

UNIT-1

Essential Nutrients

(Health promotion).

Nutrition :- It is defined as the science of food and its relationship to health.

Functions of food :-

- Provide energy for various metabolic functions of the body ex- carbohydrate and fat.
- Provision of constituents for building the body structure and their repair. eg- proteins.
- Protection of body, maintenance and regulation of tissue function eg:- vitamins and mineral.

Relation of Nutrition to health

- Growth and development
- Protect from specific deficiency.
- Protect from infection

Essential Nutrients and its function

1. protein

Source $\left\{ \begin{array}{l} \text{Animal source - milk, meat, egg, cheese,} \\ \text{plant source - pulses, cereals, beans, nuts, oil} \end{array} \right.$

Daily Requirement

Adults - 65-75g

children - 2.5gm.

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functions of protein : \rightarrow

- Require in growth and body building.
- They have regulatory function eg! - hormone like insulin.
- Protect body against disease
- Transport some minerals.
- Help in repair and Maintenance of body tissue.
- Source of energy in lean period.

Fat

Source $\left\{ \begin{array}{l} \text{Animal source} \rightarrow \text{Ghee, butter, milk, cheese,} \\ \text{egg yolk.} \\ \text{plant source} \rightarrow \text{Nuts, cereals, pulses,} \\ \text{vegetables.} \end{array} \right.$

Daily Requirements

15-20% of total calories.

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Functions

Reserve source of energy, they are deposited in adipose tissue.

Provide insulation against cold.

Protection to vital organ.

Help in absorption of fat soluble Vitamin A, D, E, K.

Carbohydrate

(a) Source - Cereals and millets (Rice, wheat, Maize, jowar, ragi, bajra), roots and tubers (potato, sweet potato), pulses (Rajma, pea, beans), nuts and oil seeds, sugar, jaggery.

Daily Requirement \rightarrow 50-60% of total calorie in normal person.

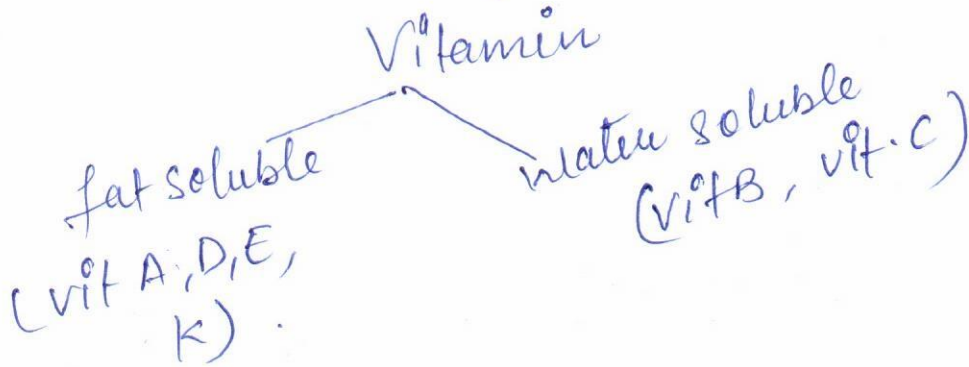
Functions \rightarrow

- Provide energy to the body
- Maintain body temp.

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Dietary fibres → (cellulose, pectin) prevent from constipation and low cholesterol level.

Vitamin → Require in small quantity and can be divided into two categories.



Vitamin A (Retinol) →

Daily Requirements - 600 microgram.

Source: → Liver oil, fish oil, carrot, spinach, tomato, yellow fruits.

Functions

- Role in normal vision
- Growth of cell.
- Growth of Reproduction
- Play role in protein synthesis, DNA synthesis.

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Vitamin D (Calciferol)

Source - Egg yolk, fish, fish oil, sunlight.

Functions

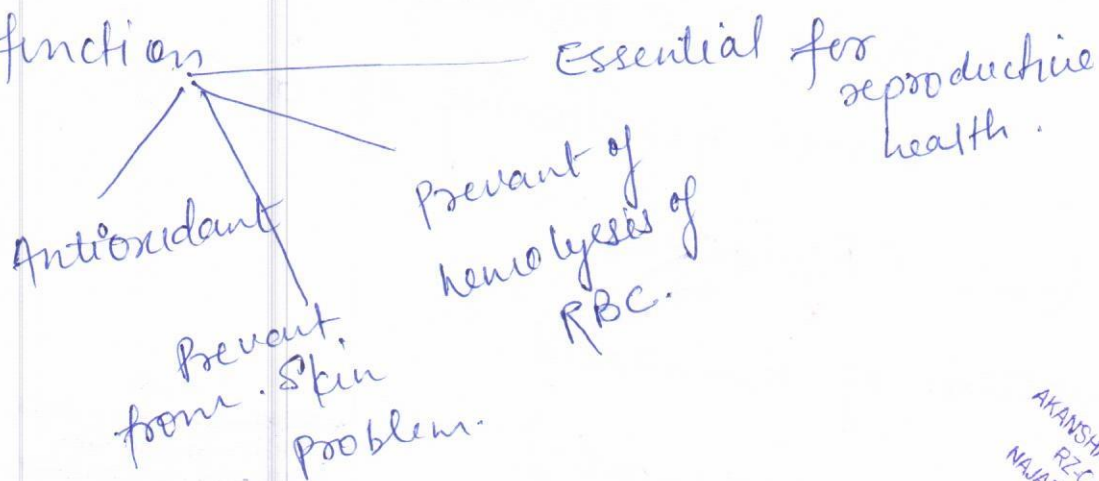
- Promotes absorption of calcium and phosphorus.
- Maintains normal function of (PTH)
- Help in kidney functioning.
- Required for healthy bones

