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Autism Spectrum Disorder (ASD): Information for Psychiatry Residents

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Summary: Autism spectrum disorder (ASD) is a neurodevelopmental disorder where people have troubles with social interactions, sensitivity to sensory input, and have a need for extreme consistency and routines.

Case: “He’s about to be kicked out of school and I’m going to lose my job!”

Identifying data	10-yo boy
Reason for referral	Referred urgently to you due to problems with aggression and school suspensions. Parents: “You have to do something! He’s about to be kicked out of school!”
HPI	He has had longstanding issues with aggression and interactions with others. Since this school year, worsening problems with aggression. Suspended several times this year for hitting peers and teachers. As a result of having to go to school early to pick him up, mother is at risk of losing her job. When you ask about stresses, he reports that: • “School is too loud” • “Everyone is mean!”
Strengths	Enjoys math and science, and anything engineering-related, e.g. devours books and videos about engines and machines. Parents report, “Thomas loves his tank engines.”

What are you going to do to help Thomas?

What is Autism Spectrum Disorder?

ASD is a neurodevelopmental disorder that leads to difficulties with

1. Social communication and interactions;
2. Behaviours, with restricted repetitive behaviors and Interests.

Features of Autism Spectrum Disorder (ASD)

ASD is a heterogeneous condition that affects a person's ability to relate to others with the following features:

Difficulties with social communications and social interactions	Non-verbal difficulties • Troubles with normal eye contact, understanding gestures; troubles understanding social cues, tone of voice Verbal difficulties: • May have normal speech and vocabulary • Troubles with understanding metaphors, taking things too literally, difficult to have a conversation with as not able to participate in the “back and forth” nature of conversation or relationships; may have repetitive speech or repetitive use of words or phrases that do not fit the context of the discussion
Difficulties with perspective taking and “theory of mind”	Difficulties seeing things from others’ perspectives (i.e. theory of mind, empathy or sympathy, perspective taking) which leads to troubles understanding how to relate and act with other people. • For example ◦ A child with ASD sees a toy that another child is playing with and want to play with it, so they simply grab it. ◦ The other child gets upset and responds by grabbing back the toy. ◦ The child with ASD is unable to see the other child's perspective, and may sincerely even achieve the other child as the aggressor. ◦ Due to lack of perspective taking, it is hard for the child with ASD to understand why the other child is upset, or why the adults are upset. From the ASD child’s perspective, it is the others that are the problem.
Rigid routines and/or preoccupation with routines or rituals	Prefers fixed routine Troubles adapting to changes/transitions, as normally happens in life, at home, work or school Changes in routine or schedules can cause significant behavioral disturbances (some might call them “meltdowns”) and problems
Behaviours or interests that are restricted and repetitive	• Abnormal intensity or focus of interest in narrow areas ◦ Classic examples include technology (e.g. trains, dinosaurs, insects), as well as art, drawing, animals, etc. • Many times, this narrow focus can be helpful: ◦ Examples: Temple Grandin: PhD, scientist; Elon Musk (SpaceX, Tesla CEO)

Associated issues may include

Executive function problems	Troubles with executive function such as: • Organizing • Planning • Sustaining attention • Inhibiting inappropriate responses Examples of deficits in executive functioning include: • Focus on minor details, fail to see the big picture, e.g. the person with ASD gets overly focused on details. During an interview, as the parent describes the history of the problems, a child might become overly focused on the fact that the parent got the dates wrong, and become stuck on that. Or the child might even get upset at the parent for getting a date wrong, and not understand that the big picture is that the parents is trying to be helpful. • Difficulty with complex thinking that requires to hold more than one thought at once. Complex requires us to see “On one hand, you want ice cream now. On the other hand, we don’t have any ice cream. We could go tomorrow to get ice cream.” Persons with ASD can have troubles with the alternatives, which overlaps with perspective-taking.
Sensory processing problems and sensory overload	May be hypersensitive with sensory input such as sound, touch or movement for example: • Auditory sensitivity: Overwhelmed with loud noises, e.g. triggered on the school bus, noisy classrooms, hallways. • Tactile sensitivity: Become upset when touched, e.g. leading to troubles daily hygiene routines, troubles with tags on clothing, clothing textures or food textures. • Vestibular seeking: May seek out movement (e.g. spinning, pacing), or have distress or avoid it (e.g. car sick easily, avoid swings, rides).

