

PRE-SCHOOL CHILDREN'S NUTRITION IN SOME KINDERGARTEN OF ELBASAN

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Abstract

During the whole period of childhood foods must provide the necessary constructive and energetic material to maintain and increase the child's body. The pre-school period, from 3 to 6 years is a stage of continuing growth and development for the young child. He goes through many changes in his physical, mental, emotional and social development. The child's motor skills improve along with his balance and coordination. They also develop the muscular strength to perform several activities. According to high motor activity, during this period of increasing independence and growth, they require a high calorie intake. Because of the considerable increase in muscular development protein has a very important role in the diet of the pre-school child. They show higher need for others nutrients as vitamins and minerals. Based on this framework, child's nutrition in the kindergarten is very important to ensure correct balance of healthy food, essential nutrients and to fulfill the increased nutritional needs of pre-school children. This work was focused on the evaluation of child's nutrition in some kindergarten of Elbasan based on the ordinance of the minister of health. Assessment was based on tables that contains the gram of foods for the week for one child and on 5-days menu for pre-school children. The analysis of directives in this field, direct observations during preparation and serving of meals, interviews with kindergarten directors, staff and specialist of Institute of Public Health make possible to study closely the aspect of nutrition in children, not at all know in our country. This evaluation was aimed also to underline possible modifications on nutritional programs for pre-school children in order to satisfy their needs and taste.

Key words: *pre-school children, nutrition, kindergarten, growth, motor skills etc*

Introduction

During the whole period of childhood foods must provide the necessary constructive and energetic material to maintain and increase the child's body. Developing good habits in childhood is essential to become a healthy adult. In comparison with toddlers, preschool-aged children (3-6 years) have increased muscle tone and lower body fat. They go through many changes in their physical, mental, emotional and social development. The child's motor skills improve along with his balance and coordination. So a well-balanced diet filled with nutritious food choices is important for preschooler because it helps to promote healthy development as well as providing the energy needed to do the daily activities. At this purpose, it is important that the nutrition that they received through the 5 days menu in their kindergarten provide them with all the nutrients necessary and appropriate amounts.

This is the age at which the child requires a great calorie intake because of the intensive physical activity. The table below reflects the indication of the range of values of energy needs for children in both sexes by age (1).

Table.1 Range of values of energy needs for children in both sexes by age.

Age (years)	Male (kcal/day)	Female (cal/day)
3	1162-1699	1114-1651
3.5	1203-1739	1098-1629
4.5	1296-1863	1209-1784
5.5	1401-2027	1310-1932
6.5	1529-2226	1375-2038

For these children is difficult to cover their own needs with only three main meals. Therefore is appropriate to provide them, in addition to the principal meals, even two snacks that contribute to fulfill the specific needs in calories and nutrients typical of this age.

The food needed to cover the energy and nutrient requirements should be divided into four daily meals, each of them with the following calories shares(1):

Table 2. Daily distribution of energy intake among the different meals

Meals	3 - 6 years
Breakfast 15-20%	188-274 (kcal/day)
Lunch 35-40%	501-732
Snacks 5-10%	125-183
Dinner 30-35%	438-640
Total	1252-1829

Regarding to the nutritional principles the preschool children need a protein intake of 1,34 g/kg/day, 51 g of lipids and 211g of carbohydrates per day (2,3).They show higher need also for others nutrients such as vitamins and minerals (3).

Table 3. Need of vitamins for pre-school children

Fat-soluble vitamins	3-6 years
A	400 µg
E	3-8 mg
D	0-10 µg
K	17 µg
Water soluble vitamins	
B1	0.7 mg
B2	1.1 mg
Biotin	15-100 µg
Pantothenic Acid	3-12 mg
C	45 mg
Folic Acid	130 µg
B6	0.7 mg
B12	1 µg

Table 4. Need of minerals for preschooler

Minerals	3-6 years
Calcium	800 mg
Phosphor	800 mg
Magnesium	150-500 mg
Sodium	0.57-3.5 g
Potasium	1100 mg
Iron	9 mg
Zinc	6 mg
Selenium	15 µg
Iodine	90 µg
Fluorine	1.5-4 mg

Materials and methods

To evaluate child's nutrition in some kindergarten of Elbasan, I personally conducted a survey in some public kindergarten(4):

1. Kindergarten Nr. 2; 108 children
2. Kindergarten Nr.5; 146 children
3. Kindergarten Nr. 7;126 children
4. Kindergarten Nr. 9; 115 children
5. Kindergarten Nr.12 ;121 children

Assessment was based on:

1. Direct interviews with the directors of these kindergartens to have information about the organization of food system in the institutions they lead. Analysis of all documents in their possession relating to this topic and their implementation.
2. Directives of Ministry of Health, the most recent of 01/02/2013; Nr 39, which contain tables of the 5 daily menu for pre-school children, component of menu according to the days of the week and the orientation grams of foods(5,6);
3. Observations during preparation and serving of meals to assess if they are realized in accordance with health and hygiene standards. Observations of the work of staff and of environments where the food is prepared and administrated to verify the implementation of general hygiene requirements applicable for all food business operators(7);
4. Information given by specialist of Institute of Public Health about assessments made by them, their frequency and modality (8).

Results

The above analysis showed that in the kindergarten examined the formulation of the daily menu was based on the daily distribution of energy intake among the different meals:

- Breakfast 20% of total calories
- Lunch 40%
- Snacks 10%

According to the source of energy (lipids, carbohydrates and proteins) the daily distribution of energy consisted in:

- Carbohydrates 55-60% of total calories
- Proteins 12-15%
- Lipids 25-30%

For breakfast they consumed for three days of the week: bread (50gr), milk (200ml), cheese or butter (30 gr or 10 gr), sugar (5gr) The other 2 days: bread (50gr), milk (200 ml), choco cream (20gr) sugar (5 gr).

