FROM CONCERN TO CONNECTION: RECOGNIZING AUTISM AND NAVIGATING REFERRALS IN PRIMARY CARE

R. Christopher Qualls, Ph.D.
Licensed Clinical Psychologist
Southwest Virginia Child Development Clinic
Professor Emeritus (Emory & Henry University)

Professional Disclaimer

The views expressed in this presentation are those of the speaker and are not meant to represent the views or policies of the Virginia Department of Health or the Commonwealth of Virginia. I have no financial conflicts of interest to disclose.

Outline

- ❑Recognizing the Signs and Symptoms of Autism Spectrum Disorder (ASD)
- ❑Utility of the M-CHAT-R/F in Screening for ASD
- ❑Limitations of the M-CHAT-R/F and Other Screening Instruments
- ❑Components of an Effective Referral for an ASD Evaluation
- ❑Case Example

Learning Objectives

- 1. Participants will be able to recognize the signs of children at-risk for autism spectrum disorder (ASD) that are present in a typical well-child visit.
- 2. Participants will be able to utilize the M-CHAT-R/F to determine the risk level (low, medium, or high) for ASD that toddlers exhibit.
- 3. Participants will be able to state the limitations of screening instruments (e.g., M-CHAT-R/F) in identifying children at-risk for ASD.
- 4. Participants will be able to list the components of an effective referral for children identified as at-risk for ASD.
- 5. Participants will be able to refer children for appropriate interventions once diagnosed with ASD for a comprehensive evaluation.

DSM-5 TR Criteria (APA, 2022)

- A. “Persistent **deviations** in social communication and social interaction across multiple context” (all 3 are necessary)
  - 1. “**Deficits** in social-emotional reciprocity…”
  - 2. “**Deficits** in nonverbal communicative behaviors used for social interaction…”
  - 3. “**Deficits** in developing, maintaining, and understanding relationships…”
- B. “**Restricted, repetitive** patterns of behavior, interest, or activities” (at least 2 of the following)
  - 1. “**Stereotyped** or repetitive motor movements, use of objects, or speech”
  - 2. “**Insistence** on sameness, **inflexible** adherence to routines, or **ritualized** patterns of verbal or nonverbal behavior”
  - 3. “Highly **restricted**, **fixated** interests that are **abnormal** in intensity and focus”
  - 4. “**Hyper- or hypo-reactivity** to sensory input or **unusual** interest in sensory aspects of the environment”
- C. “Symptoms must be present in the early developmental period (but may not become fully manifest until social demands exceed limited capacities or may be masked by learned strategies in later life).
- D. “Symptoms cause clinically significant impairment in social, occupational, and other important areas of current functioning.”

DSM-5 TR Criteria (APA, 2022 continued)

- E. “These disturbances are not better explained by intellectual developmental disorder (intellectual disability) or global developmental delay.”
- Levels of Severity
  - Requiring very substantial support (Level 3)
  - Requiring substantial support (Level 2)
  - Requiring support (Level 1)
- Specify if:
  - With or without accompanying intellectual impairment
  - With or without accompanying language impairment
- Specify if:
  - Associated with a known genetic or other medical condition or environmental factor
  - Associated with a neurodevelopmental, mental, or behavioral problem
- Specify if:
  - With Catatonia
  - Autism Video http://www.youtube.com/watch?v=2S8zRCdXDDU

Prevalence of ASD

- Prevalence varies widely with the trend toward increased occurrence rates.
- In 1999; .2 - .5% (Kadesjo, Gillberg, & Nagberg, 1999)
- Current – ~3.2% or 1 in 31 eight-year-olds (CDC, 2022)
- Much more common in boys but this may be to some extent due to an under identification of girls with autism.

