Knowing When to Refer: How Audiologists Can Help with Early Screening for Autism Spectrum Disorder

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Objectives

1. State why the **audiologist** is in a unique position to aid in early identification of Autism Spectrum Disorder (ASD)

2. Identify importance of **early screening** for ASD in young children referred for hearing evaluations due to speech-language delay

3. Introduce **online learning module** to support audiologists in making appropriate referrals
Autism Spectrum Disorder (ASD)

**DSM IV-TR**
- PDD-NOS
- Autistic Disorder
- Asperger’s

**DSM 5**
- Autism Spectrum Disorder (ASD)
DSM IV–TR vs. DSM 5

Two Symptom Categories:

- Social-Reciprocity
- Restricted-Repetitive Behaviors
- Language
Early identification of ASD

- Reliable diagnosis of ASD ~24 months of age (Baron-Cohen, Allen, & Gillberg, 1992; Lord et al., 2006; Moore & Goodson, 2003)

- Growing evidence that early signs of ASD are observable within the first year of life (Zweigenbaum et al., 2013)

Two domains of early high-risk behaviors:
1. Impairments in social communication
2. Repetitive behaviors involving the body or various objects

- Important to understand “red flags” for ASD
## Red Flags: Social/Communication

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Age Specifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>No big smiles or other warm/joyful expressions</td>
<td>6 months</td>
</tr>
<tr>
<td>No back-and-forth sharing of sounds, smiles or other facial expressions</td>
<td>9 months</td>
</tr>
<tr>
<td>No babbling</td>
<td>12 months</td>
</tr>
<tr>
<td>No back-and-forth gestures (e.g., showing, reaching or waving)</td>
<td>12 months</td>
</tr>
<tr>
<td>No response to their name</td>
<td>12 months</td>
</tr>
<tr>
<td>Does not point at objects to show interest</td>
<td>14 months</td>
</tr>
<tr>
<td>No words</td>
<td>16 months</td>
</tr>
</tbody>
</table>
## Red Flags: Social/Communication

<table>
<thead>
<tr>
<th>Behavior</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Does not play &quot;pretend&quot; games (pretend to &quot;feed&quot; a doll)</td>
<td>18 months</td>
</tr>
<tr>
<td>No meaningful, two-word phrases (not including imitating or repeating)</td>
<td>24 months</td>
</tr>
<tr>
<td>Any loss of previous skills (i.e., regression)</td>
<td>Any Age</td>
</tr>
<tr>
<td>Trouble understanding people's feelings or talking about own feelings</td>
<td>Unspecified</td>
</tr>
<tr>
<td>Repeats words or phrases over and over (echolalia)</td>
<td>Unspecified</td>
</tr>
<tr>
<td>Gives unrelated answers to questions</td>
<td>Unspecified</td>
</tr>
</tbody>
</table>
## Red Flags: Restrictive Repetitive Behaviors

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Age Specifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gets upset by minor changes (e.g., changes in routine, environment)</td>
<td>Unspecified</td>
</tr>
<tr>
<td>Has obsessive interests</td>
<td>Unspecified</td>
</tr>
<tr>
<td>Flaps hands, rocks body, or spins in circles</td>
<td>Unspecified</td>
</tr>
<tr>
<td>Unusual reactions to the way things sound, smell, taste, look, or feel</td>
<td>Unspecified</td>
</tr>
</tbody>
</table>
Screening for ASD

• Combined efforts to train healthcare workers in **early signs** of ASD + use of a **screening measure**
  • More streamlined referral for diagnostic testing
  • Brought the age of ASD diagnosis down from 83 to 64 months (Oosterling et al., 2010)

• Still significant room for improvement in the **implementation** of such guidelines and the practice of routine screening for ASD
Why is screening for ASD worthwhile?

• About 4% of children with HL have an ASD (Jure, Rapin, & Tuchman, 1991)

• Median age of diagnosis
  • Hearing loss: 14 months (Meinzen-Derr, Wiley, Bishop, Manning-Courtney, Choo, & Murray, 2014)
  • Dual diagnosis: 66.5 months (Meinzen-Derr, et al., 2014)

• So, in the dually diagnosed population, the hearing loss is diagnosed first
Why audiologists?

