

Crafting a Personalized Hearing Solution

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What's in This Handout

KEY TAKEAWAYS.....	3
COURSE CONTENT.....	4
INTERACTIVE WORKSHEET.....	13
NOTES.....	21
QUIZ SUMMARY.....	22
REFERENCES.....	23
ADDITIONAL INFORMATION.....	24–25

Key Takeaways

Key Takeaway	Clinical Implication
Patients have a choice between DIY and a professional fit	You, the hearing care professional, are the first of the Top 10 reasons for hearing aid delight.
Most patients want custom products, but few purchase them	Approximately 80% of patients want custom products, yet only 10-20% end up purchasing them.
The ear dictates what can be built	The best physical fit of an earmold starts with a good ear impression.
A strict impression protocol reduces risk	Follow the six steps from impression-specific history through post-impression evaluation, and develop a plan in case of an issue.
Patient history shapes the impression	Screen for infection risk, bleeding risk, coughing reflex, surgery, active infection, and congenital or other malformation.
Five key points drive a successful impression	Oto-block size and placement, syringe tip placement and angle, waiting time to move the syringe tip outward, and breaking the seal.
Inspect every impression before ordering	Confirm it captures the concha bowl, helix, and ear canal, is past the 2nd bend, and note natural voids or gaps on the order.
Retention comes from three areas	Look at the canal, concha bowl, and helix, and provide the concha bowl when asking for a canal lock.
Specialty products expand your practice	Solid plugs, professional molds, and hearing protection help you become the ear expert in your community, expand business, and grow referrals.
Successful outcomes depend on the ingredients	Partner with your manufacturer, provide a full impression without voids, limit features if vanity is an issue, and share the patient's previous experience.

Course Content

Learner Outcomes

- Identify proper protocols to safely make quality impressions
- Identify ancillary custom products to offer for patients
- Identify the advances in custom hearing aid technology

The Challenge: Patient Choice and Personalization

Patients have a choice between a DIY option and a professional fit.

- How is the consumer to know whether a product is a hearing aid or an OTC device?
- Receiver-in-canal (RIC): small, discreet and quick to fit.
- Completely-in-the-canal (CIC): only the tiny removal handle of the hearing aid shows outside of the ear canal.

Top 10 Reasons for Hearing Aid Delight

Rank	Reason
1	You, the hearing care professional
2	Continued connection
3	Verification and validation
4	Experimentation
5	Strong recommendation
6	Counseling
7	Evaluation
8	Professionalism
9	Motivation
10	Hearing aids actually work

Source: Hearing Industries Association

Custom Products and Consumer Expectations

- Approximately 80% of patients want custom products, yet only 10-20% end up purchasing them (Wichard, 2019).
- In the digital era, consumer expectations are higher and they want interactions and products to be personalized.
- The nature of personalization implies custom solutions will be better.

Reasons to Recommend Custom Hearing Technology

Natural Resonance of the Ear

- The natural resonance of the ear combines the ear canal resonance and the pinna effect, shown as the total pinna and canal acoustic gain (dB) across frequency.
- Natural resonance varies by style: unaided ear, IIC, CIC, ITC, ITE, and BTE.

Natural Resonance vs Style

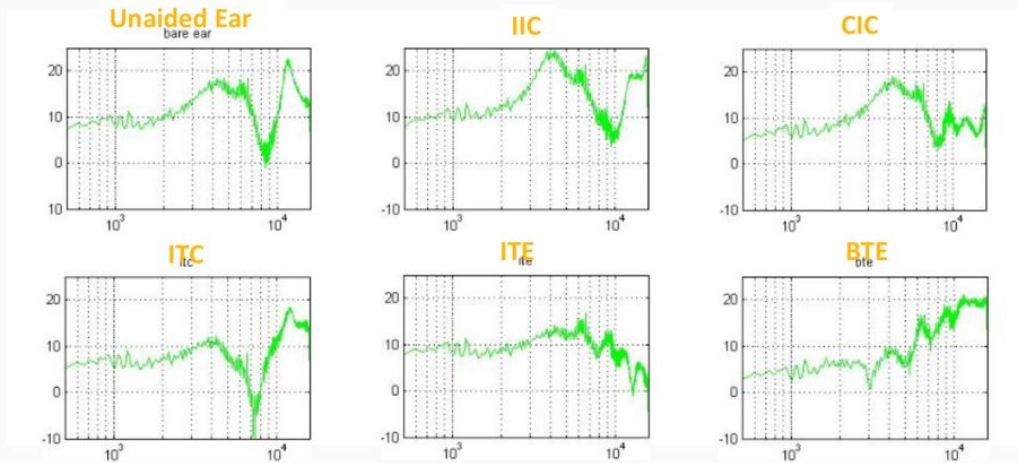


Figure 1. Natural resonance of the unaided ear compared with IIC, CIC, ITC, ITE, and BTE styles.