Distractibility and inattention	Distractibility and inattention can result from: • Sensory overload, e.g. auditory overload from the hum of the fluorescent lights, sound from other people in a busy classroom. • Attention deficit hyperactivity disorder (ADHD), which would thus benefit from standard ADHD treatment (Holtmann, 2005)
Emotional dysregulation (mood problems, such as anger, anxiety)	As they are often easily overwhelmed by various triggers (sensory, social, cognitive, etc.), they may become triggered into "fight/flight/freeze" (aka "red zone").
Language issues	May have delays in normal spoken language With higher functioning ASD, may have normal spoken language however have problems with non-verbal communication, e.g. trouble making eye contact, understanding social cues, etc.
Intellectual disability	May range from some with intellectual disabilities or mental retardation, to others with above average intelligence. Others have very well-developed skills in some areas (such as memory for certain facts or events) and then deficits in areas such as personal care or community functioning.

Classic symptoms vs. less obvious symptoms of ASD

Most diagnostic criteria are based on the classic male with ASD. Many females with ASD have written about how they have less obvious symptoms of ASD, which has led to the realization that there is a wide spectrum of symptoms. It is now realized that these 'less obvious' symptoms can apply to males or females.

	Classic symptoms of ASD	Less obvious symptoms of ASD
Overall	More overt and obvious symptoms of ASD.	Some people are better at mimicking neurotypicals (“playing the neurotypical game” (Holliday, 2012) and may thus not present as overtly with classic ASD symptoms. May describe themselves as having a male rather than a female brain -- may resemble tomboys which is socially acceptable and less obvious. As a child, may feel that the way other girls play is ‘stupid, boring, doesn’t make sense’.
Social errors	Classic person with ASD makes social errors but lacks insight, so they don’t think they have any problem; they may get upset at others when confronted with it.	Many people with ASD will apologize, or blame themselves for their social errors.
Perspective taking	Classic person with ASD doesn’t really worry or seem to care about what others think and feel, coming across as being self-centred and selfish; is unaware of oblivious to other's feelings.	Many people with ASD lack understanding about how others feel, yet they still worry that they may have upset others. May often pick up on other’s negatives emotions (frustration, anger) and feel rejected, perhaps because they don't really understand why the other person is upset. E.g. A person with ASD calls another person overweight, and is horrified when the other person gets upset, yet truly doesn't understand why the other person is upset, because, factually, it is true that the other person is overweight.
Connection with others	Classic person with ASD may have less interest in connection with other people.	Many people with ASD do really want to feel connected with other people; but they struggle with repeated rejection due to their troubles with social skills and perspective taking. They may be labelled as 'borderline' due to their fears of abandonment.

Interests	Classic interests in ASD are often science or tech related, e.g. dinosaurs, machines, science.	Many peeople with ASD have intense interests in other areas such as: • Fiction such as reading or writing fiction (e.g. fantasy, science fiction) • Creating a fantasy world, • Creating a new persona, • Talking to imaginary friends, • Nature such as animals. “Animals and imaginary friends are safe and cannot betray you.”

Strengths of ASD

Despite the challenges in those who have ASD, note various strengths that those with high functioning ASD bring into their lives and workplaces such as:

- Being very good at following rules and laws, as well as trying to understand things according to rules and laws (Baron-Cohen, 2003).
- Being objective rather than people focused, which helps some individuals with ASD do very well in fields such as science, engineering, computers. In addition, many individuals with ASD have interests across other fields that include arts, music, drama, and social sciences, to name just a few.
- Being able to focus their attention for long periods of time, even on tasks which others may find boring or mundane.
- Being able to stay objective, and not be as affected by ‘peer pressure' or others opinions (e.g. children on the autism spectrum are far less influenced by peers when it comes to clothing trends or pressure to try drugs)
- Being visual. Many may have exceptional (even "photographic") visual memory (i.e. memory for things that they have seen). These strong visualization skills (the ability to think in pictures) may help in engineering, design and other visual fields.
- Being auditory and verbal. Rather than being visual however, individuals with ASD may have exceptional auditory memory (i.e. memory for things that they have heard.) Strong verbal skills in fact, can help in future professionals such as being a writer, editor, tour guide, or lecturer...
- Strong "analytical" or logical reasoning skills, which may help with accounting, engineering, and computers.
- Show great depth of knowledge in areas of interest, which can help them become experts in their fields of interest.
- Having a strong work ethic, as they tend to be punctual, reliable, dependable, accurate and follow rules closely.