Possible Reasons for Increased Prevalence (Newschaffer, Croen, Daniels et al., 2007):

- ✓ Broader definition of the disorder;
- ✓ Greater awareness of the disorder;
- ✓ Older parents (genetic anomalies; larger number of prenatal and perinatal complications)

Behavioral Indicators of ASD at Office Visits

- Language signs
  - Significant language delay
  - Limited attempts to communicate with caregiver or others
  - Inconsistent or nonresponse to their name
  - Nonresponsive to simple requests
  - Substantial repetition of words or sounds
- Motor signs
  - Nonfunctional, repetitive motor movements (e.g., flapping; finger wiggling)
  - Body tensing
  - Toe-walking
- Affective signs
  - Consistently neutral emotion in spite of attempts to evoke positive affect
  - Elevated level of distress in reaction to typically nonthreatening requests/actions
  - Nonresponsive to others' displays of emotions

Behavioral Indicators of ASD at Office Visits

- Interpersonal Signs
  - No or fleeting eye contact with others
  - Ignoring others in room
  - No reaction to positive comments or actions of provider
- Play Signs
  - No or fleeting interest in playing with toys in waiting area or treatment room
  - No interest in the play behavior of siblings or other children
  - Nonfunctional or odd play with developmentally-typical toys
  - Carrying toys with which they do not play or objects that are not toys

M-CHAT-R Questionnaire (Robins, Fein, & Barton, 1999)

- 1. If you point at something across the room, does your child look at it?
- **(FOR EXAMPLE**, if you point at a toy or an animal, does your child look at the toy or animal?) Yes No
- **2. Have you ever wondered if your child might be deaf? Yes No**
- 3. Does your child play pretend or make-believe? (FOR EXAMPLE, pretend to drink from an empty cup, pretend to talk on a phone, or pretend to feed a doll or stuffed animal?) Yes No
- 4. Does your child like climbing on things? (**FOR EXAMPLE**, furniture, playground equipment, or stairs) Yes No
- 5. Does your child make unusual finger movements near his or her eyes?
- (FOR EXAMPLE, does your child wiggle his or her fingers close to his or her eyes?)Yes No

***Critical Items in bold**

M-CHAT-R Questionnaire (Robins, Fein, & Barton, 1999)

- 6. Does your child point with one finger to ask for something or to get help? (**FOR EXAMPLE**, pointing to a snack or toy that is out of reach) Yes No
- **7. Does your child point with one finger to show you something interesting?**
- **(FOR EXAMPLE, pointing to an airplane in the sky or a big truck in the road) Yes No**
- 8. Is your child interested in other children? (**FOR EXAMPLE**, does your child watch other children, smile at them, or go to them?) Yes No
- **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? (FOR EXAMPLE, showing you a flower, a stuffed animal, or a toy truck) Yes No**
- 10. Does your child respond when you call his or her name? (**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?) Yes No

***Critical Items in bold**

M-CHAT-R Questionnaire (continued)

- 11. When you smile at your child, does he or she smile back at you? Yes No
- 12. Does your child get upset by everyday noises? (**FOR EXAMPLE**, does your child scream or cry to noise such as a vacuum cleaner or loud music?) Yes No
- **13. Does your child walk? Yes No**
- **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? Yes No**
- **15. Does your child try to copy what you do? (FOR EXAMPLE, wave bye-bye, clap, or make a funny noise when you do) Yes No**

***Critical Items in Bold**

M-CHAT-R Questionnaire (continued)

- 16. If you turn your head to look at something, does your child look around to see what you are looking at? Yes No
- 17. Does your child try to get you to watch him or her? (**FOR EXAMPLE**, does your child look at you for praise, or say “look” or “watch me”?) Yes No
- 18. Does your child understand when you tell him or her to do something?
- (**FOR EXAMPLE**, if you don’t point, can your child understand “put the book on the chair” or “bring me the blanket”?) Yes No
- 19. If something new happens, does your child look at your face to see how you feel about it? (**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?) Yes No
- 20. Does your child like movement activities?
- (**FOR EXAMPLE**, being swung or bounced on your knee) Yes No

***Critical Items in Bold**

Scoring and Interpretation of M-CHAT-R

Interpretation of Results (https://www.mchatscreen.com/mchat-rf/scoring/)