Instant-Fit Ear Tips vs. Custom RIC Molds

Variability of fitting a wide range of ears: do instant fit tips really fit most?

- Underfitting important low and mid-frequency information
- Creating a clear path for environmental noise

Benefits of Custom Products

- Provide a secure fitting
- Provide microphone positioning that takes advantage of natural pinna and ear canal resonances
- Provide a personalized solution only the hearing care professional can deliver

Crafting a Personal Hearing Experience

The best physical fit of an earmold starts with a good ear impression. The ear dictates what we can build.

The Impression Protocol

1. **Impression specific history**
2. **Appropriate tools and materials**
3. **Patient instruction**
4. **Otoscopic examination**
5. **Impression process**
6. **Post impression evaluation**

Patient History: Historical Accuracy

Risk area	Detail
Infection risk	Diabetes, immunocompromised
Bleeding risk	Therapeutic blood thinning
Coughing reflex	Vagus nerve stimulation
Surgery	Mastoidectomy, fenestration, tubes
Active infection	Bacterial or fungal
Malformation	Congenital or other malformation

Q2

Quiz Hint: A patient history for custom hearing aids covers infection risk (diabetes, immunocompromised), bleeding risk (therapeutic blood thinning), coughing reflex (vagus nerve stimulation), surgery, active infection, and congenital or other malformation, so every one of these is worth asking about.

Previous Hearing Aid History

- Is there build up?
- What size of venting?
- Visible modifications? These are indicative of a fit issue.
- What size of battery? This can affect acceptance.

Supplies

- Disinfecting wipes
- Cotton (preferred) or foam otoblocks (dams)
- Bright, narrow earlight
- Quality handheld or video otoscope
- Syringes or gun
- Impression material
- Well identified boxes

Impression Material

Property	Detail
Material choice	Silicone
Viscosity	Higher: firm as it flows. Lower: softer as it flows.
Shore value	Higher: more firm, finished impression. Lower: more soft, finished impression.

Q3

Quiz Hint: Impression material with a lower viscosity is softer as it flows, while a higher viscosity is firmer as it flows.

Q4

Quiz Hint: Shore value describes how hard the finished impression is after it cures: a higher value gives a more firm impression and a lower value gives a more soft impression.

Syringe Placement and Angle

The slide compares two impressions, A and B, with a different syringe placement and angle in each.

