

MAKING A GOOD (EAR) IMPRESSION

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Hearing Is Our Concern™

HOUSEKEEPING

If you are having technical problems, please stay logged on and call AudiologyOnline at

1-800-753-2160



HOUSEKEEPING

This session is available for **1/1 ceu.**

Must stay **logged** on for the **full** session.

Must successfully **complete** a short **quiz.**



HOUSEKEEPING



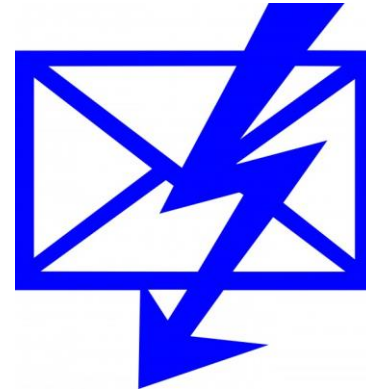
Pdf. of presentation is available.

Questions? Please use chat box!

LEARNING OBJECTIVES

- Participants will be able to list key steps in taking successful ear impressions.
- Participants will be able to identify the various types of ear impression materials currently on the market.
- Participants will be able to discuss the benefits of establishing a professional ear impression protocol.

IS IMPRESSION TAKING A DYING ART?



OPPORTUNITY





Fitting a custom product (a well fit one at that) may be the difference between a delighted vs unsatisfied patient!

ROLE OF THE EAR IMPRESSION

- Three dimensional image of the ear for:
- Fabrication of custom hearing aids
- Fabrication of custom earmold for BTE's/RIC's
- Custom ear monitors
- Hearing Protection
- Swim Molds



ART OR SCIENCE?

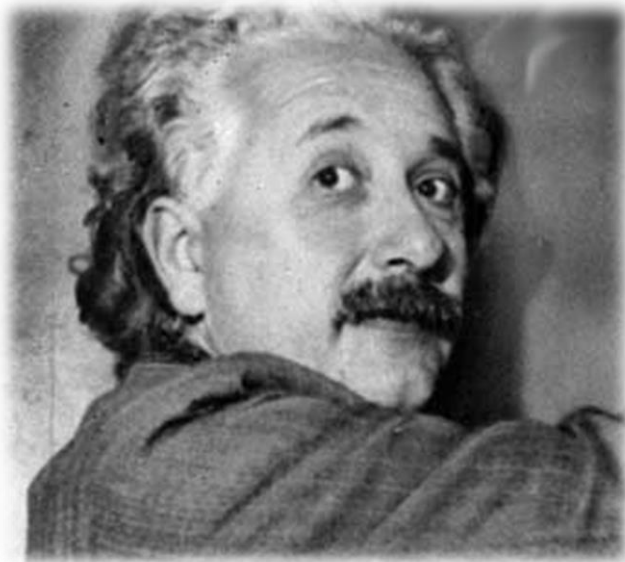
AU.D STUDENT STUDY

- Recommended Material/Viscosity?
- Silicone or Powder/Liquid?
- Jaw movement or not?
- Use of syringe or injector?
- Same technique and material for all devices?

AND THE SURVEY SAYS...

- No official policy re: Impression taking techniques
- Most recommended silicone over powder/liquid material
- Most did not see any need for different techniques relative to building different products
- Most labs preferred closed jaw impressions, a minority “chewing” impressions.

ART & SCIENCE



COMPONENTS FOR SUCCESS

- Impression Protocol
- Impression Specific History
- Appropriate Tools/Materials
- Otoscopic Examination
- Post Impression Evaluation



A HISTORY WORTH TAKING

- Infection risk: diabetes, immunocompromised
- Bleeding risk: therapeutic blood thinning
- Coughing reflex: vagus nerve stimulation
- Surgery: mastoidectomy, fenestration, tubes
- Active infection: bacterial or fungal
- Hearing levels
- Congenital or other malformation



PATIENT HISTORY – HEARING AID

- Previous Aid tells the story
 - Build up
 - Opened up
 - Venting
 - Fit issue
 - Battery size
 - Can affect acceptance



