



Station 1: Check In

Procedure:

- ✓ Request athlete's data
- ✓ Questions regarding hearing: ask the athlete (not the coach) / no suggestive questions:
 - Do you think you have hearing loss?
 - Do you wear hearing aids? Which ear(s)?
If yes, do you have your hearing aid(s) with you?

After check-in:

- ✓ Guide the athlete with their screening form to the waiting area or a volunteer takes the athlete with them to Station 2: Otoscopy



Station 2: Otoscopy

Procedure:

- ✓ Wear gloves
- ✓ Perform otoscopy in both ears
- ✓ Use the same speculum for both ears unless the first ear shows visible infection or blood
- ✓ Dispose of plastic ear specula in the garbage bag
- ✓ Place metal ear specula in the designated box for cleaning and disinfection/sterilization

Note regarding results:

- ✓ Note any abnormalities of the pinna, ear canal, or eardrum. The Clinical Director will determine whether a referral is needed.

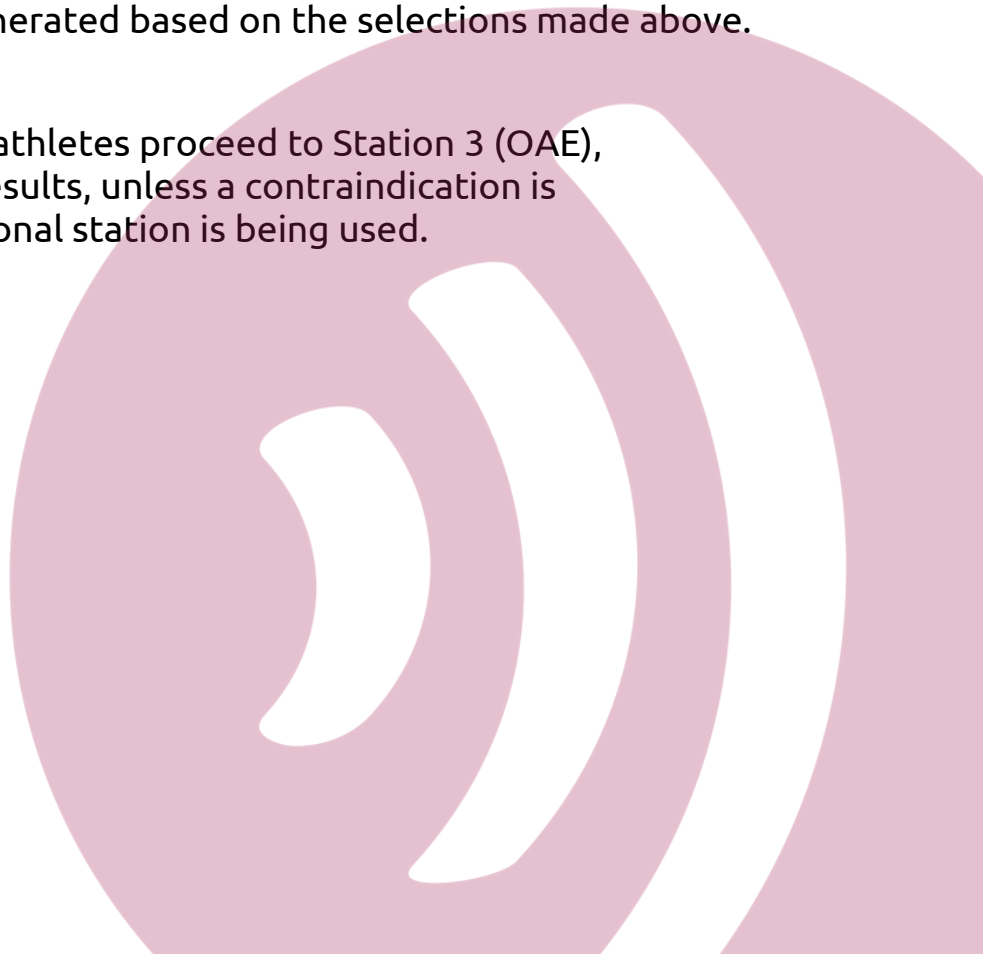
Remarks:

- If additional otoscopic findings are observed, please select all applicable options.
- Findings related to earwax or foreign bodies will be documented, with one of the following categories selected:
 - Minimally blocked: greater than 50% visibility
 - Partially blocked: approximately 50% visibility
 - Blocked: less than 50% visibility

Follow-up questions will be generated based on the selections made above.