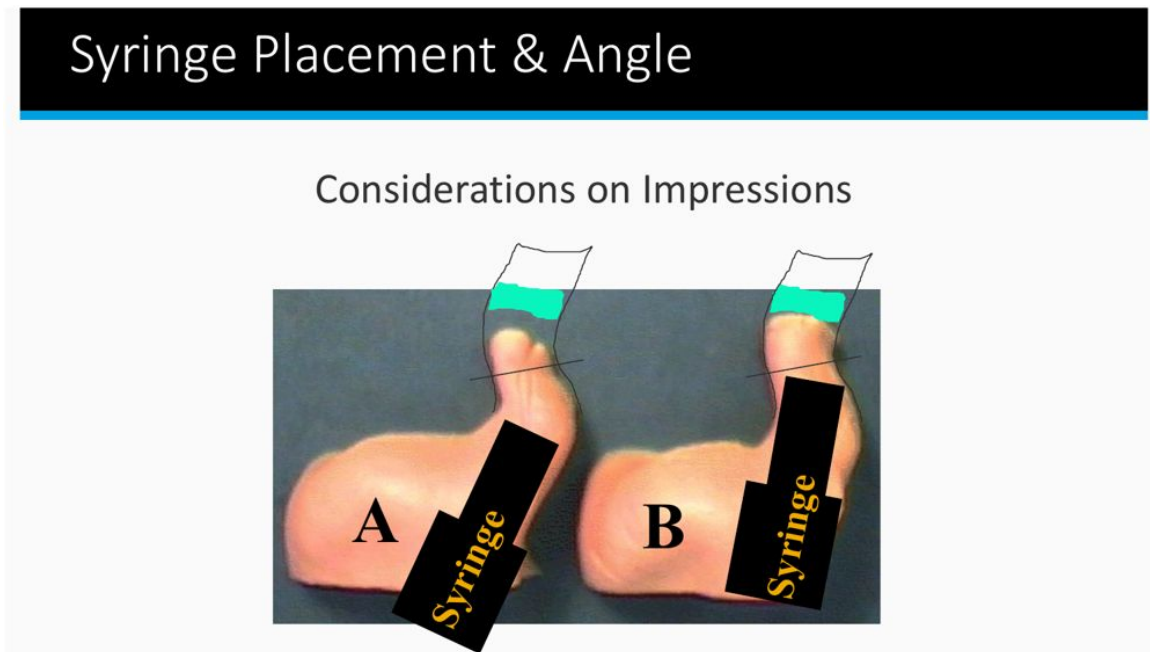


Figure 2. Syringe placement and angle in two impressions, labeled A and B.

Five Key Points of Shooting a Successful Ear Impression

1. **Size** of oto-block
2. **Oto-block placement**
3. **Syringe tip** placement/angle
4. **Waiting time** to move syringe tip outward while shooting
5. **Breaking the seal**

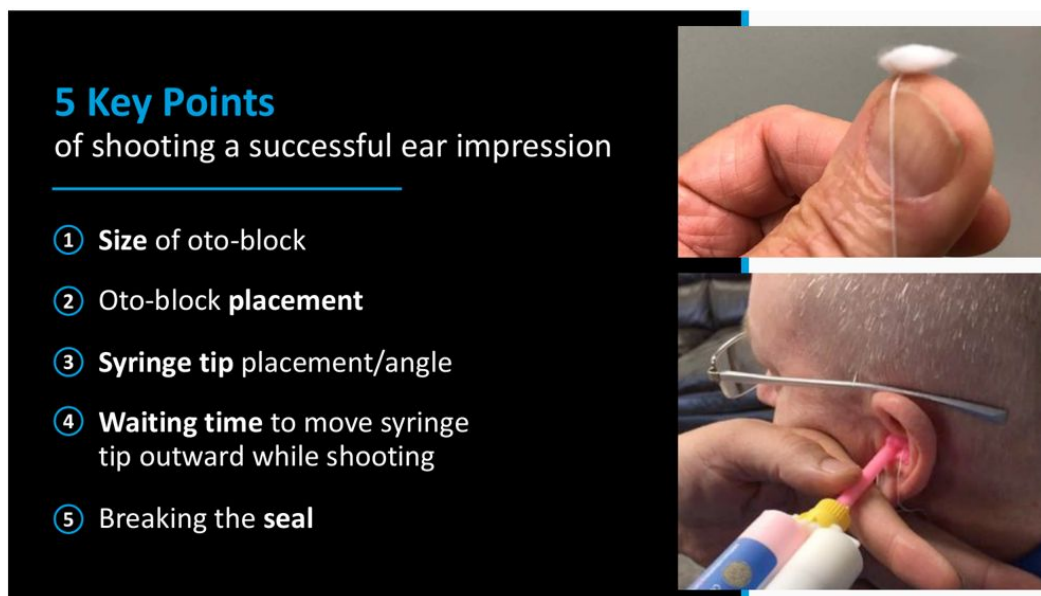


Figure 3. Five key points of shooting a successful ear impression.

Professional Stance and Technique

- Most common technique: sitting with an otolight.
- Video otoscope technique: standing with a handheld video otoscope.

Pro Tip: Face Masks

Face masks can distort the concha bowl and helix for soft textured ears. Remove the mask ear loop for soft textured ears so as not to distort the impression.

Inspecting the Impression



Figure 4. Labeled ear impression anatomy, including canal, bends, concha, helix, tragus, and antitragus.

Impression Inspection Checklist

- Does the impression capture the concha bowl, helix, and ear canal?
- Is the impression past the 2nd bend?
- Are there any natural voids or gaps I should note on the order?

