Understanding Level 1 Autism Diagnosis and Treatment for School Aged Children

Cincinnati Pediatric Society Lyon Lecture

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Disclosures

- The presenters have no relevant disclosures

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changing the outcome together

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Objectives

- Recognize the clinical features and diagnostic challenges of Level 1 Autism in children
- Review evidence-based interventions and understand their application in both clinical and school settings
- Apply family-centered and school-collaborative strategies to support adaptive functioning, social inclusion, and emotional well-being

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Introduction

Prevalence and Importance

Autism affects approximately 1 in 31 children, making early detection and intervention critical for better outcomes

- Roughly 43-59% of autistic individuals have average-to-above average IQ (presumably Level 1)
- Level categories are not yet differentiated in national surveillance data

Role of Pediatricians

Pediatricians play a vital role in early identification and referral for autism evaluation and intervention

Shaw KA, Williams S, Patrick ME, et al. 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 2025;74(No. SS-2):1–22. DOI: http://dx.doi.org/10.15585/mmwr.ss7402a1

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Diagnostic Challenges – Level 1

- Masking or camouflaging behaviors
  - Learn to adapt or use basic social skills
- Cultural and gender differences
  - Culture: Expectations related to eye contact, direct/indirect communication, use of gestures, values on independent play
  - Gender: Autistic females tend to have more masking behaviors and may present with better developed social-communication skills
    - Autism diagnosis is 4x more prevalent in males, but females likely underdiagnosed
- Some features overlap with ADHD and anxiety
- Late referrals due to "good grades", "good eye contact", or verbal ability

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Clinical Features – Level 1 in Toddlers

Communication

Language delay common but regression uncommon

- May have initial language delays
- Inconsistent response to name and eye contact
- Echolalia; Scripted speech (repeating phrases from videos or other people, etc.)
- Limited use of gestures (pointing, descriptive gestures)

Social & Play

- Parallel play in social settings
- Delayed or limited pretend play
- Difficulties imitating others in play
- Difficulty recognizing and responding to other people's emotions

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Clinical Features – Level 1 in Toddlers

Behavior

- Routine-oriented behaviors; Rigid behaviors (e.g., only drinks from blue cup)
- Difficulties with transitions between tasks; quick to frustration (tantrums)
- Repetitive play (i.e., lining up, sorting, filling/dumping)
- Repetitive behaviors (i.e., flipping light switches on/off) and motor movements (i.e., hand flapping, rocking, spinning)

Sensory

- Covering ears to sudden or loud noises
- Aversion to specific sounds (e.g., vacuum, sirens)
- Avoid messy play
- Resistance to hugs or parent-initiated affection
- Fixation on lights, objects, or patterns
- Strong reactions to smells
- Seeking activity – spinning, jumping, climbing

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Clinical Features – Level 1 in Toddlers

Adaptive Behaviors

- Highly selective/picky eating patterns
- Sleep difficulties (falling or staying asleep)
- Difficulties with bathing, brushing teeth, haircuts
- Delays in toilet training

Cognition & Learning:

- May have average or near average early intelligence
- Preference rote memorization tasks (counting, ABCs, shapes, colors)
- Highly focused interests that dominate play
- Short attention span for adult-led activities

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Clinical Features –
Level 1 in School-Age/Adolescents

Social
- May appear naïve, socially awkward, or struggle with social cues
- Difficulty initiating and maintaining peer relationships
- Struggles with group work, playground interactions
- Differences in eye contact
- Challenges in understanding others' perspectives, emotions, or intentions
- Social isolation or bullying risk

Communication
- Conversational speech but literal interpretation of language
- Trouble reading social cues in conversation (e.g., conversational reciprocity)
- May get “stuck” on preferred topics of interest or talk over others
- Scripted speech (repeating phrases from videos or other people, etc.)

