

Injecting Inside the Mouth

It is possible to treat a tooth without pain. You do this with an injection of local anesthetic. You must inject near the nerve, so **to give good injections, you must know where the nerves are.**

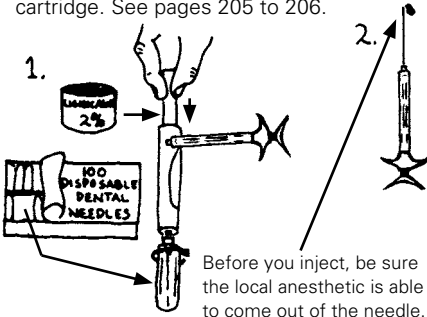
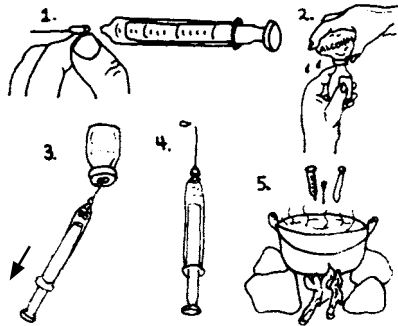
Injecting is a skill that develops with experience. The best way to learn is not from a book, but from a person who has experience giving injections.

Watch an experienced dental worker give injections. That person can then watch you and show you how to inject carefully and safely.

Local anesthetic is an injectable medicine. When it touches a nerve, the tooth joined to that nerve feels numb or dead for about an hour. This usually gives you enough time to take out a strong tooth or to put a cement filling into a deep cavity.

WHAT YOU NEED TO INJECT

There are two kinds of syringes for injecting local anesthetic inside the mouth. One is made of metal and the other is made of glass. The metal syringe uses local anesthetic in a cartridge. The glass syringe uses local anesthetic from a bottle.

DENTAL (METAL) SYRINGE	GLASS SYRINGE
<p>This is a dental syringe. It uses special needles, and the local anesthetic is sealed inside a glass cartridge. After injecting, safely dispose of the needle and the cartridge. See pages 205 to 206.</p>  <p>Before you inject, be sure the local anesthetic is able to come out of the needle.</p> <p>Use a new needle and a new cartridge of local anesthetic for each person.</p>	<p>This kind of syringe is for injections of medicine like penicillin, but you can use it in the mouth. Sterilize the syringe and needles (pages 88 and 138) before and after each use. When sterile, the needles are ready for another person.</p>  <p style="text-align: center;">Be careful! Do not touch the needle.</p>

It is safer to use the metal dental syringe but it depends on the local anesthetic you can get. Order needles to fit your particular kind of syringe.

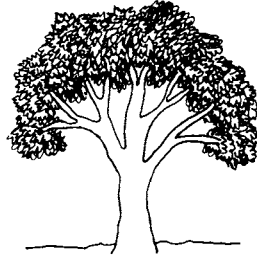
METAL SYRINGE	PLASTIC OR GLASS SYRINGE
<p>Order:</p> <ol style="list-style-type: none">1. syringe: aspirating dental cartridge syringe, 1.8 ml (1ml=1cc)2. needles: disposable needles for dental cartridge syringe (27 gauge, long) one box contains 100 needles, each one inside a plastic cover.3. local anesthetic: local anesthetic cartridges for a dental syringe one sealed tin contains 50 cartridges of lidocaine (lignocaine) 2%.	<p>Order:</p> <ol style="list-style-type: none">1. syringe: standard syringe that holds around 3 ml (1ml=1 cc)2. needles: 24 gauge, long (40 mm x.56 mm or similar)3. local anesthetic: 20 ml bottle of lidocaine (lignocaine) 2% or, if not available: order 2 ml ampules of procaine hydrochloride 1%.

Note: Lidocaine will keep the teeth numb longer if there is **epinephrine** in it. But this is more expensive, and you should not use it on persons with heart problems (see the bottom of the next page).

WHERE TO INJECT

You can deaden a nerve with an injection of local anesthetic:

1. near the **small nerve branch** going inside the root of a tooth.
2. near the **main nerve trunk** before it divides into small branches.



Smaller nerves 'branch' off from the main nerve—much like branches of a tree leave its main trunk.

One small nerve then goes to each root of every tooth.