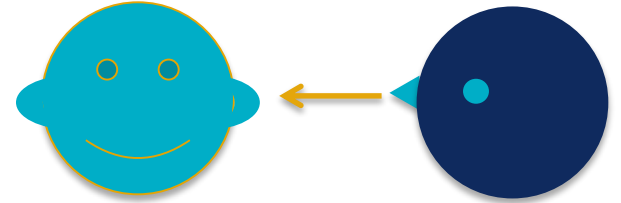
SUPPLIES

- Disinfecting wipes
- Cotton (preferred) or foam dams
- Syringes or gun
- Impression material
 - Cartridges and cannulas
 - Fresh two part silicone mix
- Well identified boxes



TOOLS OF THE TRADE

- Proper seating
- Lighting and magnification
 - Good quality optical or video otoscope
 - Bright, narrow earlight
- Forceps
- Currettes



Sit at eye level



Macro view otoscope
provides better visibility

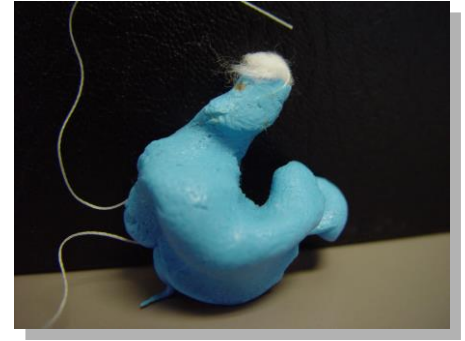


OH MY BREAKING BACK.....



IMPRESSIONS

- Length
 - Gives more canal info
 - Provides better retention
 - Sound direction
 - Increased power



OTOBLOCKS-COTTON VS FOAM

- Cotton Otoblock
 - Gives the greatest information of canals
- Foam
 - Can lose space and critical information of the canal