- **Total Score 0-2**: The score indicates **LOW likelihood for autism**. No Follow-Up needed. Child has screened negative. Refer as needed if developmental surveillance or other tools suggest increased likelihood for autism. Rescreen at 24 months if the child is younger than 2 years old.
- **Total Score 3-7**: The score indicates **MODERATE likelihood for autism**. Administer the M-CHAT-R Follow-Up items that correspond to the elevated likelihood responses. Only those items which were scored as elevated likelihood need to be completed. If 2 or more items continue to indicate elevated likelihood, the result is a positive screen. Refer the child immediately for (a) early intervention and (b) diagnostic evaluation.
- **Total Score: 8-20**: The score indicates **HIGH likelihood for autism**. The child has screened positive. 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.
- Critical items are 2, 7, 9, 13, 14, 15

Limitations among Screening and Diagnostic Instruments for ASD (Gupta, Srinivasan, & Gupta, 2025)

Table 1. Comparison between Diagnostic and Screening Tools for ASD

Tools	Age	Type	Sensitivity	Specificity	Settings
M-CHAT[14]	16–30 mo	Screening	0.97	0. 99	General
ASRS[15]	2–18 y	Screening	>0.90	>0.90	General
STAT[16]	2–3 y	Screening	0.92	0.85	Specialist
SCQ[17]	4+ y	Screening	0.75–0.85	0.60–0.75	General
SRS[18]	2.5	Screening	0.84–0.91	0.08–0.41	Specialist
GARS	3–22	Diagnosis	Evidence limited	Evidence limited	Specialist
ADI-R[19]	2+	Diagnosis	0.52	0.84	Specialist
ADOS[20]	2+	Diagnosis	0.94	0.80	Specialist
CARS[20]	2+	Diagnosis	0.80	0.88	Specialist

ADOS: Autism Diagnostic Observation Scale; *ADI-R:* Autism Diagnostic Interview-Revised; *CARS:* Childhood Autism Rating Scale; *STAT:* Screening Tool for Autism in Toddlers and Young Children; *MCHAT:* Modified Checklist for Autism in Toddlers; *SRS-2:* Social Responsiveness Scale-second edition; *ASRS:* Autism Spectrum Rating Scale; *GARS:* Gilliam Autism Rating Scale.

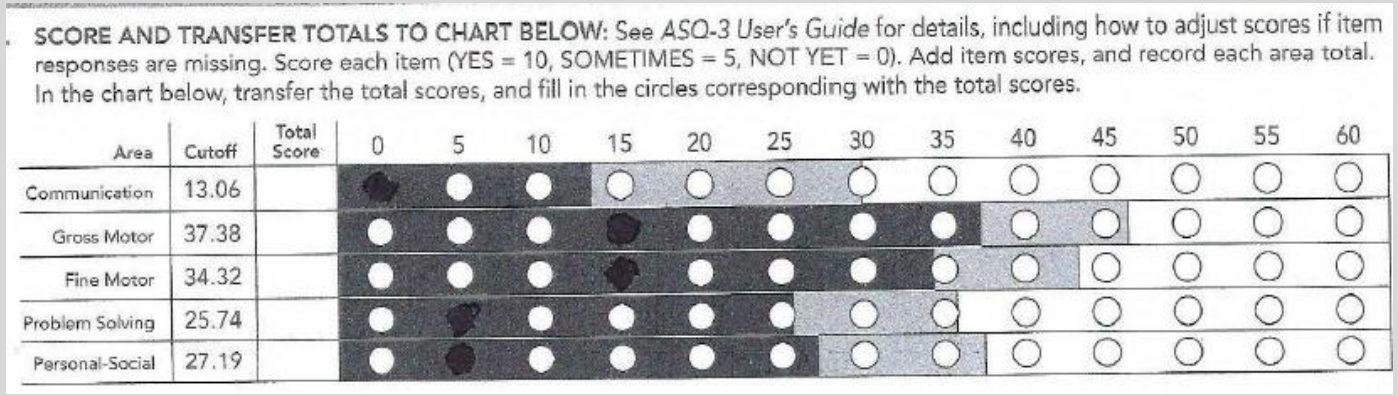
Components of an Effective Referral for an ASD Evaluation

