



How to Differentiate Autism Spectrum Disorder from Hearing Loss

Vicki Simonsmeier, MS, SLP/Aud, URLEND Faculty

Sarah Winter, MD, URLEND Director

Utah Regional Leadership Education in Neurodevelopmental Disabilities

Children who are Deaf or Hard of Hearing (DHH) with ASD

- Prevalence estimates of co-morbid diagnoses of ASD and hearing loss (HL) range from 4 – 20% of the ASD population.
 - CDC, 1:110
 - Gallaudet Research Institute, 1:53
 - Prevalence of profound HL in children with ASD is 10 times higher than general public (Rosenhall, Nordin, Sandström, Ahlsén & Gillberg, 1999).
- Larger percentage of deaf children with profound HL and ASD than any other degree of hearing loss.
- Children who are DHH are frequently diagnosed with ASD much later than their ASD peers with normal hearing.



Differential Diagnosis

- Initial symptoms of ASD are subtle and can be confused with symptoms of hearing loss.
 - Average hearing loss diagnosis
 - 2-3 months of age
 - Average ASD diagnosis
 - 3-4 years of age
- Audiology might be one of the first referrals made when a child is not communicating due to HL or ASD.
- Determining the presences of HL *and* ASD can be challenging.
- Interdisciplinary team members - parents/family, teachers, audiologists, SLP, OT, PT, Medical, Psychologist, audiologist.
- Determine skill and abilities in multiple contexts/environments.

Children with HL

- ✓ Delayed speech and language development
- ✓ May or may not babble
- ✓ Visually alert (if no associated vision loss)
- ✓ Will establish joint attention
- ✓ Engages in reciprocal play activities when parent is within sight
- ✓ Responds to or shows empathy to others' emotions

Children with ASD

- ✓ Delayed speech and language development
- ✓ Often does not babble
- ✓ Inconsistent visual alertness and engagement
- ✓ Rarely establishes joint attention
- ✓ Inconsistent or non-existent reciprocal play
- ✓ Inconsistent show of empathy

Case Study

- Child failed newborn hearing screening in hospital but passed follow up screening.
- At 18 months, child had undergone multiple visits to audiology and ENT due to chronic ear infections. Parents also reported to the audiologist that child had poor social behavior, lack of eye contact, lack of parallel play and decreased interactions with other children. Child was fit with hearing aids.
 - *Consider administration of an age appropriate ASD screening tool in the audiology office).*
- Parents also reported to the audiologist that the child was starting to talk at 12 months of age including phrases (“more milk please”) and then speech and language decreased.
 - *Communication can decrease secondary to ASD as well as onset of hearing loss.*
- Child was evaluated at 3.7 years of age, and was diagnosed with moderate to severe hearing impairment, “perhaps an ASD” and “suspicion of global developmental delay”.
 - *Wait and see does not benefit the child with HL, ASD nor global delays. Early evaluation can lead to early intervention.*
- At 3.10 years child was evaluated and given a provisional PDD-NOS diagnosis, but no recommendation for follow-up testing.
- At 4.10 years preschool teachers were concerned about child’s poor socialization, limited play skills and off task behaviors and poor progress towards SLP goals.
 - *Child underwent adaptive testing and it was determined he met criteria for developmental delay. No mention of hearing loss nor ASD was included in the report.*
- At 5.2 years of age, child underwent an interdisciplinary evaluation.
 - *Audiologist confirmed good hearing levels with hearing aids. Child was seen for multiple evaluations. Diagnosis of ASD was made, along with decreased speech-language, sensory processing difficulties and cognitive delay.*
 - *Family was provided with recommendations for public and private schools that could provide comprehensive services.*
 - *Parents were able to pull all the pieces diagnostic pieces together in order to secure appropriate interventions for child.*