Epidemiology

Prevalence

- Previously felt to be 1%
    - 1% (CDC 1/88) (Can. J. Psych. 55(11), 2010, 715-20; Arch Gen Psyc 2011, 68(5), 459-65)
- However, more recent data suggests it is more common ~ 1.5%
    - 1.5% or 1 in 66 Canadians aged 5 to 17 years (1 in 42 males, and 1 in 165 females) (Government of Canada, 2018)

Gender: M:F – 4:1

- Although males are diagnosed more frequently than males, evidence suggests that many females actually have missed diagnoses as they have more subtle signs than males (Kirkovski, 2013; Loomes, 2017).

Intellectual disability

- Most with ASD do not have intellectual disability (ID)
- <25% have ID

Age of diagnosis

- In some children with more obvious and severe ASD symptoms, it can be diagnosed as early as 2-years of age (Guthrie, 2013), though parents will often tell you, “I knew he was different from birth.”
- Mean age of diagnosis is age 4-5 (Daniels, 2014)

Morbidity and Burden of Disease

ASD causes significant morbidity to the child and family

- Severely affects many aspects of a child’s life
- Has emotional, behavioural, medical impacts on family
    - Causes more stress on the family than any other disorder of childhood
    - Leads to 1000 extra hours of care per year.

Etiology

Parents often ask “What causes ASD?” and it is helpful to help affirming explanations, as opposed to primarily pathological explanations, such as Baron-Cohen's Systematizing Theory, the ‘engineering hypothesis’:

- It has been noted anecdotally, that certain professions such as engineering and computer sciences have a disproportionately high percentage of individuals with ASD (Baron-Cohen, 2009). As modern societies become increasingly dependent on technology, it has been theorized that having ASD traits are adaptive and helpful, which is one theory which might possibly explain rising rates of autism spectrum disorders (CDC, 2012).
- This fits with the fact that in popular culture, there are more and more positive depictions, such as the characters on the TV series “Big Bang Theory”, or Dilbert.

Vaccines do not cause autism

- There are still some parents who worry that vaccines cause autism, but the good news is 1) research strongly shows vaccines do not cause autism and 2) earlier evidence suggesting vaccines cause autism have in fact been shown as being fraudulent

Screening

Indications for Screening

Are you doing a psychiatric assessment of a child/youth?

- Ask about ASD (“Psychiatric assessment of all children should routinely include questions about sign/symptoms of autism spectrum disorder”, JAACAP Practice Parameters for ASD, 2014).

Is there an older sibling diagnosed with ASD?

- If so, then consider screening for ASD in younger siblings and other first degree family members (e.g. parents)
- When an older sibling is diagnosed with ASD, the odds of a younger sibling having ASD is 10-20% (Szatmari, 2016).

Early Red Flags

Are there problems with social communication?

- Little social smiling
- Limited social eye contact
- Little comfort seeking

- Little separation anxiety
- Limited greeting
- Impaired joint attention
    - Joint attention is the ability to share interests, pleasurable experiences, or requests by using gestures or verbal communication in combination with eye contact with another person.

Are there problems with non-verbal communication?

- Speech delay, e.g. does not have spontaneous 2 word phrases with a verb by 24 months
- No pointing to indicate what you want to see
    - Instead of pointing, a child with ASD might grab your head to turn your head towards what they want you to see.
    - The child may drag the parent by the hand, treating other people as a tool or object
- No change in facial expression
- No gestures
- Difficult for parents to guess what the child wants due to the lack of communication

Red Flags for Ages 18 mos. and older

Are there problems with:

- Delayed or atypical language
    - Regression or loss of communication skills (including words)
    - Language comprehension and production (e.g. delayed or odd first words or unusually repetitive)
    - Unusual tone of voice or unusual crying?
    - Problems developing normal gestures (such as pointing, waving)?
    - Play
    - Differences in play, such as
        - Reduced or atypical: imitation of actions; functional/imaginative play
        - Excessive or unusual manipulation or visual exploration of toys and other objects
        - Repetitive actions with toys and other objects
- Visual or other sensory and motor skills
    - Atypical visual tracking, visual fixation (e.g. on lights)
    - Under- or over-reaction to sounds or other forms of sensory stimulation
    - Delayed fine and gross motor skills, atypical motor control (e.g., reduced muscle tone, reduced postural control for age)
    - Repetitive motor behaviors, atypical posturing of limbs or digits

