

Hawaii Lions
District 50

Procedures for Hearing Screenings

Otoscopy

Otoacoustic Emissions
(OAE)

Tympanometry

Audiometry

Site Preparations for Hearing Screenings

Ensure the following supplies are positioned at each test station:

Station	Gloves	Sanitizing Wipes	Fresh Probe Tip	Dry Paper Towel	Batteries/ Power	Pen
Otoscopy	Y	Y	-	-	AA X 2	Y
OAE	Y	Y	1/child	-	*	Y
Tympanometry	Y	Y	1/child	-	**	Y
Audiometry	Y	Y	-	Y	***	Y

Depending on the size of the screening room and existing furniture, re-arrange the furniture if necessary to allow testing according to the following sequence.

Station	Quantity
Otoscopy	1-2
OAE Test	Up to 6
Tympanometry	1
Audiometry	1

Otoscopy Procedures

Ensure otoscope light is bright—if not change the batteries.

Before inspecting each child

- Clean tip (specula) with alcohol swab/sanitizing wipe/swab
- Also put on a clean glove on the hand that touches the child.

To inspect the child's ears


- tug the ear lobe upward/backward—this helps to straighten the ear canal
- placed the otoscope in the ear canal.
- Look for signs of excessive ear wax, foreign objects, bleeding, fluid build-up

Record the results according to the legend below the data boxes and in the comment box on the consent/data form.

After each child is tested, the glove must be discarded or sanitizing wipes must be used.

Motion the child to one of the OAE stations

OAE Test Procedures

Connect the probe cord to the bottom of the instrument, then press the down  arrow to turn it on.

Ensure the instrument is operational (the screen will be as shown in the photo below).



Otoacoustic Emission (OAE) Instrument

Before testing each child

- attach a clean/fresh rubber tip to the probe of the instrument for use on both ears
- Clip the cable of the probe to the student's collar or lapel.
- Put on a clean glove on the hand that touches the child.

When using the instrument

- Insert the probe first into the right ear while ensuring the rubber tip has an airtight seal with the ear canal.
- Press the $\>$ button on the instrument for the right ear.

Shortly, a horizontal colored bar will appear to indicate that a "Probe Check" is in progress and:

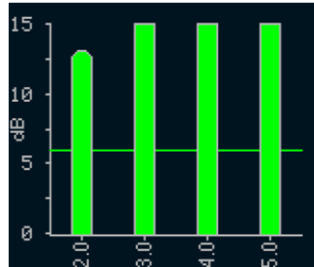
- Whether there is no seal between the probe and the ear canal—re-insert the probe to improve the seal.

- If unable to obtain a good seal, install a smaller or larger rubber tip on the probe, depending on the size of the ear canal opening.
- If other OAE parameters are proper and the seal with the ear canal is good, the horizontal bar will be green, and the test will automatically begin

(Repeat this on the left ear and press the < button)

This test will render one of two outcomes:

- For a healthy ear, there must be at least three vertical green bars on the screen, followed by the next screen that says "Pass." See photo below.



At least 3 green bars above the horizontal line indicate a "Pass."

- A possibly deficient ear will display two green bars or less and a showing of "Refer" on the following screen.

Record the results on the consent/data form whether pass (a slash) or fail (an X) for each ear.

Some children are unable to respond to or cooperate with testing. Circle UTT.

Write your assigned station number; if no number, then your initials

If OAE fails, test Tymp and Audio

*UTT: Unable to Test Basic Test: Oto & OAE

*UTT		Screener Initial or Station # <u>2</u>		Screener Initial or Station # _____		Comments:	
CNT	DNT	PNA	OAE	Tymp	Audio Pure Tone @25 dB HL		Since child passed OAE for both ears, no further testing is needed.
Ear	Oto				2K	4K	
Right			/				
Left			/				

Oto: W=Wax; FO=Foreign Object; T=Tube; also briefly describe unusual findings; /= Pass X = Fail

For OAE:
/ = Pass or X = Failure

(continued next page)

Motion the child to the next station:

- To the reward station if both ears passed.
- To tympanometry or the audio station if either ear did not pass.

After each child is tested, the probe tip must be changed.

- The probe tip will be collected and disinfected prior to the next screening project.
- Hand Sanitizer must be used after each student screened.

