

Unit - 7

Vitamins

* Definition →

- Vitamins organic substances एड ए कएँ body कँ cells कँ normal functions and structures कँ maintain करत एँ।
- Vitamins कँ mostly plants and animals कँ obtain करत एँ।
- नँ body कँ synthesized करत एँ।
सकएँ diet कँ जरूरत एँ।

* Classification →

- Vitamins कँ two types कँ classified करत एँ -

① fat-soluble vitamins →

like - A, D, E, K.

- नँ nature कँ hydrophobic एँ।
- Liver कँ stored एँ।
- नँ body कँ excreted करत एँ।

अ) Vitamin - A → (Ratinal)

* Source →

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- Green vegetables.
 - cereals (grains)
 - fruits (mats)
 - etc.....
- * Functions →
- of carbohydrates metabolism and improve our health
 - DNA metabolism and liver ailments
 - Body growth and liver important health
 - Normal vision and liver ailments
 - etc.....

- * Deficiency diseases →
- night blindness.
 - skin and dryness.
 - etc.....
- b) Vitamin - D →
- * Sources →
- cod liver oil
 - egg yolk.
 - fish liver oil.
 - Animal liver
 - etc.....
- * Functions →

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- Ca^{2+} phosphate / calcium Ca^{2+} excretion Ca^{2+} increase Ca^{2+} Ca^{2+} body Ca^{2+} normal growth Ca^{2+} promote Ca^{2+} Ca^{2+} etc.....
- * Deficiency diseases →
 - Rickets (खुरार रोग)
 - Osteomalacia.
 - etc.....
- c) Vitamin - E → (Tocopherol) →
 - * Sources →
 - Meat → vegetables.
- egg yolk
- Green leaf vegetables.
- etc.....
- * Functions →
 - Ca^{2+} liver Ca^{2+} toxicity Ca^{2+} protects Ca^{2+} Ca^{2+}
 - Good antioxidant Ca^{2+} Ca^{2+}
 - Reproductive system Ca^{2+} Ca^{2+} helpful Ca^{2+} Ca^{2+} etc.....
- * Deficiency diseases →
 - RBC Ca^{2+} weakness.
 - Tooth discoloration
 - Necrosis of hepatic cell.

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d) Vitamin-K → (Phylloquinone).

* Sources →

- Soya beans.
- Oil of fish
- Green leaf vegetables
(Leafy green vegetables)

etc.....

* Functions →

- Blood clotting factors and activity and increase and
- Wound healing and helpful and
- Anti-aging process.

* Deficiency diseases →

- Blood clotting and delay and
- Hemorrhage.
- Liver functioning impairs and

etc.....

② Water-soluble vitamins →

Like - . vitamin - B.

. vitamin - C.

a) Vitamin B1 →

* Sources →

- Rice bran (outer part)

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- Wheat bran (जई अट अना)
- Whole grains (सोया अना)
- Eggs (अंडे)
- fish • Meat • milk • Nuts

etc---

* Functions →

- Good appetite अट maintain रख दे
- Normal brain metabolism अट ले अना अना अना अना
- Body अट carbohydrate अट utilisation अट अना अना अना अना
- अट अना अना अना

* Deficiency diseases →

- Beri-Beri (बीर-बीर)

• Anoxia.

• Insomnia. (नींद ना अना)

• oedema

• Weakness. (अना अना)

• Headache.

etc---

b) vitamin-B₂ → (राइबोफ्लेविन)

* sources →

- egg yolk • milk • liver
- Cereals etc---

* Functions →

- अट अना अना अना अना अना अना अना

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- optic nerve and stimulates and it is
- eye health and maintains read it
- Body it energy and regulate and it is
- Heart health and promote read it
- etc-----

* Deficiency diseases →

- Hair loss and it is
- cataracts (childhood)
- red eyes
- Itchy eyes.
- Eczema on face
- etc-----

c) Vitamin B6 → (Pyridoxine)

* Sources →

- milk
- meat
- eggs
- yeast
- Rice polishing.
- etc-----

* Functions →

- Infant growth and it is
- B12 and RBCs and formation of it is essential and it is
- Dopamine and formation of it is helpful and it is
- etc-----

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* Deficiency diseases →

- Anaemia (रक्त की कमी)
- Depression (शक्तिहीन)
- confusion
- swollen tongue (नीम)
- etc....

d) Vitamin - C (Ascorbic Acid) →

- * sources →
- Apple
 - रसई
 - नीम
 - Vegetables
 - पापaya.
 - etc....