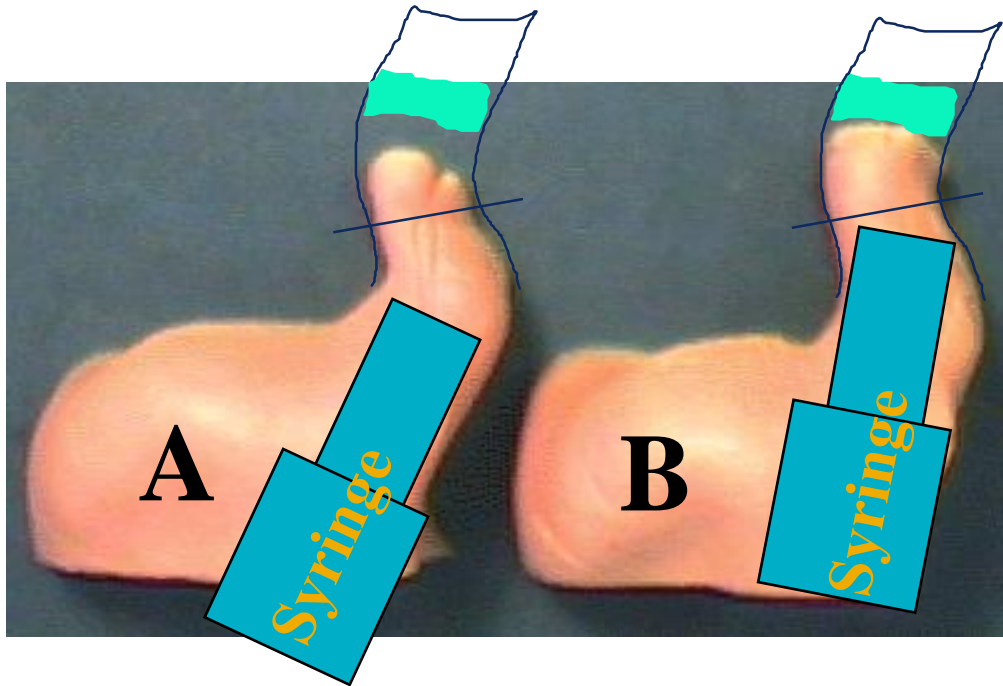


OTOBLOCKS-COTTON VS FOAM

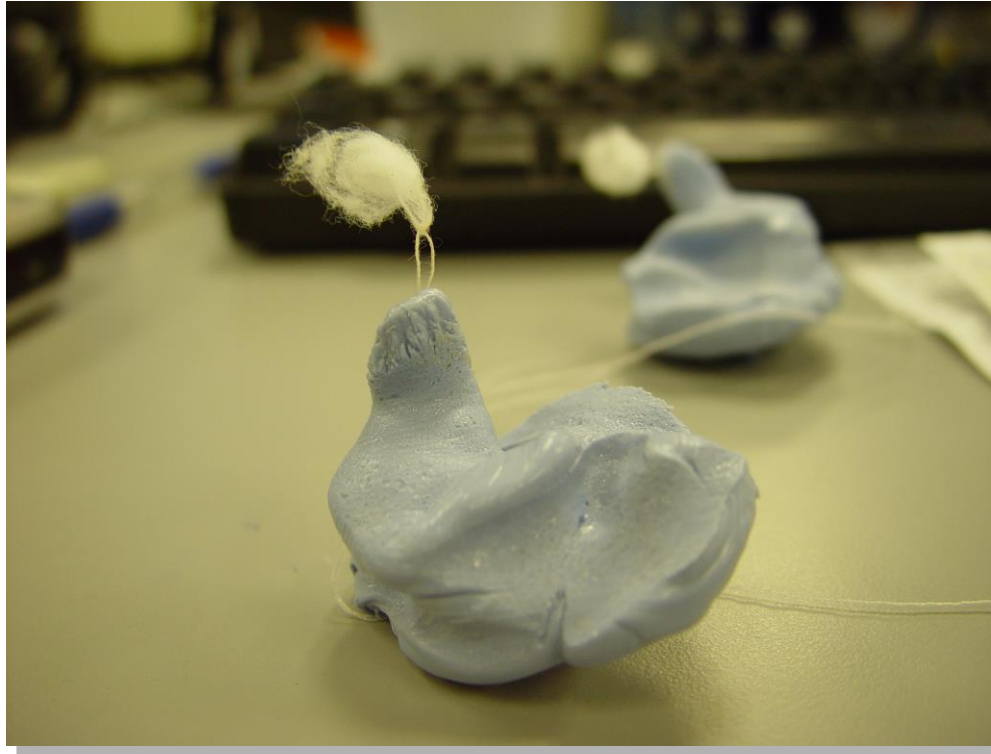


AIM

Considerations on Impressions



MAKING CONTACT



IMPRESSIONS

- Curved canal
 - Sound direction critical
 - Good Retention
- Straight canals
 - Extend into concha bowl
 - Consider tragus
- Bony growths
 - Mark the locations of growth and TM



RADICAL MASTOIDECTOMY



MASTOID IMPRESSIONS

- Mastoidectomies
 - Examine ear carefully
 - Fill in all spaces
 - Use caution
 - What you see is not always what you get
 - Mark where TM is located



IMPRESSION MATERIALS/METHODS

Methyl Methacrylate (Powder/Liquid)

Silicone

Ear Scanning



METHYL METHACRYLATE

“...low pressure, low temperature molding method in which a mixture of finely divided methyl methacrylate polymer and liquid methyl methacrylate monomer are employed.”

METHYL METHACRYLATE

PROS

- Inexpensive
- Comfortable
- Quick setup
- Accurate
- Modifiable

CONS

- Messy
- Not stable over time
- Brittle
- Packing requirements

SILICONE IMPRESSION MATERIAL

- Condensation Cure Silicone-provided as a set of putty and a tube of activator.
- Addition Cure Silicone (Vinylpolysiloxane) -two putties blended together at a 1:1 ratio. Cartridges for pistol injectors contain 1:1 addition cure silicone.

SILICONE IMPRESSION MATERIAL

PROS

- Clean and neat
- Easy shipping
- Stable over time
- Strong
- Consistent viscosity

