

Nutritional Needs and Contemporary Dietary Habits in Young People Groups

Yuying Gao

College of International Education, Beijing University of Agriculture, Beijing, China

gyy2005618@gmail.com

Abstract. Food as a substance that must be ingested by people to sustain life, are rich in variety of nutrients. With the development of economic and advance of cognize, people becoming more and more pay attention to dietary pattern and pursue balanced nutrient intake. Nutrients are divided into macronutrients and micronutrients. The article is aimed at provide a nutrient guide from the perspective of macronutrients and macronutrients to public especially young people group, collated and recorded some data about 3 macronutrients: carbohydrate, fat and protein; some more important micronutrients to young people group: Vitamin A, Vitamin C, Vitamin D, calcium, iron, zinc in mineral substance. After learning and sorting, this article compared the different nutrition intake content between different age groups and list cause of results. Finally give some advices according to the data, aim to provide train of thought on young people nutrition intake to extensive scholars, researchers and the public.

Keywords: Macronutrient, Micronutrient, Young people.

1. Introduction

As the development of economic, food quality is already become new pursue today, people especially young aged group more and more focus on their everyday intake and food nutrition when they have a meal, healthy dietary pattern is being a new trend spreading all over the world. To guide public everyday nutrition intake, nutritionist release dietary pyramid and update every year to help public cultivate healthy dietary pattern. Classify nutrition to macronutrients and micronutrients, macronutrients refer to carbs, fats, and proteins, as the three basic components of every diet. Micronutrients are also important to our body, it consist on vitamins,minerals, amino acids and fatty acid. Different nutrition plays different role in our body, carbohydrate always as staple food form to intake, it can divide into Fast-digesting Carbohydrates and Slow-digesting Carbohydrates, have functions on provide energy, constituent cells and tissues, and maintain brain cell. Fats as an important source of calories, have 2 types of fats: animal fat and vegetable fat, it can stockpile abundant energy in body, have function on maintain body temperature, fixed viscera position. Except carbohydrates and fats, protein also can provide energy to human body, but not as a main energy source. Besides, protein undertake function about repair cells and tissues, as enzyme catalysis, support immune system and transport substance. People can intake 45-65% of carbs, 20-35% fats, and 10-35% proteins in calories every day from meal. People in childhood stage are suggested to have 250-300g vegetables and 150g fruits to intake enough micronutrients [1].

However, guidance above is an ideality model by nutritionists, but the fact situation in public life is greatly different. Most of family will have meal with most family members together, so it is difficult to separate different ages of people's nutrition intake in tradition meal. In addition, cause by various reasons, for example dietary habit, religions faith, pace of life, geographical and climate affect, different region and habit influence public's food intake, hence public are difficult to have meal identical with nutrition model. Generally, for the childhood stage, children prefer to eat more snacks and sugar, sweet taste may pacify children's emotion and lead their eating habit not only affected by food cooked by parents, but also their like. Personal preference reason embody in every aged group in various forms. People in young ages will focus on their career much than food intake, frequently, young people need to face overtime and full schedule, this lead this group of citizens are easier to choose proceed food like pizza, fast foods. In regard to old ages, this group pay more attention on their body health situation than other age people. Cause by unavoidable illness, old people will keep a watchful eye on their everyday menu, by means of diet to keep healthy. People in different age need diversity content of nutrition to support their somatic function work, because of this reason, we intake different content of food. This article main explores young aged group people's dietary pattern, with regard to children and teenagers, they are during the growth stage, balanced diet and more protein intake can be more helpful to their growth and development. Cause their longer exercise time than other age, proteins are good for build muscle and promote physiological function development. On the other hand, eat high-quality protein food can help our body intake various protein and decompose to amino-acid, get essential amino-acid from outside food, and ultimately synthesized necessary proteins in our body [2]. About micronutrients, young people also should pay attention to balanced intake, conjoint emphasis Vitamin A, Vitamin C, Vitamin D and calcium. Caused by their higher intensity of using eyes and not fully developed on their vision, Vitamin A can give well play to protect young people's eyesight, relief night blindness, prevent cornea dry to stay eyes healthy. Vitamin C can improve white blood cell function to enhance immunity, confront free radical injury and reduce the risk of chronic disease. Vitamin D is closely related to calcium, as a primary limiting nutrient, Vitamin D will influence absorb of calcium and magnesium, therefore Vitamin D become an important micronutrient that people should pay attention to get. Overall, according to "Dietary Guidelines for Chinese residents". Nutrition intake will change with age, when people reach 19-50 years old, separate groups from males and females, males should intake 900 mcg Vitamin A, 90 mg Vitamin C, 600 IU Vitamin D and 15 mg Vitamin E; More minerals, such as 8 mg Iron, 1000 mg calcium and 400-420 mg magnesium. Comparing with males, females from aged 19 to 50 need less micronutrients, 700 mcg Vitamin A, 75 mg Vitamin C, 600 IU Vitamin D and 15 mg Vitamin E; 18 mg Iron, 1000 mg calcium and 310-320 mg magnesium in minerals. Come to the old age, nutritionists advised to intake 2050 kcal-2350 kcal calories for old males, 1700 kcal-1950 kcal for old females; Less proteins intake: 65 g for males, and 55 g for females. Comparing to younger age group, carbohydrates and fats will take up less present, 20%-30% fats in entire energy, 50%-65% carbohydrates in entire energy.