“Because children with ASD are often initially suspected of having a hearing problem, audiologists are in a critical role to spot possible signs of ASD in children whose hearing they are testing and to make appropriate referrals for screening and diagnosis of ASD” (ASHA, 2006)

Why not us?
Why audiologists?

• Limited success with pediatricians
  • Universal screening success

• We are the early point of referral for speech-language delays (Harlor & Bower, 2009).
  • Common with ASD

• Audiology clinic may actually be the first referral for a child with ASD (Tas et al., 2007)
  • Diagnosis of hearing loss tends to occur first (Myck-Wayne et al., 2013)
Why screening is worth your time

- Delayed diagnosis of ASD
  - could lead to a missed window of opportunity for instituting ASD specific interventions in addition to interventions being provided for hearing loss (Meinzen-Derr et al., 2014).
- Early intervention
  - “creates opportunities for children with ASD to benefit more fully from intervention” (Zweigenbaum, Bryson, & Garon, 2013).
  - can lead to profound reductions in ASD symptomatology due to greater brain plasticity during periods of early development (Dawson, 2008).
Why screening is worth your time

• Reliability of behavioral thresholds and test-retest is often poor (Beers, McBoyle, Kakande, Dar Santos, & Kozak, 2014)
  • may overestimate behavioral thresholds
  • may miss a mild or notched hearing loss
  • may demonstrate increased perception of loudness and hyper-responsiveness to auditory stimuli

• Hearing aids and cochlear implantation are not contraindicated for patients with both ASD and hearing loss
  • special habilitation efforts may be required
Introduction to the Module

• Demographics of ASD and hearing loss
• Discussion of known genetic factors of ASD and HL
• Potential behavioral observations characteristic of ASD for audiologists to be aware of during their assessments
Introduction to the Module

• A list of additional questions that identify ASD red flags to add to case history forms

• Possible resources for audiologists and parents to use at the time of visit

• Suggestions for modifying the hearing evaluation protocol to accommodate ASD-associated behaviors

• Information to assist in making appropriate and sensitive referrals
Making Sensitive Referrals

Challenges to making the referral

• Is a referral warranted?
• How will the parents react?
• Are the parents ready?
• Who do we refer to?
Making Sensitive Referrals

**Time for discussion**
- We need time to listen and empathize

**Review parental concerns**
- Parents’ experience
- Atypical behaviors for developmental stage
- Referral source
Making Sensitive Referrals

Validate parent concerns with professional observations
- *I* statement vs. *You* statement
- Typical vs. Normal
- Support vs. Help

Transform parents’ language
- Stay positive
Causes of Autism

Genetic diagnoses can be made in only 15-20% of cases

Why should a referral to genetics be made?

• Establish a diagnosis
  • natural history/prognostic information
  • recurrence risks
  • appropriate medical management
  • opportunity for prenatal diagnosis
• Diagnosis not established
  • appropriate medical management
  • empiric recurrence risks
When should a referral to genetics be made?

- Suspicious for a syndrome associated with ASD
  - dysmorphic facial features/microcephaly/macrocephaly/intellectual disability/epilepsy/birth defects/certain stereotypic behaviors
- Multiple affected family members
  - more common to see multiple affected family members in non-syndromic ASD vs. syndromic ASD
- Family is interested
How to find a pediatric genetics provider (www.genetests.org)
Glimpse of genetics related content in the module

• Introduction to genetics
  • DNA, genes, chromosomes, inheritance patterns
  • Genetic testing methods (FISH, microarray, etc.)

• Causes of autism
  • Role of complex genetics & environmental factors
  • Syndromic versus non-syndromic ASD
    • List of known genetic changes/conditions associated with ASD
Glimpse of genetics related content in the module (cont.)

- List of genetic conditions associated with ASD and hearing loss
- List of environmental factors causative/suspected to be causative
- Why refer to genetics?
- When should a referral to genetics be made?
- Who provides genetics services
  - Role of geneticist & genetic counselor
- How to find a genetics provider in your area
References


