



MODULE 3:

Oral Health and Hygiene

- Overview of prevention, early detection and treatment of oral diseases
- Focus on noma

Copyright 2010 MAMA Project, Inc.

Revised 2013 (slides 60, 93)

This material is intended solely for non-commercial, not-for-profit use. Any commercial or for-profit use of this material is prohibited.

Notice: MAMA Project does not warrant that any medical diagnosis procedure or medical treatment set forth in these materials is the most current or desirable course of treatment. Any user is encouraged to check the accuracy of any medical diagnosis procedure or medical treatment against currently accepted courses of treatment.

Child Survival Programs for Sahel region and Haiti are in collaboration with University of Maryland Dental School.

For questions or information, please contact: MAMA Project, Inc. 2781A Geryville Pike, Pennsburg, PA, USA 18073

ORAL HEALTH

-A Key to Child Survival & Noma Eradication-

- PREVENTION: Better nutrition and oral hygiene and immunizations
- EARLY DETECTION: Vigilance and community education
- TREATMENT: To control complications of killer childhood diseases that are precursors of noma.

Our GOAL is to



prevent this tragedy!



This module prepares those working with village families to promote oral health, recognize danger signs in time to spare children unnecessary suffering and death from noma, and to prevent other killer childhood diseases that can be eradicated by following the principles reviewed in this program.

What are the key messages for the community? We will first review oral health information that should be taught in the villages.



“YOU NEED HEALTHY TEETH AND GUMS”

Your teeth and the gums around them help you in many ways.

Teeth are important for:

Good **HEALTH**. Infection from a bad tooth can spread to other parts of your body.

Good **LOOKS**. Healthy teeth that look good help you feel good.

Good **SPEECH**. Your tongue and lips touching the teeth help you make many sounds.

Good **EATING**. Your teeth break food into small pieces so that you can swallow and digest it better.

Good **BREATH**. If you leave food around your teeth, your breath will smell bad.



Your gums are important too.

They fit tightly around the teeth, and help to keep them strong. Without strong gums, your teeth are of no use. Most old people lose teeth because of bad gums, not bad teeth.



How Can We Prevent Cavities and Sore Gums?

Eating good food and carefully cleaning the teeth prevents tooth decay and gum disease.

How can we get food to prevent cavities and sore gums?

Food from your own garden and local food from the market is best.

These foods are good for your body, your teeth, and your gums.



Which foods can prevent cavities and sore gums?

Vitamin Rich Vegetables, especially with dark green leaves:

Amaranth

Spinach

Beet & Carrot Tops



Teach parents to feed the children first, before they sell their produce!

Which plants provide proteins to prevent cavities and sore gums?

- **Peas and beans**, like green beans, soybeans, winged beans, and mung beans.



What supplies energy, helps vitamins to be absorbed, and also helps young childrens' brains?



Oil, from

palm nut kernels

ground nuts

and coconut.



What foods are rich in vitamins to strengthen the gums and the immune system?

Fruits, and Vegetables like banana, guava, oranges, papaya, pumpkin, squash, tomatoes and carrots



What foods are rich in protein to build strong tissues and repair damage from trauma and illness?

Eggs



Meat



Fish



Food taboos kill women and children!

- There are many food myths that worsen malnutrition in pregnant women and children.
- One such myth is that “eating eggs causes children to become thieves”. Teach the importance of eggs in the child’s diet, for strong tissues that resist infection leading to overall better health and survival.
- Pregnant women and children should not be restricted from any kind of nutritious food.
- People need to abandon food taboos that hurt the most vulnerable members of the community.
- Help people to examine their food customs to value the ones that promote good nutrition (like breast feeding) and discard the dangerous ones.

What an infant drinks is extremely important for health and survival

- One of the biggest mistakes that caregivers make is to give infants sugar water or teas starting at birth. This deprives babies of the best antibody rich breast milk that mothers produce right after delivery.
- Another mistake is to use baby bottles. They cause dental caries, but worse they kill children! By becoming contaminated with bacteria that cause deadly diarrhea, and by causing malnutrition when poor mothers substitute diluted formula for clean and nutritious breast milk.

What should infants and children drink after weaning from the breast?

- Boiled water
- Milk
- Coconut milk
- Avoid soda and any drink that is not clean

One of the most important keys to preventing disease in children is:

- **Exclusive breast feeding**
for first 4-6 months
- **Continue breast feeding**
for at least two years

