

IMPRESSIONS

CONCEPTS & TECHNIQUES

CONCEPTS

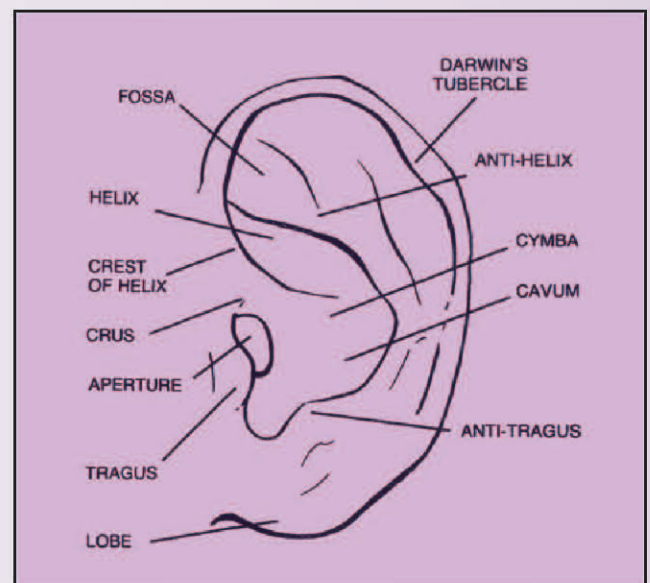
Impressions are the foundation upon which most earmold technology rests. Without a carefully formed impression which delineates the folds and convolutions of cartilage which are the outer human ear and its canal, it is not possible for a laboratory to correctly “physically fit” hearing impaired clients with an earmold.

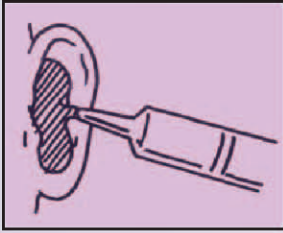
Almost all successful hearing aid fittings do begin with an earmold impression. The most advanced techniques of fitting cannot succeed unless the dispenser has mastered the craft of impression taking. You must become a “master” at impression taking.

How does a fitter become a “master” impression taker? The following section will detail the knowledge required and describe the tools, materials and various techniques also necessary to become a master impression taker. As with all skills that require learning, an apprentice period is recommended. Very few persons have learned good impression technique from a book alone. Have a trainer work with you from the outset so you do not acquire and maintain bad impression technique habits.

The dispenser must understand the ear’s anatomy and the plastics that are current impression compounds before he can master impressions technique.

The anatomy of the external ear and its canal are straightforward and simple. The chart below describes the major features.

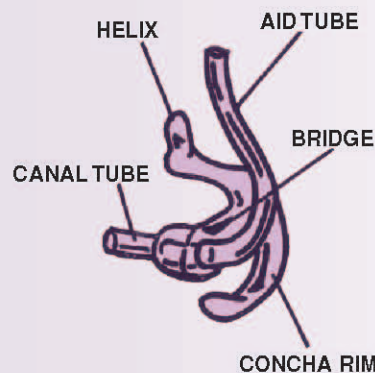
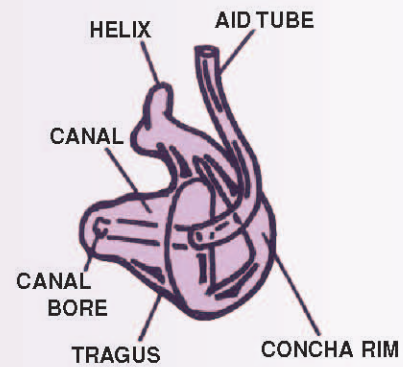
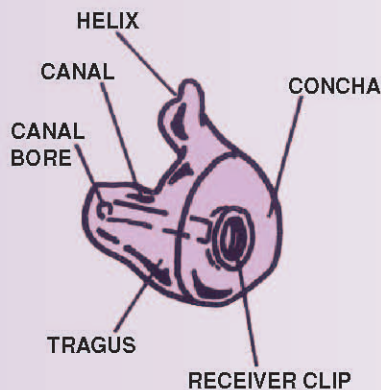




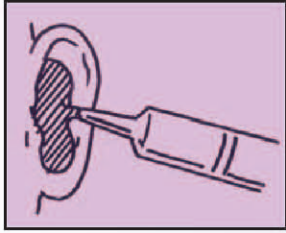
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These named areas are important in order to communicate correctly with other professionals and the earmold laboratory about individual cases. These anatomical areas also give their names to the earmold's physical areas.