	<p>Inject an upper tooth near its roots.</p> <p>Bone in the upper jaw is soft and spongy. Local anesthetic placed near the root of an upper tooth can go inside the bone and reach its nerve easily.</p> <p>The same injection also makes the gums around that side of the tooth numb.</p>
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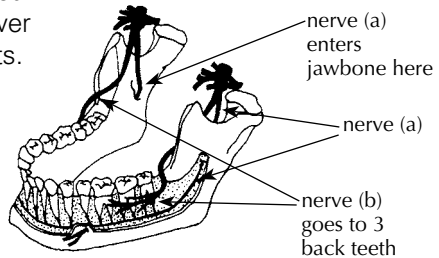
It is more difficult to inject the lower teeth.

The lower jaw bone is thicker. When you inject near the roots of a lower tooth, the anesthetic is not able to reach its nerve as easily.

Note: You can inject lower front teeth in young children, or very loose lower front teeth in adults, near their roots.

To make a lower tooth completely numb, you must block the main nerve (a) before it goes inside the jaw bone.

If you are treating a back tooth, you must give a second injection for nerve (b). See page 140.



These 2 injections also make the gums around the teeth numb.

WHEN TO INJECT

Inject local anesthetic whenever the treatment you give may hurt the person. If, after you inject, the person says the tooth still hurts, be kind. Stop and inject again.

**Inject local anesthetic slowly and carefully.
You can then treat a bad tooth and not hurt the person.**

HOW TO INJECT*

For a good, safe injection, remember these 5 things!

1. Do not inject local anesthetic into an area that is swollen.

This can spread the infection.

Also, pus inside the swelling stops the local anesthetic from working properly.

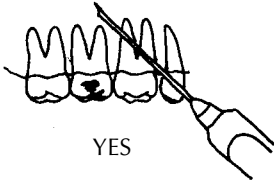


Instead, treat the swelling first (page 94) and take out the tooth later.

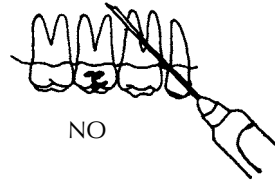
2. If the person has a heart problem, do not inject more than 2 times in one visit. Also, it is best not to use an anesthetic with epinephrine on persons with heart problems. Use lidocaine only, or mepivacaine 3% only.

* Local anesthetics are the only injections given in the mouth. To learn about injecting antibiotics, see page 210.

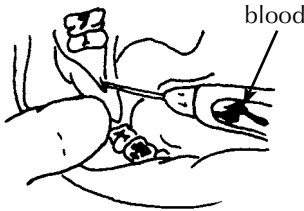
3. Before you push the needle under the skin, be sure its pointed end is facing in the correct direction.



The local anesthetic must come out against the bone, where the nerve is.



4. Before you inject the local anesthetic, wait a moment to see if any blood enters the syringe. (Note: only an *aspirating* syringe will do this.)



Pull back on the plunger. If blood comes inside, it means you have poked a blood vessel.

Pull the needle part way out and gently move it over to a different place.

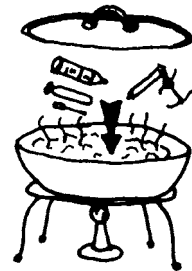
If you inject local anesthetic into the blood vessel, there will be more swelling afterward, and the person may faint. If the person faints:

- Lay him on his back.
- Loosen his shirt collar.
- Lift his legs so they are higher than his head.

5. Be sure your syringe and needles are clean and sterile (see pages 86 to 91). Do not pass an infection from one person to another by using dirty needles.

FOR GLASS SYRINGES:

Boil the syringe and needle in water (page 88) for at least 30 minutes in a covered pot. It is also a good practice to boil your metal syringe.



