

# Working with Hearing Aids & ALDs: Preventative Maintenance & Troubleshooting

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## **Auditory Outreach**

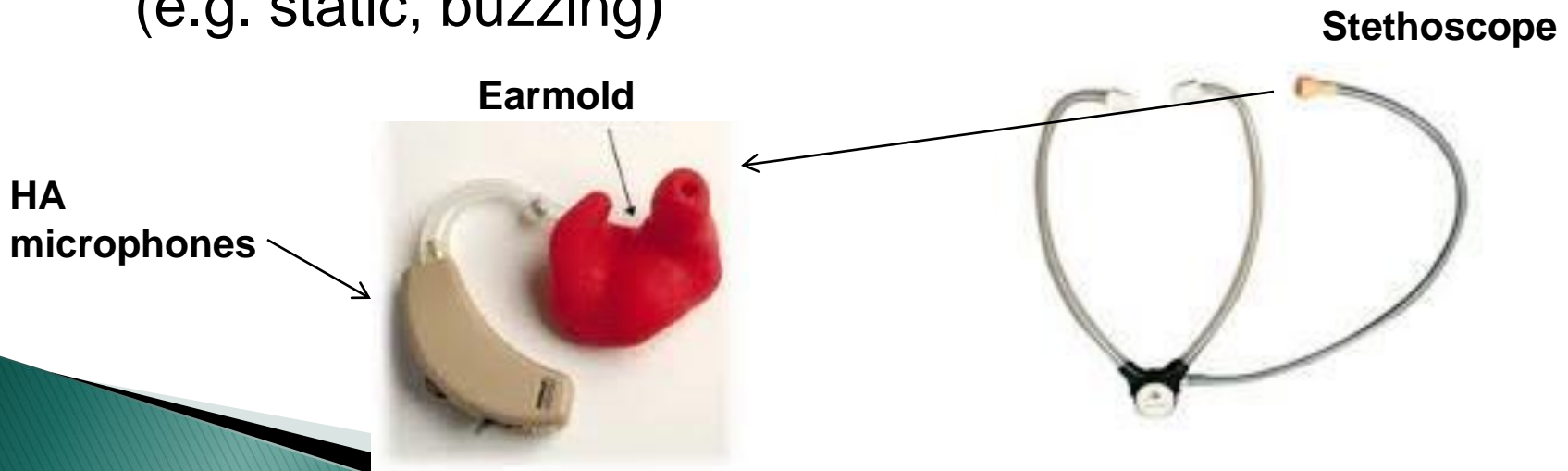
Provincial Outreach for Cochlear Implants and  
Auditory Training Equipment Program

# Preventative Maintenance

- ▶ Listening Check
- ▶ Behavioral Check
- ▶ Battery
- ▶ Microphone Covers
- ▶ Other accessories: wax guards, domes, earmold tubing
- ▶ Cleaning & Storage

# Listening Check on HA

- ▶ Cup the *Hearing Aid Stethoscope* over the ear canal outlet of the  *earmold*, which should be securely attached to the hearing aid
- ▶ Speak into the hearing aid microphones
- ▶ Listen for amplified environmental and speech sounds that are clear, consistent, and free of unusual noises (e.g. static, buzzing)



# A Note on Whistling

- ▶ Whistling = Feedback
- ▶ Feedback: Amplified sounds escape out of the earmold, enter the HA microphones and are re-amplified, causing a high-pitched squeal
- ▶ Most HAs (esp high powered ones) will feedback when they are not in the ear and does not indicate malfunction
- ▶ When feedback is heard when the earmold is in the ear, it indicates a loose or improperly fitted earmold → call the clinical audiologist!

# Listening Check on FM

- ▶ Cup the *HA Stethoscope* over the ear canal outlet of the  *earmold*, which should be securely attached to the hearing aid coupled to the *audio shoe* (“boot”) and *FM or digital universal receiver*
- ▶ Speak into the powered-up and unwound transmitter microphone
- ▶ Listen for amplified speech that is clear, consistent, free of unusual noises, and *louder* than environmental sounds



microphone

Cup  
*stethoscope*  
here



# Behavioural Check with ALD

- ▶ For a binaurally aided student, do this one side at a time!
- ▶ Ensure hearing aid works, receiver(s) properly connected, and transmitter turned ON
- ▶ From at least 4 metres away, speak into the transmitter's microphone and check for understanding, e.g. *“Can you point to the door?”*; *“Can you nod your head 3 times?”*
- ▶ Don't just ask “Can you hear me?”
- ▶ Recommended schedule
  - Listening Check: at least once per week
  - Behavioral Check: at least once per day, but preferably at every start-up (back from recess, lunch etc...)

