CHAPTER 7

Treating Some Common Problems

You must make a good diagnosis to treat a problem so it goes away and does not return. Why treat a sore on the face by cleaning it when the sore is from pus draining from a tooth with an abscess? You need to know the cause of the sore to give the best kind of treatment.

After you make the diagnosis, you must decide whether you or a more experienced dental worker should provide the treatment.

Know your limits. Do only what you know how to do.

In the following pages, we describe the kinds of problems you as a health worker may see, and we also give the treatment for each problem.

Before you touch the inside of anyone's mouth, learn how to keep clean. The next 6 pages explain how you can prevent infections by washing your hands, wearing gloves, and sterilizing your instruments.

Germs in the mouth

The mouth is a natural home for germs. They usually do not cause problems because the body is used to them. In fact, many germs are helpful. For example, when we eat, some germs break down chewed food into parts small enough for the body to use.

There are problems when the number of these ordinary germs increases greatly, or when strange, harmful germs come into a healthy body from outside. Fever and swelling follow. It is an infection.

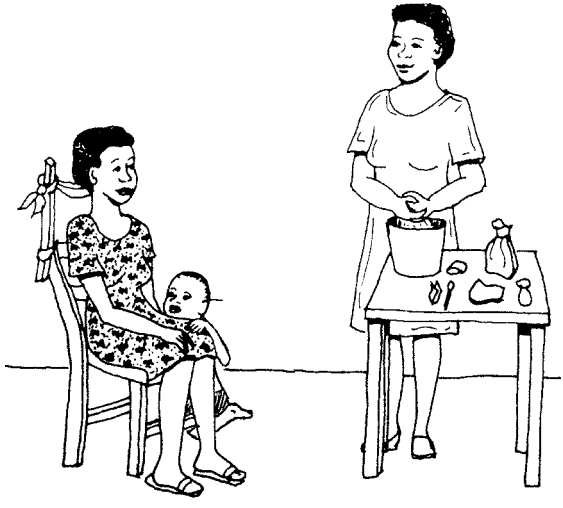
When we regularly clean the mouth, the number of germs stays normal. You can teach others to clean teeth and gums, but cleaning is each person's responsibility.

However, dental workers have one serious responsibility. **You must not spread germs from a sick person to a healthy person.** You must do everything you can to make sure your instruments are clean. An instrument with blood on it can spread hepatitis (a serious liver disease) or HIV, which causes AIDS.

THE FIRST RULE FOR TREATMENT: STAY CLEAN!

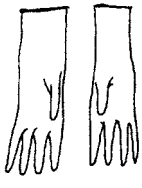
No matter what problem you are treating, be sure that your workplace, your instruments, and you are always clean. For example, **prevent infection by always washing your hands** before you examine or treat someone.

Wash your hands in front of the person, in the same room. You will show that you are a careful and caring health worker. Also, you will demonstrate just how important cleanliness really is.

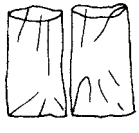


Wear gloves

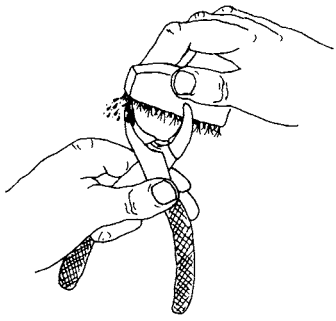
Latex or plastic gloves protect the people you touch from germs that may be stuck under your fingernails or on your skin, even after you wash your hands. They also protect you from getting infections. Wear clean gloves whenever you touch someone's mouth or any blood.



If you are filling or removing a tooth, or if you are touching any instruments that have been sterilized, you must wear sterile gloves.



If you do not have gloves, use plastic bags that have been washed in disinfectant soap instead. Bags are harder to use than gloves, but they are better than nothing.



Germs hide inside bits of old food, cement, or blood on an instrument. There they can continue to live, even in boiling water.

This is why you must be sure to scrub the working end of each instrument carefully with soap and water. Rinse, and then look carefully to see that it is clean and shiny.

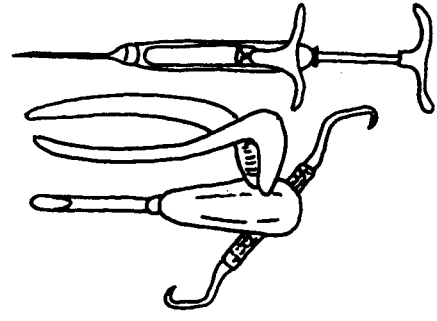
Remember that 'clean looking' is not necessarily 'clean'. Truly 'clean' means free of germs. Unless you ***sterilize,*** that instrument may still have germs, the kind that cause infection in the next person that it touches.

Sterilizing means killing germs. The best way to sterilize is with heat. High heat kills almost all harmful germs—especially those that cause hepatitis, tetanus, and mouth infections. Wet heat (steam) is always more effective than dry heat from an oven.

Here is a simple rule to use in deciding when to sterilize:

Boil or sterilize with steam any instrument that has touched blood.

That means always sterilize all syringes, needles, and instruments you use when scaling teeth (Chapter 8) or when taking out a tooth (Chapter 11).



Be safe: When in doubt, sterilize.

Instruments left in boiling water need 30 minutes to become sterile. A pot with a cover to trap the steam can act faster. The inside becomes hotter and 20 minutes is enough. But remember that water can rust metal instruments. To prevent rust:

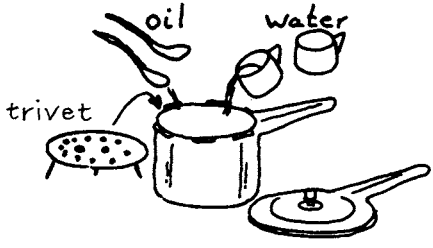
- Add 5 spoonfuls (20 ml.) of oil to every liter of water you boil.
- Then lay the hot instruments on a dry, clean (sterile, if possible) cloth, so the water can evaporate.

Never put an instrument away while it is wet.

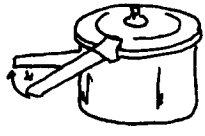
Sterilizing with steam under pressure is the fastest and surest method. It kills harmful germs in 15 minutes. You need a strong pot with a tight fitting lid. **But be sure to make a small hole in the lid so steam can escape when the pressure becomes too great.**

A special pot called a pressure cooker is perfect for this. It even has a safety hole on it to release extra steam.

1. Put 2 cups of water and 2 spoonfuls of cooking oil into the pot.



2. Place the handles together. Put on high heat until a loud hissing noise begins.



3. Put on lower heat. Begin timing **now.** Leave the hissing pot on the low flame for 15 minutes.

DO NOT LET THE COOKER BOIL DRY!

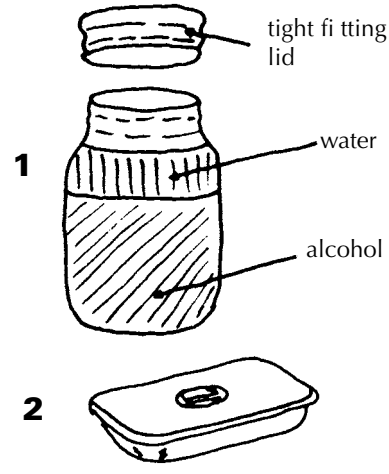
4. Cool the pot under water, open, and lay the instruments on a clean towel to dry.

The next time you use the pot, you can use the same water that was left inside it.

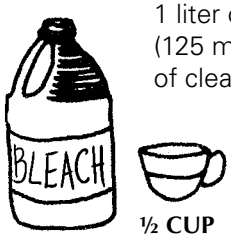
Sterilizing with heat is not necessary for instruments that do not touch blood. For example, after you examine a person or place a temporary fi lling, you can clean your instruments and then soak them in a solution of alcohol or bleach.

Alcohol solution

1. Mix in a large container each week: 7 parts alcohol (95%) with 3 parts clean water. Keep the container tightly covered to prevent evaporation.
2. Keep a covered pan half fi lled with this mixture. You will have to add some more of the mixture from the large container to the pan each day.
3. Leave your clean instruments in the pan, completely covered with the liquid, for 30 minutes.



Bleach solution (sodium hypocholorite)
Find the cheapest brand name in your area for bleach. Examples are ***Javex, Clorox, Purex,*** and ***Cidex.*** Make 1 liter of solution with a mixture of ½ cup (125 ml) of bleach and 3½ cups (875 ml) of clean water.



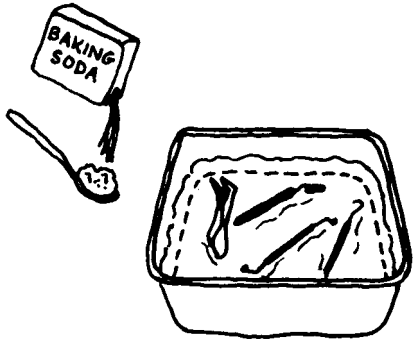
½ CUP

BLEACH & WATER

3 + ½ CUPS

Unfortunately, bleach rusts metal instruments. To reduce rust, add 1 large spoonful of baking soda (sodium bicarbonate) to the solution, and leave your instruments in the solution for only 30 minutes.

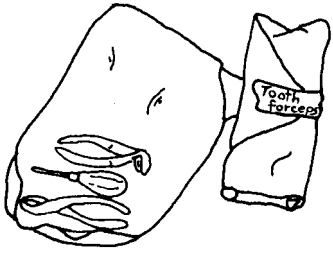
Wipe each instrument with alcohol to remove the fi lm of bleach. Then store it dry inside a clean cloth or in another covered pan.