Impression Inspection Checklist

Does the impression capture the concha bowl, helix, and ear canal?

Is the impression past the 2nd bend?

Are there any natural voids or gaps I should note on the order?

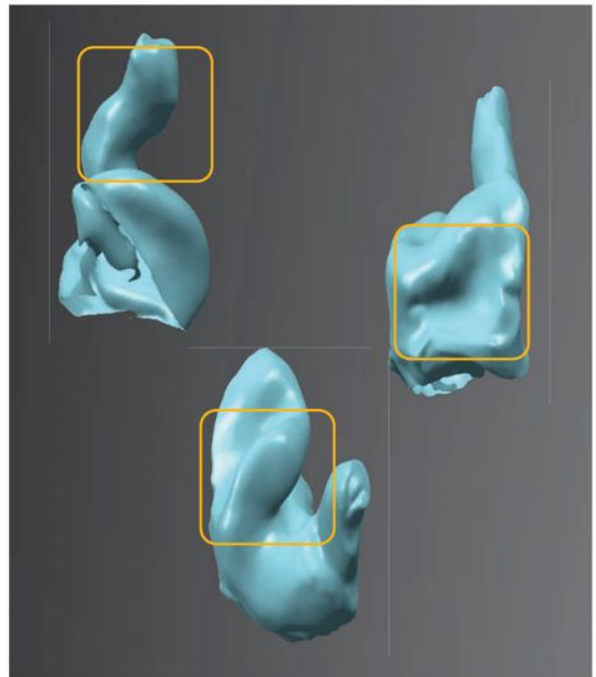


Figure 5. Impression Inspection Checklist with highlighted 3D impression scans.

Incomplete Impressions

- Voids
- Short canal
- Texture of the ear: firm or loose ear texture is part of getting to know your patient.

Q5

Quiz Hint: The protocol ends with the post-impression evaluation, which means examining the impression for quality (concha bowl, helix, ear canal, past the 2nd bend, and any voids or gaps) before it goes to the manufacturer.

Q1

Quiz Hint: Approximately 75% of the custom impressions received at Starkey are deemed Top Shelf to build custom hearing aids.

Ear Impressions: Risk Management

- Diligence in practicing safe technique
- Minimize risk by following a strict protocol; develop a plan in case of an issue

Getting the Best Out of Custom Products

Everything matters when ordering a custom product.

Oto-Blocks Can Change the Fit

Oto-blocks can change the fit

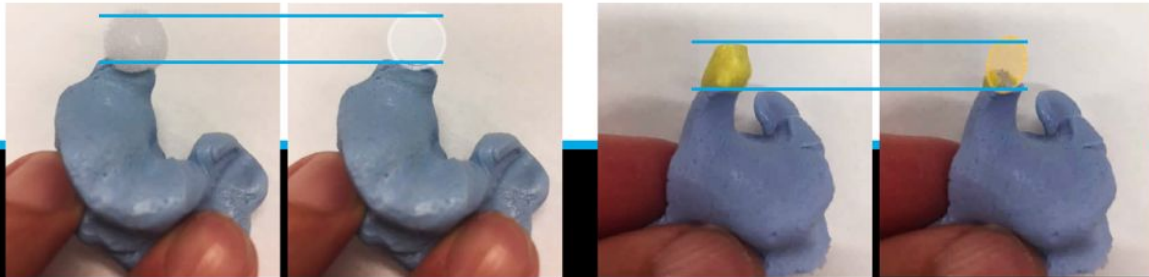


Figure 6. Oto-blocks can change the fit, shown in two side-by-side impression pairs.

Complete vs. Incomplete Impressions for a CIC Order

- Complete impression: recessed, good.
- Incomplete impression: recessed, taller.
- Poor impression callouts: lack of retention, sound direction off or blocked, and shell protrudes.