FOR METAL SYRINGES:

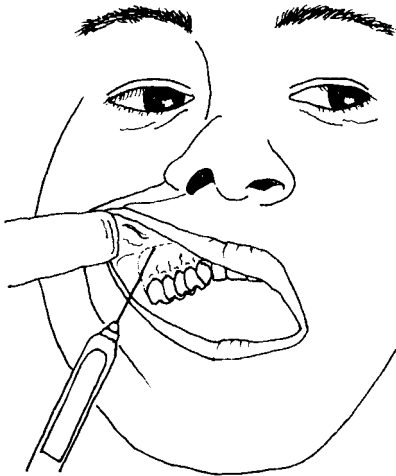
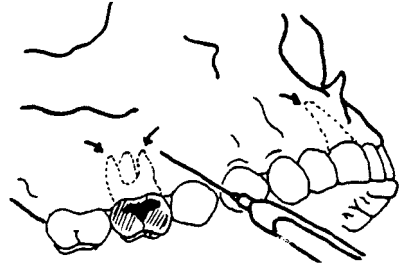
- **Use a new cartridge for each person who needs an injection.** Do not use local anesthetic from a cartridge that you have used on another person.
- **Use each disposable needle only 1 time** and then throw it away in a box like the one on pages 205 to 206. If you must reuse a needle, replace the cap very carefully and put the needle in a safe place (such as a pan of bleach solution) until you are ready to clean and sterilize it (see pages 87–88).

Injecting the Upper Teeth

Inject local anesthetic near the root of the tooth you want to treat.

Front teeth have one root. Back teeth have more than one.

For a tooth to become completely numb, the local anesthetic must touch the small nerve going to each one of its roots.



1. First decide where to inject.

Lift the lip or cheek. See the line that forms when it joins the gum.

The needle enters at the line where the lip or cheek meets the gum.

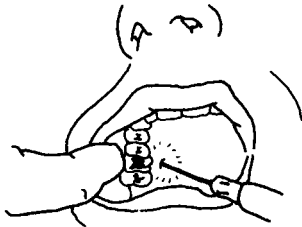
2. **Push the needle in**, aiming at the root of the tooth. Stop when the needle hits bone. Inject about 1 ml of local anesthetic (½ of a cartridge).

Pull the needle part way out and move it over to the next root. Inject again.

If the tooth is to be taken out, leave .25 ml for the next step.

3. If you are taking out a tooth, also inject the gums on the inside.

Ask the person to open wide. Inject the remaining anesthetic (.25 ml) directly behind the back tooth that must come out.



One injection can numb the gum behind the 6 front teeth. Inject into the lump of gum behind the middle front teeth.



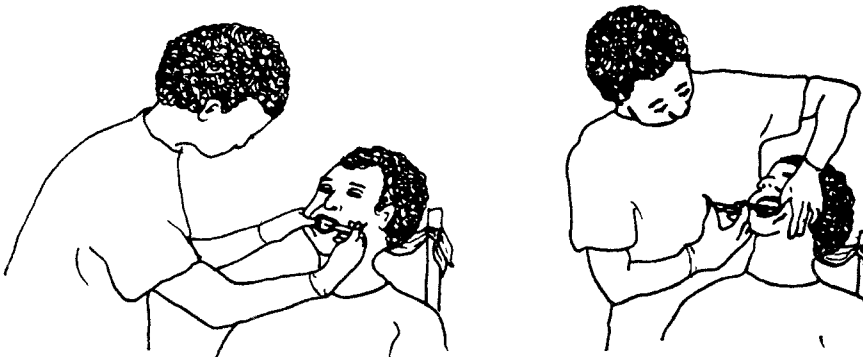
(Note: This injection hurts! It may help to use 'pressure anesthesia.' See page 141.)

4. **Wait 5 minutes** for the tooth to become numb.

Injecting the Lower Teeth

When you block the nerve, it affects all of the teeth as well as gums on that side. However, it takes practice to do this successfully. **Ask an experienced dental worker to help you learn how to give this injection properly.**

Stand in such a way that you can see clearly where you need to inject. Ask the person to open wide.

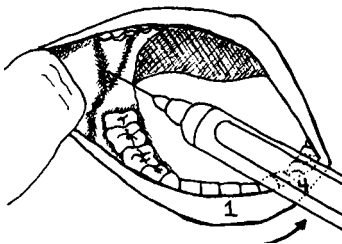


1. First feel for the place to be injected.

Put your thumb beside the last molar tooth. (Wash your hands first! See page 86.) Feel the jawbone as it turns up towards the head. Rest your thumb in the depression there.

2. Press against the skin with the end of your thumb.

The skin forms a 'v' shape. Your needle must go into the 'v'.



