Screening Tools for Autism in the Primary Care Setting

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Disclosure Information

- I have no relevant financial relationships with the manufacturer(s) of any commercial product(s) and/or provider of commercial services discussed in this CME activity.
- I do not intend to discuss commercial products or services and unapproved/investigative uses of a commercial product/device in my presentation.

Learning Objectives

- Report the components of diagnostic and etiologic evaluation of children with ASD.
Autism Spectrum Disorder (ASD): Introduction

- A neurodevelopmental disorder characterized by social and communication impairment and restricted and repetitive behaviors.
- ASD is common and reported prevalence is increasing.
  - 1 in 36 children 8 years of age meet criteria for ASD.
  - 1 in 64 children 4 years of age meet criteria for ASD.
  - More than 5 million Americans in the United States have ASD.
- All pediatric clinicians can expect to have children and youth with ASD in their practice.

Diagnosis of Autism

- Out of 1,300 families surveyed:
  - The average age of diagnosis of autism was 6 years of age, despite the fact that most parents felt something was wrong by 18 months of age.
  - Less than 10% of children were diagnosed at initial presentation.
  - 10% were either told to return if their worries persisted, or that their child “would grow out of it.”
  - The rest were referred to another professional (at a mean age of 40 months); of which:
    - 40% were given a formal diagnosis
    - 25% were told “not to worry”
    - 25% were referred to a third or fourth professional.
Screening and Surveillance

- Developmental screening
  - Formal process that uses standardized tests at discrete ages
- Developmental surveillance
  - An ongoing, flexible, longitudinal, and cumulative process in which health care professionals identify children who may have developmental and behavioral problems

Screening and Surveillance

- General developmental screening should occur at the 9, 18, and 30 month well child visits.
- ASD specific screening should occur at the 18 and 24 month well child visits.
- Developmental surveillance should occur at every well child visit.

Some Issues to Consider in Selecting a Tool

- Psychometrics: sensitivity/specificity should be at least 70–80%
- Time/staffing required
- Cost and reimbursement
- Parent–completed versus directly administered
- Cultural and linguistic sensitivity
Screening Tool Comparison

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Description</th>
<th>Cost</th>
<th>Admin time</th>
<th>Psychometric</th>
<th>Literacy Language issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-CHAT-R</td>
<td>Use 16-48 months 23 items</td>
<td>Free (in public domain)</td>
<td>5-10 minutes</td>
<td>Parent</td>
<td>Sens.: .85-.87 (mod) Spec.: .93-.99 (high)</td>
</tr>
<tr>
<td>PDDST-II PSC--Use 18-48 months 22 items</td>
<td>$148/kit $42/25 response forms</td>
<td>10-15 minutes</td>
<td>Parent</td>
<td>Sens.: .85-.92 (mod-high) Spec.: .71-.91 (mod-high)</td>
<td>? Reading level English</td>
</tr>
</tbody>
</table>

Screening and Surveillance

- The AAP does not support or endorse the use of any developmental screening tool over another.
  - Examples are provided in the ASD clinical report and AAP STAR Center website.
- Results of screening tests are not diagnostic.
  - Children identified at risk through screening and surveillance should have a diagnostic evaluation.
- Early identification and intervention can and does influence outcomes.
  - Children should be referred for developmental intervention as soon as the need becomes apparent and not wait for ASD diagnostic evaluation to take place.

Figure Legend:
Algorithm for screening a patient without identified risks for developmental problems at a health supervision visit. Numbers and headings refer to steps in the algorithm. *a* Identify problems not previously recognized during earlier screenings; intervention should specifically address these identified areas of concern.

American Academy of Pediatrics

From: Promoting Optimal Development: Identifying Infants and Young Children With Developmental Disorders Through Developmental Surveillance and Screening

Barriers to Early Identification of ASD

- Milder symptoms
- Average range intelligence
- Boys identified more frequently than girls (4:1)
- Co-existing conditions like attention-deficit/hyperactivity disorder (ADHD)
- Race, ethnicity, socioeconomic factors
- Culturally sensitive screening measures

Case reports

- While seeing patients at a community clinic, you meet with Matthew...
  - 18-month-old for WCC
  - Very few words—parents think because he is bilingual
- Your next patient is Claudia
  - 2-year-old who just moved into town
  - Very few words—stares at the door

Case reports

- What stands out to you about Matthew and Claudia?
- Matthew’s and Claudia’s caregivers complete the M-CHAT-R questionnaire
Case Reports

- Please score Matthew and/or Claudia's M-CHAT forms
Scoring of MCHAT-R

- For most items, YES is a typical response, and NO is an at-risk response. HOWEVER, items 2, 5, and 12 are reverse scored, meaning that NO is a typical response and YES is an at-risk response. To score the M-CHAT-R, add up the number of at-risk responses, and follow the algorithm below:

**Total Score 0-2:** The score is LOW risk. No Follow-Up needed. Child has screened negative. Rescreen at 24 months if the child is younger than 2 years old (or after 3 months has elapsed), and refer as needed if developmental surveillance or other tools suggest risk for ASD.

**Total Score 3-7:** The score is MODERATE risk. Administer the M-CHAT-R Follow-Up items that correspond to the at-risk responses. If 2 or more items continue to be at-risk, refer the child immediately for (a) early intervention and (b) diagnostic evaluation.

**Total Score: 8-20:** The score is HIGH risk. It is not necessary to complete the M-CHAT-R Follow-Up at this time. Bypass Follow-Up, and refer immediately for (a) early intervention and (b) diagnostic evaluation.

