

Research Article

Research on the Relationship between Student Physical Activity and Dietary Supplements

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Abstract: Teenagers are extremely concerned by the state, society and families and their health affects the majority of people's hearts. Therefore, the constitution of teenagers becomes the focus of people. Promoting the healthy growth of young people not only needs a reasonable amount of sports, but also needs the attention to the dietary supplement. This study uses large amounts of data literature and questionnaires of young people and their parents to analyze the logical relationship between student physical activities and their dietary supplements. This study introduces the importance of dietary supplements on the students' sports activities mainly from the following levels. First, the study clarifies the status of nutritious meals at this stage of students at school sports activities; then, the impact of reasonable diet on student sports; finally, summarizes the main contents and basic methods of reasonable diet nutrition. Through the above analysis, the study shows that the dietary supplement and sports activities are essential for the healthy growth of young students.

Keywords: Dietary supplements, student physical activity, teenager

INTRODUCTION

In recent years, through the investigation, we find that the current constitution of adolescents' strength showed a downward trend that specific performance is the speed of youth work, power and physical strength decreased significantly. In order to comprehensively improve the physical fitness of young people, to ensure that it can grow up healthy and happy, we have taken certain measures, that is, from the beginning of 2007, schools at all levels across the country in-depth, extensive carry out the "Sunshine Sports." In the same year on May 7, the State Council issued "on the strengthening of youth sports to enhance youth physical opinion", the opinion clearly states: To ensure that young students to exercise one hour a day. We know that all 12 to 18 year-olds, the characteristics of the general high school students at this stage of the young people are learning more nervous, but the growth is relatively strong, the body of a large amount of activity, greater energy consumption, so they are bound to have special nutritional needs. For physical exercise to enhance physical fitness and promote physical development is very important and the special nutritional needs of young people not only to meet their own growth and development, but also to meet the standards of exercise on the body's nutritional needs. Adolescent physical health effects of the two main reasons were lack of physical exercise and dietary unreasonable, therefore increasing physical activity and dietary reasonable adolescents is particularly important. Yang (2008), the study shows that the dietary

supplement and sports activities are essential for the healthy growth of young students.

MATERIALS AND METHODS

The characteristics of school physical activities: Accordance with the "Sunshine Sports" spirit of the State Council, the youth should adhere to exercise one hour a day. Guo (2005) High school sports activities are generally three types of "two operating an activity, physical education and race training" to carry out the implementation. Two operating activities specifically refers to a morning exercises, calisthenics and extracurricular activities; through statistics, China's PE usually arranged in the last two sections in the morning or afternoon; most of the race in the afternoon after two training classes and before dinner. Young students metabolic rate is relatively high, so the sports activities of these time periods and their bodies are in a state of low blood sugar levels, but this time the growth and development of young people is a good period, so to participate in sports activities within that period not conducive to the growth and development of young people. Nutrition of young people, not only to meet the body's metabolism, sports and daily activities, but also to meet the growth requirements, so reasonable diet nutrition for young people is also required (Li and Yun, 2013).

The physical and psychological characteristics of teenagers: General teenagers probably are located between 12 to 18 years and significant changes in body

shape will occur during this period, usually after puberty, the development of secondary sexual characteristics and mature body of these stages. During this period, adolescents form, cognitive ability and my heart, character and community will have significant differences, so that adolescence is a critical human growth and development stage. At this stage, with age, because young people affected by endocrine on physical development will be a second peak. Therefore, at this particular stage, young people need to focus on diet and exercise, to replenish the missing nutrients, adequate physical exercise, in order to achieve physical fitness purposes.

Youth in adolescence, not only affected the psychological aspects, but also influenced by physiological aspects, in this particular period is crucial to improve the level of intelligence of young people. And in this period, young people will be dramatic psychological changes, significantly enhanced self-awareness, self-independence gradually formed and would like to own to solve problems independently, the self as the first element to deal with any matter. This awareness of young people's own development has a strong positive use and because relatively little social experience, self-esteem and strong, with a wealth of emotions, physiological changes of their own curious rebellion more serious, so teenagers are generally out on their own preferences to choose meals, there will be picky eaters, the partial eclipse, anorexia and eat snacks phenomenon, so over time, it will greatly increase the rate of adolescent obesity or body slim phenomenon. Therefore, to properly train mental awareness of young people, enhance physical exercise and proper diet, avoid the growth and development of their own adverse effects.