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Clinical Features –
Level 1 in School-Age/Adolescents

Behavior
- Rigid routines, or thinking patterns (resisting change)
- Emotional or behavioral outbursts when routines change
- Narrow and intense interests (e.g., specific topics)
  - Trains, volcanoes, weather patterns, traffic signs

Increased risk of anxiety and depression

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Clinical Features –
Level 1 in School-Age and Adolescents

Sensory
- Aversion to noises, bright lights, or certain textures in clothing, food, or materials (e.g., tags, seams, sticky substances)
- Trouble processing multiple sensory inputs at once (e.g., listening while writing)
- Easily overwhelmed in environments with competing stimuli (e.g., classrooms, shopping centers, restaurants)

Adaptive Behaviors
- Highly selective/picky eating patterns
- Delays in daily independence
  - May need reminders to use the bathroom, bath/shower, brush teeth
  - May lack awareness about own hygiene
- May resist wearing seasonally appropriate clothing

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Clinical Features –
Level 1 in School-Age and Adolescents

Cognition & Learning:
- Average to above-average intelligence
- May excel in specific academic areas (e.g., math, memory-based tasks) while struggling in others (e.g., abstract reasoning, reading comprehension)
- Benefit from visual supports and structured, routine-oriented learning environments
- Difficulty planning and organizing academic activities
- Trouble shifting attention and adapting to sudden changes

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Strengths

- Strong long-term and rote memory skills
- Attention to detail
- Observation skills, visual skills
- Honest feedback
- Interest in learning how things work
- May question norms, which leads to new solutions
- Creativity (distinctive imagination, expression of ideas)
- Expertise in their special interests

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How Does this Differ from ADHD?

ADHD:

- Inattention, hyperactivity, and impulsivity that interfere with functioning or development
- Difficulty sustaining attention, forgetfulness, and disorganization
- Fidgeting, excessive talking, and interrupting others

- Both show social differences and executive functioning challenges
- ADHD lacks the pervasive social-communication differences and restricted/repetitive behaviors central to Autism

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How Does this Differ from Anxiety?

Anxiety:

- Excessive fear, worry, or avoidance behaviors
- Physical symptoms
  - Stomachaches, headaches, changes in sleep and appetite
- May be context-specific (e.g., social delays at school but not at home)

- Both show some social differences, but for children with anxiety, skills improve once anxiety is managed

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Recommendations for Pediatric Providers

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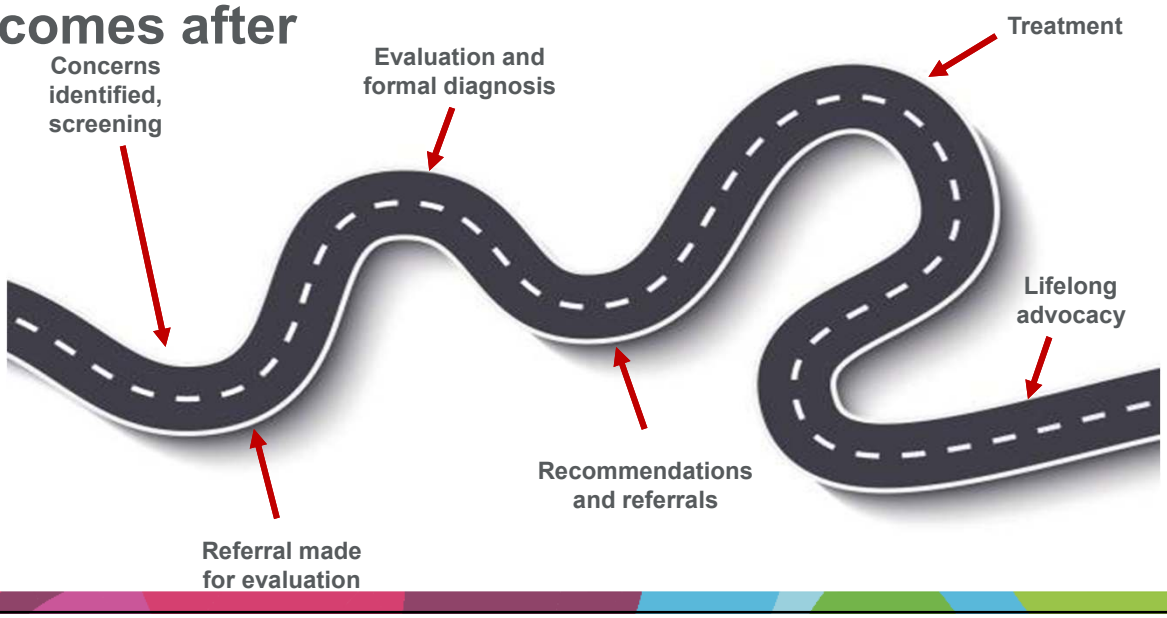
Getting an evaluation and what comes after



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Topics for Pediatric Providers

Early Identification and Screening

Routine developmental screenings should assess social communication, sensory sensitivities, and behavioral patterns for early autism detection.