* Functions →

- wound healing में निर
- required रक्त में
- Iron absorption में निर
- necessary रक्त में
- cold and viruses में against
- immunity provide करता है
- vitamin - c tissues में growth
- and repair में निर required
- रक्त में
- etc....

* Deficiency diseases →

- weakness.
- Anaemia
- swollen legs.

- Rough skin.
- Scary
- Burns if bleeding.

*** Recommended dietary requirement**

1) Vitamin - A →
• 600 µg/day of vitamin-A is the daily requirement.

2) Vitamin - D →
• Daily requirement - 100 units/day.

3) Vitamin - E →
• Daily requirement - 10 mg/day.

4) Vitamin - K →

9) Vitamin - C →
• Daily requirement -

8) Vitamin - B₆ →
• Daily requirement - 1.6 - 2 mg/day.

7) Vitamin - B₂ →
• Daily requirement - 1.5 - 2 mg/day.

6) Vitamin - B₂ →
• Daily requirement - 0.5 mg/day.

5) Vitamin - B₁ →
• Daily requirement - 1.5 mg/d.

• Daily requirement → 140 - 200 mg/day.

- Rough skin.
- Scary
- Gums if bleeding.

* Recommended dietary requirement -

- 1) Vitamin - A →
- 600 µg/day of vitamin-A is the daily requirement.
- 2) Vitamin - D →
- Daily requirement - 100 units/day.

- 3) Vitamin - E →
- Daily requirement - 10 mg/day.

- 4) Vitamin - K →
- Daily requirement → 140 - 200 mg/day.
- 5) Vitamin - B1 →
- Daily requirement - 1.5 mg/d.
- 6) Vitamin - B2 →
- Daily requirement - 0.5 mg/day.
- 7) Vitamin - B3 →
- Daily requirement - 15-20 mg/day.

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8) vitamin → B₆ →

- Daily requirement - 1.6-2 mg/day.

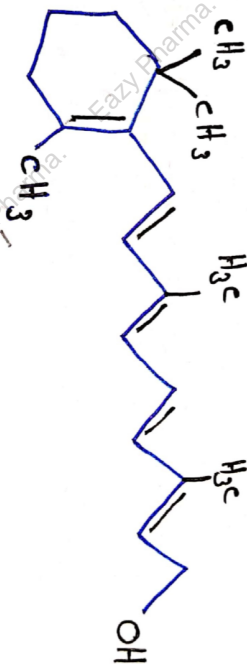
9) vitamin - C →

- Daily requirement -

* Chemical nature →

1) vitamin - A →

- chemically vitamin - A Retinoids
- not water soluble
- ethanol & insoluble ether
- water & insoluble ether

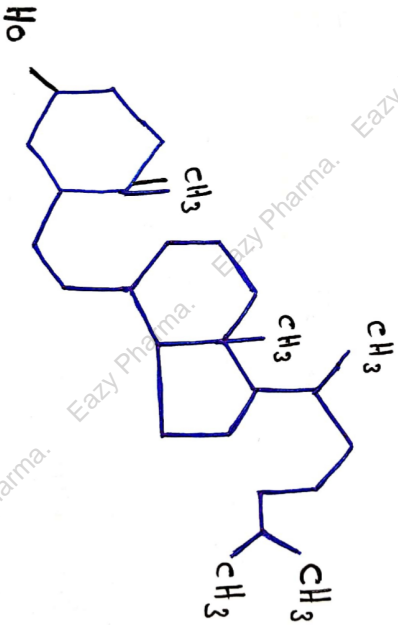


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2) Vitamin-D →

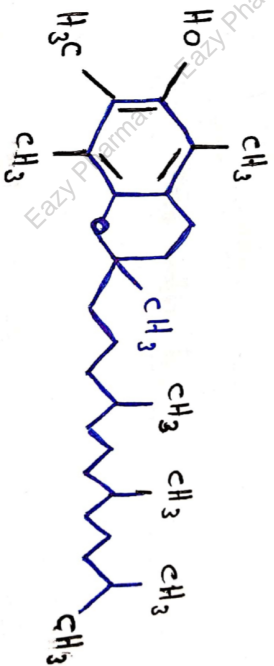
- vitamin-D fats, oils and ethanol में soluble है।
- sensitive to -oxygen.
- water में insoluble है।
- Heat and light में inactive forms में converts है।



