

## **Nutritional Challenges and Eating Disorders Among Adolescents: A Public Health Perspective**

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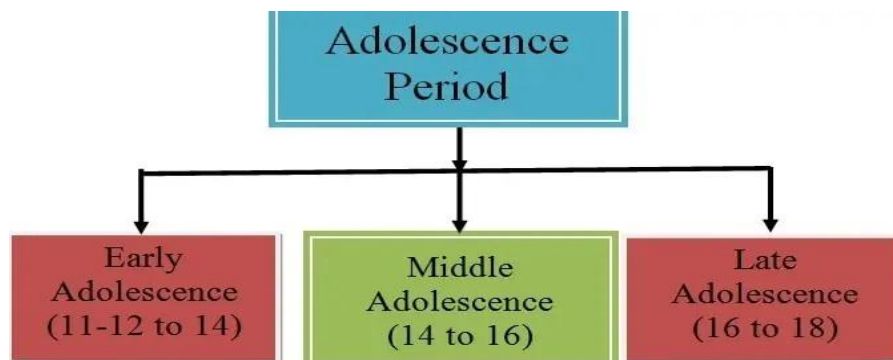
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Eating disorders among adolescents are a growing public health concern, characterized by complex psychological, biological, and sociocultural factors. This paper explores the prevalence, causes, and consequences of disorders such as anorexia nervosa, bulimia nervosa, and binge-eating disorder in adolescents. It highlights the critical role of early detection and intervention, the impact of social media and peer pressure, and the importance of family and school-based support systems. Through a review of recent research and clinical case studies, the paper emphasizes a multidisciplinary approach involving medical, psychological, and nutritional care. The presentation aims to foster awareness, reduce stigma, and promote effective strategies for prevention and treatment in adolescent populations.

The World Health Organization (WHO) defines an adolescent as a person between the ages of 10 and 19. Adolescence is a transitional phase between childhood and adulthood, when significant physical, psychological, and social changes take place.



It is a unique stage of human development and an important time for laying the foundations of good health. There are three stages of adolescence, which include early adolescence (10 to 13 years), middle adolescence (14 to 17 years), and late adolescence/young adulthood (18 to 21 years and beyond).



Adolescents need a balanced diet with lots of nutrients to support their growth and development.

Adequate nutrition during adolescence is crucial for:

**Balanced food intake across food groups**



1. **Growth and Development:** Nutrition supports growth spurts, bone development, and muscle



2. **Energy and Performance:** Proper nutrition provides energy for physical activity, sports, and academic performance.



3. **Immune Function:** Nutrition supports immune function, reducing the risk of illnesses and infections.
4. **Mental Health:** A balanced diet supports mental health, reducing the risk of depression, anxiety, and other mental health disorders.

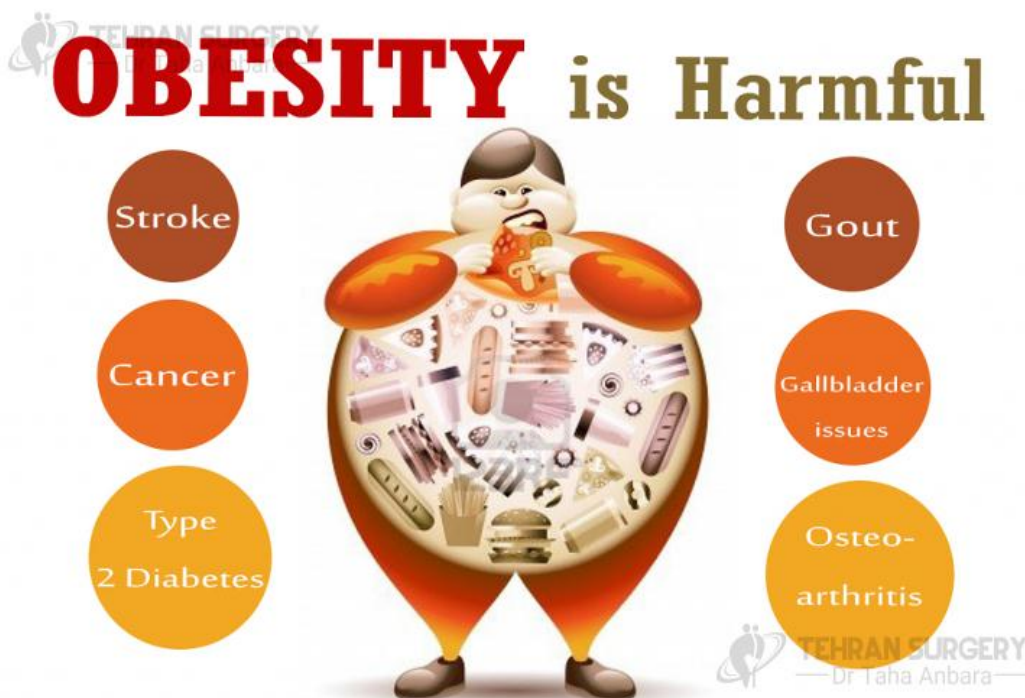


Adolescents often face nutritional challenges, including:

1. **Poor Eating Habits:** Irregular meal times, skipping meals, and consuming unhealthy snacks.
2. **Inadequate Hydration:** Inadequate water intake, leading to dehydration and decreased athletic performance.
3. **Disordered Eating:** Eating disorders, such as anorexia nervosa, bulimia nervosa, and binge eating disorder.

**Nutritional problems in adolescence:**

**OBESITY:** Poor dietary habits combined with decreased physical activity have led to an increase in over weight and obesity among adolescents.



- Adolescents who eat high calorie and high fat foods become over weight and obese.
- Skipping meals at home and consuming foods that are junk (Very salty, high sugar and fat) also contributes to overweight.
- They may snack between meals
- They may consume sweetened beverages too many



- Loss of menstrual periods
- Development of lanugo a fine, downy hair on arms, legs and sometimes cheeks.
- Complaints of nausea, bloating or constipation after eating normal amount of food.

**Food and exercise habits:**

- Cooking for others or obsessed about food but not eating
- Rigidly avoiding specific foods or whole categories of food(dairy,meats,fatsetc)
- Refusing to eat, denying hunger, eating tiny portions of food
- Exercising excessively
- Possessing in-depth knowledge of calories and fat in foods
- Consuming odd food combinations or large amounts of low calorie condiments. Eg,,:Mustard ,vinegars.
- Exhibiting ritualistic eating behaviour such as ,cutting foods into tiny bits or using special utensils or plates each time when eating.
- Avoiding social invitations because of food that might be served.

**Psychological Signs:**

- Feeling “fat’ even when emaciated, intense fear of gaining weight ,distorted body image.
- Excessive preoccupation with weight, food ,exercise and dieting.
- Social withdrawal, depression ,moodiness
- Emotional withdrawal
- Perfectionism
- Refusal to admit eating patterns are abnormal.
- Low self esteem.
- Fatigue or weakness due to malnutrition.

**Bulimia nervosa**



**Physical signs**

- Onset in late teens or early twenties, often after weight loss or dieting attempts.
- Usually near ideal body weight, but often with weight fluctuations.
- Eat large meals,but without gaining weight.
- Dental enamel erosion,cavities
- Fatigue or weakness due to malnutrition.
- Irregular menstrual periods

**Food and exercise habits**

- Frequent binge eating
- Strict dieting followed by bingeing
- Leaving room after eating ,often to bathroom.
- Hiding eating from others
- Avoiding social invitations because food that might be served.

**Psychological Signs**

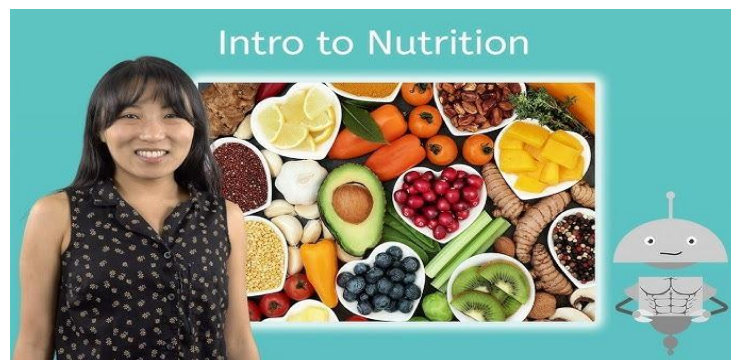
- Excessive preoccupation with weight ,food ,exercise and dieting.
- Feeling uncomfortable eating in front of others
- Feeling out of control when eating and unable to stop binges.
- Depression ,loneliness, shame and feeling of emptiness.
- Alcohol or drug use ,personal problems.
- Realization that eating patterns are abnormal.
- Low self esteem.

4. Nutrient Deficiencies: Inadequate intake of essential nutrients, such as iron, calcium, and vitamin D. The best way to measure bone strength is by assessing bone mineral density. The lower density, the greater the risk of bone fractures.

Zinc deficiency adolescents suffering from puberty delay

B12 deficiency include depression, confusion, cognitive decline and dementia.