Referrals/Family Centered-Care and Advocacy

Educating families about the evaluation process, interventions, and community resources empowers informed decisions and supports advocacy efforts.

Continuing Education for Providers

Ongoing training ensures healthcare providers stay updated with best practices in autism spectrum disorder management.

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Identification and Screening

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Rise in “Self Diagnosis” of Autism

- Older, higher functioning children may experience obstacles such as:
  - Finding an experienced provider
  - Long wait lists
  - High costs associated with the assessment
- Some parents who not do see a need for disability-based services may choose to claim an autism identity for their child through self-diagnosis
- Claiming a self-diagnosis of autism gives a label that they identify with and can share to describe aspects of their child’s personality or behaviors

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Access to Services Formal vs. Self Diagnosis

Resource/ Service	Formal Diagnosis	Self Diagnosis
School based/ post secondary accommodations	✚	
Developmental Disabilities Services	✚	
Eligible to receive SSI	✚	
Protections under ADA and work-based accommodations	✚	
Sense of self awareness	✚	✚
Access to Support groups and online communities	✚	✚
Access to mental health services	✚	✚

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Importance of Identification and Screening

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- Even in "high functioning" or Level 1 cases of Autism, diagnosis matters
  - Early intervention leads to better outcomes in IQ, communication, social interaction, and behavior
  - Helps parents get connected to a community
  - Diagnosis = access to service navigation pathways

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Screening Approach

- Use a **broad screener**, useful identifying general behavioral concerns that may be clinically significant and require further evaluation
- **Disorder-specific tools are more accurate** for identifying any given developmental behavioral diagnosis
- If desired, follow up with targeted screeners like Vanderbilt, SCARED, or SCQ

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Screening Tools

- ADHD: Vanderbilt Rating Forms 5-18 years
- Anxiety: Screen for Child Anxiety Related Disorders (SCARED)
- Social Emotional Development:
  - Ages and Stages Questionnaire –Social Emotional (ASQ- SE) birth-72 months
  - Strengths and Difficulties Questionnaire (SDQ) - 2-17 years
  - Social Communication Questionnaire (SCQ) - Age 4+

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Ages and Stages Questionnaire: Social Emotional-2 (ASQ: SE-2)

What is ASQ:SE-2?

- Parent-completed questionnaires that reliably identify young children at risk for social or emotional difficulties.
- Screens 7 key behavioral areas—self-regulation, compliance, communication, adaptive functioning, autonomy, affect, and interaction with people

ASQ:SE-2 - Ages and Stages

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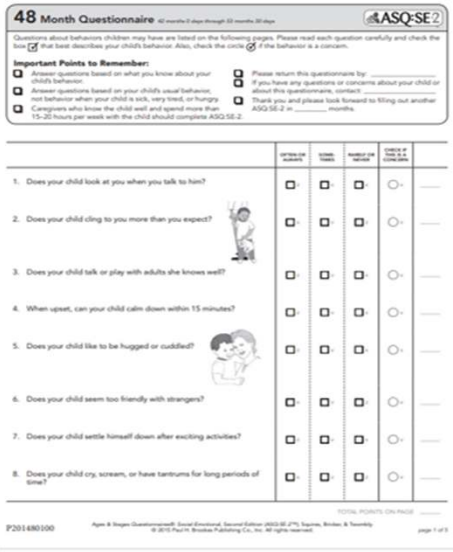
Ages and Stages Technical Data

Technical Data

- Investigated with more than 14,074 children; the sample mirrors the U.S. population in terms of race/ethnicity and includes all socio-economic groups
- Reliability
  - Test-retest: .89 (excellent)
  - Internal consistency: .84 (excellent)
- Validity
  - Investigated with more than 2,800 children.
  - .83 (excellent)
- Sensitivity
  - .81 (excellent)
- Specificity
  - .83 (excellent)



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Getting Started with the ASQ-SE