As children and teenagers, young people need more energy and nutrients than elders, through the comparison between characteristic in three aged group, children and young aged group are easier to suffer from sub-health problem or even obesity. Research in France, Italy, Belgium and some Europe countries, scientists found that total and added sugar are high in childhood stage and young aged group. The average intake of CHO in European countries reached at 43-58% of total energy, intake added sugar for 16-36%, monosaccharide and disaccharide intake by children and young aged group reached at 23-36%. Enter the 21st century, children and young aged group suffer from obesity percentage increased remarkable too. Data from "Investigation on Chinese student's physique and health" show that there are 17.1% of boys have overweight problem and 11.1% boys are already suffering from obesity in city from 7-18 years old; cause by more stringent management and attention on appearance, girls in city have overweight lower than boys, at 10.6% and prevalence rate of obesity have 5.8%, much fewer than boys. Children in countryside also have fat problem, but either of gender group are less than in city. Boys live in the countryside have 12.6% overweight, 7.7% have obesity, and girls live in the countryside have 8.3% of overweight and 4.5% of obesity. With this trend more and more popular and intensity, children

and young aged group have higher risk on cancer, type 2 diabetes, CVD and non-alcoholic hepatic disease, which are threat their health today. Although people today start to look out the nutrient substance intake, but most of people's life style lead they cannot keep a healthy dietary pattern like nutritionist expect.

This article collected some data, compare data between different age group people, it aims to give some guidance to public especially young people group, expected young people to build a more balanced and healthy diet.

