

## Research Article

### Research on Strategies for Breakfast Nutrition Dietary of the Students Majoring in Sports Training

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**Abstract:** This study took the effect of breakfast on the function of the body as the key point, by analyzing the breakfast quality problems at the present stage of the sports training major students, proposed the suggestions for improving breakfast nutrition dietary of the sports training major students, since the reasonable diet can not only promote the students' physical health, but also can enhance the immunity ability and improve the efficiency of learning, so as to guarantee the professional sports training students' nutritional intake, thereby improve the body's function, ensuring the quality of learning and training.

**Keywords:** Breakfast quality, physical health, sports training

#### INTRODUCTION

With the development of social economy, people's living standard improved gradually. However, due to the busy life and work, people tend to neglect the quality of life, especially the quality of breakfast. Having breakfast and selecting proper food for breakfast are very important to human health, especially to pupils. Good diet-behavior and abundant nutrients in breakfast can provide adequate energy and nutrients for pupils' physical and mental development. Lack of breakfast or poor quality of breakfast not only influence pupils' nutrients intake, but also influence their academic records, nutritious status and health.

As the first meal of the day, the nutrition of breakfast plays an important role in the energetic function of the whole day. Compared to the ordinary students, the intake of sports training major students has higher demand for breakfast; they need to consume more nutrients to meet the body's energy demands. This study aims to understand the student's sports training specialty breakfast nutrition status and influential factors, so as to put forward reasonable proposals to promote the balanced nutrition and strengthen the movement level.

#### MATERIALS AND METHODS

**Effect of breakfast on the function of the body:** The existence of life, growth and development of organism, various physiological activities and physical activities, as well as the metabolism process all rely on the body. The morning training, the substance of metabolism in vivo must constantly come from the new material of the outside intake with a certain amount (mainly from food intake), so as to ensure the nutrition that human body

needs. The malnutrition of breakfast can not only cause the physiological function of the body declined, but also can reduce the body's ability to adapt to the changes of the external environment and can not defend the outside harmful substances invasion, which even can become pathogenic factors of some diseases, such as the nutritional deficiencies are caused by nutrition deficiency. Nutrients can form the basis of body's tissue, sports can enhance the activities of the body functions, only with the two scientific cooperation, can more effectively promote the health of the body and improve athletic performance.

Reasonable breakfast can provide the necessary nutrients for human work. The nutrients that people need daily are including: sugar, fat, protein, vitamins, inorganic salts and water, the total heat is about 2500-3000 kcal, while breakfast can provide about 25-30% of the total heat a day, if it is less than this value, it will use the body's storage energy, therefore, it will cause the body's functions declined over time.

Sugar is the main component of breakfast, which is often in the formation of starch to take. Sugar as the main energy supply material has many advantages: easy for digestion and absorption by the body, fast heat decomposition, the oxygen consumption is less during oxidation, releasing more heat energy (Quiles *et al.*, 1996). Glucose is an important substance to maintain the normal physiological function of the central nerves system, which is the only energy source of brain. The weight of brain accounted for only 2% of the body weight, but the energy consumption accounted for 25% of the basal metabolism of the whole body. Since the brain tissue had no energy reserves, which all relied on blood glucose for energy supply, during morning exercise training, the brain needs sugar about 50-60 g, the normal level of blood glucose can ensure the normal

physiological functions of the brain. In addition, sugar can promote the absorption of protein function with the antiketogenic effect, maintaining the normal function of cardiac and skeletal muscle. When the body is in motion and lack of sugar, the symptom is often manifested as dizziness, slow response, poor endurance, angina with other symptoms of low blood sugar.

Protein as the essential material for breakfast is also an important content of breakfast. Protein is involved in the composition of body's muscle, blood, bone, skin and so on. The repairs of the damaged tissue as well as the metabolism all need protein. The needed energy for morning training about 30-42% is from protein. When protein intake is insufficient, people may feel tired, physical strength will drop, muscle will be atrophic and spastic, plasma the protein of plasma will be decreased with insufficient blood, which are often manifested in sports training. After long time, it will lead to the decrease of exercising capacity; meanwhile the resistance ability will be weakened and so on.