Screening Instruments

- Modified Checklist of Autism in Toddlers (M-CHAT) (sensitivity 0.77-0.87, specificity: 0.38-0.99)
- Infant-Toddler Checklist (ITC) (sensitivity 0.86-0.89, specificity 0.75-0.77)
- Social communications Questionnaire (SCQ)
- ABC (Autism Behaviour Checklist)

Clinical Presentation

Children/youth may present with

- Difficulties with daily routines
    - Child may be rigid and insistent on certain daily routines

    - Aversion to change and sensory sensitivities:
    - Troubles following normal eating, sleep and routines (haircuts, nail cutting, dental care, dressing, etc)
    - Adaptive skills generally below measured IQ
- Social isolation and troubles communicating.
- Functional impairment
    - Troubles meeting normal developmental milestones that one would expected for their chronological age, e.g. having friends; moving out, etc.
- Academic problems, iIntellectual impairment and/or language impairment
    - Often large gap between intellectual and adaptive functional skills
    - Example:
        - May have good intellectual skills, yet in real life, has severe troubles with adaptive skills
        - Child/youth may have above-average intelligence, but marks may be lower than expected due to troubles with planning, organization and coping with change.
- Motor
    - Motor deficits often present: odd gait, clumsiness, walking on tiptoes, etc.
- Self-injury (head banging, biting)
- Disruptive/challenging behaviors

Typical Presentation
There are various ways in which adults with ASD may present to psychiatry:

- Patients with a diagnosis of ASD may present with ongoing mental health concerns.
- Patients without a prior diagnosis of ASD may also present for concerns such as
    - Mental health concerns
    - Specifically wondering if there is a diagnosis of ASD

Prior to the Appointment

Consider having materials that explain ahead of time what will happen during the appointment that parents can give to their child, such as a social story about “What to expect during your visit” (link to CHEO examples).

The Waiting Room

Given that many individuals with ASD are sensitive to sensory overload, try to have a waiting room that is sensory friendly without too much light, sound, smells, etc. This also helps people with other conditions such as anxiety and trauma.

History

Therapeutic alliance and goals with patients with ASD

Developing therapeutic alliance includes finding mutually agreeable goals. Try to see things from the perspective of the patient with ASD, as due to their difficulties with theory of mind, it is much harder for them to see your perspective. They are dragged in to see you. They are already feeling blamed and criticized by others. It is hard for them to see things from others’ perspectives, such as their parent(s), sibling(s) or teacher(s). Imagine yourself in the patient’s shoes, and how difficult that would be.
Examples of converting parent and other’s concerns into the patient’s concerns, with the hope of generating a mutual goal:

Parent perspective	What the clinician can say

“He’s aggressive”	“It sounds like you get really upset sometimes. I’m guessing that there must be something annoying, or upsetting. What are those things, if you know?” Possible goal: “What if we could find a way to make life less frustrating for you? Or find a way so that those frustrations don’t bug you as much?”
“He’s selfish”	“I wonder if its hard for you to understand other people. It must be hard, when they say or do things, and you don’t understand why this happens. What if we could help you understand people better?”
“Every day is a struggle, with routines. We’re always having to yell at him.”	“It sounds like daily routines are a struggle. What if we could find a way to make those routines easier for you?”

Start of the interview

Concrete, literal

- Individuals with ASD tend to be concrete and take things literally
- Example
    - Clinician: “What brought you here today?”
    - Person with ASD: “A car.” (providing a literal, concrete answer; as opposed to a more abstract answer, e.g. problems with school, stresses at home, etc.)