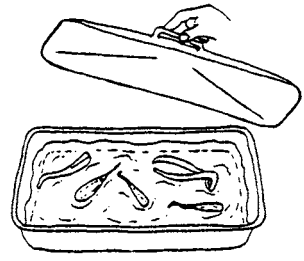
Change the solution each week.

Keep your sterile instruments together in a clean place.

Wrap them in a clean cloth **OR** Leave them in disinfectant (p. 89)

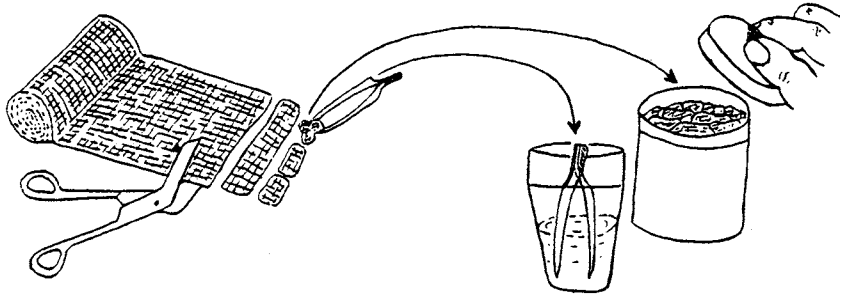


Mark with tape the names of the instruments inside.



Before you use any instrument again, wash it with clean water—to remove the taste of the disinfectant.

Germs living in dirty cotton can easily go inside the socket and start an infection. It is important, therefore, to keep the cut pieces in a container that is clean and has a cover. Use clean tweezers to remove the cotton gauze when you need some.



Also, keep your room and work area clean. Sweep or mop the floor one or two times a day, and wipe down the chair and tables after every patient.

Staying clean is a part of staying healthy.

NEEDLES

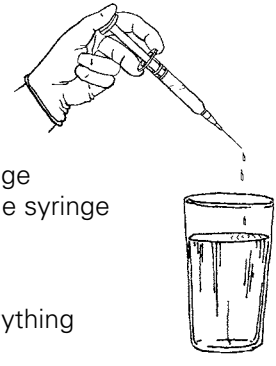
Many people get sick with serious illnesses like hepatitis or HIV/AIDS from using unsterilized needles.

Reusable syringes and disposable syringes

Reusable syringes can be used again and again. Reusable syringes make less waste and can save money, but they must be washed very carefully and sterilized after every use.

Use each disposable needle only one time and then throw it away in a box like the one on pages 199–200. If you must reuse a needle, replace the cap very carefully and put the needle in a safe place (such as a pan full of bleach solution) until you are ready to clean and sterilize it (p. 138).

HOW TO WASH AND STERILIZE A SYRINGE AND NEEDLE FOR REUSE:



1. Put on a pair of heavy gloves to protect your hands from germs and from sticking yourself with the needle.
2. Draw 5% bleach solution (see page 89) up through the needle into the syringe barrel.
3. Squirt out the bleach solution.
4. Repeat several times. Rinse everything several times with clean water.
5. Take the syringe and needle apart and boil or steam them. (See page 138.)

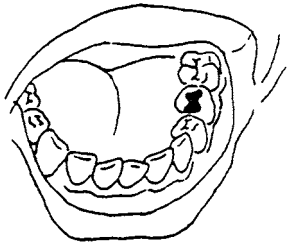
Never reuse a needle or syringe without cleaning and sterilizing it first.

PART 1
PROBLEMS YOU WILL SEE MOST OFTEN

CAVITIES AND LOST OR BROKEN FILLINGS

A cavity can occur in any tooth. A cavity can also start around an old filling, especially if it is dirty. The deeper a cavity gets inside the tooth where the nerve lives, the more the tooth hurts.

SIGNS:



- pain when drinking water or eating something sweet
- a hole (or black spot) on the tooth, or between two teeth
- pain if food gets caught inside the hole
- no pain when you tap the tooth.

TREATMENT (when there is no abscess):

Try to remove any loose piece of filling with a probe. Then, following the steps in Chapter 10, put in a temporary filling.

Now:

1. Fill the hole with cement. If you have no cement, put some cotton into the hole to keep food out.
2. Look for cavities or broken fillings in the other teeth. Fill each one with cement before it gets worse and starts to hurt.

Soon (within a few months):

3. Arrange for someone to replace the temporary filling with a permanent one. You will need a person who has experience using a dental drill (see p. 151).

A groove on the neck of a tooth is a more difficult cavity to fill. For the temporary cement to hold properly, you need to shape the groove with a drill. To help temporarily, you can put a little fluoride toothpaste on the groove (page 205). Do this once each week until the inside part of the groove is stronger and the tooth hurts less. Or, you can paint the inside of the groove with oil of cloves (eugenol) to reduce the pain.

To avoid making the problem worse, **(1)** do not use a hard toothbrush; **(2)** do not brush back and forth along the gums; and **(3)** do not chew tobacco or betel nut and do not hold them against the teeth.

TOOTH ABSCESS

A cavity that is not filled grows bigger and deeper until it touches the nerve. Germs travel inside the tooth's root and start an infection called an **abscess.**

Pus forms at the end of the root, inside the bone. As the pus increases, it causes great pressure. This is why an abscess causes severe pain.

SIGNS:

- pain all the time, even when trying to sleep
- tooth often feels longer, and even a bit loose
- tooth hurts when it is tapped
- a sore on the gums near where the root ends *(gum bubble)*
- swelling of the gums around the tooth, or swelling of the face on the same side as the bad tooth.

TREATMENT:

If there is no swelling, take out the tooth immediately (unless you are able to give root canal treatment). This allows the pus to escape and relieves the pain. See Chapter 11.

If there is swelling, treat the swelling first. Take out the tooth only after the swelling goes down. This is necessary because an anesthetic (see Chapter 9) will not work if there is swelling.

To treat the swelling, give an antibiotic. **Penicillin by mouth is best.** Use an injection only when the person is in immediate danger. For example, inject penicillin when the person has a fever or if the swelling is pressing against the throat. But remember you can treat most serious infections with simple penicillin by mouth. For the doses for serious infections, look below the box on the next page. **If you still think an injection is necessary,** look at the section on 'aqueous procaine penicillin' on page 204.

Adults and children over 25 kg (60 pounds) of weight should take the same amount of oral penicillin. Children under 25 kg should take ½ as much. For most infections, penicillin by mouth is taken 4 times a day for 5 to 7 days. The first dose is double and then the regular dose is taken every 6 hours. **The person should take all of the penicillin, even if the pain or swelling goes down. For the correct doses, see the next page.**

THE BEST CHOICE	SECOND CHOICE (for those allergic to penicillin)
Penicillin: 1 tablet = 250 mg. **Give enough tablets for 5 to 7 days**	Erythromycin: 1 tablet (or capsule) = 250 mg. **Give enough tablets for 5 days**
First Dose (take all at once)	**First Dose** (take all at once)
Adults and children over 25 kg: 4 tablets (2000 mg) Children under 25 kg: 2 tablets (1000 mg.)	Adults and children over 25 kg: 4 tablets (1000 mg) Children under 25 kg: 2 tablets (500 mg)
Then every 6 hours for 5 to 7 days	**Then every 6 hours for 5 days**
Adults and children over 25 kg: 2 tablets (500 mg) Children under 25 kg: 1 tablet (250 mg)	Adults and children over 25 kg: 2 tablets (500 mg) Children under 25 kg: 1 tablet (250 mg)
IMPORTANT: to allow it to best fight infection, take penicillin **before** eating.	**IMPORTANT:** to avoid upset stomach, take erythromycin **with** meals.

Note: If you do not have penicillin tablets, try to get ampicillin or amoxycillin and follow directions for using them in *Where There Is No Doctor.*

For many infections, taking penicillin for 5 days should be enough. **For serious infections,** it may be necessary to take the antibiotics for 7 days. For however long you take them, always take the double dose the first time, and then the regular dose 4 times a day (every 6 hours). If the infection does not heal, you may need another medicine.* Usually you can take out the tooth 1 or 2 days before the end of the antibiotic treatment, but **the person must continue to take all of the tablets, even after you have taken out the tooth.** If not, the infection might come back even stronger than before.

If the swelling is 'pointing', open it with a sharp sterile knife to release the pus. Cover the wound with a sterile dressing to keep it clean. If you are not able to do that, explain how to reduce the swelling with **heat.** As often as possible until the swelling goes away:

- soak a cloth in warm water and hold it against the face.
- hold warm water inside the mouth near the swelling. It is not necessary to add salt to the water.

Finally, give the person medicine for pain. A 2-day supply will be enough, because the penicillin and the heat will reduce the pressure and that will reduce the pain. The best medicines for pain are **aspirin,** which comes in 300 mg tablets, and **acetaminophen** (paracetamol), which comes in 500 mg tablets. Aspirin is usually cheaper, but acetaminophen does not cause stomach pain and it is safer than aspirin for children. (To avoid stomach pain, take aspirin with food, milk, or water.) See doses at the top of the next page.

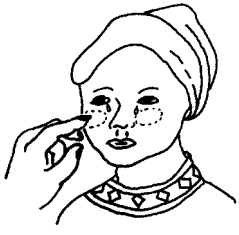
* If the infection does not heal, penicillin may not be the right antibiotic to use. Take some pus from the infection and have it tested, to see which antibiotic is best.

EVERY 6 HOURS (4 times a day):		**aspirin**	*or*	**acetominophen**
adults		600 mg		1000 mg
children	8 to 12 years	300 mg		500 mg
	3 to 7 years	150 mg		250 mg
	1 to 2 years	do not use		125 mg

INFECTED SINUS

A sinus is a hollow place inside the bone. There is a sinus under the eyes, on each side of the nose. Because the sinus is very close to the roots of the top teeth, these teeth may hurt if the sinus becomes infected.