The external ear is made up of cartilage and skin. The skin is very sensitive since the outer layer of skin is very thin in the canal area. The only part of the outer ear that can be stretched and pushed without discomfort is the tragus.



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TECHNIQUES

Always make sure your hands are clean, and set out your materials, which should include:

OTOSCOPE

EARLIGHT

FOAM OR COTTON BLOCK

MIXING BOWL

SPATULA

SYRINGE

IMPRESSION POWDER

IMPRESSION LIQUID

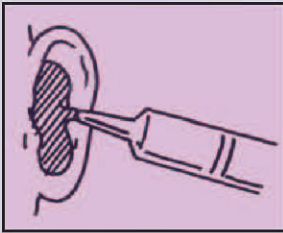
SCISSORS

TWEEZERS

Explain the procedures to your client to make him at ease. You will be examining the ear canal. You will be mixing a soft plastic material the you will pack into the ear and ear canal. It will make the ear feel full for a short time. He should not talk or chew while the impression “sets”. Then you will remove the impression. If it is a perfect one, you will be finished. If it does not meet your standards for a perfect one, you will remake it until it does. Explain that this is necessary for a good fit.

PRE-IMPRESSION TAKING INSPECTION

The first aspect of examining the client is to check the ear’s texture. Generally, when you touch the ear to examine the canal area, you will be able to classify the cartilage as either soft, medium or hard. This information plays a roll in the selection of the material and style of mold.



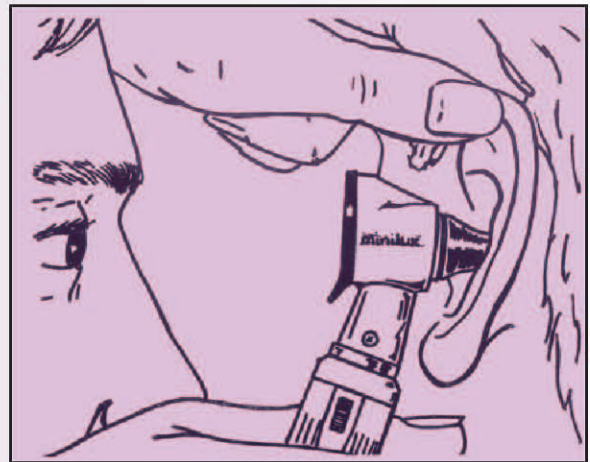
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Now you should use the otoscope to examine the ear canal. The otoscope provides illumination and visual amplification. Keep your little finger and ring finger braced against the client's skull to prevent an accident with the otoscope, should the client suddenly move his head.

As you examine the client's ear and canal, the following information should be noted by you:

1. The length and course of the canal.
2. The overall volume of the concha and canal.
3. The shapes of the ear's convolutions.
4. Problems that may exist.



What problems could exist? Which problems will indicate that you SHOULD NOT proceed with taking the impression? These are covered in the following list:

Cerumen (ear wax). There are several types. Most do not defer the impression process. If the wax is impacted, i.e., completely blocks the ear canal so the drum is not visible, refer the client for cerumen removal.

Discharge of fluid. This is usually caused by infection. It is a medical problem and the client should be referred for medical management.

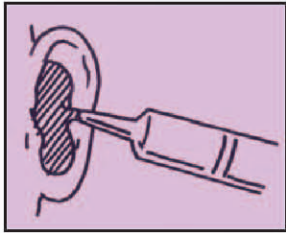
Prolapsed Canal. A flap of skin will close the ear canal opening. Usually by pulling the pinna up and out, this will open. You may take an impression when this condition exists.