- Discussing the purpose, nature, and expected outcomes of referral with parent/caretaker (share information such as typical wait time; what will be required from parents/caretakers; importance of placement on a cancellation list; alternatives such as school testing)
- Include demographic, contact, and insurance information provided in referral
- Request evaluation to rule-out autism spectrum disorder (any differential diagnoses)
- Clinician and/or parental observations prompting referral
- Findings from Screening Instruments (e.g., M-CHAT; ASQ)
- Most Recent Clinic Encounter with Labs (if available)
- Providing Medical History (Has hearing been tested?); Family Medical History
- Calling on most important case(s) (should not be overused!)

CASE EXAMPLE

- Referral/Background Information:
  - 32-month-old girl referred by pediatrician to rule-out ASD.
  - Receiving Early Intervention Services including ST/PT/OT
  - Signs: Delayed Speech, Toe-Walking, Hand Flapping, Texture Issues; Emotional Outbursts
  - M-CHAT score = 12 (High Likelihood of Autism)

ASQ



SCORE AND TRANSFER TOTALS TO CHART BELOW: See *ASQ-3 User's Guide* for details, including how to adjust scores if item responses are missing. Score each item (YES = 10, SOMETIMES = 5, NOT YET = 0). Add item scores, and record each area total. In the chart below, transfer the total scores, and fill in the circles corresponding with the total scores.

Area	Cutoff	Total Score	0	5	10	15	20	25	30	35	40	45	50	55	60
Communication	13.06														
Gross Motor	37.38														
Fine Motor	34.32														
Problem Solving	25.74														
Personal-Social	27.19														

CASE EXAMPLE (continued)

Parent Interview

- Development
  - 3rd child (parents in 20's);
  - Birth History – Vaginal delivery at 36 weeks; 4 pounds; 5-day newborn nursery stay
  - Mother reported hypertension; Prescribed an SSRI during pregnancy
  - Milestones Walked – 15 months; Talked – 30 months; Has not obtained bladder/bowel continence
- Medical
  - RSV X 2
  - Moderate Asthma
- Interpersonal
  - No interactions with other children in preschool
  - Reportedly plays with siblings
- Psychiatric History – No interventions
- Family Psychiatric History
  - Autism (cousin)
  - Learning Disability (Parent)
  - Anxiety (parent; grandmother)

CASE EXAMPLE (continued)

Autism symptoms

- Social-Emotional Reciprocity – No response to others attempts to play; no engagement in social games (Pat-a-cake; Peek-a-Boo); no social smiling or reciprocal hugging; no reaction to others' emotions
- NV communication – Little eye contact; no joint attention; rarely responds to name being called; little change in facial expression; does not communicate needs with gestures
- Relationships – Reportedly plays with siblings; no playing with other children; does not watch other children play; no pretend play
- Repetitive, nonfunctional movements or vocalizations – Flaps arms; runs in circles; spins wheels on toy cars, walks around holding car
- Inflexible adherence to routine – Arranges toys in a specific order; activities have to be performed in same way
- Restricted, fixated interests – Blocks; toy cars; flushing toilets
- Hypersensitivity – No significant
- Hyposensitivity – Elevated pain tolerance

CASE EXAMPLE (continued)

- Client Observations (free play and structured activities):
  - Appearance – Flattened nasal bridge; Height/Weight were proportionate
  - Minimal eye contact; no interaction with examiner
  - No declarative pointing; No joint attention
  - Few words – (mother reports <15 words); no response to name; directives
  - Fine Motor – No overt deficits; Gross Motor – Awkward Gait
  - Activity Level – WNLs
  - Affect – Largely Neutral
  - Play – Solitary; Repetitive (lined up block letters; stacks block; spins wheels on car; carried play objects; did not engage in cooperative play attempts)
- Test Results:
  - Bayley Scales – Cognitive – Age Equivalent = 19 months (1^{st} percentile); Expressive Language – 19 months; Receptive Language – 13 months
  - Vineland Adaptive Behavior Scales – Overall <1^{st} percentile; Communication, Daily Living Skills, and Socialization (all <1^{st} percentile); Motor Skills – 8^{th} percentile

