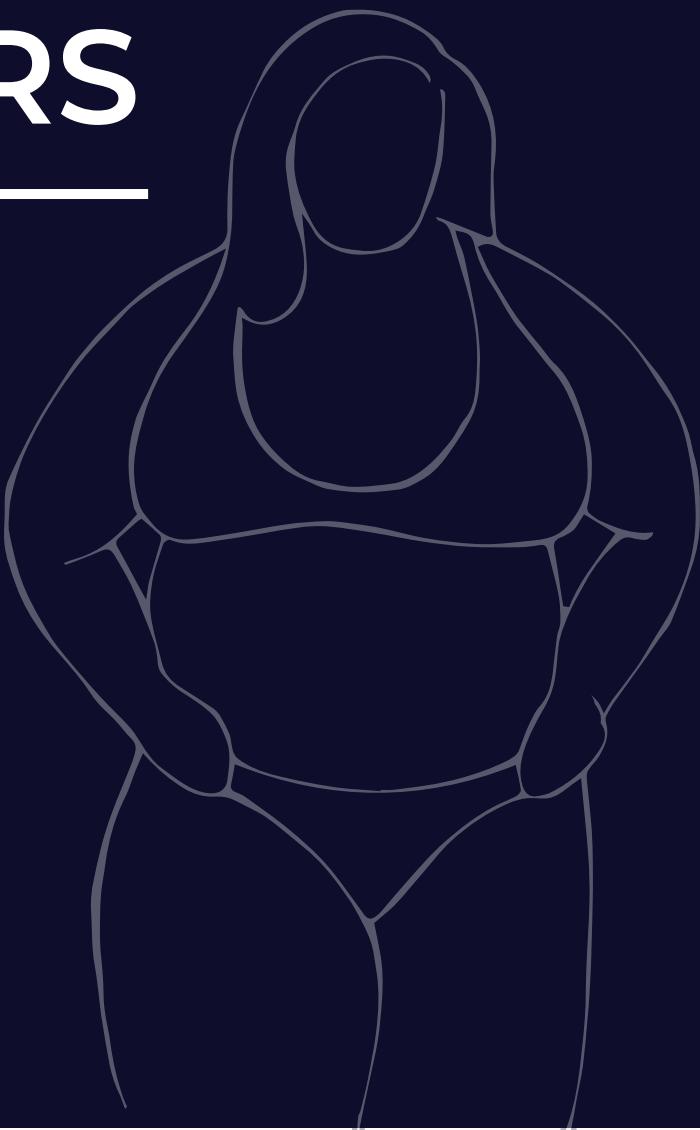


TEACHER TRAINING MODULE

NUTRITION II

**NUTRITIONAL
DISORDERS**



CHAPTER 1 - NUTRITIONAL DISORDERS

What are Nutritional Disorders?

Nutritional disorders encompass a wide range of conditions that arise due to deficiencies or imbalances in a person's intake and utilization of nutrients. They can impact people of all ages and social classes and are influenced by various factors including diet, lifestyle, socioeconomic conditions, and cultural practices.

They may be classified as:

1. Undernutrition: Occurs when there is an inadequate intake of one or more nutrients, and /or when a disease such as persistent diarrhea disrupts intake and metabolism. It is further subdivided into:

- Multinutrient undernutrition in which the main signs are growth failure and weight loss.
 - Specific micronutrient deficiencies, which cause specific clinical and biochemical conditions. For example, iron deficiency is an important cause of anaemia and affects cognitive development, vitamin A deficiency causes xerophthalmia as well as impaired immunity, and iodine deficiency causes mental retardation and goitre. Growth is not necessarily affected.
- Both types of undernutrition often occur together

2. Overnutrition–Obesity and related diseases:

Obesity is a condition in which excess body fat adversely affects health and increases the risk of other diseases.

It is caused by an energy intake exceeding energy expenditure over a long period.

Excessive intake of calories, often from energy-dense but nutritionally poor foods, over a long period of time can lead to obesity.

Obesity can cause various health issues like cardiovascular diseases and type 2 diabetes..





