

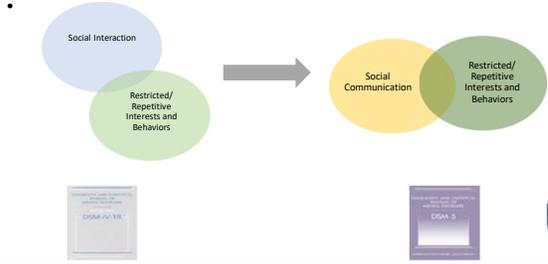


Neuropsychology and Autism: How to differentiate profiles and diagnoses

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Diagnosis: DSM-IV to DSM-5

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Learning Objectives

- Describe the overlap of autism and other factors that impact social functioning
- Demonstrate understanding of how to identify social anxiety, OCD, pragmatic communication disorder, and typical adolescence from autism
- Describe how a neuropsychological evaluation can assist in differential diagnosis of ASD and other similar disorders



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2018 Prevalence Rates in the USA

- 1 in 59 children (1.7%) in the USA have ASD
- Affects 4 males to 1 female
 - 1/39 boys
 - 1/152 girls
- Intellectual abilities:
 - 31% intellectual disability (IQ < 70)
 - 25% in the borderline range (IQ = 71 - 85)
 - 44% in the average to above average range (IQ > 85)



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Autism Spectrum Disorder: DSM V Criteria

- Deficits in social communication (all 3):
 - Deficits in nonverbal communication
 - Deficits in social and emotional reciprocity
 - Deficits in maintaining relationships
- Restricted, repetitive patterns of behavior, interest, and activities (2)
 - Stereotyped motor or verbal behavior
 - Unusual sensory behavior
 - Excessive adherence to routines and ritualized bhx
 - Restricted, fixated interests
- Symptoms present in early childhood (manifest when social demands exceed capabilities)



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Why are Numbers Increasing: Better Tools?

- New diagnostic measures
 - Autism Diagnostic Interview (1989, 1994)
 - Autism Diagnostic Observation Schedule (1989, 2000)
- Screening tools/algorithms/instruments in wide use:
 - MCHAT / AAP guidelines
 - SCQ
 - SRS



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Two decades of research findings for Interventions:

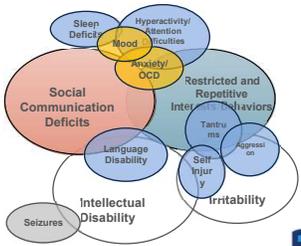
- Interventions over short periods of time findings related to:
 - language acquisition
 - nonverbal communication
 - reduction in challenging behaviors
 - social skills
- Interventions over longer periods of time:
 - cognitive ability / IQ
 - educational success
 - Maintenance of social skills with
- Suggestions of medications and complementary agents:
 - primarily associated symptoms
 - claims of broad effects



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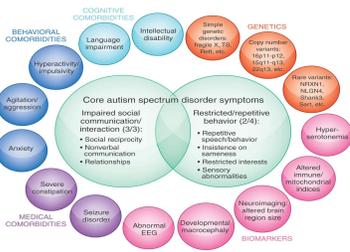
Each person with ASD can look different!

- 70% of children with ASD have at least one additional diagnosis by adolescence...




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Autism Spectrum Disorders



- Core autism spectrum disorder symptoms:
 - Impaired social communication/interaction (SC):
 - Social reciprocity
 - Nonverbal communication
 - Relationships
 - Restricted/repetitive behavior (RRB):
 - Repetitive speech/behavior
 - Insistence on sameness
 - Restricted interests
 - Sensory abnormalities
- Behavioral Comorbidities:
 - Hyperactivity/impulsivity
 - Agitation/aggression
 - Anxiety
 - Severe comorbidity
- Cognitive Comorbidities:
 - Language impairment
 - Intellectual disability
- Medical Comorbidities:
 - Seizure disorders
 - Abnormal EEG
 - Developmental macrocephaly
- Genetic Markers:
 - Simple genetic disorders: Fragile X, Rett, etc.
 - Copy number variants: 15q11 q12, 17p11-131, 22q13.3, etc.
 - Gene variants: NRXN1, NLGN3, SYNG1, etc.
 - Hyper-serotonemia
 - Altered immune/mitochondrial indices
 - Neuroimaging: altered brain region size



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What is Neurodiversity?

- Neurodiversity is a philosophy that emphasizes differences in human neurologies.
 - 95th %ile IQ is neurodiverse? Is that autism?
 - This is a frequent question asked by teenagers during evaluations
- Neurodiversity emphasizes that Autism and ADHD, for example, represent difference rather than deficits.
 - If you have social anxiety do you have autism?
 - How does one sort out social pragmatic communication disorder from ASD?
 - If you have restrictive and repetitive behaviors, is that OCD or ASD?



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Challenges of an Individual with Autism Spectrum Disorder

- May misread social cues or facial expressions
- Social interactions/group work may be stressful
- Stress-relieving activities may make others uncomfortable
- Sensory perceptions can interfere with learning
- Nebulous sense of time (can impact multi-tasking)
- Difficulty with changes and transitions



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Profiles that can similar presentation to Autism – Neurodiversity...