Free ASQ:SE-2 STARTER KITS available from Brookes publishing

Online: https://agesandstages.com/free-social-emotional-screening-toolkit/

- ASQ:SE-2 User's Guide (in English only)
- ASQ:SE-2 is photocopiable—you never need to re-order the questionnaires
- 9 paper masters of the questionnaires and scoring sheets
- Free scoring and administration manual
- CD-ROM with printable PDF questionnaires

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Strengths and Difficulties Questionnaire (SDQ)

- The SDQ is a brief survey validated for children ages 2-17
- Sensitivity (ability to correctly identify those with a disorder): Ranges from 63% to 94%
- Specificity (ability to correctly identify those without a disorder): Ranges from 70% to 96%.
- These scales assess the following areas:
  - Emotional Symptoms
  - Conduct Problems
  - Hyperactivity/Inattention
  - Peer Relationship Problems
  - Prosocial Behavior

SDQ (Goodman, 2005)

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SDQ as a General Screening Tool

- **Goodman et al. (2000)**: Demonstrated that the SDQ could effectively screen for psychiatric disorders in a UK community sample with good sensitivity and specificity
- **Becker et al. (2004)**: Validated parent and teacher SDQ versions in clinical settings, confirming strong psychometric properties
- **Muris et al. (2003)**: Found high reliability and validity in Dutch community samples
- **Goodman (2001)**: Comprehensive review of psychometric properties, supporting the SDQ's use as a screening tool

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SDQ for Autism Screening

Sensitivity (ability to correctly identify those with autism): Ranges from 60% to 85% depending on the study and scoring algorithm used.

Specificity (ability to correctly identify those without autism): Typically ranges from 60% to 90%.

Best performance is often seen when combining:

- **Parent and teacher reports**
- **Symptom and impact scores**
- **Cutoffs tailored to ASD traits**, especially in the peer problems and prosocial behavior subscales

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Utility of SDQ

- The **SDQ is not autism-specific**. It screens for general emotional and behavioral difficulties.
- Children with autism often score high on:
  - Peer problems
  - Hyperactivity/inattention
  - Low prosocial behavior

www.sdqinfo.org

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Social Communication Questionnaire (SCQ)

Age Range: 4 years and older (mental age ≥ 2 years)

Domains Assessed:
- Reciprocal social interaction
- Communication
- Restricted, repetitive, and stereotyped behaviors

Source: Autism Research Institute, SCQ Technical

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Social Communication Questionnaire (SCQ)

- **Useful for identifying children who may need a full diagnostic evaluation**
- Utility: Autism-specific screener based on the Autism Diagnostic Interview-Revised (ADI-R)
- Sensitivity: 85% – 96%
- Specificity: 80% – 96%
- Validity: Strong correlation with ADI-R; validated across multiple populations
- Versions: Lifetime and Current forms; Parent-report format

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Limitations of Social Emotional Screeners

Feature	SDQ (Strengths & Difficulties Questionnaire)	M-CHAT-R/F (Modified Checklist for Autism in Toddlers)	SCQ (Social Communication Questionnaire)	SRS-2 (Social Responsiveness Scale)
Age Range	2–17 years	16–30 months	4+ years	2.5+ years
Purpose	General behavioral screening	Autism-specific screening	Autism-specific screening	Measures autism traits
Informants	Parent, teacher, self	Parent	Parent or caregiver	Parent, teacher, or self
Time to Complete	5–10 minutes	5–10 minutes	10–15 minutes	15–20 minutes
Scoring Focus	Emotional, behavioral, peer, prosocial	Red flags for ASD	Communication and social behavior	Social responsiveness
Sensitivity (ASD)	~60–85% (varies by subscale)	~85–91%	~85%	~80–90%
Specificity (ASD)	~60–90%	~95%	~75%	~70–90%
Best Use	Broad screening in primary care	Early ASD detection	ASD screening in older children	Quantifying ASD traits

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Billing for Developmental Screening

- Use standard follow up E and M codes to bill on time, not medical complexity (96113, 96114, 96115)
  - Add a statement at the end of your visit stating how much face to face and non face to face time was spent, and how you spent that time
- If over 40 min, can include 96112 extended time code in 15-minute intervals
- Can use developmental screening code 96110
- Free to download: Strengths and Difficulty Questionnaire, Vanderbilt, SCARED