2. Macronutrients and micronutrients intake in young people

2.1. Carbohydrates

on immediately following the last numbered section of the paper. As one of the three important macronutrients, carbohydrates commonly ingest to as staple food such as rice, potato, sweet potato, bread and noodles those we intake every day. It can be classified as Fast-digesting Carbohydrates and Slow-digesting Carbohydrates. Fast-digesting Carbohydrates usually refer to precision-machined carbohydrate, for example white bread, refined rice, which have low fiber content and easier to be absorbed by human body, lead to people's blood glucose fluctuate speediness and trigger energy fluctuation and bring sense of hunger. In contrast to Fast-digesting Carbohydrates, Slow-digesting Carbohydrates include whole grain, beans, vegetables, fruits and unprocessed grains. These kinds of carbs can use their high fiber content to slow down digestion rate, provide more stable energy and keep blood glucose balance. Slow-digesting Carbohydrates can also give stronger and longer satiety than Fast-digesting Carbohydrates, which is helpful to people control weight [3]. By ingesting carbohydrates, it provided energy, regulate blood glucose, and adjust our emotions. Fiber can help people promote intestinal movement, keep our digestive system health. Due to these advantages, people should intake carbohydrate in every aged range. Same as other nutrient substance, people in different age group intake different present of carbohydrate. For children, every kid should have 50-60% carbs form calories, during they have meals and eat snacks [4]. If intake insufficient, it will lead children easy to fractious, tired and lack of energy. For teenager, they need have 55-75% of carbs to support their daily physical activities, much more than children. Less carbs intake for teenagers will cause them hypoglycemia and malnutrition. For adults, this group need intake 56-60% carbs every day in meals, approximately 300g. After growth and development stage for people's body, our demand of carbs will decrease in a small quantity, however, carbohydrate is still an important substance for our health, lack of carbs will still lead lose flesh and severity tired. Lastly, for old people group, people need to intake 55-65% of carbs every day, people may fill tired like the adult group, if they don't have enough carbs from food like adult group. As a primary intake substance, people can get carbohydrate from most staple food. Caused by common intake type, most people won't lack carbs a lot, except part of population may use some extremely and unscientific lose weight way, lose their weight by not eating carbs.

2.2. Proteins

Macronutrient consist of carbohydrate, proteins and fats. Proteins as an indispensable nutrient in human's body, can be decompose to amino acid. As we know, amino acid has various species, and it can be categorized as essential amino-acid and non-essential amino acid. Evidently, essential amino-acid means some amino-acids which can't synthetic by ourselves or the rate of synthesis can't reach actual demand, for example lysine, leucine, tryptophan etc., eight amino-acids in total [5]. People need gain these kinds of essential amino-acid from food, for instance lean meat, nuts and grains can provide lysine, fish, beans and whole grain can help us intake leucine, fruits, seeds and dairy products can provide tryptophan to people. Non-essential amino-acid means some amino-acids can synthesis by body selves, or conversion by other amino acids in human body, so that people don't have to gain this type of amino-acids just from food. Non-essential amino-acid include glutamic acid, serine and tyrosine etc., people can gain glutamic acid from vegetable especially tomato and mushroom, meat and dairy products [6]. Except common food source of protein, people can intake serine from fermentation food, yogurt

and cheeses are good choices to intake L-serine, nut and beans also are rich in serine. About tyrosine, people can intake from liver, shellfish, nut with shell such as peanut, sesame, and use for synthetic dopamine, epinephrine and thyroid hormones etc. important hormone in human body. Generally, proteins possess constitute and cure human tissue, keep electrolyte balanced, transport and immune function. DNA as a protein, copy mRNA by transcription and translate on ribosome, synthesis protein in the end. Proteins will be folded and assembled in endoplasmic reticulum, then secretion out of the cell and constitute different human tissues. In the transportation function, hemoglobin can transport oxygen, nutrient substance in the blood; lipoprotein can transport fats like LDL, HDL. Furthermore, some proteins like carrier protein, transport protein are also having transport function in our body. Antibody as a protein can antigen with binding and trigger body immune response; there are also some receptor proteins on the immune cell surface, for example T-cell, those protein are involved in body immune work. Lastly, protein also as enzyme to effect and catalyze various chemical reactions in human's body. With the developing in agriculture, public can choose more various foods than before, so protein intake is not difficult. People today get enough protein from meat, egg, beans, and dairy products, and simultaneously, more choice in meat we can choose by personal preference such as beef, fish, poultry. And choose every dairy product we like: cheese, milk. Same with carbohydrate, proteins intake has difference in different aged group [7]. People should intake protein 0.8 g per kilogram of weight and intake 10-30% when we are in the childhood stage, plenty of proteins can help our body growth up quickly. For teenagers, they need to get 12-14% of proteins every day, approximately 55-85 g every day, and boys will have higher requirement on proteins than girls in this stage. Boys on teenager's stage will have much more sports activities, some family may let their children start professional training and educate them to become an athlete, protein intake will be extremely important to this group of teenagers, it can help them grow stronger and powerful to complete their high strength sports training. For adults, people need intake 10% of proteins every day, it mainly aimed to support our daily activities. Most people in this age start their career and are busy at their work, leave less time for sports and take exercise, so their require of protein will be reduce than the teenager group. For old aged people, although they don't have much sports schedule every day, but they need high protein intake, at 15-20%. With the age growth, our muscle will lessen and atrophy, much protein can help old people keep muscle content, safeguard body and organ work. To sum up, proteins are important to body healthy, we suggest having balanced diet to not only young people but also elder people to intake various and more complete proteins, teenagers and elder people should intake more high-quality protein to support their somatic function run faultlessly.

