BILL DANIELS CENTER FOR CHILDREN'S HEARING
CHILDREN'S HOSPITAL COLORADO

Auditory Neuropathy Spectrum Disorder
Team Management Protocol for children who demonstrate variable auditory responses/difficult to test

Age	Audiological Diagnostics	Audiological Intervention	Speech-Language Recommendations	Family Consultant Or Social Worker	Additional Recommendations
0-2 months	Otoscopy ABR with CM recording protocol OAEs 1k Hz immittance, acoustic reflexes	Parent counseling Parent education	Parent counseling Visual language enhancement techniques Observation of communication	Parent counseling Resources Emotional support Home intervention services	Pediatric/developmental Otologic Medical genetics Ophthalmologic Neurologic
3-6 months	Otoscopy ABR with CM recording protocol; OAEs 1k Hz immittance, acoustic reflexes BOA; startle response Parent auditory questionnaire	Same as above	Counseling to provide language rich environment including auditory and visual communication systems	Connect family to additional community based resources • Parent organizations	Other as needed
6-9 months	Otoscopy Behavioral assessment (BOA, VRA) attempt ear specific, frequency specific warbled tones; speech awareness Immittance, acoustic reflexes OAEs Parent auditory questionnaire	Same as above	Formal communication evaluation including assessment of receptive, expressive, and pragmatic language; play; speech sound production Recommendations based on results	Websites specific to AN Ensure family is receiving visual communication support in the home	Other as needed
9-12 months	Otoscopy Behavioral assessment (BOA, VRA); attempt ear specific, frequency specific warbled tones; speech awareness Immittance, acoustic reflexes OAEs Parent auditory questionnaire	Same as above **OR** If conditioned behavioral measures demonstrate reliable elevated thresholds, fit with amplification per clinic protocol (see special considerations, page 2).	Same as above	Same as above	Optional ABR evaluation under sedation or anesthesia if: unable to obtain behavioral auditory responses; Child's auditory responses change; Per parent request

Auditory Neuropathy Spectrum Disorder

Team Management Protocol for children who demonstrate variable auditory responses/difficult to test

Age	Audiological Diagnostics	Audiological Intervention	Speech-Language Recommendations	Family Consultant or Social Worker	Additional Recommendations
18 months	Otoscopy Behavioral assessment (BOA, VRA, CPA);attempt ear specific, frequency specific warbled tones; speech awareness and speech recognition in quiet & noise Immittance, acoustic reflexes OAEs Parent auditory questionnaire	Monitor 6 months **OR** If conditioned behavioral measures demonstrate reliable elevated thresholds, fit with amplification per clinic protocol (see special considerations).	Formal communication evaluation including assessment of receptive, expressive, and pragmatic language; play; speech sound production Recommendations based on results	Begin support for transition to preschool services	Other as needed
24 months	Same as above	Same as above	Informal re-evaluation Monitor vocabulary development	Same as above AND Encourage exposure to toddler groups, story time, activities outside the home	Other as needed
3 - 6 years	Same as above	Same as above	Yearly evaluation including assessment of language; speech sound production	Individual Education Plan (I.E.P), as appropriate Transition to preschool	Other as needed
School age	Same as above	Same as above	Collaboration with educational speech-language pathologist	Self advocacy strategies for the parents and child I.E.P as appropriate	Other as needed

Special considerations: Once frequency specific/ear specific audiometric "thresholds" at elevated levels are obtained by conditioned behavioral measures, and remain stable, fit with hearing aids using pediatric fitting strategies and fit to "audiogram." If hearing levels are variable and/or fluctuate, consider multiple HA programs. Monitor and adjust hearing aid fitting based upon hearing thresholds, RECD measurements, parental report, and demonstration of benefit. Add FM as indicated; Parent documentation and input critical for management.

If child does not demonstrate benefit from amplification and speech-language skill development is not commensurate with his or her potential, or if child is not making expected progress, then cochlear implantation may be considered **REGARDLESS** of audiometric thresholds. CI workup should include surgeon consultation, imaging of cochlear nerve, CT scan, device counseling, team evaluation per CI Center protocol.