CASE EXAMPLE (continued)

- Autism Testing:
  - Screening Tool for Autism (STAT) – Positive for At-Risk (2.75; cut-off is 2) No normative play; limited imitation; limited directed attention; limited requesting
  - Autism Spectrum Rating Scale
    - Mother – Overall – 96th percentile; Social/Communication (98th percentile), Peer Socialization (99th percentile), Stereotypy (93rd percentile)
    - Teacher – Overall - >99th percentile; Social/Communication, Peer Socialization, Sensory Sensitivity, Behavioral Rigidity, Stereotypy (all at or above 98th percentile)
  - Childhood Autism Rating Scale – Raw score of 39.5; 58th percentile compared to children diagnosed with ASD; Severe Symptoms range

  - Diagnosis: ASD (with intellectual impairment; with language impairment; Level 3) and Global Developmental Delay

CASE EXAMPLE (continued)

Treatment Recommendations:

- 1. Recommend providing parents with information regarding children who have Autism Spectrum Disorder and the interventions that may be utilized to assist in their treatment. To this end, the client's parents may find the following sources helpful in understanding Autism Spectrum Disorder http://www.nationalautismcenter.org/resources/for-families/ and educational accommodations available for children with Autism https://www.autismspeaks.org/family-services/tool-kits.
- 2. Continue current therapies (ST/OT/PT)
- 3. Connect to CSB for Autism Services such as case management, ABA referral, and assistance in applying for a Developmental Disability Waiver
- 4. Provide assessment to school system as child approaches 3rd birthday
- 5. Reassess cognitive abilities in 12 to 18 months
- 6. Recommend referral for genetic testing
- 7. Share findings of assessment with referring provider

References

American Psychiatric Association. (2022). Autism Spectrum Disorder Diagnostic Criteria. In *Diagnostic and statistical manual of mental disorders - Text Revision* (5th ed.).

Goldstein, S., & Naglieri, J. A. (2013). Autism Spectrum Rating Scales (ASRS). Mental Health Systems, North Tonawanda, NY.

Gunderson, J.,Howie, F., Mehta, S., Redlin, A., Huebner, A. (2025). Sensitivity and specificity between the Screening Tool for Autism in Toddlers and Young Children (STAT) and Autism Diagnostic Observation Schedule (ADOS-2). *Journal of Autism and Developmental Disorders*, https://doi.org/10.1007/s10803-025-06778-z.

Gupta N, Srinivasan S, and Gupta M (2025). Rethinking psychometric testing in autism: Overcoming the challenges of comorbidity and diagnostic overshadowing. *CNS Spectrums, 30*(1), e19, 1–10. https://doi.org/10.1017/S1092852925000021.

Robins D.L., Fein D., & Barton M. (2009). Modified Checklist for Autism in Toddlers–Revised With Follow-up (M-CHAT-R/F). Lineagen; 2009.

References (continued)

- Schopler, E., Van Bourgondien, M. E., Wellman, G. J., & Love, S. R. (2010). Childhood Autism Rating Scale (second edition). Western Psychological Services.
- Shaw K.A., Williams S., Patrick M.E., et al. (2025). Prevalence and early identification of autism spectrum disorder among children aged 4 and 8 years—Autism and Developmental Disabilities Monitoring Network, 16 sites, United States, 2022. *MMWR Surveill Summ*, 74(2): 1-22. doi:10.15585/mmwr.ss7402a1
- Squires, J., & Bricker, D. (2009). *Ages & Stages Questionnaires®, Third Edition (ASQ®-3): A Parent-Completed Child Monitoring System*. Baltimore: Paul H. Brookes Publishing Co., Inc.

Stone, W. L., Coonrod, E. E., Turner, L. M., & Pozdol, S. L. (2004). Psychometric properties of the STAT for early autism screening. Journal of Autism and Developmental Disorhttps://www.autismspeaks.org/screen-your-child (online M-CHAT-R).