# Battery

- ▶ \_ out of \_ HAs do not work (quote study)
- ▶ Low battery indicators
  - Student starts hearing regular beeps, e.g. 2 long beeps every 15 min
  - No sound from hearing aid
  - **Sound from HA alone but no sound when attached to ALD**
- ▶ Changing the battery
  - Open the battery door
  - Remove sticker from battery and wait at least 60 seconds (HA batteries, zinc-air are air-activated)
  - Note the polarity of the battery and insert into battery compartment as per HA manual instructions
- ▶ Recommended schedule (will vary depending on use)
  - Size 13 battery (most regular/traditional size BTE HA): every 6-14 days
  - Size 312 battery (“micro” HA, open-style HA, iSense micro, Roger Focus): every 3-10 days

# Microphone Cover/Protector

- ▶ Mic cover: Protects the HA mic from dirt and moisture
- ▶ Needs to be changed about once per month
- ▶ Replacement mic covers can be obtained from health unit audiologist
- ▶ With tool provided by HA manufacturer, remove old cover and put in new cover





# Other Accessories

- ▶ Wax guards



- ▶ Domes



- ▶ Earmold tubing



# Storage

- ▶ Hearing aids & ALDs need to be kept in a safe, dry place
- ▶ Hearing aids to be stored in *dri-aid kit* at student's home
- ▶ Receivers can be kept at school in a Ziploc style, resealable plastic storage bag half-filled with rice  
→ which acts as a desiccant

# Cleaning

- ▶ Earmold & HA need to be cleaned on a daily basis, hopefully by the student
- ▶ Visually inspect the earmold for any debris covering the sound outlet
- ▶ Brush off or wipe away any earwax or other debris with the manufacturer's supplied HA cleaning tools
- ▶ Wipe the HA with a dry cloth or tissue



# Troubleshooting – No Sound

- ▶ Change battery
- ▶ Is the sound outlet blocked by any debris? e.g. earwax
- ▶ If only no sound from ALD (HA working):
  - Check receiver and audio shoe connections
  - Check charge of transmitter battery
  - Press Sync (inspiro) or Connect (Roger inspiro)
  - Check inspiro microphone connection – *Is it fully plugged in? Ensure transmitter is OFF if removing the mic to reinsert.*

# Troubleshooting – Static & Buzzing

- ▶ Static from HA alone
  - Change battery
  - Replace microphone covers
  - Is it in the recommended user program if the HA has more than one program? (Telecoil (T) program always sounds like static.)
  - Is there a real static background noise in the environment that might have been exaggerated by the HA amplifier?  
E.g. projector, air conditioner

# Static & Buzzing from ALD

- ▶ Check audio shoe/ receiver connection
- ▶ Check the receiver and transmitter are on the same channel → if buzzing goes away when you press Sync then they were not on the same channel
- ▶ Is there another FM system in the vicinity on the same or a conflicting channel?
- ▶ Check the inspiro's microphone connection
- ▶ If the cause of buzzing is isolated to environmental interference, use *Find channel* feature on the inspiro to find a new, clean channel

# Troubleshooting - Intermittency

- ▶ Sound comes and goes
  - Without ALD (HA is intermittent)
    - Change HA battery
    - Check security of earhook
    - Check placement of earmold in ear
    - Change HA microphone covers
    - HA might have internal moisture → consult with HA audiologist

# Troubleshooting Intermittent ALDs

- ▶ Check audio shoe/ receiver connection
- ▶ Check inspiro microphone placement
  - Is it partially blocked by clothing?
- ▶ Check inspiro microphone connection
- ▶ Change HA battery
- ▶ Change inspiro microphone
  - Ensure transmitter OFF before changing
- ▶ Send loaned system in for technical service



# Encouraging Consistent Use of HA & ALDs

- ▶ Find out true reason for reluctance to use, and tackle that issue
  - Appearance
  - Anxiety towards asking teacher to wear equipment
  - Belief that “it doesn’t help”
  - Equipment malfunction
    - Unwanted noise
    - Physical discomfort
    - Unable to hear classmates

# Appearance

- ▶ When the student says. . .
  - *It's ugly*
  - *It's too big*
  - *It makes me different than others*
  - ***I just don't like it***
  - ***It doesn't work/ it buzzes***

## **Solutions?**

- For older students, consult with HA audiologist regarding a less conspicuous earmold style; e.g. skeleton, canal tip, dome & slim tube
- Is remote control an option so the student won't need to touch the HA to adjust the program/ volume or toggle out of FM?
- Assist them in understanding the social and academic benefits of hearing peers and teachers vs. misheard or missed conversations and instructions

# Anxiety - Towards asking teacher to wear transmitter

- ▶ When the student says. . .
  - *It doesn't help*
  - *I don't like to be different*
  - *I don't like it*
  - *It doesn't work*

## **Solutions?**

- Hold a meeting at the beginning of the school year with all the teachers to go over the transmitter wearing and removal procedures to minimize the amount of talking required by student when s/he hands transmitter to teacher
- Coach teacher and student on how to respond when the teacher is asked why s/he is wearing the transmitter
- If student is highly resistant, negotiate a commitment to use it in 2-3 'more academic/important' classes

# Belief - “It doesn’t help.”

- ▶ When the student says. . .
  - *I hear the teacher well enough*
  - *The teacher’s voice is loud*
  - *It buzzes*

## **Solutions?**

- Emphasize that consistent use of ALDs evens-out playing field with classmates so they can compete fairly; it doesn’t give them an advantage
- Use situational questionnaires like CHAPS (Children’s Auditory Performance Scale) which assess listening behaviours in various situations with & without ALDs

# Equipment malfunction

- ▶ Unwanted noise
  - In the case of interference, use “find channel” on Inspiro
  - How is the teacher wearing the microphone?
  - Is transmitter muted or turned off during teaching breaks?
- ▶ Physical discomfort
  - In the case of earmold discomfort, consult with health unit audiologist
- ▶ Unable to hear classmates
  - Is transmitter muted during teaching breaks?
  - For older students, consult with HA audiologist regarding adding a manual non-FM program that student can toggle to if needed (when receiver stays on and transmitter is turned on)