



Shri Mallikarjun Vidyavardhak Sangh's
Smt. Rajeshwari Karpurmath Memorial (RKM)
Ayurveda Medical College, Hospital &
P.G. Research Centre, Vijayapur.



VITAMIN A

- Functions
- Sources
- Deficiency
- Treatment / Prophylaxis

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Functions

1. Absolutely necessary for **normal vision** (Does production of retinal pigments which are needed for vision in dim light).
2. Necessary for normal **functioning of glandular and epithelial tissue** which lines intestinal, respiratory and urinary tracts as well as the skin and eyes.
3. Supports skeletal growth.
4. Act as **anti – infective**.
5. It may protect against some epithelial cancers.



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Sources

1. Widely distributed.
2. **Animal foods** contains **Retinol**.
3. **Plant foods** contains **Carotenes**.

Animal foods	Plant foods	Fortified foods
Liver and Eggs	Green leafy vegetables (spinach)	Vanaspati and Milk
Butter and Cheese	Green and yellow fruits	
Fish and Meat	Roots (carrots)	



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1. Carotenes are converted into Retinol in **Small intestines**.
2. **Liver** stores Vitamin A and produces Retinol binding protein with which Vitamin A flows in blood stream.

DEFICIENCY

Ocular manifestation	Extra Ocular manifestation
Night blindness	Follicular hyperkeratosis
Conjunctival Xerosis	Anorexia
Bitot's spots	Growth retardation
Corneal Xerosis	
Keratomalacia	

- The term “**Xerophthalmia (dry eye)**” includes all the **ocular manifestations** of Vit – A deficiency ranging from night blindness to keratomalacia



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TREATMENT

1. Deficiency should be treated urgently.
2. Early stages of Xerophthalmia can be reversed by massive dose **2lakh IU or 110mg of Retinol Palmitate orally on 2 successive days.**
3. All children with corneal ulcers should receive Vitamin A whether or not a deficiency is suspected.



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Prevention

1. Improvement of people's diet.
2. Reducing the frequency and severity of contributory factors like PEM, Respiratory Tract Infections, Diarrhoea and Measles.

Assessment of Vitamin A deficiency

- Can be done on the surveys conducted on preschool children who are at special risk.



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Recommended allowances

1. 600 micrograms for adults.
2. 1:8 ratio of Retinol and beta Carotene.
3. 50% of Retinol be drawn from animal sources.

Toxicity

- Excess intake of Retinol causes Nausea, Vomiting, Anorexia and Sleep disorders followed by Skin desquamation, Enlarged liver and papillar oedema.



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Vitamin A deficiency in India and Prophylaxis

1. VAD is a major controllable public health and nutritional problem in India.
2. 5.7% children in India suffer from eye signs of VAD.
3. Observed in lower income strata population.
4. In India in 1970, a “**National Programme for Prevention of Nutritional Blindness**” was initiated. Now it’s a part of NRHM.
5. Guidelines issued in November 2006 cover children up to 5 years of age and the programme focuses on ;



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- Administration of massive dose of Vitamin A up to 5 years.
- 1st dose – 1 lakh IU with Measles vaccine at 9 months and subsequent doses of 2 lakh IU – every 6 months up to the age of 5 years.
- All children suffering from Measles to be given 1 dose of Vitamin A, if they have not received it in last 1 month.
- Severe malnutrition cases should be given 1 additional dose of Vitamin A.

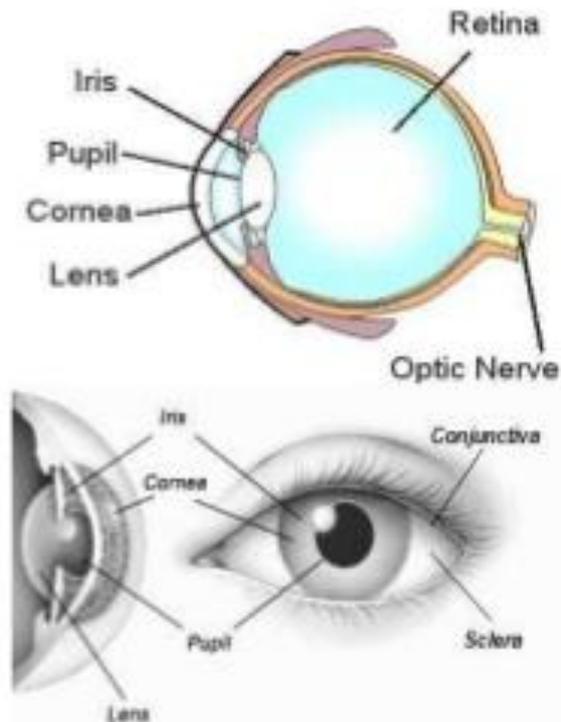
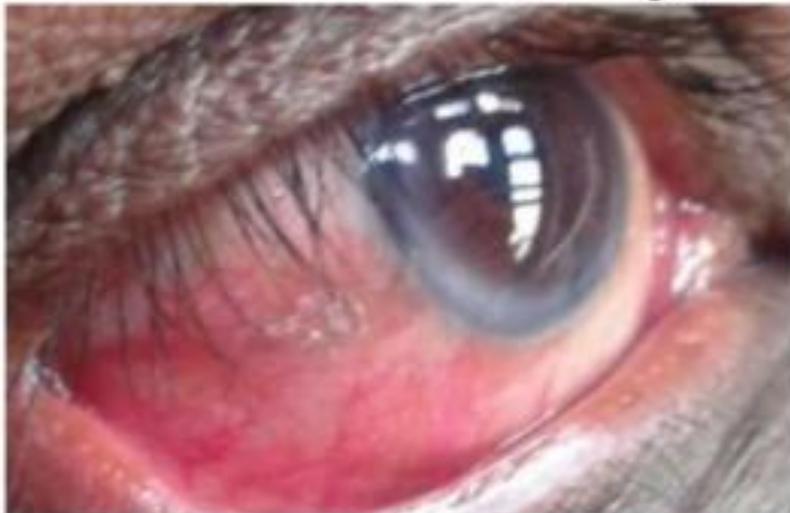
Vitamins	Diseases	Symptoms
Vitamin A	Night blindness	Poor sight vision, Loss of night vision

Night blindness is caused mainly the deficiency of vitamin A in food causes night blindness. A person who is suffering from night blindness cannot see properly in dim light. It may lead to complete blindness also.



B) CONJUNCTIVAL XEROSIS

- It is the **FIRST SIGN** of Vit.A deficiency.
- The conjunctiva becomes **dry** and **non-wettable**
- It appears **muddy** and **wrinkled** (instead of smooth and shiny)



C) BITOT'S SPOTS

- They are **triangular, pearly white or yellowish, foamy spots** on the BULBAR CONJUNCTIVA on either side of the CORNEA.
- Usually **bilateral**
- In YOUNG children, it indicates **Vit.A deficiency**
- In OLDER individuals, it is often an **inactive sequelae** of earlier disease.



Corneal xerosis

- Cornea appears dry dull and non wettable
- Serious condition
- May progress to corneal ulceration
- Ulcer may heal leaving a scar behind
- Affect vision



E) KERATOMALACIA

- It is the **liquefaction of the cornea**. This is an **MEDICAL EMERGENCY**.
- The cornea(a part or the whole) may become **soft** and may **burst open**.
- This process is **rapid** and if the **eye collapses**, **vision is lost**.





THANK YOU