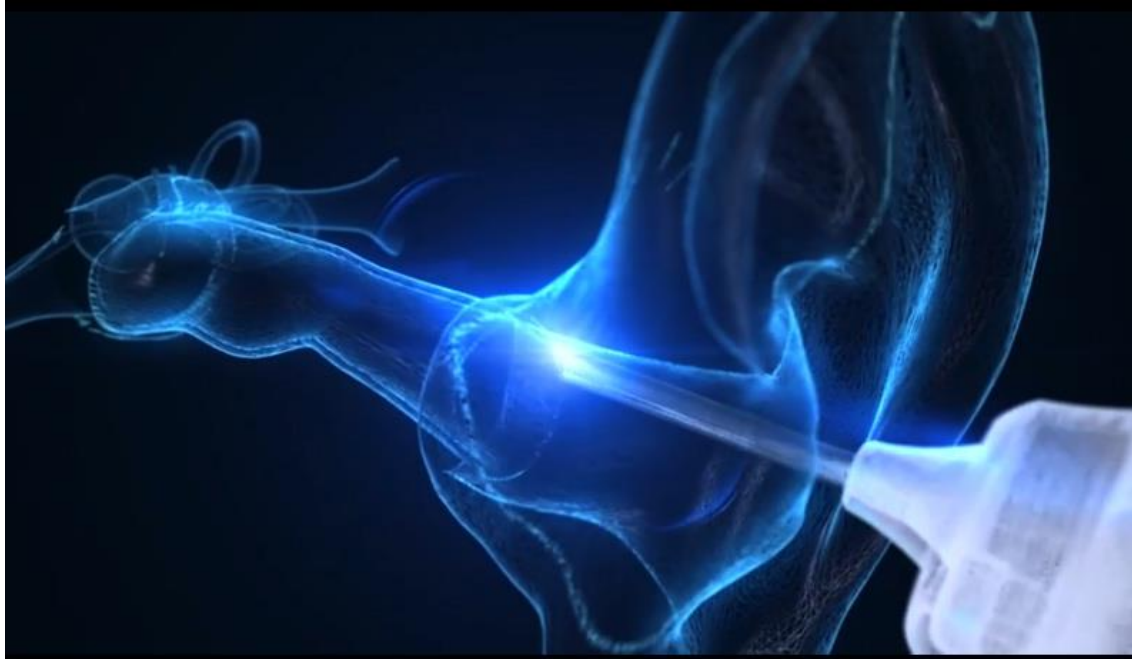
CONS

- Greater cost
- Learning curve

VISCOSITY = SHORE VALUE?

- Viscosity- The measure of the material consistency before polymerization. A quality of silicone materials.
- Lower viscosity has a soft consistency, a higher viscosity material is more firm as it flows into the canal.
- Shore Value-The after-cure hardness of silicone materials.
- Lower shore value=softer finished impression.

EAR SCANNING



EAR SCANNING

LANTOS



GN OTOMETRICS



EAR SCANNING

PROS

- Less invasive
- High tech
- Consistent data
- Automated orders

CONS

- Greater cost
- Learning curve
- Disruptive

SCANNING-THE NEW FRONTIER?

- Likely represents the next step in custom earpiece fabrication
- No products available for sale/evaluation now
- Projected availability to market:
 - sometime in the next 1-3 years

EAR IMPRESSION PROCESS



STEP BY STEP PROTOCOL

- Tools/Materials Preparation
- Prepare Thyself
- Instruct the Patient
- Otoscopy
- Block Prep/Placement
- Look twice/shoot once!
- Shoot Impression
- Impression removal
- Final Otoscopic Examination
- Debrief the Patient



INFECTION CONTROL

- Follow reasonable hygiene procedures
- Establish and adhere to a consistent infection control policy for your practice



INSTRUCT THE PATIENT

- Prepare the patient for the experience: expected sensations, curing time
- Give any special instructions: open or closed jaw, bite block, etc.