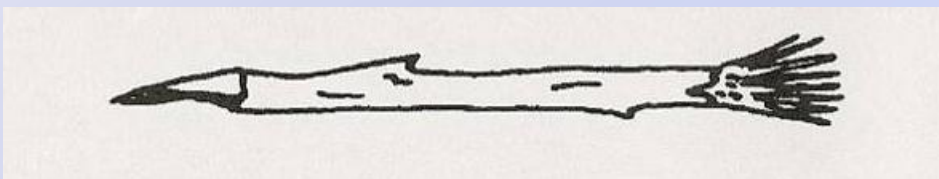


Taking Care of Baby Teeth

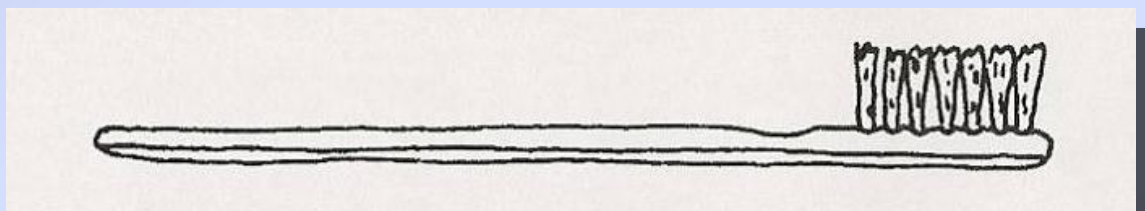
A child's baby teeth are being made before birth while the baby is still inside the mother's womb. During the last months of pregnancy and the first few months after the child is born, the baby teeth take their final form.

Pregnant mothers and young children need good food and good health in order to have strong baby teeth.

Cleaning your teeth carefully every day is another important way to take care of both teeth and gums. **However, cleaning teeth is like building a house. To do a good job, you need to work slowly and carefully.** Once a day is enough, if you clean your teeth well every day.



Buy a brush from the store, or make one yourself. But be sure the cleaning end of the brush is soft so that it won't hurt the gums.

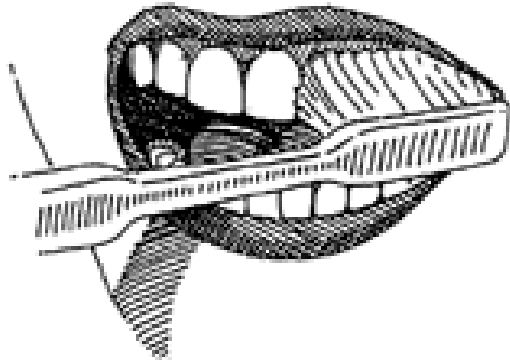


Use your brush to clean all the teeth, especially the back ones with the grooves. Back teeth are harder to reach and so it is easy no to clean them well enough. Cavities start from sweet food and germs left together inside the grooves.

CHEWING STICKS



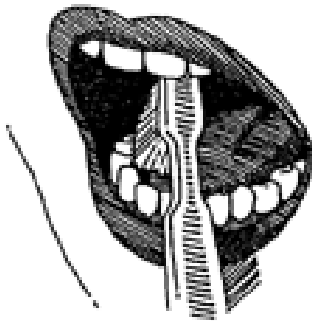
BRUSHING TECHNIQUE



a: Clean the outside surfaces of the upper, then the lower teeth



b: Clean the inner surfaces of the top teeth.



c: Clean the inner surfaces of the lower teeth.



d: Finally, clean the chewing surfaces of the upper, then the lower teeth.

Steps to Oral Hygiene for Children

- Clean your baby's gums after each feeding using:
 - *Cotton wool*
 - *Clean soft cloth*
- Clean your baby's teeth using:
 - Chewing stick
 - Small soft bristled toothbrush.
- Avoid using feeding bottles for babies to prevent tooth decay and gum diseases.
- Rinse child's mouth after every meal.
- If you use fluoridated toothpaste, be careful not to allow children to use more than a pea-sized amount and do not swallow.

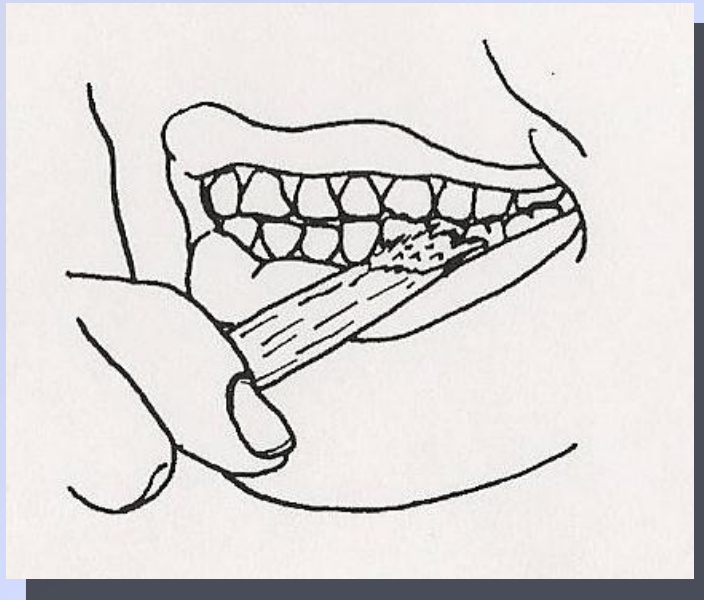
Before recommending fluoride, find out if water already contains high level of fluoride.