The physical activity and nutrition situation of teenagers: In recent years, the nutritional level of young people has been improved significantly, resulting in deformation of morphological development of youth phenomenon. Also, due to the lack of proper youth sports, making the youth's body function decline, physical fitness was significantly reduced. Therefore, patients with severe obesity is in adolescents overweight and obesity rapidly increasing proportion of regional differences also significantly different cities in obese adolescent patients significantly more than the countryside. The main cause of this serious phenomenon is due to the eating habits of the city the problem of youth, love picky eaters, eat flour, fat intake seriously overweight, eat less fruit and vegetables, a serious shortage of vitamin intake. However, rural teenagers eat more whole grains, cereals, fresh fruit and vegetables intake standards, protein and vitamin supplements reasonable, meat and vegetables, nutritional balance. Therefore, the city's young people to eat more fresh vegetables and fruits, not overeating,

with a reasonable diet, develop good eating habits, good breakfast, lunch, fed, dinner eat less, try to make meals diversify, which is the growth and development of young people is very important, if you participate in sports activities do not eat breakfast, you will hypoglycemia phenomenon affects not only teaching but also a serious threat to physical health of young people, if dinner intake, then will greatly increase the chances of obesity in adolescents happen, so essential to the growth and development of young people's reasonable diet, physical exercise teenagers but also to strengthen and enhance their physical fitness, reduce the incidence of obesity.

The impact of proper nutrition on physical education: When teenagers making appropriate physical exercise, improve their endocrine activity, central nervous system tension increases, leading to enhanced activity, metabolic function improved significantly, the total energy consumption is several times as much as usual, prompting young body carbohydrate and fat decomposition and consume large amounts of vitamins and inorganic salts, protein metabolism accelerated. So, after making youth physical exercise, a variety of nutrients to replenish the missing body, only to provide enough heat, a variety of salts, minerals and trace elements, in order to ensure that young people during physical exercise after restored, prompting grow and develop their physical and mental health. Another problem is that large youth sports activities, plus the arduous task of learning, mental tension, it will consume a lot of energy and you need to add a lot of nutrients.

So, all of these reasons, a critical stage in the growth and development of young people, it will need a lot of nutrients to meet the body's growth and development needs, with a reasonable diet and appropriate physical exercise on physical and mental health of young people is essential, above two important conditions are indispensable complement each other. In the adolescent growth and development stage, must be scientific and rational basis with meals, plus reasonable physical exercise, in order to improve young people in various organs of the body function. Especially after the youth sports activities, if not timely and effective nutritional supplement, the body of young people will be in a "negative balance" of the state, this state would be a serious threat to the health of young people, due to the lack of a variety of nutrients elements of long-term effect on the health of young people is extremely unfavorable, it will cause a decline in adolescent physiology, exercise capacity decreased. So, after conducting youth sports activities, the need for timely dietary supplement, complement a variety of nutrients the body lacks, meat and vegetables, reasonable diet, pasta and cereals as both a basic nutrition, but also have enough protein and a variety of

vitamin intake, so as to promote the growth and development of young people, enhance memory and logical thinking of young people, so not only can ensure that young people's health but also improve their learning efficiency. However, note that, to be able to avoid excessive nutrient intake, so induce a variety of diseases and obesity.

RESULTS AND DISCUSSION

The concept of reasonable diet: Proper nutrition with the name suggests is a reasonable diet, intake of various nutrients from food to meet the body's physiological needs and all social activities of the human body and also with the intake of nutrients the body needs these nutrients to reach equilibrium, neither lack, nor excessive, which is to ensure the normal development of the body, improve health, an important method of disease prevention and longevity. Proper nutrition can also improve athletic ability of young people, eliminating sports fatigue and achieve excellent results. A balanced diet is not simply a certain kind of nutritional intake. You need a variety of food composition, not only to meet the physical needs but also to maintain a variety of nutritional balance. General dietary intake of foods including seven categories, namely fats, meat, cereals, milk, vegetables, fruits, roots, growth and development of young people in learning tension, but also for physical exercise, physical exercise to a very large energy consumption, in this particular period, dietary choices and match essential food choices not only to ensure that the quantity but also to ensure quality, so as to ensure the healthy growth of young people (Li *et al.*, 2014).

The content of reasonable diet: When people is in a juvenile puberty should promptly supplement the heat in sport and when supplemental heat is required, generally in accordance with the food itself, the body heat and energy consumption may be, so to ensure that the heat balance. Here we give the students of different ages proposal daily calorie needs, generally 7-10 years old need 8370 KJ, 10-13 years old need 9625.5 KJ. Entering adolescence, their physical and psychological development of organ changes gradually mature, so the demand for the supply of nutrients more. For example, we need to heat secondary students than adults engaged in physical labor, specifically the number below, 13-15 years old 42 kg male and female teenagers need heat 1088 and 10462.5 KJ of 16-19 year old men and women need 12555 and 11299.5 KJ heat, male than female high 1255.5KJ heat. Dietary substances provide the necessary heat to the thermal energy body, mainly carbohydrates, fats, vitamins, protein, minerals and water.