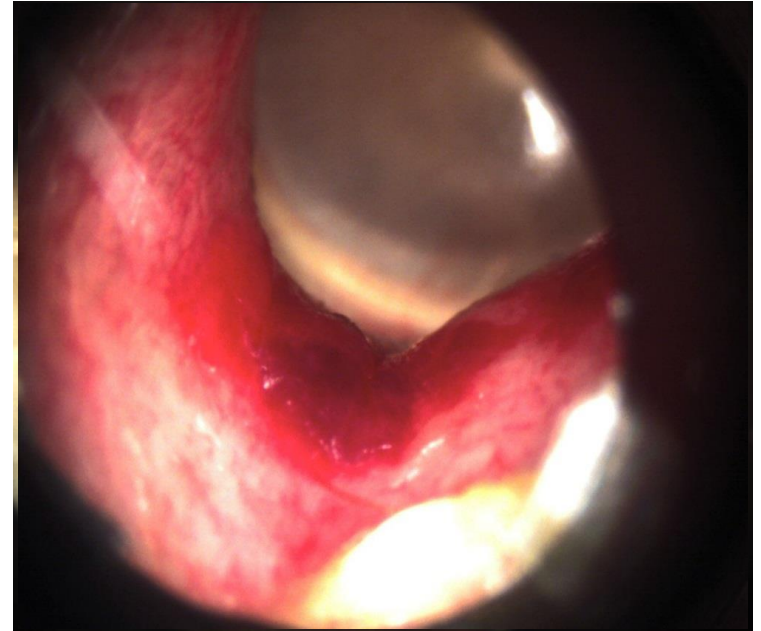


OTOSCOPY

- Look for abnormalities along full length of ear canal and tympanic membrane
- Remove cerumen or foreign objects within your locally recognized scope of practice or refer for treatment
- Drainage, or other suggestion of inflammation or infection? Refer as appropriate
- Proceed only if you feel it is safe to do so

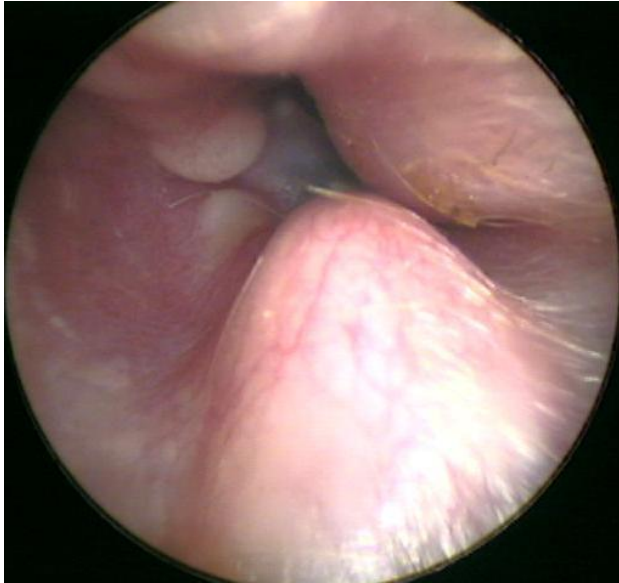
THE EAR CANAL: A LONGER LOOK

- Beyond the second bend impressions require a more careful inspection of the ear canal
- Note narrowing or other anatomical differences that may present difficulties in placement of the cotton block or removal of the cured impression



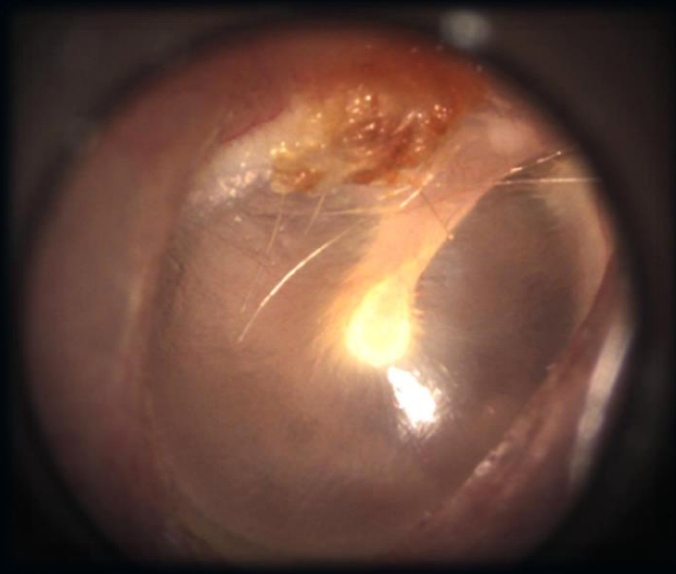
MEDICAL CONSIDERATIONS

EXOSTOSES



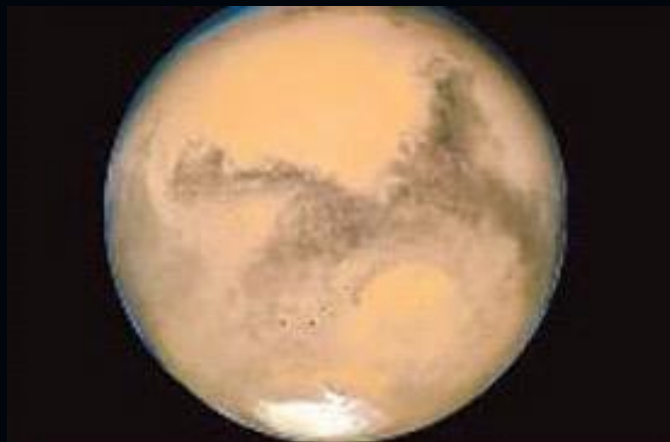
OSTEOMA













NASA / AP

EXPLORATION OF THE RED PLANET reaches a significant milestone on "Ten Years on Mars."

