enzyme system, caused by decreased pH in vivo acidic metabolite accumulation, neural activity tension, the body of some nutrient demand increase greatly.

In recent years, from a nutritional survey all kinds of the project teams in our country athlete's dietary have a common problem are carbohydrates (sugar) intake too low, three big nutrients imbalance, energy distribution is not reasonable in three meals a day, breakfast heat is on the low side, dinner heat is on the high side, part of the vitamin intake is inadequate, food the structure is not reasonable, dietary fat, high cholesterol, high protein, animal food especially pork oil proportion is too large, but the staple food, milk, vegetables, fruit and so on intake of these nutrients proportion, unreasonable phenomenon has seriously affected the health and fitness of athletes, early by the nutritional survey to athletes found: more athletes have the nutrition deficiency or insufficiency (Kim *et al.*, 2000).

The high jump is a jumping events in track and field, the basic task of high jump is to use its ability, through jump over the bar, by run-up and landing action form, make human body vault as high as possible the bar in high jump technology is: by running into jump; mountain support into Teng empty; change from horizontal displacement for the projectile motion and has dual characteristics of periodic motion and non periodic motion, so that the high jump is one of the most difficult technology in the track and field sports, the survey on athletes dietary nutrition survey of athletes in this study, which according to the actual circumstances use of 3 consecutive days of dietary recall method, investigated the athlete's diet habits and some knowledge of nutrition. And put forward some suggestions for improvement.

Table 1: How to solve the athletes' nutrition in the course of travel

	The train's answer (%)
Rich carbohydrate food	12
Easy carrying food	23
Easy frozen food	
Habitual food	51
Multifarious food	42
Rich fat and protein food	15
Enough water	50
Fruit	85

Table 2: How to arrange the pre match meal

	Selection of coaches (multiple choice) (%)
Food, small volume, light weight	65
Completed at least 3 h before the competition starts	27
30 min before meals	10
Before drinking tea	
Before the new food	
15 to 30 min before the supply of sugar	26
Before rehydration	32

## MATERIALS AND METHODS

**Dietary and nutritional status for 3 days at the period of high jump competition:** At this stage, in the domestic high level high jump contest presents the characteristics of the training prepared period is short and the long contest season, team sports fan trip in the competition will take place in the season if, in home and away games, fatigue tired from the journey and after the game, for the athlete's physical ability condition greatly affected, how to solve the athletes' dietary nutrition supplementary in the game between the round-trip, guarantee the physical fitness of athletes will be conducive to the spot athletic ability to play during the trip, so it is necessary to strengthen the athletes nutrition recover during the journey (Table 1).

During the first journey in continuous and intense competition, intake a large number of carbohydrate have a good effect athletes' sugar reserve, the athletes of sugar reserves will help enhance athletic ability, during the period before the journey but only 12% coaches select before contest carrying strengthen high carbohydrate foods, coaches should be strengthened in the understanding of the problem the 51% coaches, athletes that should carry enough water, 50% of the coaches choose enough fruit and customary food, which for the athletes during the trip and vitamin supplementation increased intake of food good athletes, it is also consistent with the general travel knowledge, in round game before, most of the team is often to funds to the players in advance during the trip, let the players to buy food, this can lead to youth high jump athletes food supplement has great randomness during the journey, some players are picky eaters, the partial

eclipse phenomenon, buy food is instant noodles, biscuits and other snack during the journey, the supplement nutrition often fail to requirements.

### Nutrition arrangement before the first contest day:

Athlete nutrition is the key, the main purpose is to eat before approaching to provide adequate energy and moisture for the athletes, the study found that: athletes often there is a chronic fatigue problem, before the contest should adopt measures to ensure the supply of sugar and water to solve these problems, before the game, replenishment, high jump, dehydration injury exercise capacity, athletes must add a sufficient amount of liquid, so that the body hydration is very good, in order to make the athletes keep a body in normal fluid state and sugar reserves, before the game within 30 min, sugar supplement is beneficial to maintain high jump athletes in the best physical condition, at the same time, the last meal before the contest should not has the obvious difference with the usual training period dietary pattern, in order to avoid the athletes do not adapt to the food, meals should be located in the pre 3-4 h (Coyle and Montain, 1992).

Table 2 shows before the 30 min of the contest sugar supplement is not the best choice, but the coaches' choice of supplement and rehydration before the contest, only take up 26%. That most coaches don't realize the importance of strengthening the athlete to athlete's sugar reserves (Kreider, 1991). Although every kind of food is good for athletes, but before a meal should be limited to the replacement of the new food, to prevent and reduce the emergence of athletes in the stomach discomfort phenomenon.

**Diet arrangement after a day of the contest:** After a day nutrition adjustment purpose to replenish amounts of muscle glycogen and lack of water and minerals, keep acid-base balance of body fluids during this recovery, athletes need to add a lot of sugar, water, minerals, inorganic salts were supplemented by high sugar foods. The characteristics of this period of time of the meal is: rich in water, mineral salt, inorganic salt, reducing of protein and energy (Burke *et al.*, 1996).