SIGNS:



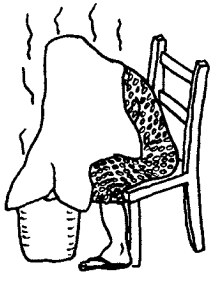
- toothache in several top teeth. The teeth look healthy, but hurt when you tap them.
- a head cold, and plugged nose. She can only breathe through her mouth.
- hurts when you press against the bone under her eyes.
- tooth feels different when patient bends over forward.

TREATMENT:

Do not take out any teeth. They will feel better after you treat the sinus infection.

1. Give penicillin for 5 days (page 94).

2. Explain to the person that she should:



- drink lots of water.
- breathe steam from boiling water to clear her nose.
- hold a warm wet cloth against her face, as often as possible.
- not try to blow her nose, or else her ears will hurt. Wiping the nose is better.

3. See the person again after 3 days, and

- examine her teeth closely, tapping them to be sure they are strong and healthy.
- if she is not better, get help from a more experienced health worker.

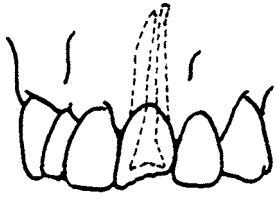
TOOTH INJURIES

1. Broken tooth

It is possible to save a broken tooth. It depends on where the tooth is broken and whether its nerve is still covered.

SIGNS:

- pain when breathing air or drinking water
- blood from the gums around the tooth
- tooth moves when you touch it.



TREATMENT:

Take out the broken tooth if:

- its nerve is not covered. If no one can give special root canal treatment, the tooth must come out. Germs from the saliva have already gone inside the tooth and started a small infection.
- its root is broken. To see if it is broken, push gently against the tooth as you feel the bone around its roots. **The tooth's root probably is broken** if the tooth moves but the bone does not. **The root probably is not broken** if both the tooth and bone move. However, the bone around the roots may be broken (page 109).

You can save a broken tooth if the nerve is still covered and the root is not broken. To do this, use a file on the sharp edges around the break. This makes them smooth so they do not cut the tongue. Later, an experienced dental worker who has the equipment can cover the broken part with a cap or a filling. Until this is possible, tell the person how to protect the tooth:

- Give the tooth a rest. Use other teeth to eat.
- Do not drink things that are very hot or cold, and do not eat spicy food.
- Watch the tooth. See if it changes color (gets darker). Also watch the gums near the root. See if a sore (gum bubble) develops.

A dark tooth and gum bubble are signs that the tooth is dying. Take it out, unless you can give special nerve treatment.

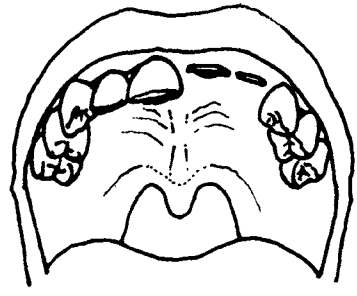
2. Tooth knocked out

When a tooth is knocked out of the mouth, you should ask two questions:

(1) Was it a baby tooth? **(2)** How long ago did it happen?

Baby tooth. There is no reason to try to put a baby tooth back into the socket. Tell the child to bite on some cotton to stop the bleeding. Then wait for the permanent tooth to replace it. **Warn the mother that the permanent tooth may take more time than usual to grow into the mouth.**

Similarly, there is no need for treatment if the baby tooth is pushed up under the gum.

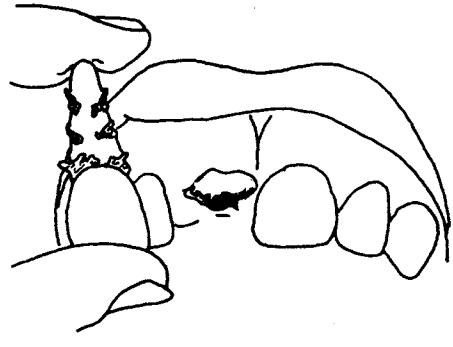


The tooth may grow back into the right place later, or it may turn dark and die. if you see a darkened tooth or a gum bubble (p. 74), take out the baby tooth before it hurts the permanent tooth that is growing under it.

Permanent tooth. A permanent tooth is worth saving. How long ago was it knocked out? If it was less than 12 hours ago, you can put a permanent tooth back into the socket. The sooner you do this the better, so do not wait. **If you replace the tooth in the first hour, it has a much better chance of joining with the gum and bone.** In order to heal and to join the bone, the tooth must be held firmly.

a) Wash the tooth gently with saline, milk, or clean water. There should not be any bits of dirt on the root of the tooth.

Keep the tooth damp with wet cotton gauze.



Do not scrape away any skin from the root or from the inside of the socket.

b) If you can not use anesthetic, tell the patient that it will hurt somewhat. Gently push the tooth up into the socket. As you push it up, use a slight turning movement back and forth.

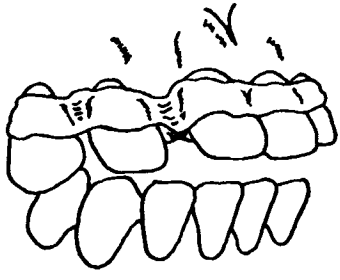
The biting edge of the loose tooth should be at the same level as the teeth beside it.

Hold it in place with your fingers for about 5 minutes.

c) Soften some beeswax and form it into 2 thin rolls. Place 1 roll near the gums on the front side of five teeth: the loose tooth and the two teeth on each side of it. Press the wax firmly, but carefully, against these teeth.

Do the same with the second roll of wax on the back side of the same teeth, again near the gums.

It is good if the wax on the back side is touching the wax on the front side. This helps the wax hold the teeth more firmly. To do this, you can push the wax between the teeth with the end of your cotton tweezers.



Keep the wax in its position for at least 3 weeks.

Tell the person with the injured tooth to return to see you several times. The tooth may die several months or even several years later (see page 47). If that happens, you must take out the tooth, unless you can do root canal treatment.

If it is possible, take an X-ray of the tooth 6 months later and then again each year. Look at the X-ray picture of the root to be sure an infection is not eating it away. To do this, compare the root with the roots of the teeth beside it.

LOOSE TOOTH

A tooth may be loose for one of several reasons. Decide the reason before giving the treatment.

IF THE TOOTH IS LOOSE BECAUSE	THE BEST TREATMENT
a new permanent tooth is growing under it.	1. tell the mother and child what is happening. 2. pull out the loose baby tooth, if it is hurting the child.
gum disease or an old abscess has eaten the bone around its roots.	1. take out the tooth, especially if it also hurts. 2. explain to the person what to do to prevent this problem in other teeth. (See Chapter 5.)
its root has been broken.	take out both parts of the tooth. If you have trouble taking out the broken root, leave it and try again a week later.
the bone around its root is cracked. (The bone moves when you push against the tooth.)	**Do not take out the tooth.** If you do, the bone will come out with it. Instead, hold the tooth with wires (page 110).

A tooth may also be loose because another tooth is biting too hard against it.

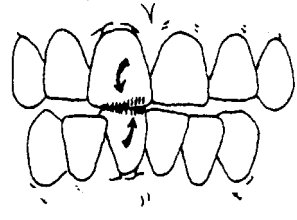
SIGNS:

- you can feel the tooth move when the upper and lower teeth meet.
- that tooth hurts.

TREATMENT:

You need to remove a bit of each of the teeth that are biting too hard. Use either a dental worker's drill, a small file, or a hard stone.

1. Smooth the **inside** edge of the **upper** tooth.
2. Smooth the **outside** edge of the **lower** tooth.

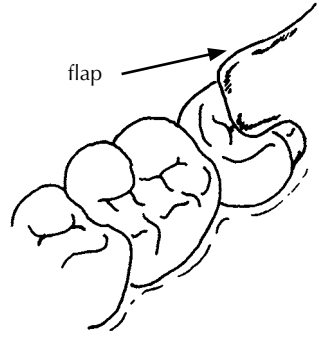


NEW TOOTH GROWING IN

A new tooth cuts through the gums when it grows into the mouth. Germs can easily go under the gums in that place and cause an infection. When the opposite tooth bites against the sore gum it can make an infection worse.

SIGNS:

- toothache at the back of the jaw
- mouth cannot open properly
- a bad taste coming from the back of the mouth
- sore throat
- skin over the new tooth is sore and hurts when you touch it
- the age of the person is the right age for growing a new molar tooth (page 66).



Infection in the gums and pressure from the new tooth are painful. notice the 'flap' of skin over the new tooth.

TREATMENT:

Do not take out a new tooth while there is still infection and pain. Wait for the infection to finish. Then decide if there is room for the tooth to grow in. A dental X-ray can help you make that decision. New molar teeth are often difficult to take out. Ask an experienced dental worker to take out the tooth, if it must be done.

What you can do

First, treat the infection. Then wait for the new tooth to grow more into the mouth. Tell the person what is happening. Tell him what he can do to keep the gums healthy while the tooth grows in:

- Rinse the area with warm salt water (page 7). Make 4 cups each day until the mouth opens normally again. Then make 1 cup each day to prevent the problem from returning. Keep rinsing this way until the tooth grows all the way in.
- Hold a warm wet cloth against the jaw as often as possible each day.
- Take aspirin for pain (page 94).

Give penicillin (pages 93–94) if there is fever, a swelling, or if he is only able to open his mouth a little.