Tympanometry Procedures

Turn on and warm up the instrument for about 10 minutes. Ensure the instrument is operational (the screen will show ____??____ and a blinking green light on the rear of the probe will indicate that the instrument is ready for use.

Before testing each child

- attach a clean/fresh rubber tip to the probe of the instrument for use on both ears
- also put on a clean glove on the hand that touches the child.

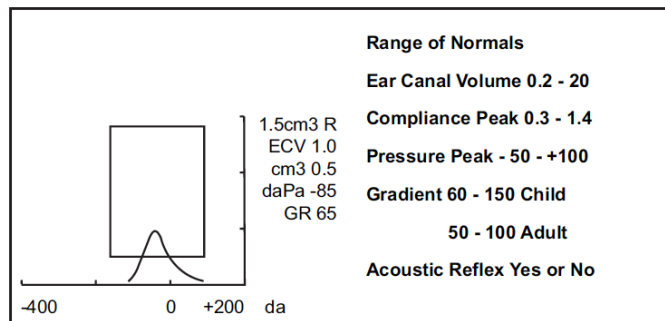
When using the instrument

- The instrument is ready for use when the green light on the back of the probe handle is blinking.
- Press the “R” (right ear) button, and insert the tip into the right ear while ensuring the rubber tip has an airtight seal with the ear canal.
- An orange light means there was no good airtight seal with the ear canal
 - Withdraw the probe, wait for the blinking green light and repeat the test.
 - When the probe is properly fitted, the test will automatically proceed, and the green light will remain steady on.
 - If an airtight seal still cannot be achieved, replace the tip with a smaller or larger probe tip
- Allow a few seconds for the instrument to assess the health of the ear
- The test is over when the steady green light goes off.

Repeat this procedure on the left ear.

This test will render a variety of outcomes:

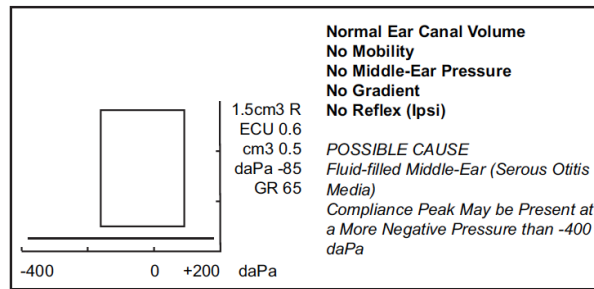
- For a healthy ear, there will be a peak within the rectangular box shown on the screen—see diagram below.



A peak within the box indicates a “Pass”

(Continued next page)

- A Fail/Refer pattern will typically display a flat line or no line at all within the box.



Example of abnormal ear health—mark as failure

Record the results on the consent/data form whether passed (a slash) or failed (an X) for each ear.

*UTT = Unable to Test Basic Test: Oto & OAE If OAE fails, test Tymp and Audio

*UTT			Screener Initial or Station # <u>2</u>		Screener Initial or Station # <u>1</u>		Comments:	
CNT	DNT	PNA	Oto	OAE	Tymp	Audio Pure Tone @25 dB HL		
						2K		4K
Right			X	X			**Attach Tymp printout with child's name to data sheet only for Tymp failure	
Left			/	/				

Oto: W=Wax; FO=Foreign Object; T=Tube; also briefly describe unusual findings; /= Pass X = Fail

If at least one ear fails OAE, perform Tymp and Audio tests on both ears, record results accordingly. For Tymp failure, print Tymp results.

Motion the child to the next station

- To an audiometer test station if not yet tested for audio.
- To the reward station if an audio test has been completed.

Note: Failing the tympanometry test is a significant finding. If there is any doubt on recognizing the failure, consult with the audiologist or the screening coordinator/supervisor.

After each child is tested, the probe tip must be changed.

- The probe tip will be collected and disinfected prior to the next screening project.
- Hand sanitizer must be applied after each student.

Audiometry Procedures

Prior to the start of screening, ensure the audiometer is operational—change the batteries if needed.