INSPECT THE EAR CANAL

- Expect variations in ear canal anatomy

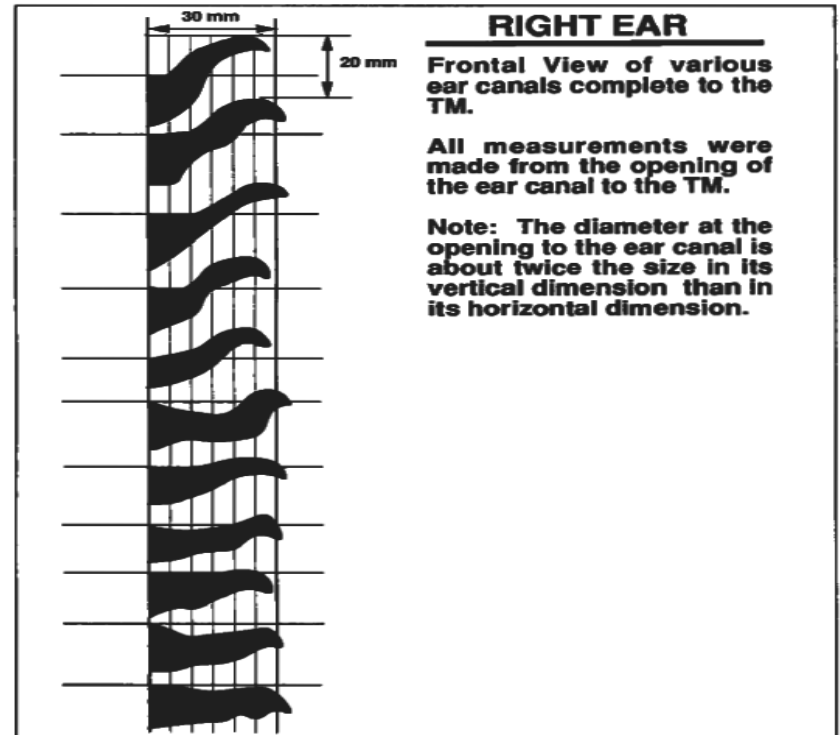


Figure 2. Angles and shapes of ear canals showing the variations that can be expected, although most tend to follow the upward angles found at the top of the graph.

