

# NUTRITION AND HEALTH

# INTRODUCTION

- Nutrition may be defined as the science of food and its relationship to health. It is concerned primarily with the part played by nutrients in body growth, development and maintenance .
- The word nutrient or “food factor” is used for specific dietary constituents such as proteins, vitamins and minerals. Dietetics is the practical application of the principles of nutrition; it includes the planning of meals for the well and the sick. Good nutrition means “maintaining a nutritional status that enables us to grow well and enjoy good health.”

# CLASSIFICATION OF FOODS

- ***Classification by origin:***
  - **Foods of animal origin**
  - **Foods of vegetable origin**
  
- ***Classification by chemical composition:***
  - **Proteins**
  - **Fats**
  - **Carbohydrates**
  - **Vitamins**
  - **Minerals**

# CLASSIFICATION BY PREDOMINANT FUNCTION

- **Body building foods:**
  - -meat, milk, poultry, fish, eggs, pulses etc
- **Energy giving foods:**
  - -cereals, sugars, fats, oils etc.
- **Protective foods:**
  - -vegetables, fruits, milk, etc

# NUTRIENTS

- Organic and inorganic complexes contained in food are called nutrients. They are broadly divided in to:
  - **Macronutrients:**
    - -proteins
    - -fats
    - -carbohydrates
  - **Micronutrients:**
    - -vitamins
    - -minerals

# Assessment of Protein nutrition status

- Protein nutrition status is measured by Serum Albumin Concentration.
- It should be more than 3.5 g/dl.
- Less than 3.5 g/dl shows mild malnutrition.
- Less than 3.0 g/dl shows severe malnutrition.

# FAT

- **Most of the body fat (99 per cent) in the adipose tissue is in the form of triglycerides, in normal human subjects, adipose tissue constitutes between 10 and 15 per cent of body weight. One kilogram of adipose tissue corresponds to 7700 kcal of energy.**

# Fats yield fatty acids and glycerol on hydrolysis

▪ Fatty acid content of different fats ( in per cent)

<u>Fats</u>	<u>Saturated fatty acids</u>	<u>Monounsaturated fatty acids</u>	<u>Polyunsaturated fatty acids</u>
▪ <u>Coconut oil</u>	<u>92</u>	<u>6</u>	<u>2</u>
▪ <u>Palm oil</u>	<u>46</u>	<u>44</u>	<u>10</u>
▪ <u>Cotton seed oil</u>	<u>25</u>	<u>25</u>	<u>50</u>
▪ <u>Groundnut oil</u>	<u>19</u>	<u>50</u>	<u>31</u>
▪ <u>Safflower oil</u>	<u>10</u>	<u>15</u>	<u>75</u>
▪ <u>Sunflower oil</u>	<u>8</u>	<u>27</u>	<u>65</u>
▪ <u>Corn oil</u>	<u>8</u>	<u>27</u>	<u>65</u>
▪ <u>Soya bean oil</u>	<u>14</u>	<u>24</u>	<u>62</u>
▪ <u>Butter</u>	<u>60</u>	<u>37</u>	<u>3</u>

# VITAMIN A

- «Vitamin A» covers both a pre-formed vitamin, retinol, and a pro-vitamin, beta carotene, some of which is converted to retinol in the intestinal mucosa.
- The international unit (IU) of vitamin A is equivalent to 0,2 microgram of retinol (or 0,55 microgram of retinal palmitate).

# VITAMIN D

- **The nutritionally important forms of Vitamin D in man are Calciferol (Vitamin D2) and Cholecalciferol (Vitamin D3).**