Foreign Objects. Sometimes you will not see the drum because of a blockage that is not ear wax. This situation requires you to refer the client for removal of the foreign object. (Some examples: a pencil eraser, a pea, a cotton ball, etc.)

Enlarged Canal. This condition usually is due to surgery. Many times the ear drum will be completely missing. Have a medical clearance before making any impression of ears with this condition.

Malformations. Some ears have moles, stenosis, warts, pimples, various types of scar tissue or congenital deformities. If these are present, make sure your impression properly contains them and alert the lab that this is a real anatomical situation and not an impression error.

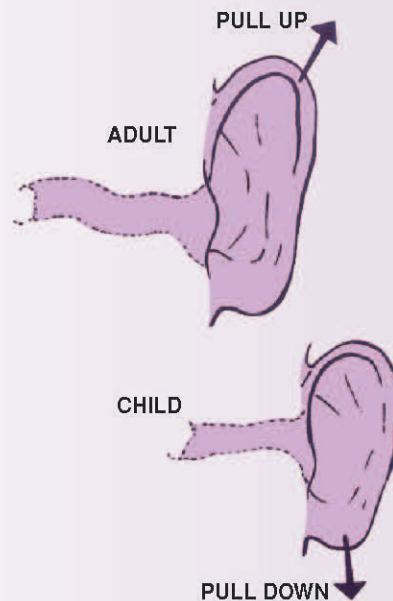
Hair Growth. Many older patients have dense hair growth at the opening of the canal. This should be cut away before making the impression.



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A final note on ear examination is that there is an anatomical difference in the shape as well as size of a child and adult's ear canal that requires a small difference of technique. For clear observation of most adults' ear canals, pull up on the pinna. For children, pull down on the pinna at the lobe.



Technique Difference in Child and Adult Ear Examinations

ACTUAL IMPRESSION PROCESS

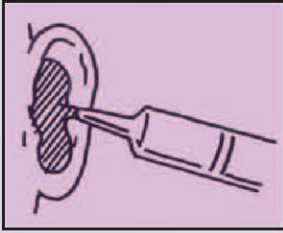
There are two techniques for impression taking that have evolved over the past 5 years. The preferred method today is the syringe technique. You may choose the one you prefer.



FINGER



SYRINGE



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In fitting hearing aids, you are providing treatment for sensorineural hearing loss. This treatment requires that you be concerned with your client's safety. The impression process is an area where you must be safety conscious. What can happen in impression taking? Some of the impression material can become dislodged in the ear canal and then sometimes require a doctor to remove it. Does the impression material hurt the client? Usually not. However, trying to remove it may. To eliminate this possible situation, you should always use a cotton block or foam block inserted in the canal with a thread attached that hangs outside of the ear.

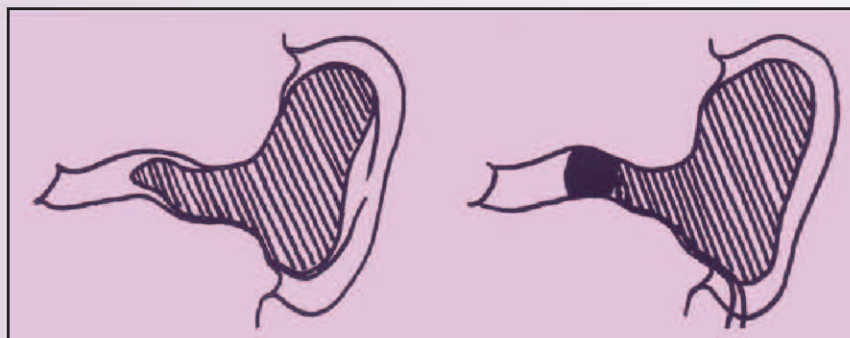
Cotton and Foam Ear Blocks



In the event of some impression material remaining in the ear, the fitter has only to pull the thread which is attached to the foam block, and it acts as a stopper that pulls the material out of the ear canal.