TEETHING

When babies and small children first get their teeth, it is called **teething.** This can make the child unhappy, because his gums are sore.

Teething does not cause fever, head colds, or cough.

But a child can have any of these problems at the same time as he gets a new tooth.

TREATMENT:

If the child has another sickness, do not blame it on teething. Look for another cause and treat it separately. Also, **do not cut the gum** over the new tooth. Let the tooth grow through the gum by itself.

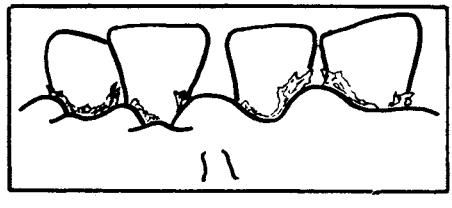
1. Give acetaminophen for pain and fever (page 94).
2. Give the child something hard to bite against. This will help the tooth to grow through the gums faster. For example, let him chew on a dry hard biscuit.

GUM DISEASE STARTING

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 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 (page 183).

SIGNS:

- 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.



Feel for tartar under the gum—or even a piece of fishbone.

TREATMENT:

Explain to the person the cause of her gum problem and what she can do to help herself. The only way to stop gum disease is to remove plaque and tartar from the teeth and then to keep them clean.

1. Show her how to clean her teeth better near the gums (page 69).
2. Tell her to rinse her mouth with warm salt water (page 7). Make 4 cups each day until the bleeding stops. Then make 1 cup each day to keep the gums strong and tough.
3. Tell her to eat fresh fruits and vegetables. Guavas, oranges, pineapples, papayas, tomatoes, peas, and green leaves give strength to gums.
4. Gently reach under the gums and remove tartar (or loose piece of fishbone) that is caught there (see Chapter 8).

Sometimes a pregnant woman's gums become swollen, and the swelling does not go down even after cleaning with a soft brush and rinsing with salt water. These swellings must be cut away. But she should wait to have this small operation until after the baby is born.

MORE SERIOUS GUM DISEASE

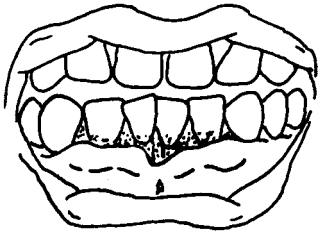
Vincent's infection of the gums, also called ***trench mouth,*** affects both adults and children. In its worst form, it can eat a hole through the cheek of a weak child (page 121).

A person with Vincent's Infection may not want to eat because his teeth hurt when he chews food. That can make a child's malnutrition worse.

You must prevent this problem from starting, especially in a child who is weak from sickness. Teach mothers to clean their children's teeth and to get their children to rinse their mouths with warm salt water.

SIGNS:

- gums between the teeth are dying and turning gray.
- pus and old blood collect around the teeth.
- burning pain from the gums.
- bleeding from the gums.
- the mouth smells bad.



TREATMENT:

You will need to see the person over a 2-week period. Start some treatment **now:**

1. If the person is already sick, give penicillin for 7 days (page 94).

2. Clean away the pus, old food, and big pieces of tartar. Then:

- Tell the person to rinse his mouth with warm water.
- Wipe his gums with cotton soaked in a 3% solution of hydrogen peroxide. Rinse with warm water. For a child, use a weaker solution. Mix 1 part hydrogen peroxide with 5 parts water and wipe the child's gums with it.
- Scrape away the bigger pieces of tartar. Do not try to remove all of it. You can do that later. Put topical anesthetic on the gums if you have some (first dry the area with cotton so the topical anesthetic will stay longer). Rinse away any loose bits of tartar with warm water.

3. Give Vitamin C (ascorbic acid), 2 tablets a day for 7 days.
(1 tablet= 500 mg.)

4. Teach the person how to care for the gums at home:

- Rinse at home for 3 days with a weak solution of hydrogen peroxide (page 8). 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. Rinse once every hour. After 3 days, change to salt water, 4 cups a day. If you have no hydrogen peroxide, rinse with salt water from the beginning.

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.

Show parents how to do this. Give them some cotton gauze and hydrogen peroxide to take home.

- Clean the teeth with a **soft** brush. Parents can clean children's teeth. Show them how (page 18), 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 (page 102).
- Stop smoking and stop chewing betel nut.

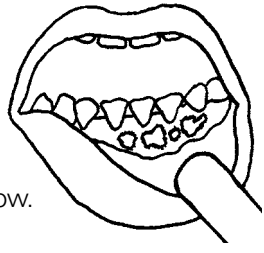
One week later, scrape away the rest of the tartar from the teeth. Then use the person's own brush and show him how to do a better job of cleaning his teeth.

FEVER BLISTERS

Herpes virus is a kind of germ that causes fever blisters. Fever blisters are sores that can form inside the mouth on the gums or outside on the lips. Blisters on the cheeks only are not from herpes virus (see canker sores, page 106).

Sores **inside the mouth** are a serious problem that usually affect children between 1 and 5 years old. A child with fever blisters in his mouth can become very sick. He will not be able to eat properly. If he does not drink enough fluids, he can become dehydrated (lose his body water). This is dangerous! Fever blisters are also a problem for people living with HIV/AIDS. See pages 186 to 187.

SIGNS:



Inside the mouth

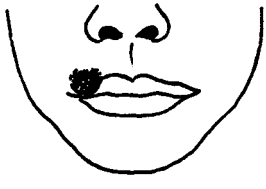
- sore throat.
- fever.
- crying, stops sucking 2-3 days before sores appear.
- spit spills from the mouth because it hurts to swallow.
- painful swelling under the jaw.
- Bright red blisters on the gums, **but not between the teeth.** Blisters also may be on the roof of the mouth.

TREATMENT:

Medicine cannot kill the Herpes virus. The sores will go away by themselves in about 10 days. The treatment is to help the person feel more comfortable and to be sure he gets enough to eat and drink.

1. Give aspirin or acetaminophen for fever (page 94).
2. Wipe milk or yogurt over the sores to protect them before eating. **Wash your hands before touching the inside of someone's mouth!** (See page 86.) Then give food that is soft and not spicy. If the person cannot eat, prepare a special milk-oil drink, as on page 111.
3. Give lots of fluids to drink.

Sores **on the lips** usually occur after the age of 5. They often appear when the person is weak and sick (for example, with diarrhea or pneumonia.) Usually there is no fever. The blisters soon break open and release water. When they dry, a crust forms. The blisters often return. When sores leak water they can pass infection. If you or anyone else touches them, wash your hands immediately.

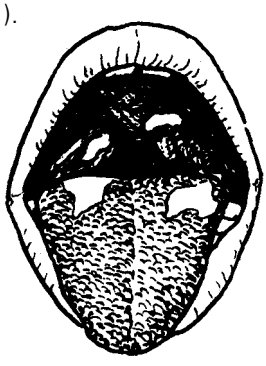


On the lips

To prevent the blisters from becoming infected, put an antibacterial cream or petroleum jelly *(Vaseline)* on them. If you hold ice against the sores for several minutes each day, it may help them heal faster. See page 187 for more options.

THRUSH

Thrush is an infection caused by a yeast fungus called Candida. It often appears when a person is weak and poorly nourished, or sick and taking medicine like tetracycline or ampicillin. In a baby, thrush usually appears on the tongue or top of the mouth. It can stop the baby from sucking. In an adult, thrush often occurs under a denture. Thrush is a very common problem for people living with HIV/AIDS (see pages 180 to 181).



SIGNS:

- White patches on the tongue, cheek, or top of the mouth. Wipe the white area: If there is **no** bleeding it is **old milk.** If there **is** bleeding, it is **thrush.**
- the child may not want to suck or eat.

TREATMENT:

There is usually something else present which is helping thrush to grow. Try to find what it is and deal with it. For example, treat the malnutrition, change or stop the antibiotic medicine, or leave the denture out of the mouth for a while. Then:

1. Cover the white patches with nystatin drops. Use a full dropper 4 or 5 times a day until the patches are gone. If you do not have nystatin you can soak a piece of cotton in gentian violet and use it to paint the white patches 2 times a day.

   If the baby's mother has sore, painful nipples, she may also have thrush in her breasts. She should treat her nipples the same way she treats the baby's mouth.

   Do not use penicillin or any other antibiotic unless you need to treat something different. Thrush can get worse when a person uses an antibiotic for a long time.

2. Continue breast feeding. For older persons, make their food soft and easy to chew.

IMPORTANT: Sometimes white lines appear on the inside of an adult's cheek or on the roof of the mouth. If these lines become sore, they can change into a cancer (page 125). To prevent this cancer, ask the person to **stop smoking** (especially pipes), **stop chewing betel nut, and get dentures adjusted if they do not fit properly.**

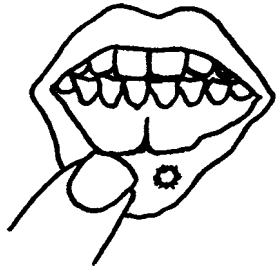
CANKER SORES

The exact cause of canker sores is not known. Unlike fever blisters, canker sores usually affect adults rather than children.

One or more sores can appear at any time. These sores hurt, especially when pieces of food touch them.

SIGNS:

- A sore can appear on the cheeks, inside the lips, on the tongue, or below the gums on the smooth skin.
- The sore is white or yellow with the skin around it bright red.
- The person may have had a similar kind of sore before. It tends to come back.