Vitamin - D₃, (cholecalciferol)

3) Vitamin - E →

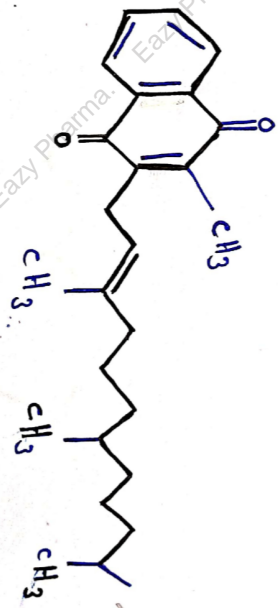
- vitamin-E nature में acidic है।
 - water में insoluble है।
 - Good antioxidant है।
 - Air में stable है।
- * structure →



• Tocopherol

4) Vitamin - K →

- water में insoluble और है।
- alcohol में soluble और है।
- Blood clotting में essential और है।



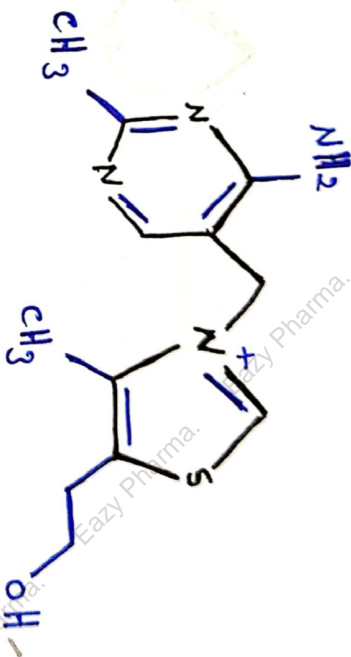
Vitamin K (Phylloquinone)

5) Vitamin - B1 →

- water में methanol and glycerol में soluble और है।

• fats and oils में insoluble और है।

- colourless crystal और है।



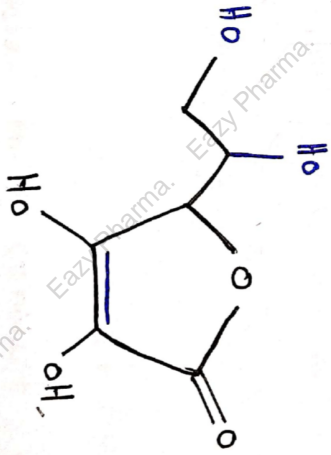
Thiamine

Vitamin B1

6) Vitamin - C →

- water में soluble और है।

- fat's in insoluble in water
- Ascorbic acid is hexose (6-carbon derivative) in water
- in two forms in exists in water
- eg → L- Ascorbic acid.
- D- Ascorbic acid.



Vitamin - C
Ascorbic acid

* Co-enzymes →

* Definition →

- Co-enzymes are substances in water in enzyme action and enhances enzyme action and

- Enzymes are catalytic activity mostly non-protein compounds we depends on water, in water co-enzymes are in water

* Functions →

- Co-enzymes, enzymes are biological activity and in water

essential एंड ई

3) Co-enzymes, low molecular weight

और organic substances एंड ई

इन्हें विट एन्झाइम ऑफ़ और

reaction exhibit गैर ऑर थान्डी

3) Co-enzymes ऑर one molecule

large number of substrate ऑर एन्झाइम

ऑर help ऑर convert ऑर ऑर

अनर रीअर ई

* Classification →

1) Metabolite co-enzymes -

• synthesized from common

metabolites.

2) Vitamin derived co-enzymes →

• derivatives of vitamins.

or.....

Unit-7

complete

Thank you ☺

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By Dr Firoz khan

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