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Evaluations and Interventions

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Elements of a Diagnostic Evaluation

- DSM-5 Focused Interview
- Comprehensive History
- Structured Behavioral Observations Autism Specific
- Structured Assessment of Developmental Abilities

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Resources for Evaluation

- Psychology Today www.psychologytoday.com
- Mindpeace www.mindpeacecincinnati.com

Consider sending older children to a community psychologist or CCHMC (BMCP or psychiatry) for therapy, to better understand the depth and breadth of social communication, attention, and anxiety concerns. Psychologist can refer for additional evaluation as indicated.

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Developmental Considerations for Intervention

Elementary: Emphasize play-based social skills and routines; Adaptive behaviors

Middle School: Focus on peer relationships and coping strategies; Cognitive flexibility; Independence in adaptive skills

High School: Transition planning, vocational skills, mental health support; Maintenance of friendships; Safety awareness (e.g., online, in relationships)

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Evidence-Based Interventions

- **Speech-Language Therapy:** Increase use of pragmatic language, understanding of non-literal language and non-verbal communication, conversation skills
  - Clinical: Direct 1:1 therapy
  - School: Integrated into IEP goals and social situations
- **Occupational Therapy:** Improve sensory regulation, executive functioning
  - Clinical: Sensory integration strategies focused on home/community
  - School: Classroom accommodations (e.g., sensory breaks)

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Evidence-Based Interventions

- **Applied Behavior Analysis (ABA):** Behavior modification, skill acquisition (early childhood)
  - Clinical: Intensive 1:1 sessions
  - School: Embedded in classroom routines
- **Social Skills Training**: Increase skills and confidence with peer interaction, pragmatic language
  - Clinical: Group therapy, role-play
  - School: Social skills groups, peer-mediated interventions
- **Cognitive Behavioral Therapy (CBT)**: Addresses anxiety, emotional regulation
  - Clinical: Individual sessions targeting flexibility and coping
  - School: Adapted, intermittent CBT for classroom stressors/transitions

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School Supports

Individualized Education Plans (IEPs): Include social-emotional goals

Peer-Mediated Interventions: Encourage inclusion through structured peer support

Sensory-Friendly Classrooms: Request accommodations for sensory support

Regular Communication: Encourage families to ask for home-school notes or digital platforms for updates

Inclusion Approach: A whole-school approach is essential to foster genuine inclusion and belonging for autistic children

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Family-Centered & Collaborative Strategies

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Guiding the Child and Family

To support families, providers can:

- At the time of referral, share your knowledge of best practice options
- Foster communication between the family, school, and other healthcare providers to ensure coordinated care and service access
- Provide resources on navigating complex systems and acknowledge varying procedures and policies
- Use respectful terminology that aligns with individual identities and fosters dignity and understanding

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Promoting Social Inclusion & Independence

- Advocate for structured social support during recess or lunch (e.g., social buddy program)
- Encourage participation in extracurricular activities
- Focus on skill building towards independence in organizational, decision-making, and problem-solving skills, self-care routines
- Encourage the use of visual schedules and check lists to build independence

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Helping Parents Find Treatment Services

- Social Skills Groups
  - (email us for a list)
- Speech and Occupational Therapists
  - https://www.zeemaps.com/map?group=3554134
- ABA Providers
  - https://www.zeemaps.com/map?group=3563300
- Mental Health Providers
  - https://www.zeemaps.com/map?group=3466239

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Education and Parent Support

DDBP Caregiver Education Program

Ohio Parent to Parent Mentorship Program
****include NKY and Dearborn County, IN**

CCHMC Resources

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Provider and Parent Resources

- American Academy of Pediatrics (AAP) Clinical Report: Identification, Evaluation, and Management of Children With Autism Spectrum Disorder | Pediatrics | American Academy of Pediatrics (Jan 2020)
- Autism Society of Ohio: Resources - Autism Ohio
- Ohio Center for Autism and Low Incidence (OCALI): Family and Community Outreach Center | OCALI
- Regional Autism Advisory Council: News and Upcoming Events - IDDEdCenter | University of Cincinnati

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Thank you! Questions?

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