Table 3 shows 42% of the high jump coaches choose protein, high fat food, there are quite a few coaches think concept of aging, high protein, high fat is nutrition, nutrition diet after the game is very crucial, after the dietary nutrition in relation to the athletes' physical recovery, high protein, high fat food intake of food protein, will affect the athletes physical recovery, 55% of coaches to select/sugar supplement, 53% of replenishment coaches selection/lots of fruits and

Table 3: How to arrange the diet after contest form 3-5 (multiple choice)

	The coaches of the answer (%)
Protein, high fat foods (such as pork, roasted duck pork chop, sausage, etc.)	42
High sugar foods (such as rice, pasta)	47
Sugar supplement replenishment	55
Supplement of vitamins and trace elements	52
A lot of fruits and vegetables	53
The drug has the effect of antioxidant	37

vegetables, 47% of coaches selection/high sugar foods, these illustrate coaches of athletes in competitions in the consumption of glycogen, add water, vitamins and trace elements in the understanding of the fair, this may relate to its own motion experience (Van Loon *et al.*, 2000).

## RESULTS AND DISCUSSION

**Education and publicity on sports nutrition knowledge:** By adopting various forms of propaganda, such as: carry out nutrition knowledge lecture regularly, issued nutritional cards, knowledge, put up nutritional knowledge propaganda posters posted, issued athlete nutrition knowledge manual books, nutrition knowledge blackboard newspaper, broadcast the video of the nutrition knowledge etc., make the coaches and athletes know more about the content and the significance of reasonable nutrition dietary, the reasonable solution of nutrition diet to improve the athletes, coaches, the cook, the basic quality of sports teams of dietary management personnel of nutrition and adhere to the nutritional education widely for a long time, the formation of an athlete eat nutrition, cooker cook speak good atmosphere of nutrition and create a new situation of scientific training.

**The dietary management of sports teams:** Dietary nutrition sound management system of the sports team and dedicated management movement range, chef should guarantee food quality, but also to learn a reasonable nutrition food and keep the cafeteria hygiene, on the refrigerator, disinfection cabinet, tableware disinfection etc., should be at least three times a week, the chef must be regular physical examination, to wash their hands before work, strictly control the food quality, does meet the quality requirements of the food, so as to ensure the health and safety of food. Supply fully dietary nutrient and scientific meal is the premise of reasonable nutrition for athletes, so it must be systematic and scientific adjustment to meal structure, improved dietary supply now exist some unreasonable aspects, to establish the nutritional needs of athletes and balanced diet recipes give consideration to the diet taste, so as to realize the goal of reasonable nutrition.

**The sports nutrition knowledge learning and training channel:** Management personnel and cook on the canteen by holding short-term courses, so that by the personnel training system to understand and master the basic knowledge of sports nutrition, nutrition catering method and the test, which documented appointment, motion range cook batch nutrition and cooking knowledge training, the trainees can become both cooking skills and know knowledge of sports

nutriology cooks and through the coaches training strengthens the trainer movement based nutrition knowledge learning.

**To establish of sports nutrition websites:** At present our country is engaged in the sports nutrition technical personnel is less, using this fast and convenient tool of modern network technology, coaches, sports team managers and players can learn knowledge through the network of sports nutrition, sports nutrition websites include: basic knowledge of sports nutrition, scientific training and nutrition; according to the specific situation of athletes dietary nutrition of athletes for guidance, introduces various methods to eliminate exercise fatigue; please sports nutrition experts to conduct special discussions the topic about of the coaches and athletes' care the topic of, at the same, time they communicate via the Internet on scientific training and sports nutrition experience, put forward their own questions and views, players can through the mail put forward some nutritional problems encountered in training, by the experts to answer and make recommendations, help athletes and coaches solve nutritional recovery problem encountered in practice.

## CONCLUSION

- The all athletes have the dietary nutrition unbalance of different degree, it primary performance is that low total calories: intakes, high fat intakes, pretty low carbohydrate intakes, very low vitamin A and the vitamin B1 intakes, low vitamin C intakes, very high the vitamin L intakes, low zinc intakes, unreasonable proportion each of each meal. etc.
- The athletes' daily dietary composition is not reasonable, too high and frequent in taking the livestock's meat, but few in taking coarse food grain, animal's harslet black, black color food etc which contains various nutrition that human needed and obviously not enough in taking fruit and fresh vegetable.
- There are big problems in the athletes' eating habits, most of which is that don't have the habit of having breakfast even don't have breakfast at all and accord personal favorite and the taste of the meal to decide how much and which to eat.
- The athletes' percentage of body fat is higher and the body mass is lighter than average level of Chinese excellent male high-jump athletes.
- Athletes lack enough understanding to nutritional. Knowledge relating to the high-jump and they cannot satisfy the need of taking reasonable nutrition with their understanding degree of nutritional knowledge.

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