2.3. *Fats*

Focusing on fats, fat brings both advantages and disadvantages for human's health. Nutritionist divide fat into vegetable fat and animal fat. Through the constructure, source and healthy influence to human body, there are some small differences between vegetable fat and animal fat. Vegetable fat is most source from vegetable oil, for example olive oil, soybean oil and corn oil, other source like nut, seed and some fruit like avocado. Vegetable fat have a great many unsaturated fatty acid, include monounsaturated fatty acid and polyunsaturated fatty acids, this type of fat are always as liquid state at room temperature. the omega-3 in polyunsaturated fatty acids have strong advantage on reduce LDL and decrease the risk of heart disease. On the other hand, omega-3 also can promote brain development, positive to human body growth [8]. Comparing to vegetable fat, animal fat often contained higher saturated fatty acid and as solid state at room temperature. Public can intake animal fat from meat, dairy products, butter, egg yolk and fish source. Because of the high saturated fatty acid and trans-fatty acids in the fat from animals, animal fat usually will bring higher risk on CVD [9]. Nowadays, processed foods are more and more popular by its convenient form, people in nowadays also can intake fats from fast foods and deep-fry foods, for example French fries, fried chicken. Compare with get fats from animal organs and full-fat dairy products, get fats form fast food and deep-fry food are unhealthy. No matter what kind of fat, as a significant substance in our body have four functions: store energy, protect cell structure, keep body temperature and protect organs in our body. As an important nutrient substance, children and teenagers

have a high require intake in fats, at 25-30% every day. Adult intake content is similar with children and teenagers, at 20-30%, not exceeding 30%. For old people group, their function of metabolism will decrease significantly. Due to this reason, they need fewer content in fats, not exceed 25% from whole energy intake. It is worth mentioning that, people in different geographic position, different religious beliefs and dietary habit will directly influence people's fat intake. For instance, people live in high altitude localities, circumpolar latitude areas may intake fatter to withstand the cold; some citizens and people may live in an area where developed animal husbandry, such as America, Australia and the Nei Mongolia Autonomous Region in China will have more meat during their everyday meals; Besides, people have their personal like on fat, some people may feel fishy when they have animal fat and soya-bean oil, and vegetarian won't eat meat too. Above these reasons, fat intake is not always balanced and accord with the dietary model. Most food which are rich in fats may have good taste, this point also lead people especially young people easily to intake over content fats in our life, increase weight significantly even suffer from obesity, disable to control blood glucose, more stress will take to our heart at the same time and rise liver disease risk. Consequently, we recommend young people to limited intake of fried foods and try to balanced fat intake from vegetable and animals, eat more food which have high omega-3, it will be helpful to their brain development and advantage to their body growth.