Do NOT risk worsening fluorosis of teeth if the levels are already high.



Toothpaste is not necessary.

Charcoal or even just water is enough. When your teeth are clean, rinse away the loose pieces of food.



And, it is better to clean your teeth carefully once every day than to clean poorly many times a day.

Zinc-Enriched MAMA DENTIFRICE

Recommended for mouth for the entire family- *infants, children & adults*

- Each morning & evening place a pinch (level tiny .15cc scoop) inside lower lip.
- Spread around mouth.
- Next, clean teeth thoroughly & gently with fresh chewing stick.
- Then take a drink and swallow. Do not spit out!
- Repeat 3 times per day if the child has mouth infection, measles, malaria, diarrhea, pneumonia, inflamed eyes or is not growing well.
- Prevent noma with good hygiene and nutrition.
- Seek medical attention *immediately* when malnourished children develop mouth infections.




Contains: Sodium Bicarbonate, Iodized Salt, & Zinc Oxide, One scoop (.15cc each) will provide 7.5 mg Zinc. Iodine and Zinc are micronutrients essential for growth and immune function.





Zinc-Enriched MAMA Dentifrice

Follow Chart for Good Oral Hygiene.


For Zinc Supplementation during illness - add extra dose or use tablets.





Newborn
0-1 week or <2 kg




			
MORNING	NOON	AFTERNOON	EVENING





Young Infant
1 week- 2 months or
2-5 kg (4.5-10lbs)




			
MORNING	NOON	AFTERNOON	EVENING





Older Infant
2-12mos or 5-9 kg (10-12lbs)
2-6 months= 1/2 mini-scoop
6-12 months= 1 mini-scoop




			
MORNING	NOON	AFTERNOON	EVENING





Toddler/Pre-school
1-4 years or 10-19 kg (20-40lbs)




			
MORNING	NOON	AFTERNOON	EVENING





School Age
5-11 yrs or 20-40 kg (40-90lbs)



			
MORNING	NOON	AFTERNOON	EVENING

Pre-teen/Adult
12 yrs to adult



			
MORNING	NOON	AFTERNOON	EVENING

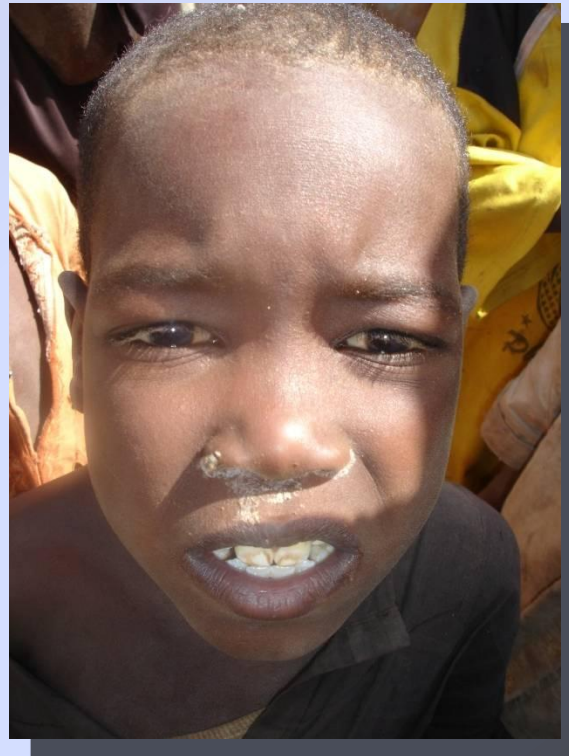
Notes:

- Dosing: For infants 2 months up to 6 months, dose is 1/2 of .15cc mini-scoop. For infants 6-12 months, dose is one .15 mini-scoop.
- Each morning & evening, place dose inside lower lip.
- Spread around mouth.
- Clean teeth thoroughly & gently with fresh chewing stick or with finger covered with clean soft cloth.
- Take a drink and swallow. Do not spit out!
- Repeat 3 times daily if the child has mouth infection, measles, malaria, diarrhea, pneumonia, inflamed eyes or is not growing well.
- Prevent Noma and Blindness with good hygiene and nutrition.
- Seek medical attention immediately when children develop mouth or eye infections.
- Contains: Sodium Bicarbonate, Iodized Salt, Zinc Oxide.
- 1 scoop (.15cc each) will provide 7.5 mg Zinc, an essential micronutrient for growth and immune function.