Hold the syringe on top of tooth number 4 and aim the needle at the 'v'.

Push the needle in until it hits the jawbone, (about $\frac{3}{4}$ of the length of a long needle). Pull back on the plunger of the aspirating syringe to check for blood (page 138).

Inject 1.5 ml of local anesthetic ($\frac{3}{4}$ of a cartridge).

Try to feel your way: If you hit bone too early, pull the needle part way out and move it over so that it points more toward the back of the mouth. Try again.

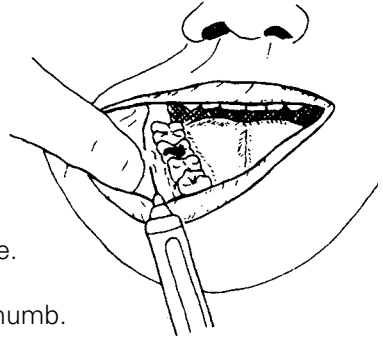
If you do not hit bone, the needle is too far back. Pull it part way out, and point it more toward the front. Push it in again.

3. Give a second injection BESIDE the back teeth.

If you are going to fill or remove a back tooth, inject beside that tooth, where the cheek joins the gum.

Inject .5 ml of local anesthetic ($\frac{1}{4}$ of a cartridge).

This injection is not needed for front teeth. It is enough to block the main nerve.

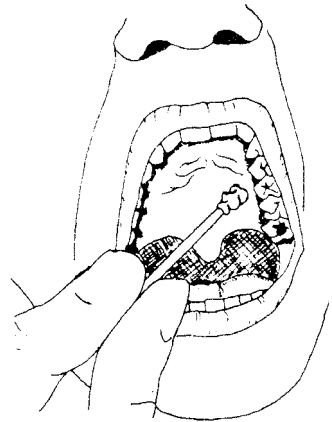
**4. Wait 5 minutes** for the tooth to become numb.**Take time with children**

1. Put some topical anesthetic on the gum before you inject. But be sure the gums are dry in that place. If you wipe the gum with cotton, the topical anesthetic will stay on longer. Give the anesthetic time to work: wait a minute before injecting.

If you do not have topical anesthetic, try using pressure. You can use 'pressure anesthesia' whenever you have to give an injection in a sensitive place, like the roof of the mouth.

Wind some cotton around the end of a match-stick. Press firmly for a minute behind the bad, tooth. Then inject quickly into the depression that formed where you pressed.

2. Be sure the anesthetic is warm when you inject it. Hold the cartridge or bottle in your hands for a few minutes before you use it.
3. Use a new, sharp needle.
4. Have someone pass you the syringe out of sight of the child. Then the child will not have to look at it and be frightened.
5. Be ready to stop the child from grabbing the syringe.
6. Inject the anesthetic slowly. Do not hurry. A too-quick injection can cause sudden pressure, which hurts and frightens the child.

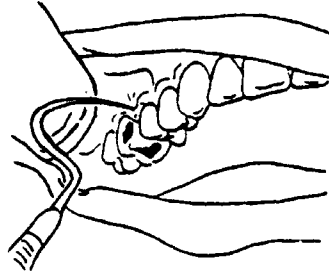


AFTER YOU GIVE AN INJECTION

Before you begin treatment, test the tooth and gums to be sure that they are numb. Wait 5 minutes for the anesthetic to start working. Ask the person how his lips feel—they should feel 'heavy' or numb. Then test the area.

Poke the gums between the teeth with a clean probe.

Watch the person's eyes—you will see if you are hurting. If the person still feels pain, stop. Think about your injection technique, and inject again.



After you finish treatment, always talk to the person about what you have done. Tell the person what to expect, and how to be careful with the numb area of the mouth:

- The area will feel normal again in about 1 hour.
- Do not bite or scratch the area while there is no feeling.
- Do not drink anything hot. It can burn the skin inside the mouth.

With a child, always place a ball of cotton between the teeth on the side where you injected. The child should leave it there for 2 hours, until the area feels normal again. Explain this to the mother, and give her a bit of extra cotton to take home. It is much better for the child to chew cotton instead of the numb lip or cheek!

Try not to hurt anyone. You can treat a bad tooth easier, faster, and without pain if you inject local anesthetic slowly and carefully into the right place.