2.4. *Micronutrients*

About the other part of nutrients—micronutrients also play an important role in our body, including vitamins, minerals and microelement. Among these substance, vitamins can support body functions, including but not limited to Vitamin A, Vitamin C and Vitamin D. As a liposoluble substance, Vitamin A have retinol, retinal retinoic acid and retinyl ester, it is a precursor of 11-cis-retinal, and it is an important substance to synthesis rhodopsin which is a photopigment in body [10]. We can get Vitamin A from carrots, fish oil, and use Vitamin A to protect vision, especially in dark area. It can help protect our skin and mucous membrane healthy, enhance immunologic function. Vitamin C as a familiar vitamin can promote iron absorb, keep skin, connective tissue and skeleton energy and health. So, Vitamin C is always well-liked by people, especially females. Vitamin B in our body can help us balanced our blood glucose and promote metabolism; except Vitamin A, Vitamin D is also a liposoluble substance, which can promote calcium and magnesium absorb and as primary limiting nutrient limit calcium and magnesium absorb [11,12]. Due to this special function, people should intake enough Vitamin D to insure micronutrient intake content. Expert today proposes teenagers to intake more vitamin every day, about 630-820 μg to promise they can have enough nutrient substance to growth up, it should be taken up 1/3 in whole vitamin source. Vitamin A can be intake from fish, dairy products and so on, furthermore, teenagers should intake 300-500 g vegetables and fruits every day. There are more content of Vitamin A in vegetables which have dark color, such as pumpkin, spinach and carrot, teenagers should intake dark color vegetables about 1/3 to 1/whole vegetable types. From 2010 to 2012, young people whose age from 6 to 17 in China have problem in lack of Vitamin A. Other vitamin is also important to our body, scientist suggest teenagers age from 11 to 17 intake Vitamin C 90-100mg every day, to keep their micronutrient intake balance. Lastly, people should intake 15 μg Vitamin D to guarantee body working properly, and maximum intake Vitamin D at less than 100 μg every day, to avoid hypercalcemia and kidney stone. Except vitamins, mineral substance is also a big part in micronutrient. Mineral substance included calcium, iron, magnesium, potassium, zinc, sodium and so on. During these substances, calcium as an important constituent part of skeleton, teeth and soft tissue in human's body, teenagers will need more calcium than adults to support their body growth, about 1000-1200 mg every day. To promise enough calcium intake, teenagers should intake 300-500 g dairy products every day, and simultaneously, soybean is also a great source to intake calcium. Less calcium may lead growth retardation, bone deformity and rarefaction of bone, which are harmful to our body. Iron as a substance which participate in transport and utilize oxygen, due to the quickly growth in teenager stage, teenagers will have higher requirement on iron than other age groups, about 15-18 mg every day. If we lack of iron, our body may have anemia and decline immunity. To avoid this problem, people can get iron from animal blood, animal liver, soybean, black fungus and sesame paste, moreover,

meat of animal is also a good source to intake iron. Zinc has many functions in human's body, it can affect our growth and development, intellectual development, immunity and reproduction function. Nutrition scientists advise teenagers to intake 9.0-11.5 mg zinc per day from animal liver, shellfish seafood and meat of animal which can help us supplement zinc. Enough zinc intake can help people to avoid dysgeusia, anorexia and problem in reproduction function.

3. Conclusion

To sum up, due to the different absorb and metabolism of nutrition, people in different age have different requirement in nutrition intake. Comparing with other two groups, children group and young aged group need more nutrient substance to support their body growth, higher metabolism can help young age people take advantage of macronutrients and micronutrients. Secondly, a large portion of young people will have longer time to do exercise, it leads young aged group of people will need more nutrition intake than other groups. After the study found that personal life style today will influence people's dietary pattern. Firstly, people in the society today have fast pace of life. Differ from before, a range of people have less time to relax and have a nutritious meal during their career, more and more people will choose fast foods, processed foods to eat their meal in limited time of break. Secondly, the industry of processed foods developed quickly today. Better technology make processed food can have better taste and appearance, more and more convenient eating ways are emerged to the market, and guidance people to purchase, directly influence people's dietary pattern. Besides, people on different ages have different food preference. For children and teenager, widely of population in these group like meat and sweet taste, so more fats will be intake on young age group. Opposite to young aged group, elder people may choose fewer sugar foods, not only because they have less requirement on sweet taste, but also caused they need to avoid disease like high blood glucose happen. According to these comprehensive problems, we suggest people today to choose some food use sugar substitute to instead of sugar, while providing sweetness and health. For somebody they lack of some substance, we advise to have some food add nutrient supplements, for example iodized salt, to supply deficient elements. In the end, with the development of food industry, people can have more and more method to balanced intake, our dietary pattern will be inevitable more healthily in the future.

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