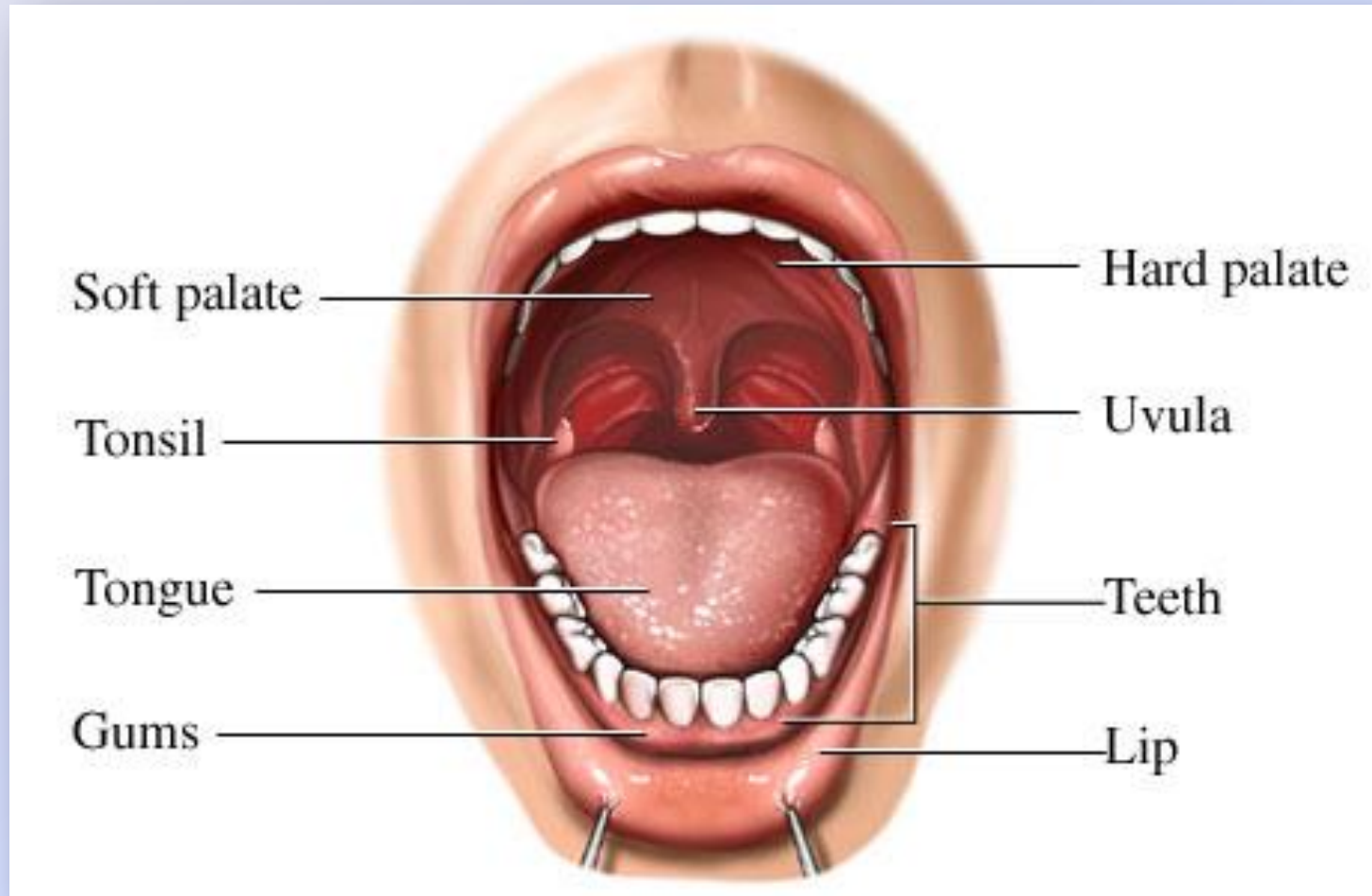
If using Zinc 20mg tablets for children with diarrhea, pneumonia or other illness:	
2 to 6 months	1/2 tablet
6 months or more	1 tablet

How will we find oral disease? Do Screening Oral Examinations:

- During Child Survival Events
- At every health encounter



ANATOMY OF THE MOUTH

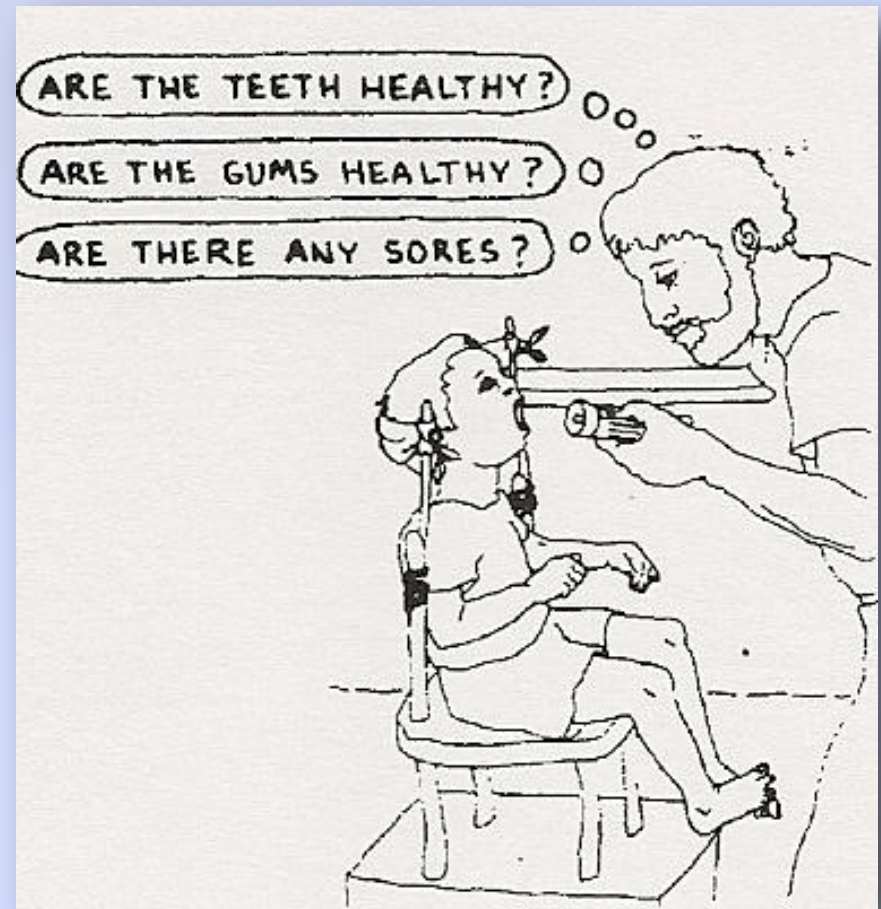


Where will we examine our patients?

- In a light and bright place
- Outside or near a window or light
- In a chair with a headrest



And, what are we looking for?



Look at the teeth:

- Is a new one growing in?
- Is a tooth loose?
- Is there a dark (dead) tooth?

Look at the gums:

- Are they red?
- Is there any swelling?
- Do they bleed?
- Are the gums eaten away between the teeth?

- Cavities in baby teeth can make a child's malnutrition worse.
- Remember that whenever you see a weak, poorly nourished child.
- When you examine a child, lift his lip and look at his teeth.
- Do this as part of your routine examination.

ORAL HEALTH PROBLEMS

**Associated with Noma
and Increased Child
Mortality**

Immune Deficiency...



Must be recognized as a the underlying cause of noma

Undernourished children are prone to serious infections because:

- Lack of essential micronutrients prevents a child from developing a healthy immune system.
- The result is a life threatening:

Acquired Immune Deficiency Syndrome

Thus, malnourished children are at risk for noma because they suffer from

“Nutritionally Acquired Immune Deficiency Syndrome”

This is sometimes called “Hidden Hunger” because the child may not appear visibly malnourished.



Both kinds of AIDS allow opportunistic infections to flourish in their victims:

N/AIDS
&
HIV/AIDS



Nutritional /AIDS

&

Human Immunodeficiency Virus/AIDS

History Lesson:

- There was a time in the 1980's, at the beginning of the recognition of the AIDS pandemic, that some researchers, noting the similarity of the immune deficiency state of malnourished children and AIDS patients, postulated that the root of AIDS was at least partly malnutrition.
- That was before the work of researchers such as Dr. Robert Gallo defined the role of the Human Immunodeficiency Virus in the pathogenesis of AIDS.

- Ongoing research has revealed that both Nutritional AIDS and HIV/AIDS often are associated with deficiency of many of the same Essential Micronutrients.

e.g. , Vitamins: A, B-complex, C, E
and Minerals: Iron, Zinc, Selenium

Nutritional AIDS & HIV/AIDS

- Similar defects in cellular and humoral immunity
- Same opportunistic infections occur
- Oral manifestations of infections are similarly dramatic and dangerous in both Nutritional AIDS & HIV/AIDS.
- Both are at increased risk for noma – in pediatric and adult patients.



Nutritional AIDS & Child Survival

- Annually, most of the nearly 10 million children who die of infectious disease before their 5th would not die if they did not have Nutritional AIDS.
- Noma is a dramatic example of the serious consequences of immune deficiency in both children and adults with AIDS of either nutritional or viral origin.



Noma in global context:

People working to prevent noma should understand the inter-relationship of oral infectious diseases, malnutrition, Nutritional AIDS, HIV/AIDS, endemic infections and the socioeconomic realities of populations living in poverty.



Noma in Clinical Context:

- Stages of noma
- Diseases that are often precursors of noma
- Treatment issues related to the usual noma precursors
- Pre-hospital management of noma

The Clinical Stages of Noma

Stage 1



Photo from WHO Collection, C. O. Enwonwu

The overall consensus is that the initial phase is Acute Necrotizing Gingivitis (ANG) which under circumstances still to be elucidated may evolve into the gangrenous phase. Today scientists are more inclined to say that any intra-oral lesion can play the role of an entry point to the disease.