In addition, we must recognize the importance of the principle of reasonable meals and supplements, such

Table 1: The suggestion for middle school student about diet

Time	A.M. (%)	P.M. (%)	Night (%)
Breakfast	30-35	35-40	30-35
Lunch	35-40	30-35	35-40
Dessert	-	5	-
Dinner	25-30	25-30	15-20
Snack	-	-	5-10

Table 2: The nutrition supply for student physical activity

Vegetable	10-15
Cereal	8-10
Meat	2-3
Milk product	5
Bean products	2-3
Sugar	0.5
Fruit	Proper

Table 3: The nutrition supply for middle school student

Age	Sex	Thermal kcal	Protein g
13-16	Male	2600	80
	Female	2500	75
16-19	Male	3000	90
	Female	2700	80

Age	Sex	Vitamin A	Carotene mg
13-16	Male	2600	80
	Female	2500	75
16-19	Male	3000	90
	Female	2700	80

Age	Sex	Calcium mg	Fe mg
13-16	Male	1200	15
	Female	1200	15
16-19	Male	1000	15
	Female	1000	15

Age	Sex	Vitamin B1 mg	Vitamin B2 mg
13-16	Male	1200	15
	Female	1200	15
16-19	Male	1000	15
	Female	1000	15

Table 4: The mixing table of various foods

Food	The original value	Mix ratio (%)	The mixing value
Wheat, corn and soybean	67, 60, 57	40, 40, 20	70
Wheat and soybean	67, 57	67, 33	77
Milk and flour	85, 67	30, 67	83
Wheat, corn and sorghum	57, 60, 56	20, 50, 30	75

as during exercise or physical education before the time before a meal should not be fed, may be set to ensure that contain enough calories; dining can be larger after exercise; dinner while avoiding excessive intake. By secondary school physical education, the percentage of heat distribution meals is as shown in Table 1.

The Situation of Student Sports Nutrition Supply is as Shown in Table 2.

From the above chart, you can know the nutritional needs of adults less than adolescents. From the thermal perspective, adults need per day 2300-2700 Kcal, while teenagers need 2500-3000 Kcal. So this movement needs of young people in their daily life, focusing on proper nutrition deployment. Table 3 shows the nutrition supply for middle school student.

Exclusion the nutrition of young people need, physical education at the time, carbohydrate, fat and protein is the main energy supply substances. Generally, a moderate-intensity physical education energy is about 1876-5147 KJ and energy consumption is 18-41% higher than before. If sugar and fat *in vivo* and *in vitro* to produce equal amounts of heat of combustion, but they are different from the protein by *in vitro* protein was found 1 g 23 KJ combustion generates heat and in the generation of body heat only 17 KJ. So, to be appropriate nutritional supplements or strenuous exercise in physical education should be.

The basic method of proper diet: Meals provided to us necessary for the body of the six classes of nutrients. For adults, 10-12% of total protein supply accounts for the high school students accounted for 12-14%, the standard supply of 1-1.5 g/kg/person. In meat, fish, generally contain 10-30% protein, milk in about 1.1-2.9%, beans about 20-49.8%, hard fruit in about 15-26%, cereals about 6-10%, potatoes are about 2-3%. 50 g fat daily can meet human needs, probably accounting for about 17-20% of total calories each day, preferably not more than 30%. Saturated fatty acids are mainly from pigs, cattle, sheep, dairy, fish and other animal fats, unsaturated fatty acids, mostly from vegetable fats. Sugars accounted for 60-70% of total calories a day, mostly from the beans, grain, roots. Per kilogram of body weight per day needs 4-6 g, high school students per kg of body weight in 5-8 g. Minerals and vitamins are mainly from animal liver, fruits and vegetables. High school students per kilogram body weight per day supplement water 50-80 mL appropriate.

In the process of teaching youth sports, only rational nutrition, physical fitness and sports in order to improve the quality of teaching young people, the most important point is that the proportion of nutrients in a balanced diet, you need to eat a variety of protein foods mixed, various amino acids with each other, improve the ratio of amino acid intake, so as to play a higher nutritional value, this complementary and mutually reinforcing roles to achieve better absorption of nutrients and utilization, as shown in Table 4.

In order to better match the Physical Education and Dietary together, we must strengthen the supply of young people three meals a day, breakfast is the focus

of the question, especially young people, due to the lack of adequate physical exercise and obesity symptoms, or because nutrition excess and overweight, there may be irregular eating for young people serious health threat. If the parents of the child breakfast quality is not high enough attention, so they tend to cause a decline in academic performance of young people, long past, is bound to affect neuronal development of young people, for young people's intellectual development and lead to serious health threat, we will explore the impact of physical education. Reference breakfast recipes are as follows: jujube rice porridge, biscuits, floss, dried bean curd mixed with cucumber Ding, bean porridge of rice, sesame rolls, boiled eggs, dried shrimps mixed with cowpea, boiled eggs, milk and so on.

CONCLUSION

With the overall progress of the society, the development of the country needs high-quality person. In order to improve the physical and mental development of the young people, we not only need to strengthen nutrition, catering for young people, but also need to strengthen young people's physical activity. After physical exercise, the body should be promptly needed to supply various nutrients and proper physical exercise should combine with a reasonable diet. According to the physical class, we should have the daily reasonable meal, nutritional supplement and develop good dietary habits.

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