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Vit E (Tocopherols)

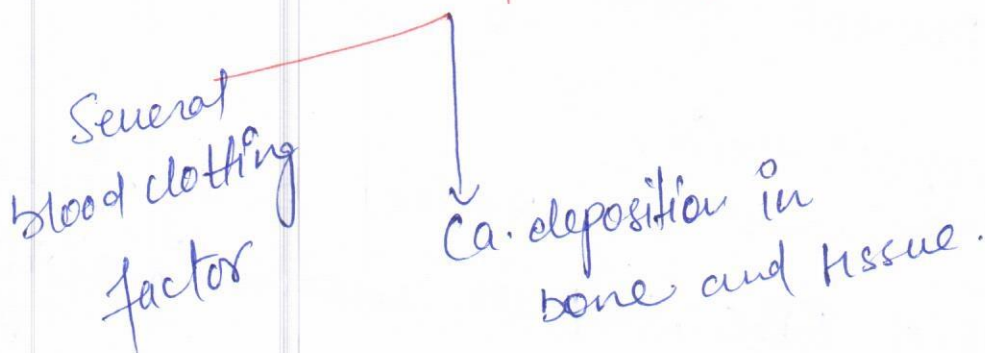
Source → Green vegetable, fish.

Functions



Vit K (Phylloquinone)

Function



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Vitamin B₁ (Thiamine)

function :-

- 1) Tissue Respiration
- 2) Tones the nervous system and muscle
- 3) Improve appetite
- 4) promote growth.

Vitamin B₂ (Riboflavin)

function → Maintain healthy skin and oral mucosa

- lipid metabolism.

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Vitamin B₃ (Niacin)

function → Inhibits the production of cholesterol.
Normal functioning of GI Tract.

Vitamin B₆ (Pyridoxin)

- Metabolism of Amino acid.

Vit B₁₂ (Cyanocobalamin)

function - Help in maturation of RBC
- promote normal growth & development.

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Vit C - Ascorbic Acid.

• Act as an ^{anti}oxidant and protect body tissue
• formation of RBC, help in wound healing.

Minerals :- classified into two types

Macro and Major minerals
> 100mg/day

Micro and trace mineral
< 100mg/day

Major and Macro minerals } - Na, K, Cl, Ca, P, S, Mg.

Micro or Trace mineral } → Fe, Cu, F, Zn, Mn.
Ni, Se, I.

Classification of foods

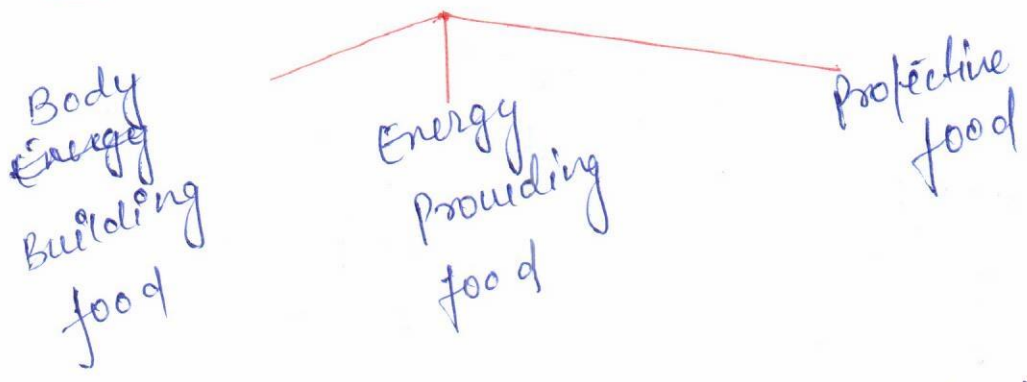
1. Acc. to Origin of food.

- a) food of animal origin :- eg :- Milk, meat, fish, eggs
- b) food of plant origin → cereals, pulses, oilseeds, nuts, fruits, vegetable

2. Acc. to chemical composition

- Protein, fats, Carbohydrate
- Mineral, vitamin, H₂O.

3. Acc. to predominant function :-



Body Building food → protein rich food like milk, pulses, meat, fish

Energy providing food → carbohydrate and fat rich foods, roots, tubers, sugar, oil, fats.

Protective food :→ vitamins and mineral such as milk, leafy vegetable, fruits.

Balanced Diet for Different Age Group.

Balanced Diet :- Balanced diet is defined as the one which contain a variety of food in such quantity and proportion.

Principle while construct a balance diet.

- A sufficient number of calorie.
- Daily requirement of protein should be met
- fat requirement should be limited. 15-20%

following factors should be kept in mind while planning a balance diet: →

- Age of a person.
- Gender
- Activities
- Food habits
- Economic Consideration
- Likes and dislikes.
- Maximum nutrients.

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