Note: **a sharp edge of a denture rubbing against the gums can make a similar kind of sore.**

TREATMENT:

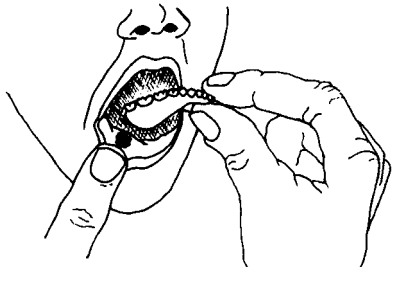
A canker sore goes away by itself in about 10 days. Medicine does not make that happen any faster. (However, smoothing a denture does help.) The treatment is simple. Tell the person how to feel more comfortable while waiting for the 10 days to pass:

- Eat foods that are soft and not likely to hurt the sore.
- Do not eat food with a lot of pepper.
- Drink lots of water.
- Chew food on the other side of the mouth, away from the sore.

A denture which does not fit should be remade.

In the meantime, leave the denture out of the mouth for 2 or 3 days.

Ask the person to rinse with warm sait water, 4 cups each day until the sore is better.



If the sore continues after 10 days, it may be infected. Give penicillin (page 93).

A sore that does not heal after antibiotic treatment may be cancer. See a doctor immediately.

SORES AT THE CORNERS OF THE MOUTH

Teeth support the lips. When they come together for chewing, the teeth stop the person's chin from moving any closer to the nose.

A person without many teeth looks old. A person with a poor fitting denture also looks old.

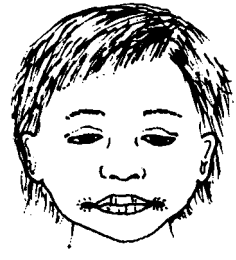
The distance from his chin to his nose is shorter than normal.

He must close his jaw further to eat. That causes lines to form at the corners of his mouth.

Poor health can make lines at the corners of the mouth crack and become sore. These cracks are often infected with thrush and can be treated with nystatin (see page 105).

A person with missing teeth needs dentures. Dentures will help him chew more food and make him look younger. They support his lips and open his mouth more. (See page 164).

A child who has had a fever or measles often has dry lips. The corners of her mouth can crack and become sore.



Cracks and sores appearing at the corners of a child's mouth are signs of dehydration and malnutrition.

The child needs to eat the kind of foods that give strength, energy, and protection. Feed her beans, milk, eggs, fish, oils, fruits, and green leafy vegetables (see page 67).

TREATMENT (when sores occur):

1. Wash the sores with soap and hot water.
2. Mix 1 part sulfur with 10 parts of petroleum jelly *(Vaseline).*
3. Smear some on the sores 3–4 times a day.

PART 2
SOME SPECIAL PROBLEMS

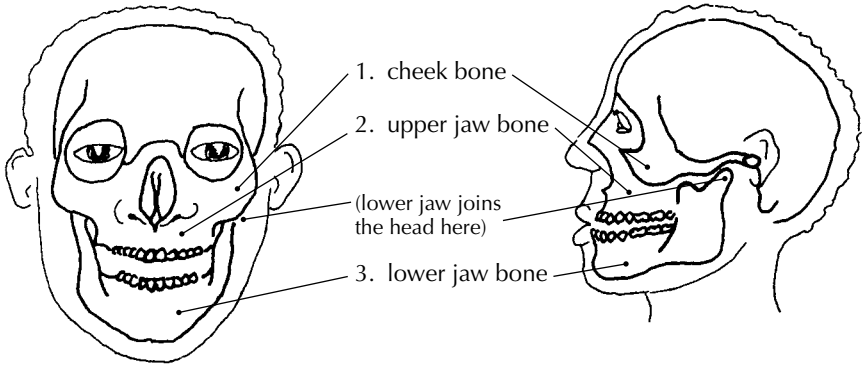
You will find some problems that are too serious for you to treat. If you can, send the sick person to a more experienced dental worker as soon as possible.

Sometimes, however, it is better to start some of the treatment yourself. Early treatment can prevent some problems from becoming more serious. Also, if you know what to do when someone returns from the hospital, you can help that person to get well faster.

Sometimes, you will find it impossible to get help. Therefore, we will discuss each of these more serious problems in detail, so you can give as much help as necessary.

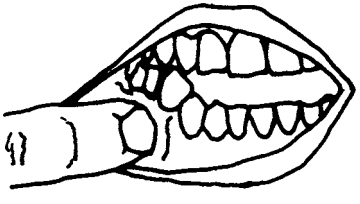
BROKEN BONE

Three main bones form the face and lower jaw.



A bone can break completely, or part of it can crack. In either case, the teeth are usually pushed out of position. Look for this as a sign of a broken bone.

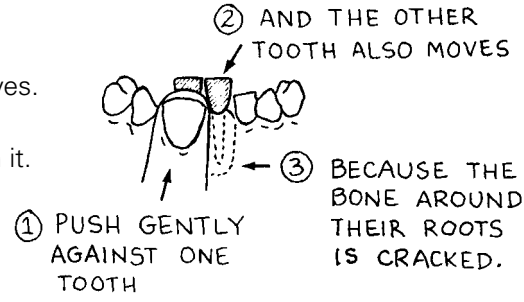
SIGNS of a broken bone:



- The person has had an injury.
- When teeth are closed, some upper teeth do not meet lower teeth.
- The person cannot open or close the mouth properly.
- There is bleeding from between 2 teeth.
- There is swelling or a bruise on the face or jaw.
- There is bleeding into the eye.

SIGNS of a cracked bone around the tooth's roots:

- When you move one tooth, the tooth beside it also moves.
- When you move the loose tooth, the bone moves with it.
- Blood is coming from under the gums.



TREATMENT:

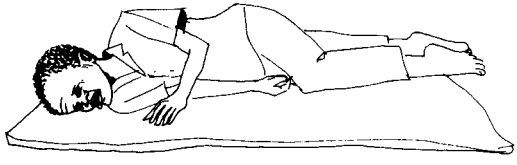
When a bone is broken or cracked, the treatment is to hold the broken parts together so that the parts can rejoin. The usual way to do this is to put wires around the teeth. An experienced dental worker should do this. There are two things you can do. First, provide emergency care. Later, show the person how to eat and how to keep his mouth clean.

Emergency care (pages 109–110):

1. Be sure the person can breathe.
2. Stop the bleeding.
3. Put a bandage on the person's head.
4. Give penicillin to stop infection.
5. Give aspirin or acetominophen for pain.

1. Be sure the person can breathe.

Lie him on his side so that his tongue and jaw fall forward.



Later, carry him to the hospital in that position. If he goes in a car, be sure he sits with his head forward. His jaw and tongue will be forward and he will breathe more easily.

Look inside the mouth to see if any tooth is broken and very loose. A broken piece of tooth can fall out and block the person's airway, so **take out the broken part now.** You can leave in the root, but if you do, tell the dental workers at the hospital (p. 213). They will remove the root when they put on the final wires.

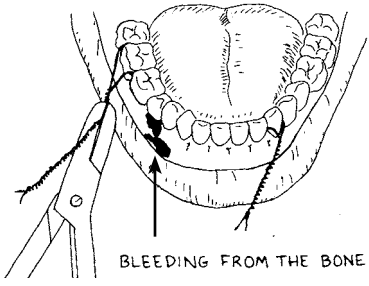
2. Stop the bleeding.

Wipe away the dried blood from his face and from inside his mouth. Look for the place that is bleeding. Sew any deep cuts on his face (see *Where There Is No Doctor,* p. 86). If you gently press cotton gauze against the bleeding gums, it will usually control the bleeding.

Bleeding inside the mouth, from between the broken parts of the bone, is more difficult to stop. You must pull the two sides together and hold them in that position. To do this, you need wire that is thin, strong, and bends easily. 'Ligature wire' (0.20 gauge) is best.

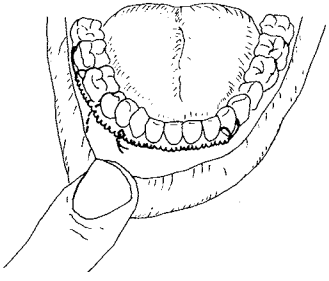
Place a piece of wire around 2 teeth, one on each side of the break. Choose the strongest tooth on each side—the ones with the longest or the most roots.

Tighten the wire around the two strong teeth with pliers or a hemostat.



Ask the person to close his teeth. Lift up the broken part of the jaw and hold it so the lower teeth meet the upper teeth properly. This is the normal way the jawbone holds the teeth.

Now join the wires. Twist and tighten them together. This may be painful. You can inject local anesthetic—see Chapter 8. You must twist the wire tight enough to hold the broken parts together.



Bend the end of the twisted wire toward the teeth. Now it cannot poke the person's lips or cheek.

3. **Put on a head bandage.**

   Gently close the person's jaw so that his teeth come together. Support it in this position with a head-and-chin bandage.

Tie the bandage to support the jaw, not to pull it. Do not make it too tight. It is all right if his mouth stays partly open with the teeth slightly apart.

Be sure not to let the bandage choke the person.

4. **Give penicillin by injection** (page 204) for 5 days to stop infection inside the bone.
5. **Give something for pain.** Aspirin (p. 94) may be enough. Give 600 mg by mouth, 4 to 6 times a day, as needed. For children, see doses on page 165. If there is a lot of pain and the person cannot sleep, give codeine. The dose for an adult is 30 mg, 4 to 6 times a day as needed.

Send the person to the hospital as soon as possible. The person must have wires placed on his teeth within a week of the accident. The wires must remain there for 4 to 6 weeks. Every week, the person must return to the hospital to have the wires tightened. During this time he cannot open his mouth to chew food or brush his teeth.

CARING FOR A PERSON WHO CANNOT EAT PROPERLY

1. Give liquid foods for strength and energy.

Prepare food in two ways: **(a)** First, a milk-oil drink to build strength; and then **(b)** a special soup to keep him strong and give him energy.