- Social Anxiety
- Depression
- Social Pragmatic Communication Disorder
- Developmental Language Disorder
- Generalized Anxiety Disorder
- High IQ



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Differentiating Neurodiversity and ASD

- Does the child have a desire for social interaction, but not the skills
 - Is this due to:
 - Language disorders
 - Anxiety
 - Depression
 - Impulsivity
 - Does the impulsivity push children away?
- Does the child have restrictive interests?
 - Is this due to :
 - OCD
 - Anxiety
 - Cognitive Impairments



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What is anxiety?

- Excessive fear and worry where there is a perceived imminent or future threat
- Triggers the need to flee/escape
- Experienced as bodily sensations (e.g. heart racing, tummy ache), especially in preparation for future anxiety-provoking situations
- Response to perceived danger gets in the way of completing activities at home and/or school



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Neurodiverse Profiles and ASD

- The most frequent differential diagnosis is related to anxiety
 - Social Anxiety
 - OCD (perceived as restrictive interests)
- When is it comorbid versus anxiety impacting social interactions?



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What is OCD?

- Obsessive-compulsive disorder (OCD) includes two parts:
 - Intrusive thoughts that are disturbing and worrisome (i.e. obsessions)
 - Habitual actions that reduce distress over intrusive thought (i.e. compulsions)
- Together, these form a reaction to anxiety that gets in the way of daily life at home or at school
- *Example: Obsessive thought: "If I touch a doorknob, I will get sick from germs" → Compulsion: excessive hand-washing and cleaning*
- *Example: Obsessive thought: "What if I leave the back door unlocked and someone breaks in and hurts me?" → Compulsion: repeated checking that door is locked*



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Anxiety and ASD

- Rates of anxiety higher in ASD than in other groups (Bellini, 2004; Gillot & Standen, 2007; Green et al., 2000; Russell & Sofronoff, 2005; White et al., 2009; Van Steensel et al., 2011)
- 44-55% of children with ASD meet criteria for an anxiety disorder (White et al., 2009)
- Children with ASD often do not display age-typical symptoms of anxiety (White et al., 2009)
 - Changes in schedule, specific phobias, reactivity to sensory input, externalizing behaviors



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Anxiety can look different in children and teens

8 WAYS A CHILD'S ANXIETY SHOWS UP AS SOMETHING ELSE

- 1. Anger**
The perception of danger, stress or frustration is enough to trigger the fight or flight response leaving your child angry and selfish. It may feel like you're arguing but it's really anxiety.
- 2. Difficulty Sleeping**
In children, having difficulty falling asleep or staying asleep is one of the hallmark characteristics of anxiety.
- 3. Defiance**
Unable to communicate what is really going on, it is easy for a child to display defiance as a lack of discipline instead of an attempt to control a situation where they feel stressed and helpless.
- 4. Chandeliering**
Chandeliering is when a seemingly calm person suddenly flies off the handle for no reason. They have pushed hurt and anxiety so deep for so long that it's seemingly innocent comment or event suddenly sends them straight through the chandelier.
- 5. Lack of Focus**
Children with anxiety are often so caught up in their own thoughts that they do not pay attention to what is going on around them.
- 6. Avoidance**
Children who are trying to avoid a particular person, place or task often end up experiencing more of whatever it is they are avoiding.
- 7. Negativity**
Teens who are easily tend to experience negative thoughts at a much greater intensity than positive ones.
- 8. Overplanning**
Overplanning and deferring get hand in hand in their root cause. When anxiety can cause some children to try to take back control through defiant behavior, it can cause others to overplan for situations where planning is needed or unnecessary.



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Is this anxiety or is this ASD? It may be both!

Does my child actively avoid situations at home or at school?

Has my child come up with rituals that they have to do or have me do in stressful situations?



Has my child come up with rituals that they have to do or have me do in stressful situations?

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Summary

- Significant overlap in what results in poor social interactions
- Early intervention is most effective, however...
 - What are we intervening on?
 - Anxiety
 - Language Development
 - Impulsivity
 - Social Interaction
- Must be careful that ASD does not become a catch all for early difficulties
- Important that the convenience of the spectrum does not drive diagnostic conceptualization

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Neuropsychological Evaluation and ASD

- An assessment can provide information on abilities vs skills
- Assessment in early childhood range can initiate interventions
- Standardized assessment (ADOS/ASRS/SLDT) to assess social language and reciprocal social interaction
- Is there a more comprehensive language impairment that is affecting social interactions?

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Neuropsychological Evaluation and ASD (cont)

- Neuropsychological Assessment can assist in identifying social/pragmatic language differences compared to reciprocal social interaction difficulties
- Assessment can also provide data regarding typical development in adolescence and the perception of weaknesses in teens
- Data can assist in providing foundation for a differential diagnosis, while acknowledging the behavioral profile and patient/parent perception

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