At 10.00 o'clock they have the snack of the early morning: one seasonal fruit (150 gr).

Table 5. Lunch for 5 days of the week

	Monday	Tuesday	Wednesday	Thursday	Friday
Lunch	bread (25gr), rice (200gr), white bean(accompanied with potatoes, carrots and onions) (200gr) meat (veal 80gr).*	bread (50gr), rice soup with vegetables (200gr), dish with meat and seasonal vegetables (200gr).*	bread (50gr), rice soup with vegetables (200gr), mashed potatoes (200gr), meat (veal 80gr), salad with seasonal vegetables (110 gr).*	bread (25 gr), pasta with cheese (230 gr), dish with seasonal vegetables (200gr), meat (veal 80gr);*	bread (50gr), rice soup with vegetables (200gr), dish with potatoes (200gr), meat (veal 80gr).*

*For the preparation of these dishes I noted the amounts of each component.

For the afternoon snack 2 days of the week they consumed biscuits. Even for the biscuits I noted the quantity of each component. They are egg biscuits. The other 2 days it is served: bread (50gr) with cheese (30 gr) and egg (1). The remaining day it is prepared a cake.

The menu (breakfast, first snack, lunch, afternoon snack) of each day ensured these calories:

Table 6. Total calories in a day

	Total Calories
Monday	1440
Tuesday	1724
Wednesday	1493

Thursday	1573
Friday	1445

During the preparation of the meals I noticed the implementation of the mainly sanitary requirements although there is still much to be done to ensure that in all kindergartens are followed the procedures HACCP. (Hazard Analysis of Critical Control Points).

HAACP for kindergarten is a manual of self-control required for all structures that prepare and / or serve meals for children. It contains all the procedures that should be taken by these structures with regard to preparation and serving of meals, hygiene of kitchen, food control. In this regard the specialist of Institute of Public Health reported the intensification of their inspections to:

1. Ensure the compliance of Ministry of Health directives, in terms of food and daily menu;
2. Increase the implementation of the general hygiene requirements and procedure of HAACP by kindergarten staff.

Discussions

Children should eat in an adequate way to grow; excessive amounts of food or, on the contrary, insufficient quantities may pose a risk to health. To promote the correct growth and development, to prevent and decrease risk of developing overweight in adulthood, chronic-degenerative diseases (such cardiovascular, diabetes, etc), is essential to teach children to consume all kinds of food, preferably those low in fat and rich of vitamins, minerals and fiber. Prevention is much more effective when it begins from childhood.

According to this framework the mainly objectives of catering in kindergartens should be:

1. Guide, through an educational approach, feeding behavior towards correct models;
2. Increase consumption of fruits, vegetables and legumes, and promote the variety of foods
3. Ensure the hygienic safety, in order to reduce the risk of poisoning through the choice of ingredients and preparations.
4. Reduce the use of foods rich in additives

This work reflects the food system of some kindergartens of Elbasan, the distribution of energy intake among the different meals, a 5 days type menu to satisfy nutritional need of children. I noticed that the nutrition is focused in few types of dishes, by repeating them by days.

To promote the variety of foods and to make nutrition more varied another option for breakfast than those observed should be: milk (200 ml), dry biscuits (30 gr), sugar(5 gr).

For lunch other possibilities can be:

- pasta with tomatoes sauce, chicken breast(to vary the consumption of meat, not only of veal meat), steamed peas, bread, fruit(introduce fruit after lunch);
- rice and peas, breaded cod fillets or other types of fish(rich in omega-3), salad of vegetables, bread, seasonal fruits.
- lentil soup, cheese, baked potatoes, bread, seasonal fruits.
- vegetables soup with pasta or rice, zucchini omelette, cooked vegetables, seasonal fruits.

For snacks:

- seasonal fruits,
- tea or milk and biscuits
- fruits, yogurt, bread

Conclusions

Preschooler's children body grow and develop during this time, and they needs all of the nutrients that come from healthy foods. Nutritional habits are important in the preschool years because this is when the child develops eating patterns that he will carry with him for the rest of his life. According to these needs, the feed they received in the kindergarten where they passed most of their time, should be the most varied and should contain all the nutrients in the right amounts to satisfy their needs. The evaluation of child's nutrition in some kindergarten of Elbasan showed that it satisfy the energy needs of these children, but it isn't very varied, based on the same type of foods. It is necessary to introduce more types of foods like milk and dairy product and fish rich in polyunsaturated fatty acids.

References

1. Energy requirements of infants. Eur J Clin Nutr 1996
2. Proteins and amino acids: recommended intake levels of energy-RDA(LARN) 1996
3. RDAs. Recommended intake levels of nutrients and energy, Rome: Italian Society of Human Nutrition, 1997
4. Regional Education Directory of Elbasan, Statistic Sector. February 2013
5. Manual: The basics of nutrition, feeding pregnant woman, child nutrition, Manual for primary care operators, Volume 1, MH, United Nations,- Albania 2011
6. Directive number 39, date 01/02/2013, General Directorate of Health Policy and Healthy Planning, Department of Public Health
7. Ministry of Health, <http://www.moh.gov.al/>,
8. Institute of Public Health, Elbasan, Albania <http://www.ishp.gov.al/>