

LIBRARY ASSESSMENT - VITAMINA

Vitamin A [retinol] is derived from natural plant pigments called carotenoid (provitamin A) that are converted to retinol in the body and stored as retinol palmitate in the liver.

Retinol is further converted to the active forms of vitamin A: Retinol and Retinoic acid.

Being a fat soluble vitamin, it is absorbed in the intestine as part of chylomicrons.

■ Physiological Functions.

- Night vision
- Induce synthesis of proteins involved in growth and cell differentiation.
- Maintenance of epithelial tissue.

■ Sources.

Carotenoid are found in green and yellow plants including carrots, dark green leafy vegetables, orange and tomatoes.

Animal source: liver, cod liver oil, egg yolk, whole milk and butter.

RDA: Infants - 300 to 400 µg.

children - 400 to 600 μ g

Adolescents 750 μ g

Pregnant women : 800 μ g.

■ Deficiency

Follicular hyperkeratosis - mild deficiency

Consists of rough skin with raised 'hyperkeratosis' patches resembling bad skin

→ Night blindness

→ Xerophthalmia - drying of ocular epithelium

→ Bitot spots.

→ Keratomalacia - corneal opacity with ulceration & infection

High Risk groups: Malnourished children & those with malabsorption (Celiac disease and liver disease)

■ Prevention.

National prophylaxis program against Nutritional Blindness 6-59 months of age.

9 months : 1,00,000 IU along with measles vaccine.

15-18 months : 2,00,000 IU with DPT boosters.
then 6 monthly till the age of 5 years.

■ Treatment

Oral vit A

Childrens aged : < 6 months : 50,000 IU
6-12 months : 1,00,000 IU
> 1 years : 2,00,000 IU

Repeat the dose next day and 4 weeks later.

* Parenteral water soluble preparations are administered in children with persistent vomiting or severe malnutrition.

* Keratomalacia → local treatment with antibiotic drops & ointment and padding of the eye.

■ Hypervitaminosis A and Teratogenicity.

* Acute manifestations : Pseudotumor cerebri
chronic : anorexia, dry skin, painful joints, alopecia and hepatosplenomegaly.

* It is teratogenic, if taken in high dose in early gestation.