The Clinical Stages of Noma (continued)



Photo from WHO Collection, C. O. Enwonwu

Stage 2

If the immune system is sufficiently weakened the soft tissue against the gingival lesions start swelling.

The Clinical Stages of Noma (continued)

Stage 3

In a few days, in the absence of any intervention, there is formation of a gangrenous plaque which indicates the area of future loss of tissue.



Photo from WHO Collection, C. O. Enwonwu

The Clinical Stages of Noma (continued)



Photo from WHO Collection, C. O. Enwonwu

Stage 4

On healing, large amounts of scar tissue prevent anymore than minimal opening of the mouth and the functional as well as aesthetic sequelae are extremely distressing.



**If infection is treated early
it will not progress to full
thickness tissue loss.**

Noma often starts with gum disease.

Infection can start in the gums whenever the teeth near them are not clean. For example, there may be swelling between only 2 teeth or between many teeth. In addition, gums that are weak from poor nutrition are not able to resist the infection. This is why malnourished children and pregnant women and people living with HIV/AIDS must take special care to eat well and clean their teeth carefully. When a person has HIV, his body cannot fight infections well, so a gum infection can quickly get worse and even progress to noma.



Signs of Mild Gum Disease:

- Gums are red instead of pink.
- Gums are loose instead of tight against the tooth.
- Between the teeth, gums are round instead of pointed.
- Gums bleed when the person brushes or flosses.
- Gums bleed when you press against them, or when you scrape away food from under them.
- The person has bad breath and a bad taste inside the mouth.

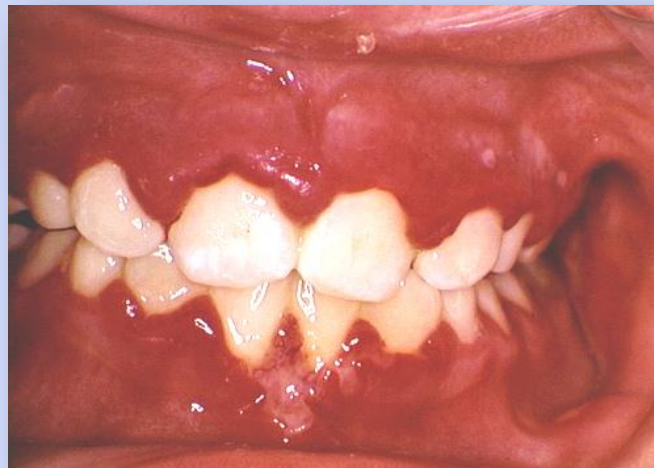


Gum Disease Treatment:

- Parents should help children clean their mouths.
- Clean teeth near gums, and gently clean gums.
- Rinse mouth with warm salt water.
- Use 4 cups each day until the bleeding stops
Rinse and spit. Do not drink salt water!
- When well, clean mouth and rinse with water or salt water at least daily to keep the gums strong.
- If you have the Zinc Enriched MAMA Dentifrice, use three times daily if ill, twice if well.
- Increase fresh fruits and vegetables, such as: Guavas, oranges, pineapples, papayas, tomatoes, peas, and green leaves to strengthen gums.



When mild gum disease progresses to Acute Necrotizing Ulcerative Gingivitis, the malnourished child is at risk for noma.



Remember that of all of the immediate precursors of noma, the most common one is:

Acute Necrotizing Ulcerative Gingivitis

ANUG

Trench Mouth

Vincent's Stomatitis



***in immune deficient
children and adults***

Treatment for Acute Necrotizing Ulcerative Gingivitis (ANUG, Vincent's Infection of the gums, or Trench Mouth):

Patient will need close follow-up over a minimum of 2 weeks and may need to begin antibiotics in the hospital.

- Start oral amoxicillin or metronidazole immediately
- See charts for doses



Treatment for ANUG

- Start by cleaning the gums gently.
- Mix 1 part hydrogen peroxide with 5 parts water.
- Soak a cotton gauze and wipe the child's gums with it.
- Rinse with warm water.
- Use the Zinc-Enriched MAMA Dentifrice three times daily, if possible.



Since person with ANUG may have Scurvy from Vitamin C deficiency:

Give Vitamin C (ascorbic acid), 2 tablets a day for 7 days (1 tablet = 500mg) and Essential Micronutrients. Remind the patient or caregiver to include Vitamin C rich foods in the diet.

Megadose Vitamin A

- Should be given according to the International norms for age and according to the severity of the illnesses
- At least one supplemental mega dose at presentation, and up to three if the child has a life threatening infection.
- See the explanation and charts in Module I.

