

# OBESITY

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★	≥ 25.0
<i>Preobese</i>	25.0 - 29.9
Obese	≥ 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>	≥ 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 Women < 88 cm	Men >102 cm 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

Ref: Waist Circumference and Waist-Hip Ratio. Report of a WHO Expert Consultation. 2008

# 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.



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- Overweight and obesity are linked to more deaths worldwide than underweight.
  - 65% of the world's population live in a country where overweight and obesity kills more people than underweight.
  - This includes all high-income and middle-income countries.

# 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
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# 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.

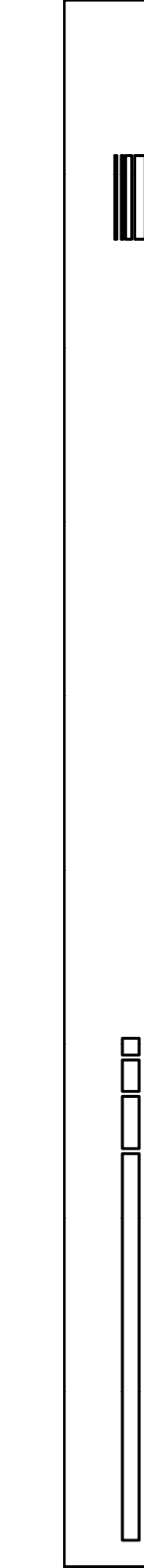
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- Supportive environments and communities are fundamental in shaping people's choices and preventing obesity
  - Individual responsibility can only have its full effect where people have access to a healthy lifestyle, and are supported to make healthy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


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- Curbing the global obesity epidemic requires a population-based multisectoral, multi-disciplinary, and culturally relevant approach.

# 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**.
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# 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.**
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# 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.

# At the individual level

- At the individual level, people can:
  - Limit energy intake from total fats and sugars;
  - Increase consumption of fruit and vegetables, as well as legumes, whole grains and nuts;
  - Engage in regular physical activity (60 minutes a day for children and 150 minutes per week for adults).

# At the societal level

- At the societal level, it is important to:
  - Support individuals in following the recommendations above, through sustained political commitment and the collaboration of many public and private stakeholders;
  - Make regular physical activity and healthier dietary choices available, affordable and easily accessible to all - especially the poorest individuals.

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- The **food industry** can play a significant role in promoting healthy diets by:
    - Reducing the fat, sugar and salt content of processed foods;
    - Ensuring that healthy and nutritious choices are available and affordable to all consumers;
    - Practicing responsible marketing especially those aimed at children and teenagers;
    - Ensuring the availability of healthy food choices and supporting regular physical activity practice in the workplace.



- Eating a healthy diet can help prevent obesity
- People can:
  - Maintain a healthy weight
  - Limit total fat intake and shift fat consumption away from saturated fats to unsaturated fats
  - Increase consumption of fruit, vegetables, pulses, whole grains and nuts
  - Limit the intake of sugar and salt.





- Regular physical activity helps maintain a healthy body
- People should engage in adequate levels of physical activity throughout their lives.
- At least 30 minutes of regular, moderate-intensity physical activity on most days reduces the risk of cardiovascular disease, diabetes, colon cancer and breast cancer.
- Muscle strengthening and balance training can reduce falls and improve mobility among older adults.
- More activity may be required for weight control.





# 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.
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