To build strength: Milk-oil drink

Mix for him each day at your clinic:

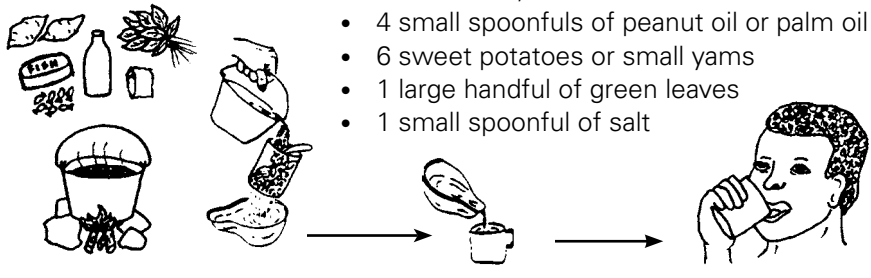
- 9 cups of water
- 3 cups of milk powder
- 150 ml of peanut oil or coconut milk
- ½ cup of honey or 1 cup of sugar

Leave some near his bed, and keep the rest in a cool place.

To keep strength and give energy: Special vegetable soup

Cut into small pieces and cook together in a pot of water:

- ½ tin of fish, or a handful of dried fish
- 4 small spoonfuls of peanut oil or palm oil
- 6 sweet potatoes or small yams
- 1 large handful of green leaves
- 1 small spoonful of salt



Pour the soup into an empty tin with small holes made in the bottom. Use the back of a spoon to press as much of the cooked food as you can through the holes. The person can suck the soup between the teeth to the throat and then swallow it. Clean the tin and set it in boiling water, so you can use it again the next day.

2. Keep the teeth clean and the gums tough.

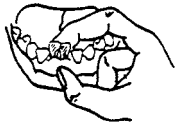
The person must learn to clean teeth and gums or the gums can quickly become infected and the mouth will feel sore. So:

- Scrub both the wires and the teeth with a soft brush after drinking soup.
- Rinse with warm salt water (page 7), 2 cups every day.

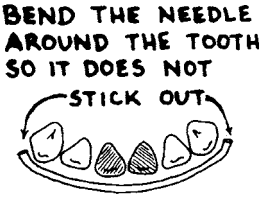
LOOSE TEETH

If the bone around the roots of the teeth is cracked, those teeth will be loose. **Do not take the teeth out until the bone is healed.** Otherwise, bone will come out with the teeth and there will be a big hole in the jaw. Instead, support the teeth, in order to hold both sides of the bone steady.

1. With your thumb and finger, gently move the loose teeth and bone back into normal position.



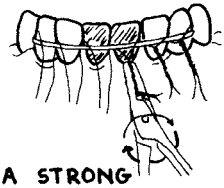
2. Cut a hypodermic needle and use it as a splint. Make it long enough to fit around two strong teeth on each side of the loose teeth. Curve the needle so it fits the curve of the teeth. To make the sharp ends smooth, use a file or rub the ends against a stone.



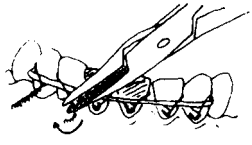
3. Tie each tooth to the needle. Use short pieces of 0.20 gauge ligature wire (page 110).

   Put one end of the wire **under** the needle. Bring it around the back of one tooth and out to the front again **over** the needle.

   Use the end of a small instrument to hold down the wire at the back of the teeth. Then twist the ends together. Tighten the wire around each one of the 6 teeth.



4. Cut the ends of the ligature wire. Turn them toward the teeth, so they will not cut the lip.

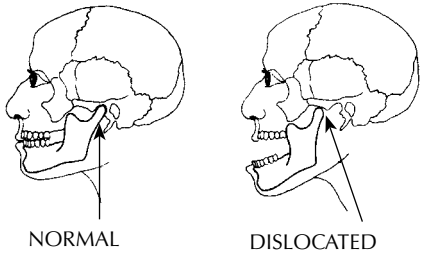


5. Tighten the wires the next day, and then once each week. But be careful. Only ½ a turn usually is needed. More, and the wire will break. Always twist in the direction a clock moves. With this habit, you will remember which way tightens the wire and which way loosens it.
6. Explain to the person that it takes 4 weeks for the bone to heal. The wires must remain on the teeth for this time. To help the teeth to heal, ask the person to:
   - give these teeth a rest. Use other teeth for chewing.
   - clean both the teeth and the wires with a soft brush.
   - rinse with warm salt water, 2 cups every day (p. 8).
   - return to have the wires tightened every week.
7. After 4 weeks, cut and remove the wires. Ask the person to watch those teeth. A dark tooth and gum bubble are signs that the tooth is dying. Take it out, unless you can give special nerve treatment.

DISLOCATED JAW

If a person opens her mouth wide and then is unable to close it, we say her jaw is **dislocated.** It is stuck in the open position. This problem often happens to a person who does not have several of her back teeth. When she opens wide to yawn or shout, the part of her jaw that joins her head moves too far forward inside the joint. It is then unable to return to its normal position. You can also dislocate the lower jaw by accident while extracting a tooth.

SIGNS:



- She is unable to close her teeth together.
- She cannot close her lips easily.
- Her lower jaw looks long and pointed.
- It hurts when you press on the joint in front of her ear.
- She cannot speak clearly.

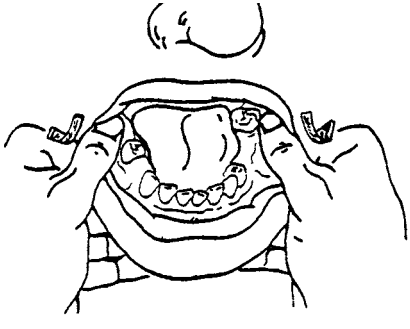
TREATMENT:

The treatment is to try to move the lower jaw back where it belongs. Then hold it in that position until the muscles can relax.

1. Find a way to support the person's head. For example, have the person sit on the floor with her head against a wall.
2. Kneel in front of her. Put your fingers under her jaw, outside the mouth. Put your thumbs beside her last molar tooth on each side. Do not put your thumbs on the molars. The person may bite them!

   Press **down** hard with the ends of your thumbs. Force the jaw to move quickly clown and back into position. Be sure to press **down** before you press back.

   If the jaw will not move, perhaps the muscles are too tight. A doctor or dentist can put the person to sleep, which will relax the muscles.



3. Support the jaw with a head–and–chin bandage for 3 to 4 days (page 110).
4. Give aspirin or acetominophen for pain (page 94).
5. Explain the problem to the person and tell her how to care for her jaw: **(a)** eat mostly soft foods for 2 weeks; **(b)** hold a warm wet cloth against the jaw; **(c)** remember not to open the mouth wide anymore. **If possible, replace the missing back teeth with dentures (page 107).**

PAIN IN THE JOINT

A **joint** is the place where one bone joins another. The jawbone has two joints, for it joins the head in front of each ear.

The mouth opens and closes because:

- muscles pull the jawbone; and
- the jawbone slides against the head bone, inside the joints.

Pain in these joints may be because:

(1) The muscles are tight because the the person is tense or nervous.

(2) The jawbone is fractured in the area of the joint. (Also check the lower jaw on the other side since a fracture near the joint is often caused by a blow to the other side of the face.)

(3) The teeth do not fit together properly.

TREATMENT:

Before you treat, decide what is causing the pain. We will discuss the three causes mentioned above.

1. **Tension.**

   Talk with the person and help, if you can, to find a solution to her personal problems. This can do much to help her and her muscles relax. In addition, explain how to care for the sore joint:

   (a) Eat only soft foods until it no longer hurts to chew.

   (b) Hold a hot, wet cloth against the jaw, to help relax the muscle. Do this as often as possible, but be careful not to burn the skin.

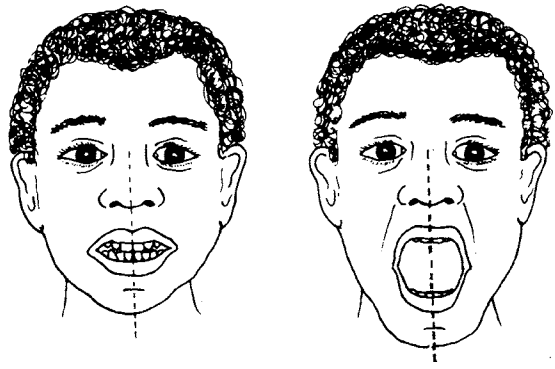
   (c) Take aspirin or acetominophen (page 94) to reduce the pain.

2. **Fracture.**

   If an X-ray shows a fracture, the person needs expert help. A dentist can wire the teeth in a way that will allow the bone to heal.

3. **Teeth do not fit together properly.**

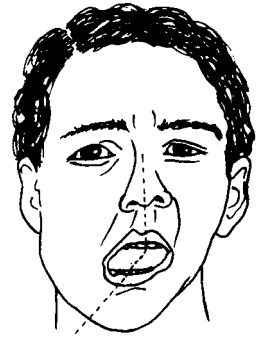
   Imagine a line that passes between the two middle upper teeth and the two middle lower teeth in the person's closed mouth (see the next page). When the person opens the mouth, this line becomes longer, but it is still a straight line. If it is not, this condition can, after a long time, cause pain in the joint.



These teeth are normal. The line formed between the two middle teeth does not shift when the mouth opens.

