

NUTRITIONAL ISSUES IN ADOLESCENT CHILDREN

Approximately 20% of the population of India consists of adolescents. Adolescents are the future generation of any country and their nutritional needs are critical for the well being of society. The phenomenal growth that occurs in adolescence, second only to that in the first year of life, creates increased demands for energy and nutrients. Almost 40% adolescents suffer from chronic undernutrition, which adversely impacts their health and development. The high rate of malnutrition in girls not only contributes to increase morbidity and mortality associated with pregnancy and delivery, but also to increased risk of delivering low birth-weight babies. This contributes to the intergenerational cycle of malnutrition.

Addressing the nutrition needs of adolescents could be an important step towards breaking the vicious cycle of intergenerational malnutrition, chronic diseases and poverty. Good nutrition during adolescence is critical to cover the deficits suffered during childhood and should include nutrients required to meet the demands of physical and cognitive growth and development, provide adequate stores of energy for illnesses and pregnancy, and prevent adult onset of nutrition-related diseases.

The adolescent period (teenage years) are characterized by a rapid increase in height and weight, hormonal changes, sexual maturation and wide swings in emotion. The adolescent growth spurt starts at about 10-12 years in girls and two years later in boys. 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 as this forms the ground 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 values by about 18 years. **Adolescent girls are at greater physiological stress than boys because of menstruation. Their nutritional needs are of particular importance as they have to prepare for motherhood.** All these rapid anabolic changes require more nutrients per unit body weight and therefore diet is an important determinant of growth and development during puberty.

Nutritional Concerns

At one end of spectrum are the problems of poverty like low weight, less energy intake, anaemia, other mild-moderate forms of micronutrient deficiencies and morbidity due to infections. Undernutrition leads to impaired growth, delayed pubescence and menarche, permanent stunting, lack of vitality, poor scholastic performance and physical capacity. A large percentage of adolescents in India suffer from nutritional deficiencies. Dietary intake with respect to adequate availability of food in terms of quantity and quality, ability to digest, absorb and utilize food and the social discriminations against girls can greatly affect the adequate nutrition of adolescents.

Studies in India have shown deficiencies in the intake of all nutrients, particularly iron, calcium, vitamin A and vitamin C. The reported reasons are mainly the **low educational level**

of parents and low family income. Anaemia has a serious negative impact on growth and development during adolescence. A high rate of iron deficiency anaemia is reported among adolescents in our country. Adolescent mothers bear a double burden: one involving their own growth and development, and another involving the intra-uterine growth and development of their offspring. The limited studies carried out in India showed a high prevalence of malnutrition among pregnant adolescents.

At the other end of the spectrum are the socio-economically privileged adolescents with problems of affluence due to 'modern' faulty life styles such as sedentary habits and over indulgence in junk foods at the cost of foregoing healthy nutritious foods and balanced meals leading to obesity or 'dieting' for current trend of zero size look. A number of chronic diseases - **hypertension, CHD, diabetes-mellitus, osteoporosis, cancer etc.** are emerging much earlier in the life cycle. Eating disorders of Anorexia nervosa and Bulimia nervosa, abuses of alcohol and other intoxicating materials, teenage pregnancy are some other socially relevant issues of importance in this age group.

7-9% all of cases of obesity worldwide are found among Indian urban families. An Indian study has shown that obese adolescents are more likely to develop hypertension later in life as compared to their leaner counterparts. Obesity amongst adolescents is responsible for carrying weight-related risks like cardiovascular diseases into adulthood. Over-consumption of calories, especially fast food, snacks and soft drinks were contributing factors resulting in obesity.

Nutritional Needs

Commensurate with rapid growth rate the nutritional requirements are high for optimum growth and development. The timing of pubertal spurt and the sex differences in growth rate have an important bearing on the nutritional needs of the teenagers. Emphasis in the adolescents diet should be on consumption of adequate cereals and pulses, abundant amounts of green leafy vegetables, other seasonal vegetables and fruits, moderation of milk and fat and minimal salt and sugar intake.