

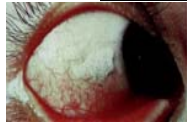


Courtesy of Noma Children's Hospital

Noma Ulcer:

Give the same three dose treatment if the child begins to show signs of Noma Ulcer, even in the absence of recent measles. If you see a mouth ulcer, swelling and redness of the gums, swelling of the cheek, foul breath, pain and fever in a malnourished child, especially between 6-72 months, give the Vitamin A, and begin oral metronidazole, at a dose appropriate to the child's age. The child should be treated at the health center as soon as possible also, but start the treatment while arranging for that care. The child may need Other antibiotics even by injection to control the mouth infection and prevent an invasive gangrene that could permanently disfigure the child's face or result in death. Vitamin A will quickly improve the tissues in the lining of the mouth, and will restore good immune function, but once the infection has begun, antibiotics, surgical debridement, and possibly later reconstruction may be necessary.

Nutritional Blindness:



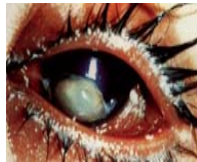
Xerophthalmia Dry Eye



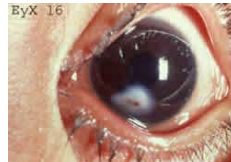
Bitot Spots



Hazy dry cornea poor quality — Keratomalacia



Gelatinous cornea, bulging, about ready to rupture. If that happens, the eye will be permanently blind.



Same eye, healed by timely Vitamin A capsules. Scar remains, but vision is good.

Questions and Answers

Q: What is Vitamin A?

A: Vitamin A is a natural substance that the body needs for a healthy immune system (to fight infections), and for normal healing and growth. Children need it more than adults, and can get it by eating animal products such as eggs, milk and meat, or eating richly colored fruits, greens and vegetables. Oil must be added to the diet to allow the child to absorb Vitamin A and for brain growth. When the diet is lacking in Vitamin A, or it is being depleted by illness, Vitamin A mega-dose capsules can help keep children healthy, and save their lives and eyes.

Q: What other nutrients should a malnourished child receive to help them to recover, grow well and fight infection?

A: Proteins - mixed grains, soy, eggs, milk, meat; Minerals - Zinc, Iodine & Iron - often require supplements, and fortification. (Eg: Iodized salt); Vitamins C and Folate from fruits and vegetables & Vitamin D from sunshine, for healthy bones

Q: What else can be done to protect children from mouth infections that lead to Noma?

A: Keep children clean - especially their hands, faces and mouths! Use a new, clean chewing stick every morning before breakfast, and every evening before bed. Brush the child's teeth and gums carefully for 5 minutes. Use Tooth Cleansing Powder (Sodium Bicarbonate, Iodized salt with Zinc Oxide) and a chewing stick, to help with cleaning and to promote healing.

Q: What is Metronidazole, and why does it help fight Noma Ulcer if given in time?

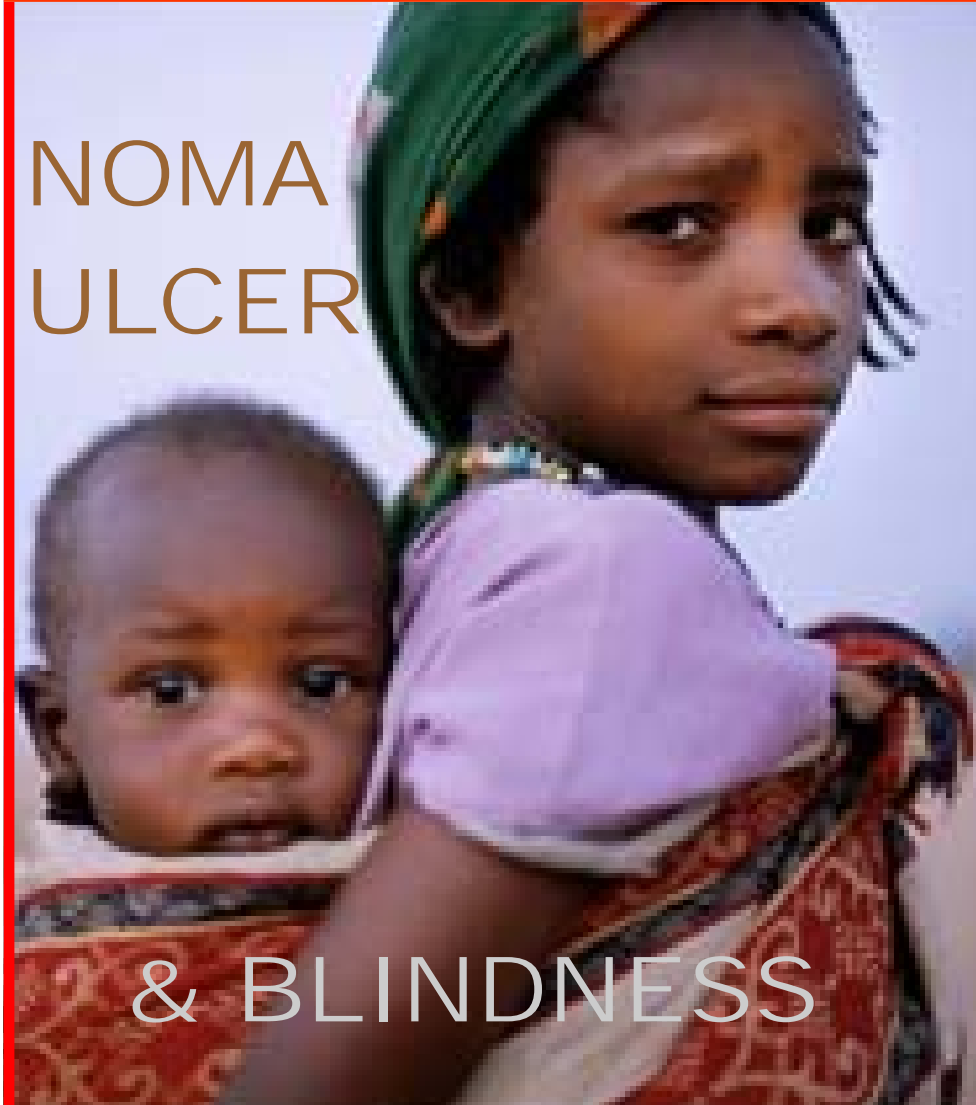
A: Metronidazole is an antibiotic that kills "anaerobic" bacteria, the kind that cause the foul odor of a mouth infection. (The germs often come from the family livestock.) When a child is weak from malnutrition, especially after measles, even normal mouth bacteria can invade a small mouth ulcer and lead to destructive facial infections.

