Diet for children and adolescents

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Key points

Ensure adequate and appropriate diets for children and adolescents both in health and sickness

Rationale: Balanced diets for children above two years and adolescents help optimum growth and boosts their immunity.

- A nutritionally-adequate and balanced diet is essential for optimal growth and development.
- Appropriate diet and physical activity during childhood is essential for optimum body composition, BMI, prevention of vitamin and mineral deficiencies and reduction in the risk of diet-related chronic diseases in later life.
- Malnutrition contributes to increased morbidity (infections) and mortality.
- A child needs to eat adequately during and soon after episodes of infections to maintain good nutritional status.
- Nutrition care during adolescence is crucial since it is the period of accelerated growth.
- Include pulses, nuts, oilseeds, vegetables, seasonal fruits, eggs and flesh foods in regular diet.
- Give adequate milk or curd or yogurt to children and adolescents.
- Promote physical activity and appropriate life style practices.
- Discourage overeating as well as indiscriminate dieting.
- Restrict consumption of foods high in fat, salt and sugar and ultra-processed foods.
- Include more fibre-rich foods such as whole grains, millets, pulses, nuts and vegetables in the diet.

Why do children and adolescents require more food?

A new born baby grows rapidly at the rate of about 28g per day during the first two months, and 450g per month thereafter; and the birth weight doubles by five months and triples by one year of age. During the second year, a toddler will gain about two kg, and between 2–10 years age the child gains 1.5–3 kg in weight every year. Infants gain about 25 cms during the first year, and 10–15 cms height from 1–2 years age. Between 2–10 years the child grows on an average 6–7 cms in height. Height at four years is about double the birth length. Most boys reach half their adult height by about age two years. Most girls reach half their adult height at about age 19 months. During this period, development and maturation of various tissues and organs also take place.

Adolescent period (10–19 years of age) is characterized by rapid increase in height and weight, hormonal changes, sexual maturation and wide swings in emotion. Adolescent growth spurt starts at about 10–12 years in girls and two years later in boys. During this phase, the annual peak rates for height and weight are 9–10 cm and 8–10 kg. Development of critical bone mass is essential during this period. Bone development during this period is crucial for maintaining mineral integrity of the bone in later life. The pattern and proportion of various body components like body water, muscle mass, bone and fat, increase during the entire childhood and adolescence to reach adult levels by about 19 years. With the onset of menstruation, adolescent girls are at greater physiological stress than boys. Nutritional care of adolescent girls is of particular importance for their own health and in preparation for motherhood in future. All these rapid anabolic changes require more nutrients per unit body weight.

Growing children and adolescents require more calcium. Though recommended dietary allowances for calcium are about 850–1050mg/day, it is desirable to give higher quantities of calcium for adolescents to achieve optimal peak bone mass. To achieve optimal peak bone mass, it is recommended to consume calcium-rich foods like milk and milk products, foxtail millet, finger millet (ragi), sesame, etc. Young children below the age of five years should be given less bulky foods, rich in energy, protein, vitamin and minerals such as pulses, nuts, edible oil/ghee milk and eggs. Vegetables including green leafy vegetables and locally available seasonal fruits should be part of their daily menu. Healthy snacks made from wholesome ingredients and less in fat, sugar and salt, make a useful contribution to their nutrient requirements, particularly in older children and adolescents. Frequent changes in the menu are often liked by children.

Older children and adolescents should consume adequate milk to fulfill high calcium requirements and to obtain quality protein. Bengal gram, tofu and paneer are also good sources of protein. Nutrient dense foods such as nuts, oilseeds and marine fish that are rich sources of good quality fats, proteins, vitamins and minerals must be consumed frequently. Foods such as fenugreek seeds, amaranth seeds, flax seeds, chia seeds, basil seeds, etc., which have health-promoting effects can be consumed at least three to four times a week.

Avoid packaged foods and foods containing excess oil, salt, sugar, added colors and other additives. Over indulgence in foods high in fats, sugar and salt should be avoided. Adolescence is a vulnerable stage for developing unhealthy food preferences as well as harmful habits like smoking, chewing tobacco or drinking alcohol. These unhealthy habits should be avoided. In addition to consumption of a nutritious well-balanced diet, appropriate lifestyle practices and involvement in physical activities such as games/sports should be encouraged among children and adolescents.

How do infections in children lead to malnutrition?

Common childhood infections like diarrhoea, pneumonia and poor nutrition care during illness and post illness cause malnutrition and contribute to about 20% mortality. During periods of infection, children tend to eat less due to reduced appetite. Many children vomit frequently. Nutrients are also lost in urine and feces. The unhealthy practice of restricting diet, during any sickness could further aggravate the problem. Hence, extra care is needed in feeding the child normally during and after any illness to prevent subsequent nutritional deficiencies. Appropriate feeding practices during illness and post illness is essential and may demand a lot of patience from mothers/caretakers.

How should a child be fed during illness?

For older children, consuming an adult diet, soft nutrient- dense foods may be offered at frequent intervals. The quantity of the feeds may be increased, after the illness has subsided, till the original body weight is regained.

What should be done during diarrhea?

Diarrhea is a common childhood disease which leads to dehydration and sometimes death. The child requires prompt correction of fluid and electrolyte loss using oral rehydration solution (ORS) along with adequate feeding.

Calorie-rich, semi-solid, soft diets may be prepared from a variety of cereals and pulses. Sprouted and cooked grain or pulses flours are easily digestible and can be used (ARF-given in guideline 4). Milk may be mixed with cereal and pulse diet. If milk is not tolerated, it may be replaced by an equal volume of curd/yogurt. Mashed vegetables and fruits may be incorporated in the diets. Feeding becomes easier after the infection subsides. During recovery, if weight loss is noticed, additional feeds (depending on the child's ability to consume) should be given to meet the extra food requirements for catch up growth. Overeating should be avoided not only to prevent overweight/obesity but also metabolic disorders such as insulin resistance, diabetes, PCODs etc. apart from other diet related NCDs.

Eat Calcium-Rich Foods

- Children require higher level of calcium for growth and bone development.
- Milk, curd, sesame seeds, íagi and GLVs like amaranth are good sources of calcium.
- Regular exercise reduces calcium loss and strengthens bones.
- Exposure to sunlight (about 30 minutes preferably between 11.00 am to 2.00 pm) maintains vitamin D status which helps in calcium absorption.

Eat Iron-Rich Foods

- Plant foods like green leafy vegetables, pulses and dry fruits contain iron.
- Iron is also obtained through meat, fish and poultry products.
- Vitamin C rich fruits like guava, amla, pineapple and citrus fruits or chutneys made with coriander and green chillies improve iron absorption from plant foods, when consumed as

part of a regular meal.
- Beverages like tea bind dietary iron and make it unavailable. Hence, they should be avoided for at least an hour before, during or soon after a meal.

During Illness

- Feed energy-rich cereals-pulse diet with milk and mashed vegetables and fruits during recovery and post illness..
- Feed small quantities at frequent intervals.
- Give plenty of fluids during illness.

For more information about the guideline, click here.

Source: National Institute of Nutrition, Hyderabad