CHAPTER 2 - OVERTURNUTRITION AND CARDIOVASCULAR HEALTH

Nutritional disorders in children encompass a spectrum of conditions, from undernutrition, historically more prevalent in poorer countries, to the modern-day challenge of overnutrition.

In recent years however, there has been an increasing trend of overweight and obesity in lower and middle income countries. This shift represents a fundamental challenge in modern societies, where the abundance of high-calorie, low-nutrient processed foods, (often high in sugars, unhealthy fats, and refined carbohydrates) coupled with changing dietary patterns and sedentary lifestyles, has contributed to a growing epidemic of health issues, particularly in younger populations.

Measuring Obesity

High BMI and increased waist circumference, as markers of obesity, are associated with a higher risk of conditions such as hypertension, dyslipidemia, insulin resistance, and type 2 diabetes.

BMI means Body Mass Index. It is a measure used to assess a person's body weight in relation to their height.

This index provides a simple numeric representation of an individual's body fat and is commonly used as a screening tool to categorize weight status and potential health risks associated with weight.

The formula for calculating BMI is weight in kilograms divided by the square of height in meters ($\text{BMI} = \frac{\text{kg}}{\text{m}^2}$)

Body Mass Index Calculation

$$\text{BMI} = \frac{\text{Weight (Kg)}}{\text{Height (m)}^2}$$

For Adults, the categories based on BMI are typically:

Underweight: BMI less than 18.5

Normal weight: BMI between 18.5 and 24.9

Overweight: BMI between 25 and 29.9

Obesity: BMI of 30 or higher

Example BMI calculation

Let's consider a person who weighs 70 kg and is 1.75 meters tall.

The formula for BMI is weight (in kilograms) divided by the square of height (in meters).

Weight: 70 kilograms

Height: 1.75 meters

$$\text{BMI} = \frac{\text{Weight (Kg)}}{\text{Height (m)} \times \text{Height (m)}}$$

$$\text{BMI} = \frac{70 \text{ kg}}{(1.75 \text{ m} \times 1.75 \text{ m})}$$

$$= \frac{70 \text{ kg}}{3.0625 \text{ m}^2}$$

$$\text{BMI} \approx 22.85$$

So, in this example, the BMI of a person weighing 70 kilograms and measuring 1.75 meters tall is approximately 22.85. According to the BMI categories, this would fall into the "Normal weight" range, as it falls between 18.5 and 24.9.

BMI in Children

In children, BMI is interpreted a little differently.

BMI-for-age assesses a child's Body Mass Index in relation to their age. This measurement takes into account a child's BMI and compares it to other children of the same age and gender.

Impact of Obesity on Children

Cardiovascular Diseases

Obesity significantly increases the risk of cardiometabolic diseases in children. The excessive accumulation of body fat, particularly around the abdomen, leads to hypertension, dyslipidemia, insulin resistance, and type 2 diabetes. These conditions not only impact a child's immediate health but also have long-term implications.

Psychological and Social Implications

Beyond physical health, overnutrition-induced obesity brings psychological and social challenges for children. Stigma, low self-esteem, and psychological stress often accompany obesity in children, influencing their overall well-being.

Addressing Obesity: A Holistic Approach

Addressing the challenge of obesity as a risk factor for cardiovascular diseases in children demands a multi-faceted approach. Education and awareness campaigns are crucial, aimed at promoting healthier dietary choices and increased physical activity. Empowering families and communities to make informed decisions about nutrition and lifestyle is pivotal in preventing these diseases.

Additionally, policy changes are essential to create environments that support healthy living, such as ensuring access to nutritious foods, promoting physical education in schools, and regulating the marketing of unhealthy foods to children.

Early intervention through healthcare systems, focusing on regular screenings and counseling, can aid in identifying and managing risks associated with overnutrition in children. Collaborative efforts between healthcare providers, educators, policymakers, and communities are necessary to combat the rising tide of cardiometabolic diseases stemming from overnutrition in the younger population.

In conclusion, obesity stands as a significant risk factor for cardiovascular diseases in children, posing a threat to their current and future well-being. Addressing this multifaceted issue demands comprehensive strategies that encompass education, policy changes, healthcare interventions, and community engagement to secure a healthier and more sustainable future for our children.