Severe Vitamin A deficiency is a wide-spread problem in Nigeria, especially in the Northwest, and is one of the reasons that children suffer so many infections.
— MAMA Nigeria

MAMA Project, Inc.
www.mamaproject.org
mamaproject@enter.net

PREVENT

NOMA ULCER



& BLINDNESS

Noma Ulcer and Nutritional Blindness

Risk Factors:

- Malnutrition in children, especially Vitamin A deficiency
- Recent measles, malaria or other infections that deplete the child's Vitamin A stores and affect the eyes, nose and mouth
- Extreme poverty
- Water and food contamination from animal waste

Prevention:

- Community-wide Vitamin A mega-dose (200,000 International Units) capsule distribution every 4-6 months (See chart for age-specific doses)
- Measles vaccination
- Twice daily tooth brushing with disposable chewing stick
- Improved diet for pregnant and nursing mothers and children
- Clean food and water
- Separation of livestock from family living space

Recognition:

- First sign of Nutritional Blindness is loss of night vision; later signs include dry, red and sore eyes. Progresses rapidly to softening of the cornea, ulceration, rupture and blindness. This is EMERGENCY!
- First sign of Noma Ulcer is a small mouth ulcer or inflamed gums. In a malnourished child with poor immunity to infection and weak tissues, bacteria can quickly invade and cause infection with signs including: cheek swelling, foul breath odor, fever and pain. especially after measles, malaria or other serious illness. If untreated, gangrene can rapidly destroy the structures of the face. This is EMERGENCY!

Emergency Treatment:

- Vitamin A mega-dose (200,000 International Units) capsules – *given immediately* – 1 today, followed by 1 tomorrow and 1 in two weeks. (See dosage adjustments for infants and women) Don't allow Noma Ulcer or irreversible Blindness. Treat early and seek consultation.
- For mouth infection, begin oral Metronidazol tablets 2-4 times daily. See chart. Treat early and seek consultation. Continue for 2 weeks.

Vitamin A Mega-dose Capsules (200,000 International Units) Treatment and Prevention Doses

Age:	UNITS / Dose	Cap-sule	Notes:
Before 6 months (if not breast-fed)	50,000	1/4	Breast milk provides Vitamin A
6 to 12 months	100,000	1/2	Start giving eggs, fruits, colored vegetables, greens, milk
Over 12 months	200,000	1	Not safe for girls or women who may become pregnant!
Girls and Women	200,000	1	Give to new mothers 6-8 weeks after delivery.

Metronidazole

For Anaerobic Infection
Tablets 250 mg
(7.5mg per kg per dose 4x a day)
With or without food
*Take with food if GI Upset

Age or Weight:	Instruc-tions:
0-1 week Or < 2kg	15mg/kg 2 times a day
1 week to 2 months 2-5 kg (4.5—10 lbs)	1/4 tablet 2 times a day
2-12 months 5-9 kg (10-12 lbs)	1/4 tablet 4 times a day
1-4 years 10-19 kg (20-40 lbs)	1/2 tablet 4 times a day
5-11 years 20-40 kg (40-90 lbs)	1 tablet 4 times a day
12 years to adult	2 tablets 4 times a day
Pregnancy?	Category B *Safe in Pregnancy.

Vitamin A Mega-Dose Capsules for community-wide mass distribution:

Give 1 Vitamin A capsule every 4-6 months. (Under 1 year or possibly pregnant: See chart)

Vitamin A Three Dose Treatment for Malnourished Children with Severe Infections:

In addition to other appropriate treatments, use the emergency 3 dose regimen for life-threatening infections such as severe measles, diarrhea, pneumonia, TB, malaria or meningitis

Vitamin A One Extra Dose Treatment for Malnourished Children with Moderate Infections:

In addition to other appropriate treatments, when a malnourished child presents with a serious, but not acutely life-threatening condition such as ear infection, diarrhea, tonsillitis, respiratory infection, parasites, or worsening malnutrition, give an extra dose. See chart.