Nutritional Needs During Adolescence



**NUTRITIONAL REQUIREMENTS FOR ADOLESCENT GIRLS**

ICMR Recommended Dietary Allowances Of Adolescent Girls-2020					
S.NO	Nutrients	13-15yrs		16-17Yrs Girls	
		Boys	Girls	Boys	Girls
	Body weight (kg)	50.5	49.6	64.4	55.7
1	Energy (K.cal)	2860	2400	3320	2500
2	Protein(g)	45.0	43.0	55.0	46.0
3.	Diteray Fibre(g)	43	36	50	38
4	Calcium(mg)	1000	1000	1050	1050
5	Iron(mg)	22	30	26	32
6	Vitamin A	930	890	1000	860
7	Vitamin D (IU)	600	600	600	600
8	Folate	285	245	340	270
9	VitaminB12	2.2	2.2	2.2	2.2
10	Vitamin C( mg)	70	65	85	70

**Macronutrients**

1. Energy: Caloric needs increase with the metabolic demands of growth and energy expenditure. In boys the peak calorie intake appears to parallel the adolescent growth spurt increasing until 16 years of age and then decreasing by 19 years.

2. Protein: Adolescents require 0.8-1 gram of protein per kilogram of body weight per day.

3. Fat: Healthy fats, such as omega-3 fatty acids, are essential for brain function and heart health.

4. Carbohydrates: Whole grains, fruits, and vegetables provide essential carbohydrates for energy.

**Micronutrients**

1. Vitamin D: Essential for bone growth and development, vitamin D is particularly important during adolescence.

2. Calcium: Crucial for bone growth and development, calcium is essential for adolescents.

3. Iron: Adolescent girls require more iron due to menstruation, while adolescent boys require iron for muscle growth and development.

4. Zinc: Essential for immune function, wound healing, and protein synthesis.

5. Folate: Crucial for cell growth and development, folate is particularly important for adolescent girls.

6. Vitamin B12: Essential for energy production, nerve function, and red blood cell formation.

**Other Nutrients**

1. Fiber: Whole grains, fruits, and vegetables provide essential fiber for digestive health.
2. Water: Adequate hydration is essential for physical performance and overall health.

#### Special Considerations

1. Vegetarian and vegan diets: Require careful planning to ensure adequate protein, iron, zinc, and vitamin B12 intake.
2. Athletes and physically active adolescents: Require additional calories, protein, and electrolytes to support physical performance.
3. Adolescents with chronic diseases: Such as diabetes, require specialized nutrition plans to manage their condition.

#### Food Groups

1. Fruits: Aim for 2-3 servings per day.
2. Vegetables: Aim for 3-5 servings per day.
3. Whole grains: Aim for 3-5 servings per day.
4. Protein sources: Include lean meats, poultry, fish, eggs, dairy, and plant-based options.
5. Dairy: Include calcium-rich foods, such as milk, cheese, and yogurt.

#### Tips for Healthy Eating

1. Eat regular meals: Aim for three main meals and one or two snacks per day.
2. Choose whole foods: Prioritize whole, unprocessed foods over processed and packaged options.
3. Limit added sugars: Aim to limit added sugars to less than 10% of daily calorie intake.
4. Stay hydrated: Drink plenty of water throughout the day.
5. Consult a healthcare professional: For personalized nutrition advice, consult a registered dietitian or healthcare provider.

#### Strategies for Promoting Healthy Nutrition During Adolescence

To promote healthy nutrition during adolescence:



1. Encourage Balanced Meals: Foster a balanced diet with a variety of whole foods, including fruits, vegetables, whole grains, lean proteins, and healthy fats.
2. Iron rich foods like non vegetarian foods and green leafy vegetables may be included in the diet to prevent anemia.
3. Home based diets are best for children. parents should encourage the adolescents to cook at home nutritious and tasty food.
4. No meal of the day should be missed, as adolescence represents a period of active life. junk food should be avoided.
5. Food should be colorful and attractive
6. Adequate well balanced nutritious foods should be taken to prevent obesity or malnutrition
7. An Adolescent girl should take enough calcium rich foods in her diet to increase bone density. This helps in delaying the onset of osteoporosis.
8. Model Healthy Eating Habits: Parents and caregivers should model healthy eating habits, as adolescents often mimic adult behavior.
9. Provide Education and Resources: Offer education and resources on healthy nutrition, meal planning, and cooking skills.
10. Support Healthy Snacking: Encourage healthy snacking habits, such as choosing fruits, nuts, and whole grain crackers.