

UTAH EHDI NICU AND HIGH-RISK INFANT SCREENING, DIAGNOSTIC & FOLLOW-UP RECOMMENDED PROTOCOL

QUICK REFERENCE

If a child has **CONFIRMED hearing loss**, refer to 1) Early Intervention; 2) ENT; 3) Ophthalmology; 4) Parent Consultants; 5) Continued audiological care; 6) Genetics; 7) Other providers, as needed.

NS = normal hearing screening; IP = Inpatient; OP = Outpatient; AC = air conduction; BC = bone-conduction; AABR = automated or screening ABR completed by audiologists using conventional ABR technology as defined above

Risk Factor	Screening Procedure	Hearing Evaluation	Follow-Up Recommendations
Congenital Cytomegalovirus	None / complete diagnostic at IP	IP Diagnostic Eval	If Normal, F/U every 3 months until age 3; every 6 months until age 6; annually thereafter, sooner if concerns.
Zika Virus Mother Zika (+) baby (-)	AABR or OAE		If NS, F/U as concerns arise - medical home monitoring
Mother Zika (+) baby (+) WITH clinical findings	AABR	OP Diagnostic < 3 months age	If normal, F/U as concerns arise - medical home monitoring
Mother Zika (+) baby (+) NO clinical findings	AABR	OP Diagnostic < 3 months age	If normal, F/U as concerns arise - medical home monitoring
ECMO	None / complete diagnostic at IP	IP Diagnostic Eval	F/U at 3 months of age (diagnostic ABR); then behavioral testing every 6 months until 6 years
Meningitis (bacterial and viral)	AABR (+ OAE, if possible)	< 3 months of age	F/U every 12 months until school age for behavioral testing
Craniofacial anomalies:			

Microtia / Cleft palate	AABR + OAE		If NS, F/U at 9 months for behavioral testing
Ear tags, pits	AABR or OAE		If NS, F/U as concerns arise - medical home monitoring
Atresia well-baby	None - Schedule OP diagnostic	Dx AC test for non-affected ear and BC for atretic ear	Make "Confirmed Hearing Loss" referrals
Atresia NICU	None - Complete IP diagnostic		If no medical or amplification management recommended, follow-up with behavioral testing at 9 months
Ototoxicity:			
Aminoglycosides >5 days	AABR + OAE		If NS, F/U at 9 months for behavioral (OAEs at a minimum)
Syndromes:			
Syndromes assoc w/HL or Progressive / late-onset HL (Appendix 1)	AABR + OAE	IP diagnostic at the discretion of Aud	If normal diagnostic, F/U @ the discretion of the audiologist or < 9 months of age for behavioral testing
Trisomy 21	AABR + OAE, at minimum	IP diagnostic when indicated	If normal, F/U @ 6 months (screen) and 12 months for behavioral testing. F/U annually, if normal hearing established
Neurodegenerative disorders such as Hunter Syndrome, sensory motor neuropathies	None - IP Diagnostic	IP Diagnostic Eval	F/U at audiologist's discretion
Neurologic insults:			
Hydrocephalus / Shunts	AABR + OAE		If NS, F/U at 9 months for behavioral
Gestational Age / Very Low Birthweight: <32 weeks <1500 grams	AABR + OAE	If possible, complete diagnostic before discharge	If NS, F/U rescreen at 6 months (OAE at minimum)

Hypoxic Ischemic Encephalopathy (HIE) / cooling	AABR + OAE		If NS, F/U rescreen at 6 months
Other Risk Factors:			
Caregiver Concern	AABR or OAE (at discretion of Aud)	Complete Diagnostic as soon as possible	If normal, repeat as concerns arise
Family History	AABR + OAE	At discretion of Aud	If NS, F/U at 9 months for behavioral
NICU admission†	AABR		F/U < 5 days monitor speech language hearing
NICU of >5 days, no risk factors	AABR (+ OAE, if possible)		F/U > 5 days F/U at 9 months or per risk factor recommendation

†Per the 2019 JCIH Position Statement, if a baby is discharged home directly from a NICU as opposed to being discharged from the well-baby nursery, they should have an AABR. The '5-day rule' no longer applies.

A comprehensive diagnostic hearing evaluation should include:

1. Auditory Brainstem Response
 - a. Suprathreshold click
 - b. Frequency-specific (500, 1k, 2k, 4k) - complete as much as possible
 - c. Bone-conduction, as indicated
2. DPOAEs and/or TEOAEs (to assess outer hair cell function)
3. Tympanometry (to determine middle ear function), as indicated
 - a. 1000 Hz (< 9 months adjusted age; 2019 JCIH Position Statement)
 - b. 226 Hz (> 9 months adjusted age)
4. Acoustic reflexes (helpful when ANSD is suspected, as they are expected to be absent [2019 JCIH]), as indicated
 - a. 1000 Hz (< 9 months adjusted age)
 - b. 226 Hz (> 9 months adjusted age)