Complete vs. Incomplete Impressions for a CIC Order

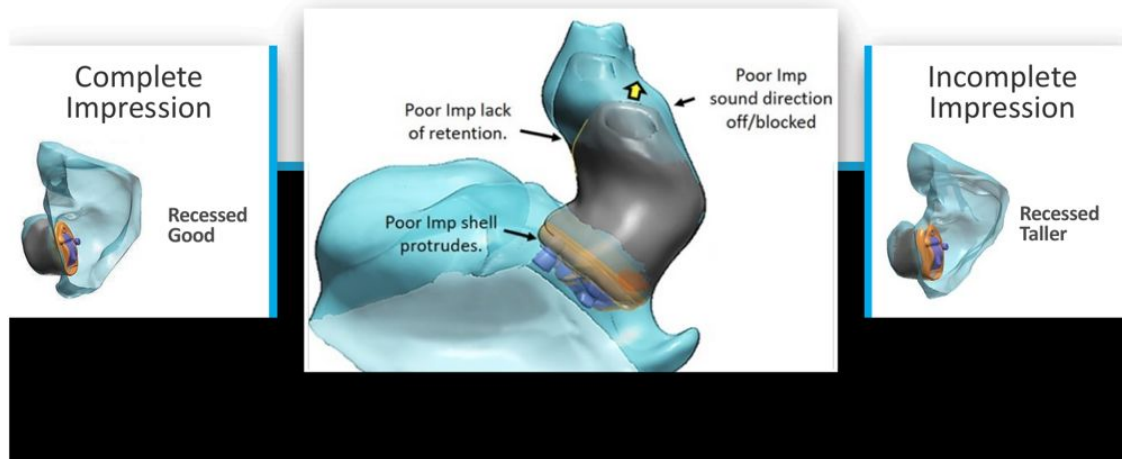


Figure 7. Complete and incomplete impressions for a CIC order.

Looking for Retention

- The length of canal can tell us more.
- Provide the concha bowl when asking for a canal lock.
- Three primary areas to look for retention: canal, concha bowl, and helix.
- Know where to position the receiver.

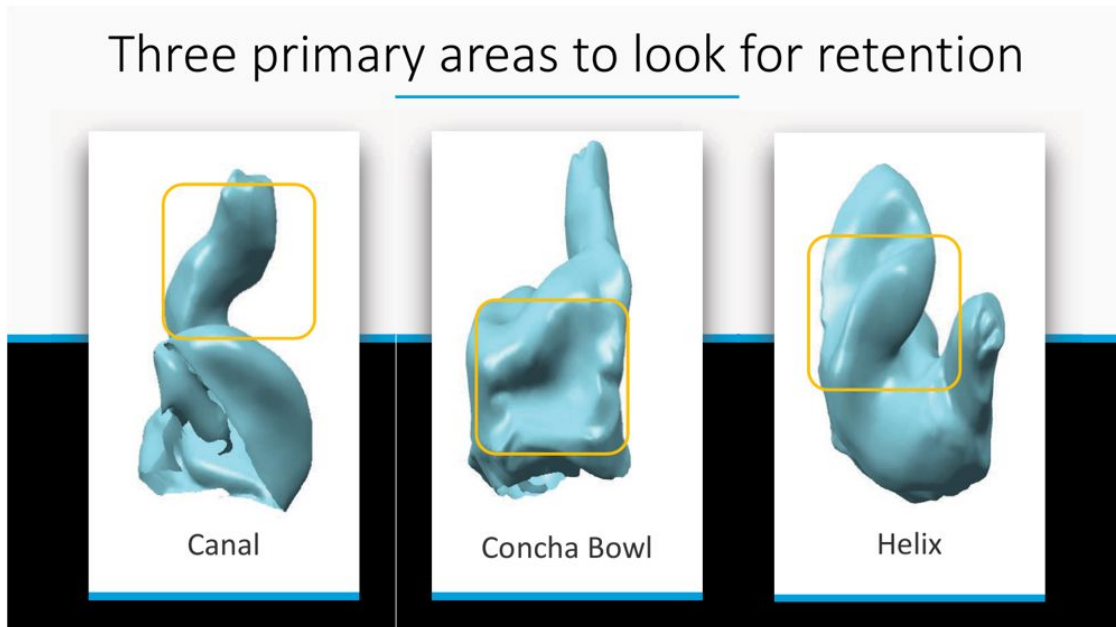


Figure 8. Three primary areas to look for retention: canal, concha bowl, and helix.

Types of Custom Products

Type	Description
IIC	Invisible-in-canal
2.4 GHz CIC 312	Completely-in-canal
ITC rechargeable	In-the-canal, custom rechargeable
Custom cased	Snap-in receiver bud

- Additional fitting considerations covered: tragus and anti-tragus, the concha bowl for custom rechargeables, custom versus bud, and receiver direction for surgical ears.
- Ears, impressions, and the TMJ can vary from one ear to the next. We do our best with requests.