A comprehensive psychiatric assessment will include

- Identifying data
- Current services and supports
- Living situation
- Reason for referral
- HPI
    - Parent’s main concerns
    - What makes things worse, e.g. triggers and stressors
    - What makes things better
- Past mental health history
- Medications
    - Any side effects?
- Past medications
- Neurovegetative symptoms
    - Any sleep issues ?
- Safety
    - Aggression, self-injury to self?
    - Aggression, self-injury to others?
- Diet / Nutrition
    - Is the patient a picky eater? If so, there may be a higher risk of malnutrition
- MSE
    - Observation of child including play
    - Observe child in social settings

Diagnostic Questions Based on DSM-5 criteria

Criteria	Questions

A. Persistent deficits in social communication and interaction across multiple context, as manifested by the following, currently or by history	
1. Deficits in social-emotional reciprocity (conversation, sharing of interests/emotions/affect, initiate/respond to social interaction)	To family members: “What’s it like talking with them? Do they ask about your thoughts or feelings? Or are conversations mainly one-sided, telling you something, or making a request?”
2. Deficits in nonverbal communication, e.g. poor eye contact, poor body language, lack of facial expressions to communicate feelings	To patient: “Do you find it hard to understand other people? Do you find it's hard to read when they are happy, sad, or upset?” To family member: “Do they have trouble reading how other people feel? Does __ have troubles with empathy?”
3. Deficits in developing, maintaining/understanding relationships	To patient: “Any troubles making friends in the real world? Keeping real-world friends?” “Ever find that real-world people sometimes are annoyed, or upset at you, and you don’t understand why?”
B. Restricted, repetitive patterns of behavior, interests, or activities, as manifested by at least 2, currently or by history.	
1. Stereotyped or repetitive motor movements, use of objects, or speech?	To patient: “Are there any special words or sayings that you have?” “Do you ever flap your hands?” To parent: “Does __ have any special movements? Special words or phrases?” “Some people really like their routines and habits -- its stressful when there are changes to their routines and habits. How about you?”
2. Insistence on sameness, inflexible adherence to routines, ritualized patterns of verbal/nonverbal behavior?	What interests or hobbies do you have?
3. Highly restricted, fixated interests that are abnormal in intensity or focus	“Any sensitivity to sound?” “Any sensitivity to touch? E.g. troubles with tags on clothing, or can’t wear certain clothing?” “Picky eater?”
4. Hyper- or hypoactivity to sensory input or unusual interest in sensory aspects of the environment? • Auditory (sound)? • Tactile (touch)? • Visual (light)? Fascination with movement?	• “Are there any special words or sayings that you have?” • “Do you ever flap your hands?” • For others: “Does __ have any special movements? Special words or phrases?”
C. Symptoms must be present in the early developmental period (may not become fully manifest until social demands exceed limited capacities, or may be masked by learned strategies in later life)	To patient: “Were you always like this since a child?” “Or is it only since being an adult?” To parent: “When did you first have concerns?”
D. Causes clinically significant impairment in social, occupational and other areas of functioning.	To patient: “Have these symptoms / issues gotten in the way of your life?” To parent: “Compared to other people, has ___ had a harder time at school, work, relationships?”
E. Not better explained by intellectual disability (ID) or global developmental delay	“Were there any troubles learning at school?” “Troubles with work?”

Diagnostic Tools

- Autism Diagnostic Interview-revised (ADI-R)
- The Autism Diagnostic Observation Schedule-Generic (ADOS-G), specificity 0.72-1.0, sensitivity 0.72-0.98
- Childhood Autism Rating Scale (CARS), sensitivity and specificity 0.82-0.95
- Diagnostic Interview for Social and Communication Disorders (DISCO)

While it can be helpful to have training in using standardized diagnostic tools, this is not always possible -- ultimately, the diagnosis is a clinical diagnosis.

DSM-5 Criteria for Autism Spectrum Disorder (ASD)

A. Persistent deficits in social communication and interaction across multiple context, as manifested by the following, currently or by history

1. Deficits in social-emotional reciprocity, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.
2. Deficits in nonverbal communicative behaviors used for social interaction, ranging, for example, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures; to a total lack of facial expressions and nonverbal communication.
3. Deficits in developing, maintaining, and understanding relationships, ranging, for example, from difficulties adjusting behavior to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absence of interest in peers.