Next step:

- ✓ After otoscopy, all athletes proceed to Station 3 (OAE), regardless of the results, unless a contraindication is present or the optional station is being used.



Optional Station: Removal of Earwax and/or Foreign Body

Procedure:

- Wear gloves. If earwax removal is needed, the Clinical Director or ENT may perform it after explaining the procedure and obtaining the athlete's consent.
- A second volunteer supports and reassures the athlete, documents the findings on the screening form, and makes sure every line is completed.
- Place used materials in labeled boxes for routine disinfection or sterilization.
- Direct athletes to Station 3 (OAE), or have a volunteer escort them, unless significant ear discharge or another contraindication is present.



explain and show



remove



check



Comments: Guidelines for cerumen management

- Consult the Clinical Director or ENT as needed and use the opportunity to learn.
- If earwax removal is needed, have the Clinical Director or ENT perform it.
- The Clinical Director should determine whether a referral is needed for reasons other than excessive earwax.
- If available, use a video otoscope to show the athlete or coach why a referral is recommended.
- Document all contraindications clearly on the screening form. Excessive earwax is not a contraindication, even if it completely blocks the ear canal.

Station 3: OAE Screening

Procedure:

- ✓ Wear gloves
- ✓ Perform OAE screening in both ears
- ✓ Use the same foam ear tip for both ears unless the first ear shows visible infection or blood
- ✓ Dispose of used foam ear tips in the garbage bag

Note regarding results:

PASS = PASS on screening unit

NO PASS = REFER on screening unit

UNABLE TO TEST = if OAE screening not possible + check one of the reasons why
= NO REFERRAL NEEDED

Next step:

- ✓ If the athlete passes in both ears, proceed to check out.
- ✓ If the athlete has a unilateral or bilateral refer/no-pass result, proceed to Stations 4 (tympanometry) and 5 (pure tone audiometry), unless a contraindication is present.



Station 4: Tympanometry Screening

Procedure:

- ✓ Wear gloves
- ✓ Perform tympanometry in both ears
- ✓ Use the same ear tip for both ears unless the first ear shows visible infection or blood
- ✓ Place used ear tips in the designated box for cleaning and disinfection

Note regarding results:

PASS = all values within the values of the normative data

NO PASS = type B-tympanogram or at least one of the numeric results outside of the normative data

UNABLE TO TEST = If tympanometry not possible + check one of the reasons why

= NO REFERRAL NEEDED

Normative data for tympanometry: ("rule of 2")

PASS = admittance between 0.20 and 2 mmho
middle ear pressure between +20 and -200daPa
ear canal volume between 0.60 and 2 ml

NO PASS =

type B (flat)

type C (under pressure) with pressure more positive than +20 daPa or more negative than - 200daPa

type As with value for admittance < 0.20 mmho

type Ad with value for admittance > 2 mmho ear canal volume <0.60 ml or > 2 ml

Comments:

- ✓ For any tympanometry no-pass result, record the tympanogram type so the Clinical Director can determine appropriate follow-up recommendations.
- ✓ A type D tympanogram with no other abnormal otoscopic findings is considered a pass.
- ✓ If tympanometry shows a unilateral or bilateral no-pass result but all other screening results are normal, the athlete is not referred for follow-up unless the Medical Doctor or Clinical Director decides otherwise.
- ✓ After tympanometry, all athletes proceed to Station 5 (Pure Tone Screening at 25 dB HL), regardless of the results.

Station 5: Pure Tone Screening at 25dB HL

Procedure:

- ✓ Test frequencies: 2000 and 4000Hz (ear by ear)
- ✓ Intensity level: 25dBHL = "pass"
- ✓ Interrupted (pulsed) tones
- ✓ Screening procedure: starting level = 50dBHL → 35dBHL (if response at 50dBHL) → 25dBHL.
- ✓ Requested response = raise hand; play audiometry if needed
- ✓ Short training and/or conditioning if needed
- ✓ Disinfect headphones before using with new athlete

Note regarding results:

PASS = reliable response at 25dBHL

→ check-out if 4x "pass" (both frequencies in both ears)

NO PASS = no (reliable) response at 25dBHL in either ear at either frequency. If screening is not possible, check one of the reasons why

Next step:

- ✓ If the athlete passes all 4 screenings, proceed to check-out.
- ✓ If the athlete does not pass at least 1 of the 4 frequencies, proceed to Station 6 (pure tone threshold testing).