In addition to the above two, fat, vitamins, inorganic salt and water also played an important role. Fat is the important component of cells, with the function of storing heat, regulating temperature regulation, supporting and protecting the organs. The heat supply of fat in morning training accounted for 10-20%, when the fat is in short supply, the symptom will be constantly hungry, dry mouth and tongue, absence of mind, body temperature dropped, or even with gastric spasm. Vitamins are a type of organic compounds, which can necessarily maintain human body's normal physiological function with many types. But most of them cannot be synthesized by human body, which can only be supplied by food. Vitamin C is a reducing substance with very strong activity, which is involved in various redox reaction, improving the body's working capacity, it can delay and reduce the fatigue, at

Table 1: The relationship between breakfast and sports injury of sports training major students in a certain college

Groups	The number of people	The number of injured people	The avg. number of the injured people
Do not eat breakfast	64	32	1.09
Poor	533	188	0.89
Better	143	41	0.81
Good	101	30	0.78

Avg.: Average

the same time, it can be conducive to the elimination of fatigue, enhance the body's ability and tolerance to hypoxia, coldness and hotness. Inorganic salt and water is also necessary for human body, each of them can perform some functions (Steven *et al.*, 1999). Therefore, it should have adequate intake of fat, vitamin A, B, C, E and sufficient inorganic salt and water in breakfast.

**Reasonable breakfast can have positive effect on human growth and development:** College students are in the transition period from late adolescent to adulthood, the various organs of the body gradually are mature and enter into the shaping stage. At this stage, the body still needs adequate nutrition. According to the research of the Health Institute of Harvard University, it showed that people had normal breakfast, the height and weight growth generally can reach the normal level; while people without breakfast or not timely, more than 60% of them existed the problem of polarization (Levine *et al.*, 1999). From that we can see, breakfast with reasonable nutrition can make the students grow tall and become strong, so that they can reach to the adult level.

**The survey result of the sports injuring rate of students with different qualities of breakfast:** It is found out the fact that is based on the investigation of sport training major students with their breakfast in one

Table 2: The ordering of the reasons for sports injury of sports training major students in a certain college

Reasons	Group without breakfast			Group with worse performance		
	The number of injured people	(%)	Ordering	The number of injured people	(%)	Ordering
Unreasonable technical action	8	42.2	1	153	33.1	1
Insufficient preparation	2	5.8	4	64	14.2	4
The function of the body is lower	3	11.9	3	33	7.2	5
Attention without being focused	4	17.8	2	70	15.2	3
Site factors	3	11.9	3	74	16.1	2
Psychological factors	2	6.1	4	33	7.2	5
Other factors	0	0.0	5	24	5.2	6
Reasons	Group with better performance			Group with good performance		
	The number of injured people	(%)	Ordering	The number of injured people	(%)	Ordering
Unreasonable technical action	18	15.8	3	11	13.2	3
Insufficient preparation	21	18.6	2	18	22.1	2
The function of the body is lower	36	32.5	1	30	37.9	1
Attention without being focused	8	6.6	6	5	6.6	5
Site factors	9	7.5	5	4	4.1	6
Psychological factors	13	11.2	4	9	10.5	4
Other factors	4	2.9	8	2	1.4	7

Table 3: The daily amount of various nutrition intake of sports training major students of a certain college during breakfast

Category	Male		Female	
	Amount	(%)	Amount	(%)
Heat	2511	25.1	2367	24.2
Protein	26.4	29.2	21.1	28.2
Fat	17.3	22.1	17.3	19.7
Sugar	87.4	26.4	79.7	24.6
Iron	10.4	35.2	9.8	44.4
Phosphorus	283.5	19.3	271	19.8
Calcium	132.3	15.7	129.5	15.2

university, from Table 1, we can see that students who do not eat breakfast or eat breakfast with different qualities, the sports injuring rate of the training students has great differences. Among them, students who do not eat breakfast group have the highest injuring rate, which can reach 50%. And the rate of students who have breakfast with "good" quality is slightly higher than that of the "better" group, but the average injured amount of people is still below the "good" group. General speaking, students who eat breakfast with the improvement of breakfast quality, the sports injuring occurrence rate has showed a declining trend.

