BrienHoldenVisionInstitute

VITAMIN A DEFICIENCY

THINK

A child who recently had measles complains of dry eyes and about not being able to see at night. What could cause these symptoms?

WHAT YOU WILL LEARN

When you have worked through this unit you should be able to:

- Describe why Vitamin A is important
- Identify who is at risk of developing Vitamin A deficiency
- List which foods are high in Vitamin A
- Describe the eye problems that can result from Vitamin A deficiency
- Describe when Vitamin A supplements should be provided.

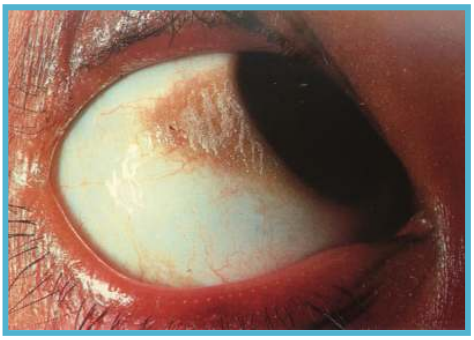
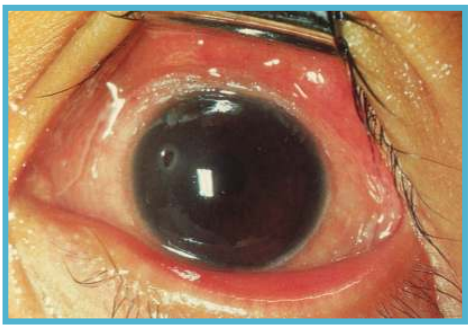
Copyright © 2009

VITAMIN A DEFICIENCY

WHAT IS IT?	• Vitamins are nutrients required by the body to live and grow • Most vitamins can not be made in enough quantity by the body and must be obtained by the diet • Vitamin A helps to keep our skin, eyes and bones healthy, and keeps sickness away • Vitamin A deficiency is when we do not have enough vitamin A to help our bodies to work properly • The effects of vitamin A deficiency are more severe in children and young people – it can cause growth problems, blindness, infections and even death. **Vitamin A deficiency can cause blindness or even death.**
CAUSES	• Vitamin A deficiency can occur when: ○ A person does not eat enough foods containing vitamin A ○ A person's body is unable to absorb the vitamin A that is eaten ○ A person uses all the vitamin A stored in the body (e.g. during pregnancy or measles outbreak • Young children and mothers who have just given birth are most at risk of vitamin A deficiency.
RISK FACTORS	• Inadequate vitamin A in the diet (not enough fresh fruit and vegetables) • Pregnancy or having recently given birth • Measles or diarrhoea in children.
SYMPTOMS	• Vitamin A deficiency can cause dryness and roughness of the skin • People who are vitamin A deficient are also more likely to develop respiratory infections, urinary tract infections and some other illnesses • Immunity against any illness is decreased • The eye symptoms of vitamin A deficiency include: ○ Problems with night vision and the ability of our eyes to adjust to dim or dark lighting ○ Dry eyes ○ Watery eyes ○ Light sensitivity.

Copyright © 2009

SIGNS	• One of the first signs of Vitamin A deficiency is dry eye
	• Dry, rough patches can appear over the eye (Figure 10-1) – these are easier to see if the person keeps their eyes open for about 15 seconds
	• Xerophthalmia – drying, hardening and thickening of the cornea and conjunctiva
	• Cheesy or foamy spots on the bulbar conjunctiva (Figure 10-2)
	  ○ Called Bitot's spots
	  ○ May look dirty white or silvery grey
	  ○ Can be easily wiped off.
	• Thick white scales on the cornea – which will pull away without damaging the eye if the vitamin A deficiency is treated
	• Grey or yellow swelling of the cornea (Figure 10-3)
	• Corneal haze
	• Corneal ulcers (Figure 10-4) – these are painless, but will scar the cornea and can cause blindness
	• In advanced cases of vitamin A deficiency, the cornea may become permanently damaged.

WHAT MIGHT IT LOOK LIKE?	 ***Figure 10-1: Dry rough patches***  ***Figure 10-2: Bitot's spots on the conjunctiva*** ***Figure 10-3: Corneal scarring and discolouration***  ***Figure 10-4: Corneal ulcer*** ***(photos courtesy of the WHO)***
WHAT SHOULD I DO?	• Measure visual acuity • Take a close look at the cornea and conjunctiva with a torch or slit lamp.

TREATMENT PLAN	• If there are any eye signs of Vitamin A deficiency, refer the person to a medical practitioner for vitamin A supplements
	• If the cornea does not look normal:
	  ○ Protect the eye with a shield
	  ○ Refer urgently to an ophthalmologist or medical practitioner
	• To prevent Vitamin A deficiency, we should encourage:

Copyright © 2009

	○ Breastfeeding infants until at least 6 months ○ Vaccination for measles ○ People to eat more food rich in vitamin A, such as fruit (especially mango and papaya), carrots, sweet potato, egg yolk, liver, milk and dairy products, and fresh, green leafy vegetables.

Copyright © 2009

SUMMARY – VITAMIN A DEFICIENCY

WHY IS VITAMIN A DEFICIENCY IMPORTANT?

- A lack of vitamin A can cause growth problems in children, blindness, infection and even death.

WHO IS MOST AT RISK OF HAVING A VITAMIN A DEFICIENCY

- Mothers that have just given birth
- Children that have been sick (especially measles)
- Children who have a poor diet.

WHAT ARE THE EFFECTS OF VITAMIN A DEFICIENCY ON THE EYE?

- Night blindness
- Dry patches on the white of the eye
- Haziness and swelling cornea
- Shallow or deep holes in the cornea
- Permanent corneal damage and scarring.

WHAT SHOULD I DO?

- Refer anyone with signs of Vitamin A deficiency to a medical practitioner – they might need vitamin A supplements
- Encourage:
  - breastfeeding until 6 months of age
  - measles vaccination
  - people to eat more foods rich in vitamin A.

Copyright © 2009

TEST YOURSELF QUESTIONS

1. Circle three foods that are rich in vitamin A:

Liver	**Chocolate**	**Spinach**
Chicken	**Carrots**	**Water**

2. Which of the following people is MOST likely to have a vitamin A deficiency (circle the correct answer)?

A 20-year old man

A 4-year old child

An 80-year old woman

3. List four ocular signs of vitamin A deficiency (i.e., signs which can be seen in the eye):

_____
_____
_____
_____

4. What should you do if a person's cornea shows signs of vitamin A deficiency?

_____
_____

5. What can be done to help prevent vitamin A deficiency?

_____
_____
_____
_____

Copyright © 2009