If ANUG is being treated at home:

- Adults: Rinse mouth every hour for 3 days with a weak solution 1:5 of hydrogen peroxide. Try to hold the solution in the mouth for several minutes. The longer the solution touches the gums, the better it is for the gums. After 3 days, change to salt water, 4 cups a day. Spit out the salt water. If you have no hydrogen peroxide, rinse with salt water from the beginning. Or use MAMA Dentifrice. Follow directions carefully. Do not spit out the MAMA Dentifrice- it contains Zinc, a necessary nutrient.
- For a young child who is not able to rinse, Mother or Father can wipe his gums with the weak solution of hydrogen peroxide 4 times a day or use Zinc-Enriched MAMA Dentifrice 3x/day. Show parents how to do this.
- Clean the teeth with a soft brush or a chewing stick. Parents can clean children's teeth. Show them how and ask them to do it even if the gums bleed.
- Cook food that is soft (like pounded yam) and not spicy (no pepper). Eat fresh fruits and vegetables that give strength to the gums.
- Stop smoking and stop chewing betel nut.



Due to time constraints, we will
move ahead to Slide #78.

Please review slides #61 to #77 on
your own.

Noma, A Practical Review:



When a child is undernourished, a simple gum infection can get out of control (see pictures that follow), and spread through the cheek to the face. When that happens the condition is called **Noma** or **cancrum oris**. You will usually see Noma in children. It will develop if these 3 things are true:

1. The child's general resistance is low. Usually, he is undernourished and anemic (lacks iron). He may have tuberculosis, or other serious chronic illness.
2. The child has severe gum disease, or has another disease that causes mouth lesions. (See examples that follow)
3. The child has recently had a serious illness like measles or malaria that further suppresses the immune system.

Early Signs of Noma:

The infection starts inside the mouth.

1. Sore mouth with itching gums
2. Swollen, sore gums
3. Gums bleed when eating or when teeth are cleaned
4. Bad breath, drooling, spits a lot
5. Does not want to eat
6. Loses weight quickly

If untreated at that stage, permanent damage occurs and the mortality rate climbs to 70-90%.

Noma does not stop in the soft tissues of the face. It destroys flesh and bone. When it reaches the jaw, the child will have:

- Loose teeth
- Dead pieces of bone around the teeth

Noma breaks through to the surface of the face, usually the cheek, but noma can involve the eyes, lips, and nose:

- Skin is tight with dark red swelling.
- Black spot (gangrene, necrosis) on the face breaks open, revealing the extent of the permanent tissue loss.
- A line separates dead tissue from healthy tissue.

Noma Treatment:

You must start treatment for Noma as soon as it is recognized, in order to limit the extent of the damage. The longer the delay, the lower the survival rate, and the worse will be the physical and psychological trauma will be for the child. Also, a larger, tighter scar will prevent the child from opening his mouth and chewing the food he needs to grow stronger.

Noma Treatment:

Start with liquids.

- The child needs to overcome both the lack of body water (dehydration) and his lack of resistance to disease.
- Start giving Super Drink. (See Packet for recipes and other options for liquid and soft diets.)
- If he cannot drink by himself, help him. Use a spoon or syringe.
- Place the fluid on the inside of the healthy cheek and ask the child to swallow.



Address Micronutrient Deficiencies

- **Assess Haemoglobin Level (See Module 4)**
- **Start iron** as soon as the acute infections are controlled and continue for 3 months. See IMCI manual for doses.
- **Begin Essential Micronutrients according to directions.**
- **Give 3 Mega doses of Vitamin A on the 1st, 2nd and 7th days of treatment (Module 1).**
- **Give food rich in micronutrients:** meat, fish, eggs, dark green leafy vegetables, fruits, peas and beans as soon as the child can begin to eat.

Treat Intestinal Parasites

- It is not necessary to do a test for parasites.
- A child may have anemia and malnutrition partly because he has worms.
- Give him medicine right away, as soon as he is eating again.
- Albendazole treats many different worm infections (See Module 2).

Treat the infection

Start antibiotics immediately!

- Metronidazole and Amoxicillin are the best medicines to use. (You can also use clindamycin)
- Start with high oral dose.
- Give IV as soon as child gets to the hospital.
- If unable to hospitalize, continue oral treatment in the community for at least 2 weeks.
- To decide how much to give, weigh the child, or use the visual chart in the packet (and see Module I).

AMOXICILLIN 250mg

Emergency Early Intervention Regimen for Noma

Patient Age, Weight or Description		Dispense quantity for complete course of Rx according to severity:			
		# Tablets for 14 days		# Tablets for each dose	
Age or Weight:	Description:	Severe 2x Dose	Moderate	Severe 2x Dose	Moderate
0-1 week Or < 2kg	Newborn	#22	#11	1/2	1/4
1 week to 2 months 2-5 kg (4.5—10 lbs)	Young Infant	#42	#21	1	1/2
2-12 months 5-9 kg (10-20 lbs)	Older Infant	#64	#32	1 1/2	3/4
1-4 years 10-19 kg (20-40 lbs)	Toddler Pre- School	#84	#42	2	1
5-11 years 20-40 kg (40-90 lbs)	School age Child	#126	#63	3	1 1/2
12 years to adult	Pre-teen to Adult	#164	#82	4	2

See packet for complete chart.