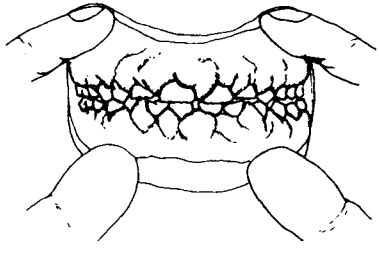
When you see teeth that do not fit properly:

- Warn the person not to open his mouth wide. Suggest, for example, that he take his food in small bites.
- Tell the person what can be done to help. Often a dentist can grind the teeth in a special way and this can end the pain.



These teeth do not fit properly. Because the line shifts, this means the jaw is also shifting. This shift can cause pain in the joint.

SWOLLEN GUMS AND EPILEPSY



Many persons who suffer from **epilepsy** (see *Where There Is No Doctor,* page 178) have a problem with swollen gums. In severe cases, the gums are so swollen that they cover the teeth. This problem is caused not by epilepsy but by diphenylhydantoin *(Dilantin),* a drug used to control epilepsy.

When you see swollen gums, find out what medicines the person is taking. If possible, change to a different drug. If the person must continue using diphenylhydantoin, explain how to prevent this swelling of the gums. Show the person this book, especially pages 69 to 72. Persons who take this drug **may** be able to prevent the swelling by **brushing the teeth carefully after each meal, and taking special care to clean between the teeth** (page 71).

BLOOD IN THE MOUTH

Use wet cotton gauze to wipe away the old blood from inside the mouth. Then you can see where it is coming from. Treat the cause of the bleeding.

IF YOU SEE:	TO STOP THE BLEEDING:	SEE PAGE
a large red clot growing out of a socket where you have taken out a tooth	1. Remove the clot with cotton tweezers. 2. Ask the person to bite on a piece of cotton.	118
sore and bleeding gums and the mouth smells bad (Vincent's infection)	1. Rinse with a mixture of hydrogen peroxide and water. 2. Remove as much tartar as you can.	8 127
a red, bleeding growth inside the cavity in a tooth	Take out the tooth; it has an abscess.	93
a loose tooth with bleeding gums around it	Hold the tooth with wires, or if the root is broken, take out the tooth.	112 157
torn gums with broken bone and bleeding	1. With wire, hold the broken parts of the bone together. 2. Send the person to an experienced dental worker.	110

PROBLEMS AFTER YOU TAKE OUT A TOOTH

Problems like swelling, severe pain, and bleeding can occur after you take out a tooth. Tetanus (p. 118), a more serious problem, can also occur, especially if your instruments were not clean.

Swelling of the Face

You can expect some swelling after you take out a tooth. But if the swelling continues to grow, and it is painful, this is not normal. Probably an infection has started. The treatment is the same as for a tooth abscess: **penicillin** for 5 days to fight infection, **heat** to reduce the swelling, and **aspirin or acetominophen** for pain. See page 94 for the proper doses.

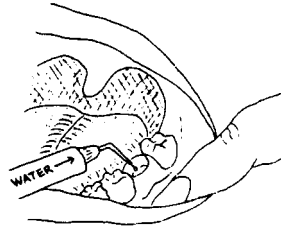
Pain from the Socket

There is always some pain after a tooth is taken out. Aspirin is usually enough to help.

However, sometimes a severe kind of pain starts inside the tooth's 'socket' (the wound) 2 to 3 days after you take out the tooth. This problem is called **dry socket** and it needs special care.

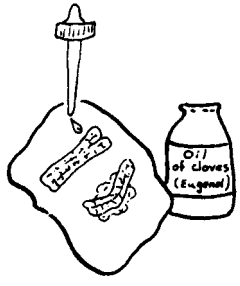
TREATMENT:

1. Place a dressing inside the socket. Change it each day until the pain stops.



First, clean out the socket.

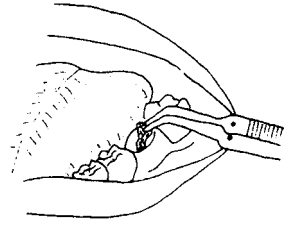
Squirt warm water inside the socket with a clean syringe. After the person spits out the water, squirt water inside once more. Use a blunt needle so that it does not hurt the gums or bone if it touches them.



Second, prepare the dressing.

Soak 1–2 small pieces of cotton in eugenol (oil of cloves.)
Squeeze each piece so that it is damp but not wet.

Note: There may be local medicine in your area that relieves pain. Use it instead of eugenol.



Third, place the dressing gently inside the socket.

Place one piece of dressing into each root space. Push it down into the root space gently.

Cover the socket with plain cotton gauze, and send the person home bitting against it. He can remove the plain cotton in an hour. The dressing should remain inside the socket.

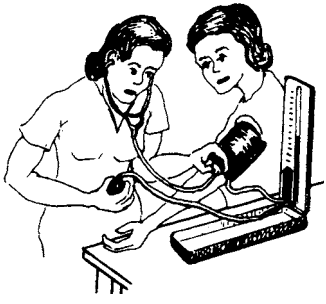
2. Give aspirin or acetominophen for pain (page 94).

Bleeding from the Socket

When you take out a tooth it leaves a wound, so you can expect some blood. However, if the person bites firmly against a piece of cotton, it usually controls the bleeding. To help the wound heal (from a clot), tell the person not to smoke, rinse with salt water, or spit for 1 or 2 days after you take out the tooth.

When the first bleeding occurs, put a new piece of cotton on top of the wound and ask the person to close her teeth against it for an hour. Keep her there with you, to be sure she continues to bite on the cotton. (If it is too painful, you may want to inject anesthetic. See Chapter 9.) Change the cotton if it becomes soaked with blood.

TREATMENT (if the bleeding continues):



1. Take her blood pressure (see *Helping Health Workers Learn,* page **19**-13). If it is high, you may need medicine to bring it down. That can help slow the bleeding.
2. Look carefully at the wound. If the gum is torn or loose, put in a suture (pages 161–163).
3. Wrap tea leaves in cotton gauze. Soak the bundle in water and then put it on the socket. Have the person bite against it. Or, have her bite against cotton gauze soaked with cactus juice.

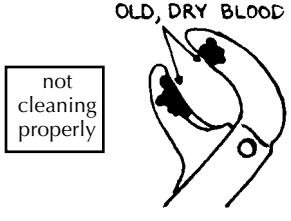
   Let the person go home only when the bleeding stops. Give her some clean cotton to use in case the bleeding starts again later (see page 161).

TETANUS

This is a very serious infection. Tetanus germs enter the body when a wound, like a wound on the bottom of the foot, gets dirty. Germs can also be carried to the socket when you use a dirty instrument to take out a tooth. To avoid this, **carefully read pages 86 to 89.**

SIGNS:

- the jaw becomes stiff and tight
- it is hard to swallow
- the whole body becomes tight, with sudden spasms



TREATMENT:

A person with signs of tetanus requires **immediate** medical help. See *Where There is No Doctor,* pages 182 to 184, if you cannot get help immediately.

INFECTION INSIDE THE SPIT (SALIVA) GLAND

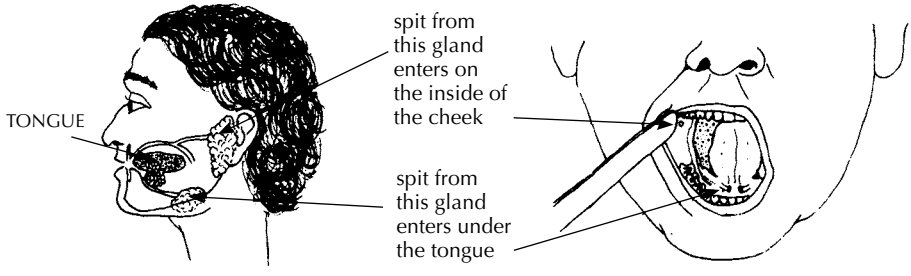
Spit glands are places where the spit or saliva is made. They are located in front of the ear and under the jaw, on each side of the head. If there is an infection inside a spit gland, the face will become swollen and the area will hurt.

Spit is sent from the gland to the mouth through a thin pipe called a duct. Ducts open into the mouth in two places: on the inside of each cheek and under the longue.

A small stone can often block a duct and cause an infection in the spit gland and swelling of the face. You may be able to feel the stone near where the duct enters the mouth.

SIGNS:

- swelling in the area of the spit gland.
- pain which gets worse when the person is hungry, and when he sees or smells food.
- the opening of the duct is red, swollen, and hurts when you touch it.



TREATMENT:

Reduce the infection and swelling first. Later try to remove the stone.

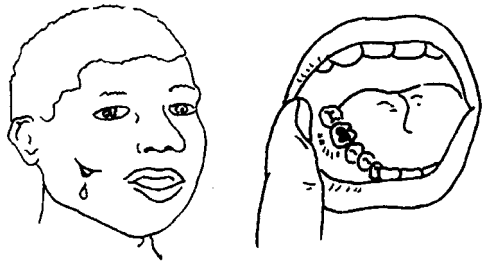
1. Give penicillin for 5 days (page 94). If the swelling is large and the infection serious, start with short-acting crystalline penicillin (see page 204).
2. Give aspirin or acetominophen for pain (see page 94).
3. Apply a wet hot cloth to the swelling as often as possible.
4. Give enough soft food to prevent the person from feeling hungry. The pain will be less then.
5. When the person feels better, a dentist or doctor can remove the stone that is blocking the duct.

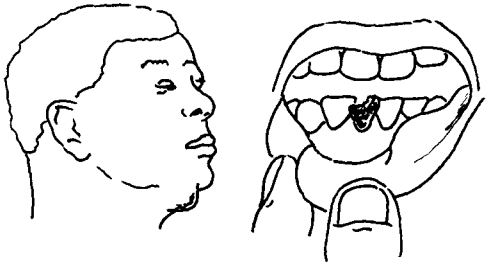
SORES ON THE FACE

Whenever you see a sore on a person's cheek or under his chin, remember there may be a tooth or gum problem. If it is a gum problem, it may be *Noma.* See the following pages.

