

10/8/23



Food and Nutrition



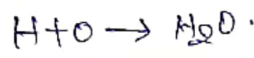
a) Macronutrients

Carbohydrates

Sugar

Polysaccharides

↓
digestion H^+
enzymes



Junction: To provide energy

Classification → 1, 2, poly

Glu + Fruct - 1

Lactose - 2

1g → 1 carb ≡ 4 kilocalories

Product muscles (Protein)

Muscular work - Energy

detoxifying

Proteins - fat - Metabolism

Energy for heart muscles

Excess carbohydrate store
fat in adipose tissue

Stimulate the peristaltic
movement

- heart diseases

diabetes, cancer, juice,
wheat, fruits, honey.

Protein

~~fat~~

Pro - first - prime

Protein - protein

(Amino acids)₂ - peptide bond

(Amino acids)_n - poly peptide bond

It is polymer.

Essential nutrient

Body building (or) New tissue
formation, Maintaining old tissues.

Milk - calcium, Egg - Albumin

hair, nail, Egg - Complete protein

Partially complete - wheat

Incomplete - gelatin

Functions:

- growth

- wear, tear → repair

- for regular supply of raw materials
for the formation of digestion of juice
hormones, plasma, hb, vitamins.

- 1g protein ≡ 4 kilo cal

Sources: Meat, fish, egg

Plant sources - pulses, nuts, oil, seed

Protein deficiency - mal nutrition

causes: Kwashiorkor, marasmus.

→ growth retardation

Average: - 300 kcal/day.

Fats or Lipids.

They are organic

Soluble in oil

Components - OH^- , $-\text{O}-$, perox.

Fatty acids, soap

Polyphospho lipids; steroids, wax

meat-fats

Simple fat oil wax	Compound Phospho lipids Glyco lipids	derived Hydrolytic substance
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Functions:

- provide energy -

- $1\text{g} = 9\text{kcal}$.

- Vehicle =

fat soluble vitamins - A, D, E, K.

- essential fatty acids.

They provide energy source.

Insulators - heat & cold.

Micro nutrients.

Vitamins & Minerals.

1.5 → 2g Calcium.

Based on body weight

(200 - 1600 ml).

Formation.

Ca phosphate
 CaCO_3

blood - extra cellular fluid

muscles

Tissues

Vitamin D is must

17/08/23

Vitamin A - Retinol

Fat soluble
Vit - A, D, E, K

WATER Soluble - except ABEK.

A - Visual cycle (deficiency)
Night blindness, Xerocama.

D - Fat soluble (Coli Califerol)
Calcium metabolism Ca^{2+}
Deficiency - Rickets, osteomalacia.

E - production of membrane lipids.

Anemia - deficiency, animals mostly damaging.

K - Fat soluble, carboxylation reactions
uncontrolled emereses. (blood running)

Water Soluble vitamins - Thymine

D₁ α -ketoacids, - beri-beri.

D₂ - Riboflavin; oxidation, reduction
reaction in hydroide. - Dermatitis
Impact growth and reproduction.

Nicotinic acid - involving C, R.

Dermatitis
Pantoic acid - Transfer of Acyl group
- Neurological problems.

D₆ - pyridoxine Trans Amination
- racemisation - Neurological probs.

Biotine - Water soluble - Carboxylation &
trans carboxylation dermatitis.

Folic acid - Transfer of
1 Carbon unit.

increase the Hb level.

- Deficiency Anemia.

B₁₂ - Coenzyme, water soluble
... shift, Pernicious
Anemia.

C - Hydroxylation, water
Soluble, deficiency - Scurvy.

A - Fish, Egg, butter,
Stored in liver.

Mixed carotenoids - carrot,
sweet potato, pumpkin,
mangoes, brachi, water melon,

Tomato,

D - Egg, milk, butter, Fat, Sun.

E - pulses, vegetable oils,
black berries, peanuts, Apple,
Spinach; Greens - leafy
vegetables.