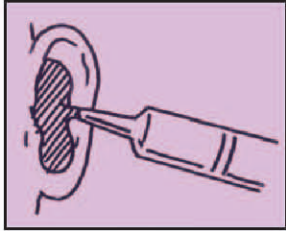
The block is placed in the opening of the ear canal with your finger. Then use the ear light to position the block just beyond the second bend in the canal. REMEMBER to leave the thread that is attached to the block hanging out of the ear!

The following drawing shows that by using a block, you obtain greater canal detail because of the stopper effect of the block. The greater the detail of the impression, the better the fit from the Laboratory.



BENEFIT OF USING THE BLOCK

QUALITY • SERVICE • INTEGRITY



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Up to this point, we have been concerned with the preparation procedures. Now we must know something about the characteristics of the impression material compounds. The materials come in a powder and liquid that, when mixed, form an easily molded mass that sets up rapidly. The impression powder and liquid are affected by temperatures. Warm temperatures cause more rapid set-up than usual. The QUANTITIES of the powder and liquid to be mixed are critical to maintain a pliable consistency for impression taking. Therefore, **ALWAYS** following the impression materials RECIPE for mixing. Don't mix different companies' powders and liquids.

The new silicone impression materials are also becoming quite popular. The silicone material comes in a putty form with a paste hardener. Our laboratory can supply either the acrylic powder and liquid material or the silicone putty material.

The photographs below detail the eight steps in using the syringe technique.



STEP 1
A cotton block is an **ABSOLUTE NECESSITY** when using the syringe. Set a tight cotton block just past the second bend.



STEP 2
Mix impression material and place material in the barrel of the syringe. The quicker you can use the material, the better the impression.



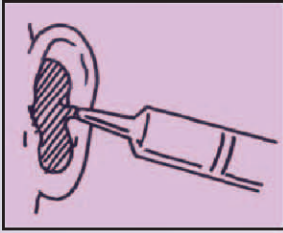
STEP 3
Insert the plunger and force the material to within 1/8" of the end of the nozzle to eliminate air pockets.



STEP 4
Place the tip of the syringe just inside of the ear canal. Inject the material into the ear canal.



STEP 5
As the material fills the canal, slowly withdraw the syringe and fill the helix and bowl area.



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Allow the material to set-up for FIFTEEN MINUTES. If you remove it earlier, you may distort the canal. To remove the impression, grasp the pinna in the center and peel the ear itself away from the set-up impression. Then grasp the impression in the concha area and lift up and out with a rotating motion. Now remove the block from the ear, if it did not come out with the impression. Take your otoscope and reexamine the ear canal for any remaining impression material.

Now that you have an impression, you must make an appraisal of its quality for your fitting. The following checklist is a useful tool:

YES NO

- | | | |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | 1. Does the canal position extend to the second bend? |
| <input type="checkbox"/> | <input type="checkbox"/> | 2. Is the helix area full and smooth? |
| <input type="checkbox"/> | <input type="checkbox"/> | 3. Are there bubbles of air in the impression body? |
| <input type="checkbox"/> | <input type="checkbox"/> | 4. Is the impression smooth and complete? |
| <input type="checkbox"/> | <input type="checkbox"/> | 5. Is the impression shiny and slick? |
| <input type="checkbox"/> | <input type="checkbox"/> | 6. Are the contours of the ear's folds smooth and rounded rather than sharp-edged due to mashing the material against the skull? |
| <input type="checkbox"/> | <input type="checkbox"/> | 7. Is the tragus area covered by the impression material? |
| <input type="checkbox"/> | <input type="checkbox"/> | 8. Are there mold marks that look like wrinkles and cracks? |

If you have answered "yes" to questions 1, 2, 4, and 7 you probably have an excellent impression to send to the lab. You should have answered "no" to questions 4, 5, and 8.