A bad tooth:

Ask him to open his mouth. Look for an infected tooth in the area of the sore. There may be a large cavity and the tooth may be loose.





Or the tooth may be darker in color than the others. This is because it is dead.

The pus is draining onto the skin, so the pressure is reduced and the person does not complain of pain.

TREATMENT:

1. Take out the tooth (see Chapter 11).
2. Give penicillin for 7 days (see page 94).
3. After the penicillin treatment, check the sore. If it has healed, there is no longer infection inside. The treatment is finished.

But if the sore is still open and you can squeeze out pus, you will need the help of experienced health workers who can:

- test the pus to see if it is resistant to penicillin. **The person may need to take a different antibiotic.**
- take an X-ray to see if there are dead pieces of bone which are keeping the infection alive. If there are, they must be removed.

If infected gums (and not a bad tooth) are the cause of a sore on the cheek or chin, the problem is more serious. See the next 4 pages.

NOMA

When a child is sick, a simple gum infection can get out of control and spread through the cheek to the face. When that happens the condition is called **Noma** or **Cancrum Oris.** Noma is a complication of Vincent's Infection of the gums (page 102).

You will usully see Noma in children. It will only 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.

(2) The child has Vincent's Infection.

(3) The child has recently had a serious illness like measles or malaria.

Noma can also be a problem for adults living with HIV/AIDS. See page 185.

SIGNS:

The infection starts in the mouth. Then it passes to the gums.

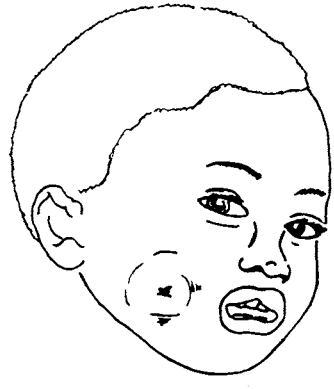
1. Sore mouth with itching gums.
2. Swollen, sore gums.
3. Gums bleed when eating or when teeth are cleaned.
4. Bad breath, spits a lot.

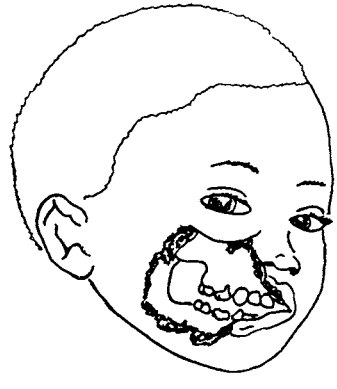
Then it reaches the jaw.

5. Loose teeth.
6. Loose pieces of bone around the teeth.

Finally, it affects the cheek.

7. Skin is tight with dark red swelling.
8. Black spot on the cheek breaks open, leaving a hole into the mouth.
9. A line separates dead tissue from healthy tissue.





TREATMENT:

You must start treatment for Noma immediately in order to prevent the hole from getting bigger. The bigger the hole, the tighter the scar that forms after you close the hole. A tight scar will prevent the child from opening his mouth and chewing the food he needs to grow stronger.

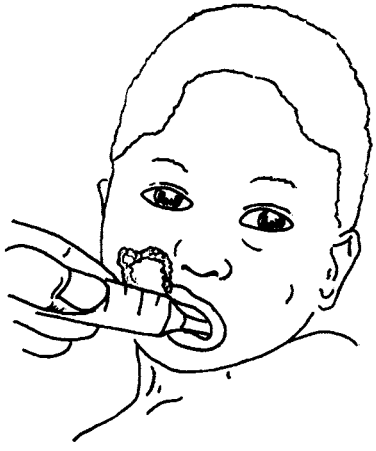
1. Give fluids.

The child needs to overcome both the lack of body water (dehydration) and his lack of resistance to disease.

Start giving the milk-oil drink described on p. 111.

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.



2. Treat the anemia.

Start giving iron now. The child should continue taking the tablets or mixture for 3 months.

	Ferrous Sulfate Tablets
over 6 years	200 mg (1 tab) 3 times a day
3–6 years	100 mg (½ tab) 3 times a day
under 3 years	50 mg (¼ tab) 3 times a day

You can also use ferrous fumarate. Advise the mother that the iron will make the child's stool black.

Also give food rich in iron: meat, fish, eggs, dark green leafy vegetables, peas and beans.

Note: A child may have anemia because he has worms. It is a good idea to do a stool analysis to find out. If he has worms, give him medicine right away. Mebendazole and Albendazole and Thiabendazole treat many different worm infections. Piperazine treats roundworm and pinworm infections, and there are other medicines for tapeworm and blood flukes. Also give **folic acid.** For doses, see *Where There Is No Doctor,* pages 374 to 377, and page 393.

3. Start antibiotics.

Metronidazole is the best medicine to use. Give 200 mg by mouth 3 times a day for 10 days. You can also use clindamycin. To decide how much to give, weigh the child. For adults, see the medicines and doses on page 185.

Weight	**Dose for clindamycin** (give 3 times a day for 5 days)
5 to 10 kg	50 mg by mouth or 60 mg by injection
10 to 17 kg	100 mg by mouth or 130 mg by injection
17 to 25 kg	150 mg by mouth or 225 mg by injection
over 25 kg	250 mg by mouth or 333 mg by injection

4. Treat the other illness that helped Noma to develop.

It is wise to assume that the child has malaria and to begin treating with antimalarial drugs (see *Where There Is No Doctor,* pages 365 and 368).

Look for any other illnesses and treat them, too, especially measles and tuberculosis.

5. Clean the sore.

Gently pull away any dead skin with tweezers. Wash the inside of the sore with hydrogen peroxide. (Be sure you measure the hydrogen peroxide carefully. See page 8.) Then put in a wet dressing. (You can also clean the sore with an iodine solution.)

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 hole and cover it with a dry bandage.
- Every day, remove the bandage, wash the hole with hydrogen peroxide, and put in a new dressing. Do this until the hole does not smell anymore and there is no more dark dead skin.

6. Remove the loose teeth and dead bone.

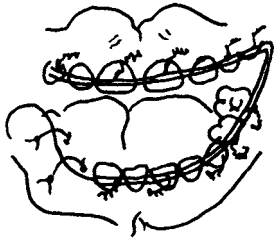
You can use a local anesthetic (Chapter 9). Usually there is not much bleeding. If gums are loose, join them with a suture (see pages 161–163).

7. Keep the mouth clean.

- Use a soft brush gently to clean the remaining teeth. Do this 3 times a day for the child.
- Wipe the gums with a weak 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.

8. Get advice on whether surgery is needed.

Unfortunately, the child will probably need surgery, to release the scar. Without this surgery, the child will not be able to open his mouth properly.



Send the child for medical help when the infection is finished and the wound starts to close.

You may also need a dentist's help at this time. The child's jaws may need to be wired. The wires are put on the healthy teeth in a way that holds the mouth open while the tight scar is forming. When the wires are removed, the child will be able to open and close his mouth to chew food.

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.

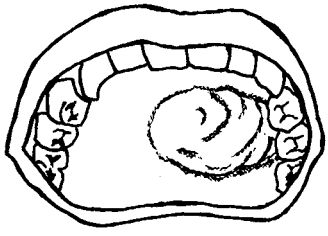
Whenever someone is nursing or caring for a sick child, that person should clean the child's teeth as a normal activity. This is especially true for a child who is weak, undernourished, and with little body water (dehydration).

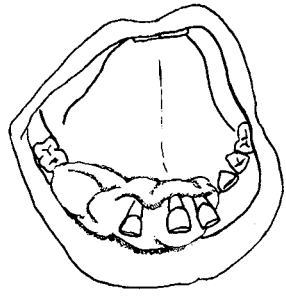
Such a child should always:

- have his teeth carefully cleaned each day with a soft brush.
- rinse his mouth with a warm salt water solution (page 7), 2 times a day.
- eat fresh fruits and vegetables, especially the kind that have Vitamin C: guavas, oranges, pineapples, papayas, tomatoes, peas, and dark green leaves.

TUMOR

A tumor is a lump that grows under the skin or inside the bone. It grows slowly but steadily, usually without any pain.



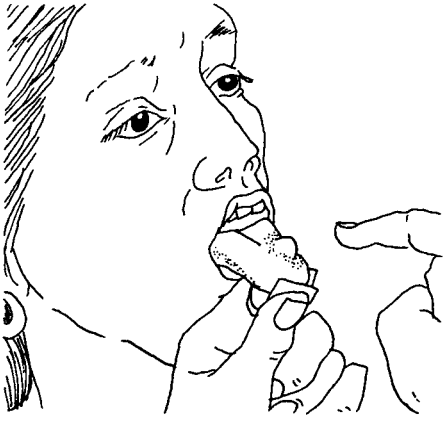


If the swelling does not get better after 5 days of antibiotics and heat treatment (page 94), it may be a tumor.

TREATMENT:

Do not waste any more medicine or any more time. **A tumor may be cancer.** Send for medical help. Surgery is needed to remove a tumor.

CANCER



Any sore that does not heal may be cancer. The lips and tongue are the two places in the mouth where cancer starts most often.

Cancer is deadly.

Medicine cannot help.
It wastes time to use it.

Cancer can spread quickly to the inside of the person's body where you cannot see it. This can lead to the person's death.

TREATMENT:

Whenever you treat a sore and it does not ge better, send the person for medical help immediately. A doctor can cut out a piece from the sore, look at it under a microscope, and decide if it is cancer.