Station 6: Pure Tone Threshold Testing

Procedure:

- ✓ Test frequencies air conduction: 250, 500, 1000, 2000, 3000, 4000 and 6000Hz
- ✓ Test frequencies bone conduction: 250, 500, 1000, 2000, 3000Hz, 4000Hz, 6000Hz
- ✓ Mask if necessary and possible
- ✓ Determine hearing threshold, ear by ear, also for ear with “pass” at pure tone screening

Note regarding results:

Record responses, indicate if NR was obtained, note any masking used, and assess test result reliability.

Comments:

- ✓ Test as many thresholds as possible for air and bone conduction. If attention or reliability decreases, try to test at least 1 threshold for bone conduction (1000Hz).
- ✓ Ask for assistance if needed.



Station 7: Check Out

Goal:

- ✓ Verify that all sections of the screening form are completed correctly before data entry (quality control).
- ✓ Review screening results to determine follow-up care recommendations.
- ✓ Make individualized follow-up care recommendations as needed.
- ✓ Provide general guidance on ear and hearing screening.
- ✓ Explain screening results, recommendations, and general advice to the athlete and, as appropriate, their coach, carer, or family.
- ✓ Complete the screening form and any referrals.

Procedure:

Explain the screening results and any recommended follow-up care to each athlete and provide guidance on routine ear and hearing checks. Document all details on the HH recommendation form and give a copy to the athlete.

About half of athletes will receive follow-up recommendations for possible ear and/or hearing concerns. Appropriate recommendations depend on the athlete completing all required screening stations and the screening form being filled out accurately.

- **Step 1 = every screener:**
 - ✓ Confirm that the screening form is completed correctly for your station.
- **Step 2 = Healthy Hearing Clinical Director**
 - ✓ Review the screening form before giving recommendations or entering data.
 - ✓ Confirm that the athlete completed all required stations.
 - ✓ Confirm that the screening form is complete. If any results are unclear, ask the volunteer who performed the screening (listed on the form) to verify or complete them.
 - ✓ Determine whether swim plugs or hearing aid repair and maintenance are needed.
 - ✓ Make individualized follow-up recommendations based on the screening results.

- ✓ Complete the final sections of the screening form: “extra services provided at the event” and “recommended follow-up care.”
- ✓ Complete the recommendation form.
- ✓ Explain the screening results and individualized recommendations to the athlete and, as appropriate, their coach, carer, or family.
- ✓ Explain the importance of regular ear and hearing screening to the athlete.
- ✓ Give the recommendation form to the athlete.
- ✓ If available, give the athlete a thank-you gift for attending the screening.
- ✓ Keep the original HH screening form at the check-out desk.

Recommendation forms:

Whenever possible, each athlete receives a recommendation form in their own language. The form summarizes the screening tests completed, any individualized follow-up recommendations, and general guidance on routine ear and hearing screening. Original screening forms must remain at check-out for data entry.

There are 2 types of recommendation forms:

- ✓ **PASS SCREENING FORM:** For athletes with clear ears and passing hearing screening results who do not need follow-up recommendations.
- ✓ **NO PASS SCREENING FORM:** For athletes with possible ear and/or hearing concerns who need follow-up recommendations.



Optional Station: Hearing Aid Maintenance and Repair

The program may provide basic hearing aid maintenance and repair services only.

Goal: Check and perform basic maintenance or minor repairs on hearing aids.

Materials: The program should have supplies for basic maintenance and minor repairs for common hearing aid models, such as a listening tube, cleaning wipes and tools, replacement earmold tubing, scissors, glue, threading tools, different dome sizes, hearing aid hooks, microphone covers, and spare batteries in sizes 13, 312, and 675.

Procedure: *If the program offers hearing aid maintenance and repair*

At check-in or during screening, a volunteer notifies a clinical volunteer if an athlete has hearing aid(s). The clinical volunteer then asks the athlete and, if possible, the coach or carer for permission to check the hearing aid(s) at the end of the screening.

A clinical volunteer will inspect the hearing aid(s) and complete any basic maintenance needed at the optional station before check-out or education.

- ✓ Record the athlete's name and identification number.
- ✓ Clean the earmolds and hearing aids.
- ✓ Inspect the hearing aid visually and with a listening device. Replace dead batteries, tubing, or other parts if needed and available.
- ✓ Explain to the athlete and his coach/family what you have done and what you advise.