Custom Specialty Products

- Solid plugs: swim plugs, sound plugs, and sleep plugs.
- Professional molds: racing receivers, pilot molds, broadcaster earpieces, and music monitors.
- Hearing protection: custom solid plugs, custom rechargeable hearing protection, and law enforcement.
- Custom specialty products help you become the ear expert in your community, expand business, and grow referrals.

In Summary

Getting to Know Your Patient

- Previous experience/history
- Canal size and shape of the ear impression
- Firm or loose ear texture
- Audio
- MCL
- UCL

Conclusion: Ingredients for a Successful Outcome

- Partner with your manufacturer
- Provide a full ear impression without voids and note any abnormalities or concerns
- With customs, limit features if vanity is an issue
- Provide the history of your patient's previous experience

Interactive Worksheet

Course: Crafting a Personalized Hearing Solution

Presenter: Michele Hurley, Au.D.

Date:

Click here to enter text.

Directions

- Complete each activity as you move through the course. Every response area is a fillable field: click inside it and type.
- Checkboxes and fields work best in desktop Word. Checkbox support in Word Online is inconsistent, so each checkbox also has a printed label.
- Each module supports one or more of the course Learner Outcomes listed in the Course Content section.

Module 1: Why Recommend Custom Products

This module supports Learner Outcome 3.

Window Pane Summary: Compare and Contrast

Using what you learned in this course, note how each option relates to each area.

Focus area	Instant-fit ear tips	Custom RIC molds
Fit across a wide range of ears	Click here to enter text.	Click here to enter text.
Low and mid-frequency information	Click here to enter text.	Click here to enter text.
Environmental noise	Click here to enter text.	Click here to enter text.

Quick Check: True or False

Approximately 80% of patients want custom products, yet only 10-20% end up purchasing them.

☐ True ☐ False

Instant fit ear tips can create a clear path for environmental noise.

☐ True ☐ False

Pause and Apply

If a patient is weighing a DIY product against a professional fit, then I will...

Click here to enter text.

Module 2: Crafting a Successful Impression

This module supports Learner Outcome 1.

Key Terms

Key term	Definition in your own words
Viscosity	Click here to enter text.
Shore value	Click here to enter text.
Oto-block (dam)	Click here to enter text.

Guided Notes: Five Key Points

List the five key points of shooting a successful ear impression.

Key point	Your notes
Point 1	Click here to enter text.
Point 2	Click here to enter text.
Point 3	Click here to enter text.
Point 4	Click here to enter text.
Point 5	Click here to enter text.

Sequencing: The Impression Protocol

Number these steps in the order you would actually perform them, 1 through 6.

Step number	Step (listed out of order)
Click here to enter text.	Impression process
Click here to enter text.	Patient instruction
Click here to enter text.	Post impression evaluation
Click here to enter text.	Impression specific history
Click here to enter text.	Otoscopic examination
Click here to enter text.	Appropriate tools and materials

Pause and Apply

If a patient's history shows one of the risks listed under Historical Accuracy, then I will...

Click here to enter text.

Matching: Historical Accuracy

Write the letter of the matching detail in the blank next to each risk area.

Your letter	Risk area	Matching detail
Click here to enter text.	1. Infection risk	A. Vagus nerve stimulation
Click here to enter text.	2. Bleeding risk	B. Bacterial or fungal
Click here to enter text.	3. Coughing reflex	C. Mastoidectomy, fenestration, tubes
Click here to enter text.	4. Surgery	D. Diabetes, immunocompromised
Click here to enter text.	5. Active infection	E. Therapeutic blood thinning

Module 3: Ordering Custom Products

This module supports Learner Outcomes 2 and 3.

Window Pane Summary: Areas to Look for Retention

For each area, note what you look for on an impression and how it supports retention.

Prompt	Canal	Concha bowl	Helix
What I look for in this area	Click here to enter text.	Click here to enter text.	Click here to enter text.
How it supports retention on the order	Click here to enter text.	Click here to enter text.	Click here to enter text.

Quick Check: Multiple Choice

Which are the three primary areas to look for retention?

