

Nutrition: is intake of food, considered in relation to the body's dietary needs.

- ❑ Good nutrition enhances the quality of life and help in prevention of diseases. It provides the body with calories and nutrients that the body needs for maximum energy and wellness.

- ❑ Poor diet is associated with 4 of 10 leading causes of death:

***Heart diseases**

***Some types of cancers**

***Stroke**

***Type 2 diabetes**

Adequate diet plus regular exercise are help in reducing the chance of developing these serious chronic diseases.

Nutrients: substances in foods that the body needs to grow, to repair and to provide energy.

Food: contain nutrients and are derived from animal or plant sources

Diet: typical pattern of food choices.

Nutritional goals:

Quality of intake that allows the body to function at best and promotes the health

Quantity of intake that promotes a healthy body weight.

Group of nutrients: we have six group of nutrients

1. Carbohydrates(CHOs): simple and complex.
2. Proteins: complete and incomplete.
3. Lipids: solid (fats), liquid (oils).

4. Vitamins: are compounds that help in regulation of many vital body processes that include digestion, absorption and metabolism.

5. Minerals: are substances that the body cannot manufacture but are needed for forming healthy bones and teeth and regulating many vital body processes.

6. Water: helps to maintain many body functions:

- **lubricate the joints and mucous membranes.**
- **enable to swallow and digest food.**
- **absorb other nutrients.**
- **eliminate wastes.**
- **Classification of nutrients**
- **1. Essential and not essential.**
- Essential nutrients: the nutrients that the body either cannot make or cannot make enough to meet its needs.
- These nutrients must be obtained from foods.
- Examples: vitamins, minerals, some of amino acids.
- Non essential nutrients: body can make from other nutrients ingested.
- Examples: cholesterol and some amino acids.

2. Micronutrients and macronutrients.

Micronutrients: need in relatively small amounts such as vitamins and minerals.

Macronutrients: need in relatively large amounts such as CHO, proteins and lipids.

3. Organic and inorganic nutrients

Organic nutrients: contain carbon.

- ✓ **Carbohydrates**
- ✓ **Proteins**
- ✓ **Lipids**
- ✓ **Vitamins**

Inorganic nutrients:do not contain carbon.

- ✓ **Minerals**
- ✓ **Water**

4.Energy yielding and non energy yielding nutrients

Energy yielding nutrients:CHO,proteins and lipids.

Non energy yielding nutrients: include other nutrients such as vitamins and minerals.

Calorie :Is a unit of heat used to indicate the amount of energy that foods will produce in human body.

1 Calorie is refer to the amount of heat required at a pressure of one atmosphere to raise the temperature of one gram of water one degree Celsius.

Kilocalorie (kcal): Is the amount of heat required to raise the temperature of one kilogram of water one degree Celsius.

1 kilocalorie=1000 calorie.

1 gram of CHO produces 4 kcal.

1 gram of protein produces 4 kcal.

1 gram of lipid produces 9 kcal.

Basal Metabolic Rate(BMR) :Is the rate of energy expended by the body when at rest. This is the minimum amount of energy needed by the body to perform essential functions such as breathing (and associated movements),heart beat

and blood circulation , synthises of molecules e.g. proteins ,maintenance of ion gradients across mambrances , etc..

What is meant by rest?

*When subject is lying still.

*When the person is quiet.

*In the room that comfortably warm.

***12-18** hours after the subject's most recent meal.

Basal Metabolic Rate is stated in different units.It is sometimes stated in kcal/day or may be expressed in kj per square meter of body surface area per hour(kj/m²/h).

Factors affect BMR

1.Main factors affect BMR.

a.Age:BMR is decreased as age is increased because:

- The proportion of lean body mass is decreased as age is increased.
- Synthesis of molecules such as proteins is decreased as age is increased.

b.Sex : male usually have a higher BMR than females(of same age) because male tend to have a higher proportion of lean body mass.

c.Pregnancy: BMR is increased during pregnancy and lactation due to the higher energy requirement of producing fetal tissues and breast milk.

d.Bodyweight , surface area, and body temperture : increase of any of these parameters result in increase BMR.

2.Others factors increase BMR.

a. Increase food intake.

b.Increase secretion of certain hormones such as thyriod hormones(T3, T4),

testosterone, insulin and growth hormones .

c. Increase physical activity.

d. Increase or decrease the environmental temperature above or below its ideal range.

e. Stress and anxiety.

3. Factors decrease BMR.

a. Malnutrition.

b. Fasting.

c. Sleep.

Recommended daily allowance(RDA): The amount of nutrient and calorie intake per day that is considered necessary for maintenance of good health, calculated for male and female of various ages and recommended by Food and Nutrition Board of National Research Council .

Uses of RDA

1. The original application of RDA as a guide for advising of nutrition problems.

2. For planning and procuring food supplies for population sub groups.

3. For interpreting food consumption records of individuals and population subgroups.

4. For establishing standards for food assistance programs .

5. For evaluating the adequacy of food supplies.

HOW TO READ A NUTRITION FACTS LABEL

Macaroni & Cheese

Start Here →

Limit these Nutrients

Get Enough of these Nutrients

Footnote

Nutrition Facts			
Serving Size 1 cup (228g)			
Servings Per Container 2			
Amount Per Serving			
Calories 250	Calories from Fat 110		
% Daily Value *			
Total Fat 12g	18%		
Saturated Fat 3g	15%		
Cholesterol 30mg	10%		
Sodium 470mg	20%		
Total Carbohydrate 31g	10%		
Dietary Fiber 0g	0%		
Sugars 5g			
Protein 5g			
Vitamin A	4%		
Vitamin C	2%		
Calcium	20%		
Iron	4%		
*Percent Daily Values are based on a 2,000-calorie diet. Your Daily Values may be higher or lower depending on your calorie needs:			
	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Quick Guide to % Daily Value

5% or less is Low

20% or more is High

Fats, Oils, & Sweets
USE SPARINGLY

KEY

◻ Fat (naturally occurring and added)

◻ Sugars (added)

These symbols show fat and added sugars in foods.

Milk, Yogurt, & Cheese Group
2-3 SERVINGS

Meat, Poultry, Fish, Dry Beans, Eggs, & Nuts Group
2-3 SERVINGS

Vegetable Group
3-5 SERVINGS

Fruit Group
2-4 SERVINGS

Bread, Cereal, Rice, & Pasta Group
6-11 SERVINGS