PREPARE THE OTOBLOCK

FLATTEN DAM

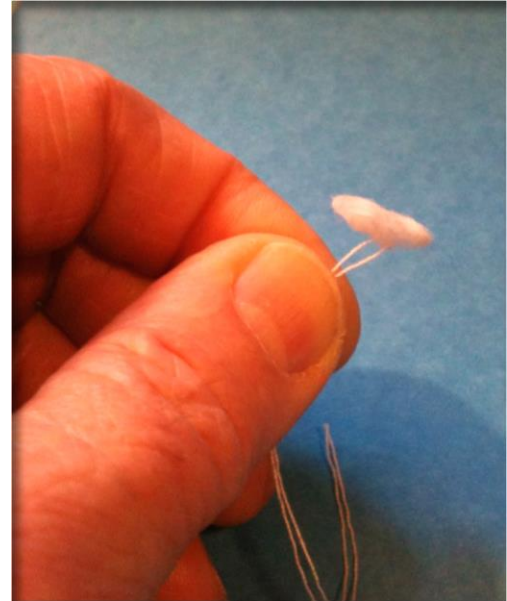


LUBRICATE

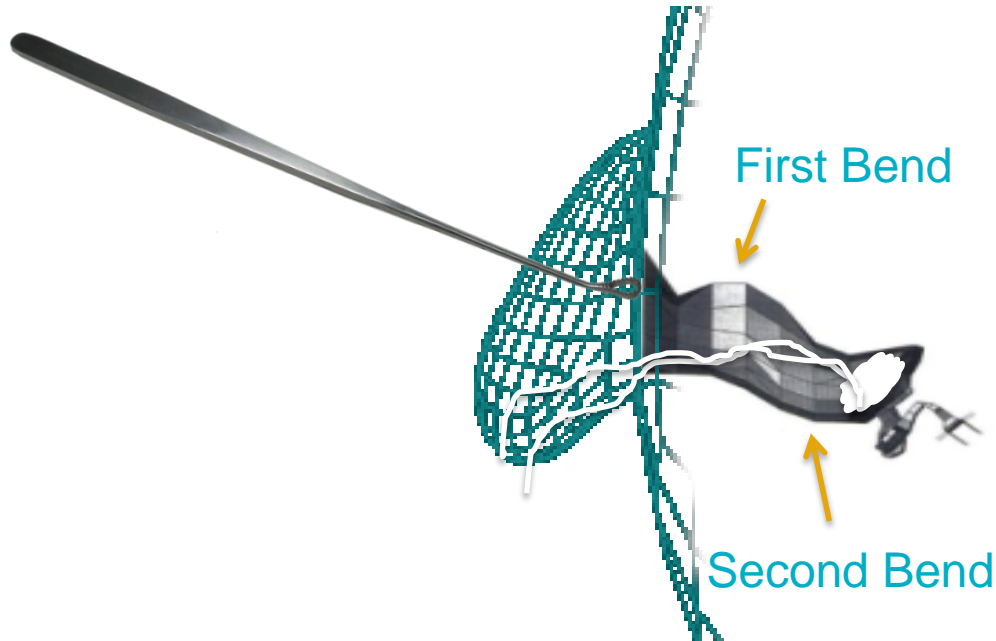


THE COTTON BLOCK

- Standard cotton block loosened and flattened out protects the eardrum, yet allows sufficient room in canal for deep impression.



BLOCK INSERTION



Place cotton block beyond the 2nd canal bend or fully against and covering the eardrum

ASSESS THE POSITION OF THE DAM

- Deep in the canal past the second bend
- No gaps or thin areas
- Proceed with impression process

**“Frankly, my dear....
I give a dam to everyone”**



GIVING PROPS

- Styrofoam block
- Instruct the patient
- Insert prior to syringing impression material
- Must remain in position until impression is cured.



PREPARE TO INJECT

- Mix syringe materials per manufacturer instructions
- Prepare cartridge and mixing cannula per instructions
- Bleed small amount of material from syringe or cannula
- Position syringe or cannula tip aimed at block and steadily inject material into canal, concha and helix
- Use safe technique, brace hand against head

SAFETY FIRST



WHAT'S WRONG WITH THIS PICTURE?