Test the instrument on yourself and ensure the following:

- The right/red phone plug is inserted in the right/red jack.
- Pulsing tones can be heard when the test button is depressed—if they are steady, switch to pulsing.
- The correct earphone is emitting pulses when the left/right switch is in the corresponding position.
- The pitch of the tones changes according to the position of the frequency control for both right and left earphones.
- The frequencies for this test are 2,000 and 4,000 Hertz.
- Place the child's chair in a position where he/she cannot see the audiometer nor the screener (facing away from the screener).

Disinfect the earphones with antiseptic wipes before placing the earphones on the child. Before testing each child, instruct the child to raise then lower either hand when the “beeps” are heard.

Procedure:

- While facing the child, place the earphones on the child with the right/red earphone on the right ear.
- Have the child move his/her hair away from the ears.
- The holes of the earphones must align with the ear canal of both ears with the headband resting on the child's head.
- The intensity or “loudness” dial must be set at 25dB for the entire test.
- Test first the right ear at 2,000 Hertz, then 4,000 Hertz
- Switch over to the left ear and test at 4,000 Hertz, then finally at 2,000 Hertz.

Record the results for each ear accordingly:

- A slash mark (pass) if the child raised his/her hand
- An X (failure) if the child did not raise his/her hand

(continued next page)

*UTT = Unable to Test Basic Test: Oto & OAE

Write your assigned station number; if no number, then your initials
If OAE fails, test Tymp and Audio

*UTT CNT DNT PNA			Screener Initial or Station # <u> 2 </u>	Screener Initial or Station # <u> 1 </u>	Comments:		
Ear	Oto	OAE	Tymp	Audio Pure Tone @25 dB HL			
				2K	4K		
Right		X		/	/		**Attach Tymp printout with child's name to data sheet only for Tymp failure
Left		/		/	/		

Oto: W=Wax; FO=Foreign Object; T=Tube; also briefly describe unusual findings; /= Pass X = Fail

If at least one ear fails OAE, perform Tymp and Audio tests on both ears, record results accordingly.

Motion the child to the next station

- To a tympanometry test station if not yet tested for tympanometry.
- To the reward station if a tympanometry test has been completed.

Note: Failing the audiometer test is a significant finding. If there is any doubt on recognizing the failure, consult with the audiologist or the screening coordinator/supervisor.

After each child is tested, the ear cushions of both earphones must be disinfected with antiseptic wipes, and wiped dry.

New Hearing Screening Protocol
Eff: 2022-2023

1 Otoscope at 2 students/minute or 10/5 min. or 20/10 min. or 30/15 min.

1 Recorder

1 Traffic Controller

2-7 OAE at 1 student every 2-3 minutes per OAE unit.

1-4 Traffic Controllers/ 1 Form Collection

1 Tympanometry to screen OAE failures

Replace probe tips after each student

Disinfect probe tips after screening completed

1-2 Audiometers to screen OAE failures (1 if <150 students)

1 Traffic Controller/Form Collection

Future Considerations: Provide reusable specula/probe tips and one-time use gloves for replacement after each student for Otoscopy, OAE and Tympanometry. If gloves are not replaced, hand sanitizer must be applied after each student screened.

7/30/2022

New Optional Hearing Screening Protocol--Effective 2018-2019

Stations	No. of Students per	Minute	Supported by	
One Otoscope Station Clean specula with alcohol swab for each student	2	1	1 Recorder	1 Traffic Controller
	10	5		
	20	10		
	30	15		
OAE Station # 1 replace probe tip for each student	1	1		1 Traffic Controller/ Forms Collector
	5	5		
	10	10		
	15	15		
OAE Station # 2 replace probe tip for each student	1	1		
	5	5		
	10	10		
	15	15		
One Tympanometry Station to screen OAE failures; replace probe tip for each student	2	1		1 Traffic Controller/ Forms Collector
	10	5		
	20	10		
	30	15		
Audiometer Station # 1 to screen OAE failures; disinfect ear cushions with antiseptic wipes for each student	1	1	Self-record	More than one Audiometer Station has not been needed with the new screening procedures.
	5	5		
	10	10		
	15	15		
Audiometer Station # 2 to screen OAE failures (optional);disinfect ear cushions with antiseptic wipes for each student	1	1	Self-record	
	5	5		
	10	10		
	15	15		

Note: Future Considerations: Provide reusable specula/probe tips and one-time use gloves for replacement after each student for Otoscopy, OAE and Tympanometry.