- ☐ A. Canal, concha bowl, and helix
- ☐ B. Canal, tragus, and eardrum
- ☐ C. Concha bowl, earline, and antitragus

What should you provide when asking for a canal lock?

- ☐ A. The concha bowl
- ☐ B. A shorter canal
- ☐ C. Only the canal tip

Pause and Apply

If I am ordering a custom product for a patient, then I will...

Click here to enter text.

Clinical Toolkit: Impression Inspection

Clinical Reference Tool

Use this checklist each time you inspect an impression before sending it to the manufacturer.

Inspection item	Check if yes	Check if no	Notes
Does the impression capture the concha bowl, helix, and ear canal?	☐ Yes	☐ No	Click here to enter text.
Is the impression past the 2nd bend?	☐ Yes	☐ No	Click here to enter text.
Are there any natural voids or gaps to note on the order?	☐ Yes	☐ No	Click here to enter text.
Are the oto-block size and placement documented?	☐ Yes	☐ No	Click here to enter text.
Have I noted any abnormalities or concerns on the order?	☐ Yes	☐ No	Click here to enter text.
Have I provided the history of the patient's previous experience?	☐ Yes	☐ No	Click here to enter text.

This tool is for clinical reference only. Always follow your facility's protocols.

Post-Course Reflection

What was the most significant thing you learned today that surprised you or challenged your existing practice?

Click here to enter text.

What knowledge gaps did this course reveal in your own skills or knowledge?

Click here to enter text.

Describe a specific patient or client from your own practice where you would apply something from this course:

Click here to enter text.

Action Plan

Identify at least 2 specific, measurable changes you plan to make to your clinical practice as a direct result of this course. Use the If-Then format where possible: "If I encounter [situation X], then I will [action Y]."

My action plan goal	Target date	How I will measure success
Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.

Quiz Summary

The following quiz hints appeared throughout the course content. Use this section as a quick study reference.

Q1

Quiz Hint: Approximately 75% of the custom impressions received at Starkey are deemed Top Shelf to build custom hearing aids.

Q2

Quiz Hint: A patient history for custom hearing aids covers infection risk (diabetes, immunocompromised), bleeding risk (therapeutic blood thinning), coughing reflex (vagus nerve stimulation), surgery, active infection, and congenital or other malformation, so every one of these is worth asking about.

Q3

Quiz Hint: Impression material with a lower viscosity is softer as it flows, while a higher viscosity is firmer as it flows.

Q4

Quiz Hint: Shore value describes how hard the finished impression is after it cures: a higher value gives a more firm impression and a lower value gives a more soft impression.

Q5

Quiz Hint: The protocol ends with the post-impression evaluation, which means examining the impression for quality (concha bowl, helix, ear canal, past the 2nd bend, and any voids or gaps) before it goes to the manufacturer.

References

- Harris Poll. (2019). *Revisiting the gaps in customer experience*. <https://redpointglobal.com> [Full URL and publisher details not provided in source.]
- Hearing Industries Association. (2018). *MarkeTrack X 20Q: Consumer insights on hearing aids, PSAP's, OTC devices, and more from MarkeTrack 10*. [Date shown in source: 8/12/2025; confirm whether this is a publication or access date.]
- Hearing Industries Association. (2025). *MarkeTrack 2025: Hearing aids in the age of OTC's and wearables*. [Date shown in source: 5/16/2020; confirm, as it predates the 2025 title.]
- Wichard, S. (2019, September). 3-D ear scanning has arrived [Tech Topic]. *Hearing Review*. [Volume, issue, and page numbers not provided in source.]

Additional Information

Presenter Bio

Michele Hurley, Au.D.

Michele Hurley received a Master of Science in Audiology from North Texas State University and Au.D. from A.T. Still University. Dr. Hurley has been practicing for 21 years in a variety of professional roles, spending the past 14 years in the area of education and technical services, and has spoken on numerous occasions on the topics of hearing aid technology and patient care.

Presenter Disclosure

Financial: Michele Hurley is employed by Starkey.

Non financial: Michele Hurley has no relevant non-financial relationships to disclose.

Additional Information (continued)

Handout Information

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Social Workers

For additional information regarding standards and indicators for cultural competence, please review the NASW resource: [Standards and Indicators for Cultural Competence in Social Work Practice](#)

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- It is the responsibility of course participants to critically evaluate the evidence from multiple sources to guide professional practice.

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