Table 2 showed us the proportion of the injured people caused by unreasonable action technology had a downward trend with the improvement of breakfast quality, which ranked the first place compared with the group without breakfast (41.2%), as well as with the group with "poor" quality (33%), "the physical function adjustment level is poor" and "the distracted attention" ranked the ranked in the second place and the third place respectively, while "inadequate preparation" ranked in the fourth place; and in the quality of "better" group and "good" quality group, the reasons that caused sports injury in the first place was "bumps, accidents and accidental factors" and "inadequate preparatory activities" ranked the second place, while "unreasonable technical action" ranked the third place (Magkos and Yannakoulia, 2003), it showed us that "the physical function adjustment level is poor" and "the distracted attention "as well as "unreasonable technical action" are the main reasons for sports injury of the students who had poor quality breakfast or did not eat any breakfast, in turn, it can explain that students who had poor quality breakfast or did not eat any breakfast are easily lead to unreasonable technical action, which can ultimately lead to the increase of the sports injuring rate (Fullmers *et al.*, 2001).

## RESULTS AND DISCUSSION

**Analysis on the causes of "poor quality" breakfast of sports training major students:** Most of sports training major students had breakfast with "poor" quality, the reasons may be:

- Related to the old eating habits, the sports training major students are mostly from rural areas, who are used to eating porridge and pickles or food gruel, plus the reason that the family economy is difficulty, which caused the students to fill their stomachs only without considering the problem of nutrition.
- Some students get up late, moreover, time is tight, they are in a hurry to go to class or have training, therefore, there is no time for them to eat in the canteen, most of them just buy some food in the grocery store and eat while walking.
- Some female students mistakenly believe that eating no breakfast can lose weight and keep fit, who simply do not eat any breakfast.

Therefore, strengthening the nutrition knowledge of students who are majored in sports is imminent, which should attract more attention from the school and educators. The daily amount of various nutrition during breakfast is as shown in Table 3.

**Analysis on the declined tendency of the injury rate with the improvement of breakfast quality:** The sports injury refers to the damages caused by various reasons during the period of having sports. Unreasonable technical action is one of the main reasons for the occurrence of sports injuries, which mainly refers to the completion of the action is contrary to the structure characteristics of human body and contrary to the activity law of system function, as well as the principle of sports biomechanics. Unreasonable technical action often appeared in the process of learning new behavior. Glucose is the direct source of brain to use energy, which is an important fuel for cells during the prolonged exercises in skeletal muscle. When the value of blood sugar is lower than the normal value, it can not only cause brain excitability decreased, unresponsive, attention cannot be focused, but also can reduce the endurance of sports, under the condition that the receiving ability and physical coordination are not changed, it will directly affect and improve the formation of technical action, which can result in the occurrence of sports injury because of unreasonable technical action during the process of practice.

## CONCLUSION

Breakfast can play an important role in protecting human health, maintaining physical fitness, improving the efficiency of learning and work efficiency. Therefore, good breakfast habits and nutritious breakfast can provide the body growth and mental development for the sports training major students that are required for various nutrients and energy, so as to improve their learning efficiency and enhance the quality of training.

### **RECOMMENDATIONS FOR IMPROVING NUTRITION DIETARY OF BREAKFAST FOR SPORTS TRAINING MAJOR STUDENTS**

Adjusting the dietary structure for athletes, trying to reduce the intake of pork, the other meat and any other foods with high fat, increasing the amount of staple food (steamed rice, steamed buns) intake, increasing the intake of dairy, animal inner organs, it is better to eat fresh vegetables and fruits and other foods.

Improving the athlete's dieting habits, giving enough attention to breakfast, developing fixed habits of having breakfast are very necessary and important. Under the circumstances of having enough human resources and financial resources, having comprehensive dietary survey regularly is also important and necessary, which can monitor and adjust the nutritional status of athletes timely.

Improving the foods of athletes', adopting the combination method of nutrition catering and buffet for the outstanding athletes, in this way can it make up for the defect of unreasonably selecting food?

Moreover, the scientific researching personnel should have targeted nutritional supplements for the outstanding athletes according to the nutritional survey, especially with calcium, various vitamins that the athletes may be lack of.

The canteen of the athletes should improve the recipes for the outstanding athletes, improving the cooking way, increasing the raw vegetables and black

food and so on, trying to take the nutrition and taste into account, so as to better achieve the meals for athletes-oriented. At the same time, developing the breakfast with comprehensive nutrition, then athletes can eat breakfast with balanced nutrition conveniently, improving the quality of breakfast of sports training major students comprehensively.

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