

# OBEESITY

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Facilitator:

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# Specific Learning Objectives

- At the end of session, the learner shall be able to:
  - Classify obesity.
  - Describe magnitude of problem.
  - Understand risk factors obesity.
  - Practice measures for prevention and control of obesity.

# Overweight and obesity

- “Abnormal growth of adipose tissue due to
  - an enlargement of fat cell size (hypertrophic obesity) or
  - an increase in fat cell number (hyperplastic obesity) or
  - a combination of both.”

# Body mass index (BMI)

- Weight / square of the height ( $\text{kg/m}^2$ )
- Index to classify overweight and obesity in adults.
- Population-level measure of overweight and obesity as it is the same for both sexes and for all ages of adults.
- However, it should be considered a rough guide because it may not correspond to the same degree of fatness in different individuals.

| BMI classification     |             |
|------------------------|-------------|
| Underweight            | $< 18.5$    |
| Normal range★          | 18.5 - 24.9 |
| Overweight★            | $\geq 25.0$ |
| <i>Preobese</i>        | 25.0 - 29.9 |
| Obese                  | $\geq 30.0$ |
| <i>Obese class I</i>   | 30.0 - 34.9 |
| <i>Obese class II</i>  | 35.0 - 39.9 |
| <i>Obese class III</i> | $\geq 40.0$ |

★ Asian Population: Normal: 18.5-22.9; Overweight: 23.0-29.9

# Combined recommendations of BMI & WC for overweight or obesity, and association with disease risk

|                 | Body mass index | Obesity class | Disease risk (relative to normal weight and waist circumference) |                             |
|-----------------|-----------------|---------------|--|-----------------------------|
|                 |                 |               | Men < 102 cm<br>Women < 88 cm                                    | Men >102 cm<br>Women >88 cm |
| Underweight     | <18.5           |               |  |                             |
| Normal          | 18.5–24.9       |               |  |                             |
| Overweight      | 25.0–29.9       |               | Increased  | High                        |
| Obesity         | 30.0–34.9       | I             | High   | Very high                   |
|                 | 35.0–39.9       | II            | Very high  | Very high                   |
| Extreme obesity | >40.0           | III           | Extremely high   | Extremely high              |

# Magnitude of problem

- In 2008, more than 1.4 billion adults were overweight and more than half a billion were obese.
- Overall, more than 10% of the world's adult population was obese.
- At least 2.8 million people each year die as a result of being overweight or obese.
- **The prevalence of obesity has nearly doubled between 1980 and 2008.**

- Now on the rise in low- and middle-income countries, particularly in urban settings.
- In 2011, more than 40 million children under the age of five were overweight.
- More than 30 million overweight children are living in developing countries and 10 million in developed countries.



- Childhood obesity is one of the most serious public health challenges of the 21st century.
- Overweight children are likely to become obese adults.
- More likely than non-overweight children to develop diabetes and cardiovascular diseases at a younger age, higher chance of premature death and disability.

# India

- NCD risk factor survey phase-2 (2007-2008)
  - Andhra Pradesh, Kerala, Madhya Pradesh, Maharashtra, Tamil Nadu, Uttarakhand & Mizoram.
- High prevalence of obesity in all age-group except 15-24 years group.
- 1.3 % Males & 2.5 % Females aged more than 20 years were obese.

# Common health consequences of overweight and obesity

- Raised BMI is a major risk factor for NCDs such as:
  - Cardiovascular diseases (mainly heart disease and stroke);
  - Diabetes;
  - Musculoskeletal disorders (especially osteoarthritis - a highly disabling degenerative disease of the joints);
  - Some cancers (endometrial, breast, and colon).
- Globally, 44% of diabetes, 23% of ischaemic heart disease and 7–41% of certain cancers are attributable to overweight and obesity.

# Epidemiological determinants

## Non-modifiable risk factors:

- Age
- Sex
- Genetic factors

# Modifiable risk factors

- Eating habits
- Physical inactivity
- Socioeconomic Status
- Education
- Psychosocial factors
- Endocrine factors
- Alcohol
- Smoking
- Drugs

# What causes obesity and overweight?

- For an individual, obesity is usually the result of an imbalance between calories consumed and calories expended
- Globally, there has been:
  - an increased intake of energy-dense foods that are high in fat; and
  - a decrease in physical activity due to the increasingly sedentary nature of many forms of work, changing modes of transportation, and increasing urbanization.

- Supportive environments and communities are fundamental in shaping people's choices and preventing obesity
- Individual responsibility can only have its full effect where people have access to a healthy lifestyle, and are supported to make healthy choices.

# Triggers for Childhood Obesity

- Children's choices, diet and physical activity habits are influenced by their surrounding environment
- Social and economic development as well as policies influence children's dietary habits and preferences as well as their physical activity patterns.
  - policies in the areas of agriculture, transport, urban planning, environment, education, food processing, distribution and marketing



# How can overweight and obesity be reduced?

- Overweight and obesity, as well as their related NCDs, are largely preventable.
- Supportive environments and communities are fundamental in shaping people's choices.
- **Making the healthier choice** of foods and regular physical activity **the easiest choice** (**accessible, available and affordable**), and therefore preventing obesity.

# What individuals can do?

- Eat more **fruits and vegetables**.
- Include more **legumes, whole grains and nuts** in the diet.
- Limit the intake of sugar and salt consumption from all sources; don't eat junk food.
- Limit energy intake from total fats and shift fat consumption away from saturated fats to **unsaturated fats**.
- **Drink more water** instead of sugary drinks.
- Achieve and maintain a healthy weight.
- Engage in regular physical activity (**do at least 30 minutes of regular, moderate-intensity activity on most days**).
- Limit TV watching in kids.

# What communities can do?

- Create and maintain safe neighbourhoods for physical activity and improve access to **parks and playgrounds**.
- Advocate for quality **physical education** in schools and childcare facilities.
- Support **breastfeeding programmes**.

# What the private sector can do?

- Voluntarily reduce the sugar, salt and fat content of processed foods.
- Ensure that **healthy and nutritious choices are available and affordable** to all consumers.
- **Avoid marketing** of junk food, particularly to children.
- Ensure the availability of healthy food choices and support regular **physical activity practice in the workplace**.

# What governments can do?

- Create **public awareness** about diet and physical activity through mass media and other means.
- **Tax** unhealthy foods and **subsidize** locally produced fruits and vegetables.
- Promote **healthy policies** and **create an environment** for walking, bicycling, sports and other physical activities.
- Enforce **regulations** for ensuring healthy diets.

# Key facts

- Worldwide obesity has nearly doubled since 1980.
- In 2008, more than 1.4 billion adults, 20 and older, were overweight. Of these over 200 million men and nearly 300 million women were obese.
- 35% of adults aged 20 and over were overweight in 2008, and 11% were obese.
- 65% of the world's population live in countries where overweight and obesity kills more people than underweight.
- More than 40 million children under the age of five were overweight in 2011.
- Obesity is preventable.