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M-CHAT-R Follow-Ups Scoring Sheet

Please note: Yes/No has been replaced with Pass/Fail.

1. If you point at something across the room, does your child look at it? Pass/Fail

(FOR EXAMPLE, if you point at a toy or an animal, does your child look at the toy or animal?)

2. Have you ever wondered if your child might be deaf? Pass/Fail

3. Does your child play pretend or make believe? Pass/Fail

(FOR EXAMPLE, pretend to drink from an empty cup, pretend to talk on a phone, or pretend to feed a doll or stuffed animal)

4. Does your child like climbing on things? Pass/Fail

(FOR EXAMPLE, furniture, playground equipment, or stairs)

5. Does your child make unusual finger movements near his or her eyes? Pass/Fail

(FOR EXAMPLE, does your child wiggle his or her fingers close to his or her eyes?)

6. Does your child point with one finger to ask for something or to get help? Pass/Fail

(FOR EXAMPLE, pointing to a snack or toy that is out of reach)

7. Does your child point with one finger to show you something interesting? Pass/Fail

(FOR EXAMPLE, pointing to an airplane in the sky or a big truck in the road)

8. Is your child interested in other children? Pass/Fail

(FOR EXAMPLE, does your child watch other children, smile at them, or go to them?)

9. Does your child show you things by bringing them to you or holding them up for you to see—not to get help, but just to share? Pass/Fail

(FOR EXAMPLE, showing you a flower, a stuffed animal, or a toy truck)

10. Does your child respond when you call his or her name? Pass/Fail

(FOR EXAMPLE, does he or she look up, talk or babble, or stop what he or she is doing when you call his or her name?)

11. When you smile at your child, does he or she smile back at you? Pass/Fail

12. Does your child get upset by everyday noises? Pass/Fail

(FOR EXAMPLE, a vacuum cleaner or loud music)

13. Does your child walk? Pass/Fail

14. Does your child look you in the eye when you are talking to him or her, playing with him or her, or dressing him or her? Pass/Fail

15. Does your child try to copy what you do? Pass/Fail

(FOR EXAMPLE, wave bye-bye, clap, or make a funny noise when you do)

16. If you turn your head to look at something, does your child look around to see what you are looking at? Pass/Fail

17. Does your child try to get you to watch him or her? Pass/Fail

(FOR EXAMPLE, does your child look at you for praise, or say "look" or "watch me")

18. Does your child understand when you tell him or her to do something? Pass/Fail

(FOR EXAMPLE, if you don't point, can your child understand "put the book on the chair" or "bring me the blanket")

19. If something new happens, does your child look at your face to see how you feel about it? Pass/Fail

(FOR EXAMPLE, if he or she hears a strange or funny noise, or sees a new toy, will he or she look at your face?)

20. Does your child like movement activities? Pass/Fail

(FOR EXAMPLE, being swung or bounced on your knee)
Case reports

• What would you do next?
**Summary/Take Home Points**

- ASD is a common neurodevelopmental disability that significantly impacts the lives of youth and families.
- Autism and general developmental screening can be done in a primary care setting at a well child visit.
- Screening does not mean diagnosis.
- Early identification and intervention improves outcomes.

**Resources: AAP Policy**

- Identifying infants and young children with developmental disorders in the medical home: an algorithm for developmental surveillance and screening
  https://publications.aap.org/pediatrics/article/118/1/405/69580/Identifying-
  Infants-and-Young-Children-With
- Identification, Evaluation, and Management of Children With Autism Spectrum Disorder
  https://pediatrics.aappublications.org/content/145/1/e20193447
- Executive Summary: Identification, Evaluation, and Management of Children With Autism Spectrum Disorder
  https://pediatrics.aappublications.org/content/145/1/e20193448
- Promoting Optimal Development: Identifying Infants and Young Children With Developmental Disorders Through Developmental Surveillance and Screening
  https://pediatrics.aappublications.org/content/145/1/e20193449

**Resources: AAP Tools**

- www.aap.org/autism
    https://toolkits.solutions.aap.org/autism/home
    https://toolkits.solutions.aap.org/autism/need2know
  - HealthyChildren.org ASD articles for families/caregivers
    www.healthychildren.org/English/health-issues/conditions/Autism/Pages/default.aspx
- Bright Futures National Center
  https://brightfutures.aap.org/Pages/default.aspx
- National Resource Center for Patient/Family-Centered Medical Home
  https://medicalhomeinfo.aap.org/Pages/default.aspx
- Screening in Practice Initiative
### Resources: Other Organizations

- **Family-to-Family Health Information Centers**
  [https://familyvoices.org/lfpp/f2fs](https://familyvoices.org/lfpp/f2fs)
- **Centers for Disease Control and Prevention**
  - Autism and Developmental Disabilities Monitoring Network
    [www.cdc.gov/ncbddd/autism/addm.html](http://www.cdc.gov/ncbddd/autism/addm.html)
  - Learn the Signs, Act Early
- **Autism Treatment Network Toolkits**
  [https://airpnetwork.org/what-we-do/toolkits](https://airpnetwork.org/what-we-do/toolkits)
- **Title V Children and Youth with Special Health Care Needs Programs**
  [www.amchp.org/Policy-Advocacy/MCHAdvocacy/Pages/StateProfiles.aspx](http://www.amchp.org/Policy-Advocacy/MCHAdvocacy/Pages/StateProfiles.aspx)
- **Association of University Centers on Disabilities**
  [www.aucd.org/template/index.cfm](http://www.aucd.org/template/index.cfm)