

LULL BEFORE STORM: NUTRITION DURING SCHOOL LIFE



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INTRODUCTION

The school-going age of 6-12 years is a latent period of growth. During this stage, growth is slow and body changes occur gradually. The nutritional requirement is the same for boys and girls up to nine years. After the age of nine, there is some change in the nutritional requirements for boys and girls.

DISCUSSION

Though the rate of growth is slow during the school years, adequate reserves are laid down during this period for rapid growth during adolescence. Hence the age from 6-12 years can be called the 'lull before the storm'. Usually girls have a higher deposition of body fat as compared to boys of the same age but have less percentage of muscle tissue. During childhood, boys are taller and heavier at each stage than girls, but at the age of 11-12 years, girls become heavier and taller. As the child enters school he/she develops the ability to work out problems and participate in group activities. This is a period of emotional stress, competitive behaviour and dreaming, which brings a drastic change in the previous learning and personality pattern. There is a change from dependence of parental standards towards those set by peer groups.



NUTRITIONAL ALLOWANCE

1. ENERGY AND PROTEIN

The requirement for calories and proteins increases during school-age. The calorie requirement remains almost the same for girls throughout. Boys from 10-12 years of age require more calories as adequate reserves are being laid for a growth spurt during adolescence. The protein requirements are slightly higher for girls than boys between 10-12 years for the approaching menarche.

2. FAT

In terms of visible fat, the ICMR has recommended an intake of 5-6 percent of total energy from Linoleic Acid. Considering this the minimum visible fat required has been estimated to be 12gm/ day but ICMR has suggested the desirable visible intake for school going children as 25 gm/day.

3. MINERALS

The 10-12 year old children require more calcium than adults to meet the demand for skeletal growth. The iron requirements are increased as blood volume increases. Also the mean increase in body weight from second year to the twelfth year in boys and tenth year in girls is 2.5 to 2.7 kg per year which is equivalent to iron requirement of 0.3mg/day. The iron requirement is further increased by the gradual rise in the hemoglobin concentration and losses. The requirement for iron in girls from 10-12 years is lower than those among 7-9 years because the iron absorption during 10-12 years is more, which is 5 percent, whereas it is only 3 percent in 7-9 years.

4. VITAMINS

Vitamin A requirement of children has been computed from the requirement figures for infants (50ug/kg) and adults (9.3ug/kg) by taking into account the growth rate at different ages. The RDA of vitamins A and C are the same as adult RDA. The requirement for B vitamins are in proportion with the calorie requirements.



DIET

By school age, children establish a particular pattern of food intake. This may differ from what is followed at home due to peer influence. The child may try new foods which they normally do not consume. Breakfast is a very important meal. Children are generally restless and spend very little time at the table. Skipping breakfast affects their performance level and the calories and nutrients lost cannot be made up at any other time during the day. Menus must include dishes that are quick to eat yet nutritionally adequate. Also, there should be variety in colour, texture and taste. The table below represents the recommended quantities of food to be consumed by the school going children.

PACKED LUNCH

Packed lunch has become a necessity for school children as it is not possible to have lunch at home. Packed lunch i.e. a lunch in a tiffin box is to be eaten by the child while away from home.

Points to be considered while planning packed lunches are:

1. It should meet one third of the day's nutritional requirements.
2. It should include food from all the five food groups though the number of dishes may be less.
3. At least one serving of green leafy vegetables should be included.
4. Food stuff providing good quality protein like egg, milk or milk products like paneer or curd would improve overall protein quality in combination with vegetable protein.
5. There should be variety.
6. Preferably the packed food should be different from that prepared for breakfast.
7. The dishes should be packed at the right consistency so as to avoid leakage, or food becoming dry during lunch which may not be appetizing for the child. One fruit or vegetable salad may be included every day.

Following are few examples of Packed Lunch:

1. Vegetable *pulao*, onion *raita*, boiled egg, orange.
2. *Sambar* rice, *amaranth*, *poriyal*, vegetable salad and buttermilk.
3. *Upma* with vegetables, apple, boiled egg
4. *Idli Chutney* (mint, coriander, and coconut); *chikki* made of groundnuts and jaggery

Some Healthy Food Items:

1. *Moong dal khichdi*
2. Boiled fish
3. *Besan* Omelette
4. *Ragi dosa*
5. Fish cutlet
6. Corn and sprouts *bhel*

**Choice and Method of Preparation of Vegetables**

Vegetables and fruits vary widely in their nutrient content and it is not always possible to interchange one with another without altering the nutritive quality of the diet. It is usually recommended that at least half the amount of vegetables eaten should be composed of green leafy vegetables and on occasions when leafy vegetables are not available some fresh fruit such as orange, tomato may be used instead. Starchy vegetables like potato, tapioca can be used to furnish the food but should not be used as a replacement for green leafy vegetables. Many nutrients in vegetables are destroyed by improper handling, storage and cooking.

Prevention of Dental Caries

Tooth decay can be caused by caries. This can occur in children who are susceptible to and whose integrity of tooth structure may be affected by nutritional deficiency. Vitamin A is necessary for enamel and Vitamin C is essential for dentine. Calcium, Phosphorus and Vitamin D are needed for calcification. Fluorine decreases susceptibility of caries. Fermentable carbohydrate which adheres to the tooth is the major cause of tooth decay. The stickier the food and longer it stays in the mouth the greater is the effect. Thorough cleaning of the mouth after each meal and developing the habit of brushing twice a day, early morning and before bed, might prevent dental caries in the long run.

Following Practical Suggestions will aid in Prevention of Loss of Nutrients:

1. Selection - It is economical to buy in-season vegetables since they are cheap and plentiful. Select vegetables which are fresh. It is preferable to choose one or two vegetables that may be served raw. E.g. carrots, lettuce etc. Tightly closed storage cupboards affect the freshness and nutritive value of vegetables.
2. Store vegetables like onion and potato in dry open tins.
3. Preparation of Handling - Peel or scrape vegetables very thinly. It saves waste and also many good nutrients can be lost through excessive peeling. It is suggested that some vegetables like potatoes are boiled with their skins to prevent nutrient loss.
4. Cook just enough before meals, quantity-wise.
5. Cooking in an iron pan is a good practice.
6. Always cook vegetables in boiling water. During this period of growth and development, children need extra attention as it is a very sensitive phase of their lives as the shaping of their constitution occurs at this stage. The quality of food affects the physiological and psychological development of children, which in turn affects their overall personality.