CURE AND REMOVAL

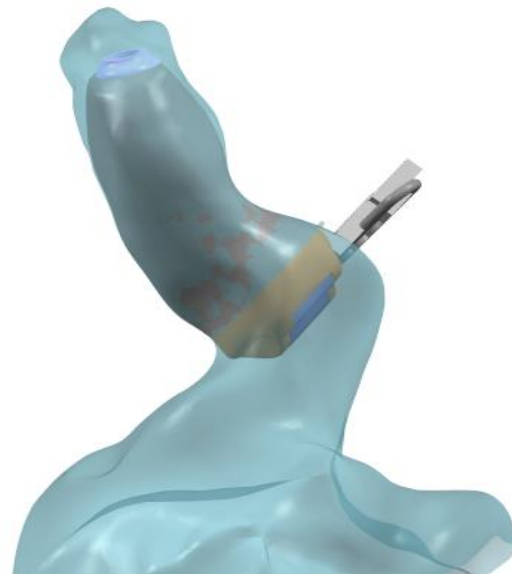
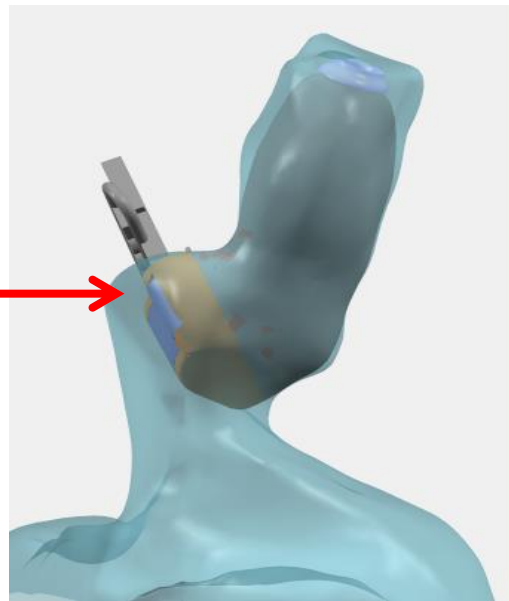
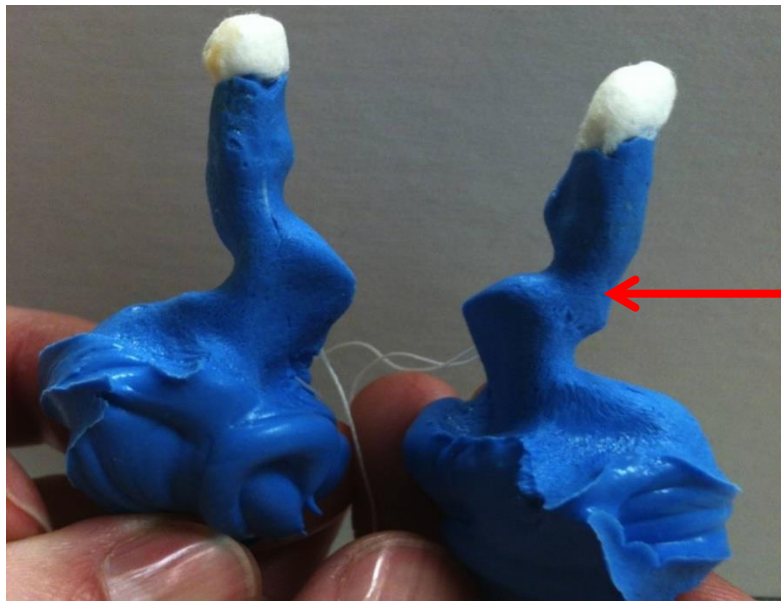
- About 4 to 6 minutes cure time
- Palpate impression gently to verify cure
- Manipulate ear, have patient open jaw to break seal
- SLOWLY remove impression from ear



ARE WE THERE YET?

- Otoscopic Examination
- Patient Query
- Impression Inspection
- Prepare for Shipping

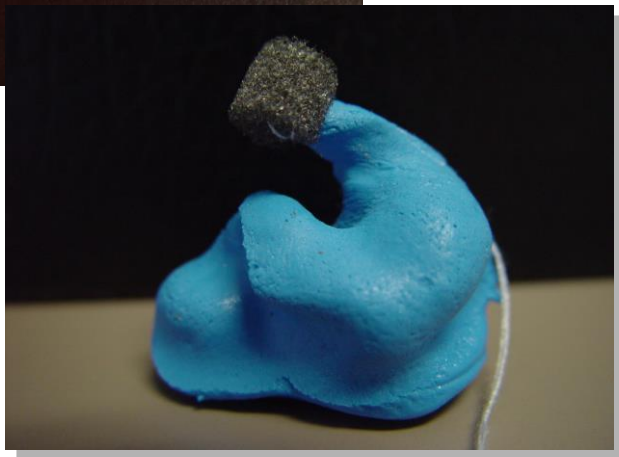
INSPECT THE IMPRESSIONS



...and if I tilt my head just so, darling,
my hearing aids won't
screech off with
their feedback...



DON'TS



EVERY PICTURE TELLS A STORY.....



COMMON SENSE PRECAUTIONS



- Use the proper tools for the impression
- Know the specific anatomy and history of the ear
- Observe reasonable cleanliness and infection control practices
- Use proper bracing techniques with any tool in the ear to prevent injury

YOUR APPROACH:



- Do no harm
 - Impressions are arguably the most invasive thing we do in our profession. Appropriate preparation and good technique are requirements.
- Provide the lab with an accurate representation of the ear canal and information necessary for fabrication of the mold or shell.
 - “Good enough” rarely is.

IN CONCLUSION

- Go forth and make a good impression(s)!
- Questions?



THANK YOU



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