METRONIDAZOLE 250mg Emergency Early Intervention Regimen for Noma

Patient Age, Weight or Description		Dispense # for complete course of Rx:	
		# tablets for 14 days	# tablets for each dose
0-1 week Or < 2kg	Newborn	#7	15mg/kg
1 week to 2 months 2-5 kg (4.5—10 lbs)	Young Infant	#7	1/4
2-12 months 5-9 kg (10-20 lbs)	Older Infant	#14	1/4
1-4 years 10-19 kg (20-40 lbs)	Toddler Preschool	#28	1/2
5-11 years 20-40 kg (40-90 lbs)	School age Child	#56	1
12 years to adult	Pre-teen to adult	#112	2

See packet for complete chart.

Treat the illness that provoked the occurrence of Noma

- In a malarial area it is wise to assume that the child has malaria and to begin treating with anti-malarial drugs.
- Look for any other illness and treat them too, especially measles and tuberculosis.

Noma Wound Management Treatment:

Bring the child to a specialist as soon as possible.

If unable, begin to clean the wounds visible inside and outside of the mouth.

- Gently pull away any dead skin with tweezers.
- Do not remove adherent gangrenous plaque.
- Wash the inside of the sore with hydrogen peroxide diluted one part hydrogen peroxide to five parts cooled boiled water. (Be sure you measure the hydrogen peroxide carefully. Too strong a solution will cause further tissue damage) You can also clean the wound with an iodine solution.)
- Then put in a wet dressing.
- The dressing: Soak cotton gauze in salt water. Squeeze out the extra water so that it is damp but not wet.
- Put it in the wound and cover it with a dry bandage.
- Every day, remove the bandage, wash the wound with dilute (1:5) hydrogen peroxide, and put in a new dressing. Do this until the wound does not smell anymore and there is not more dark dead skin.

Address the teeth and bones:

The child will eventually need loose teeth and dead bone removed by the dentist and oral surgeons.



Oral Hygiene for the Noma Patient:

- Use a soft brush gently to clean the remaining teeth. Do this 3 times a day for the child. Use Zinc-enriched MAMA Dentifrice 3 times daily if available.
- Wipe the gums with a weak (1:5) solution of hydrogen peroxide. Use cotton gauze that is damp with the solution. Do this every 2 hours for 5 days.
- Then after 5 days, start rinsing with warm salt water 3 cups a day.

Noma Rehabilitation

- **Surgery** to release the scar, and close the wound
- **Dental care**, including possibly jaw wiring to hold the mouth in a function position during healing
- **Physical therapy and speech therapy** to restore function
- **Counseling**, especially if the family believes that noma is a curse.

Prevention of Noma:

NOMA NEED NOT OCCUR. We can prevent it. Always give special attention to the mouth of a sick child, to be sure to keep his teeth clean.

Whenever someone is nursing or caring for a sick child, that person should clean the child's teeth as a normal activity. This is especially true for a child who is weak, undernourished, and with little body water (dehydration).

Such a child should always:

- Have his teeth carefully cleaned each day with a soft brush.
- Rinse his mouth with a warm salt water solution, 2 times a day or use MAMA Dentifrice 3x day
- Eat fresh fruits and vegetables especially the kind that have Vitamin C: guavas, oranges, pineapples, papayas, tomatoes, peas, and dark green leaves.



Suspect noma in children with mouth sores or ANUG!

ESPECIALLY if malnourished with recent illness such as measles or malaria.....

Do not delay therapy!

- Metronidazole/Amoxicillin
- 3 mega doses of vitamin A
- Mouth cleaning with MAMA Dentifrice Zinc enriched dental powder
- Multivitamins/Minerals (See Module I)

Next we will review photos of oral conditions that can be precursors of noma.

Some of these oral infections are often servers in HIV/AIDS patients.

See packet for more information on these diseases in children and adults.



Thrush, Yeast, Candida

ANUG in Adult



Note the involvement of the hard palate

Aphthous Ulcers, Canker Sores



Tongue



Lower Lip

Herpes on Hard Palate



Candida or thrush: White or yellow cheesy patches



Early gingivitis in child



Herpetic Gingivostomatitis



Herpes on lips: Cold Sores



**Angular Cheilitis
or cracking at the edges
of the mouth is a
common sign of vitamin
deficiency.**



Koplik Spots: Early sign of measles



Measles: Notice oral mucosa



Varicella or Chicken Pox

- Especially virulent in malnourished children



- Affects oral mucosa

Remember that of all of the immediate precursors of noma, the most common one is ANUG:

**Acute Necrotizing
Ulcerative Gingivitis
Trench Mouth
Vincent's Stomatitis**



Your packet contains information on:

- Common oral conditions & treatment recommendations
- Oral disease & HIV
- Antibiotic dosing charts

Please review these on your own.

Thank you!