B. Restricted, repetitive patterns of behavior, interests, or activities, as manifested by at least 2 of the following, currently or by history

1. Stereotyped or repetitive motor movements, use of objects, or speech (e.g., simple motor stereotypes, lining up toys or flipping objects, echolalia, idiosyncratic phrases).
2. Insistence on sameness, inflexible adherence to routines, or ritualized patterns of verbal or nonverbal behavior (e.g., extreme distress at small changes, difficulties with transitions, rigid thinking patterns, greeting rituals, need to take the same route or eat the same food every day).
3. Highly restricted, fixated interests that are abnormal in intensity or focus (e.g., strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interests).
4. Hyper- or hypo reactivity to sensory input or unusual interest in sensory aspects of the environment (e.g. apparent indifference to pain/temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, visual fascination with lights or movement).

C. Symptoms must be present in the early developmental period (however note that symptoms 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 areas of function such as social, occupational.
E. Symptoms are not better explained by intellectual disability (ID) or global developmental delay
Specify:

- Current severity of A and B

Specify:

- With or without intellectual impairment
- With or without language impairment
- Associated with a known medical or genetic condition or environmental factor
- Associated with another neurodevelopmental, mental, or behavioral disorder
- With catatonia

Differential Diagnosis: Medical Issues

Medical conditions can cause or worsen challenging behaviours in patients with ASD:

- H+N
  - Dental issues such as dental caries
  - Ear infections

- Musculoskeletal issues such as pain

- Metabolic
  - Hypo/hyperglycemia in patients with diabetes

- GI
  - Constipation and encopresis,
  - Avoidant-restrictive food intake disorder (ARFID)
  - Celiac disease, or gluten intolerance
  - Malnutrition, e.g. especially if picky eater, along with reduced intake
  - Gastroesophageal reflux disease (GERD)

- Medication side effects

- Neurologic
  - Headaches
  - Seizures

- Allergies
  - Patients with ASD appear to have increased incidence of food allergies

Differential Diagnosis: Psychiatric Conditions

Are there any other conditions (especially treatable conditions) with similar symptoms, such as:

Conditions	Screening questions
• Normal variants in personality	An individual may be ‘eccentric’ with traits of ASD, without necessarily meeting full criteria for DSM-5 ASD
• Rett syndrome, other genetic syndrome	
• Selective mutism ◦ Troubles speaking in public situations such as school, doctor’s appointments	Is your child excessively shy? Is your child able to speak when around safe people (e.g. close family)? On the other hand, does your child have troubles speaking in class, or in public situations?
• Language disorder and social (pragmatic) communication disorder (SPCD) * • New diagnosis in DSM-5 • Difficulty with pragmatics, or the social use of language and communication • Deficits with understanding and following social rules of verbal and nonverbal communication in naturalistic contexts, changing language according to the needs of the listener or situations, following rules for conversations and storytelling • Results in functional limitations in effective communication, social participation, academic or occupational performance • Associated with ADHD, behavioral problems, specific LD • Risk Factors ◦ Family Hx of ASD, ◦ Communication disorders, specific LD • DDx: ◦ ASD, ADHD, social anxiety disorder (social phobia), IDD and global developmental delay	Are there troubles with social communication, however without meeting other criteria for autism spectrum disorder? • If so, then evaluate for social (pragmatic) communication disorder.

• Non-verbal learning disability (NVLD)	Problems with non-verbal communication and social skills. Has a distinct psychological profile with significant verbal/non-verbal split, whereby verbal strengths are significantly stronger than non-verbal strengths. The exact relationship between people with NVLD and ASD is yet to be determined
• Sensory impairment (deafness) ◦ Persons with sensory impairment (e.g. deafness) may appear to have trouble relating with others.	
• Reactive attachment disorder (and developmental trauma) ◦ People with developmental trauma (along with attachment disorders) may have problems relating to other people.	Does the child appear disconnected from others? With developmental trauma, attachments should improve when they are in a secure placement with safe caregivers.
• OCD ◦ People with ASD and OCD may have repetitive behaviours ◦ In OCD, behaviours will be ego-dystonic; in ASD, behaviours may be an attempt at self-regulation.	Are there any obsessions? Compulsions?
• Intellectual disability (ID without ASD)	Any learning issues?
• Stereotypic movement disorder (SMD) ◦ Motor disorder with onset in childhood involving repetitive, nonfunctional motor behavior (e.g., hand waving or head banging), that markedly interferes with normal activities or results in bodily injury.	Any movements that cause problems?
• ADHD ◦ People with ASD may appear inattentive if they are sensory overloaded. ◦ People with ASD may also have have comorbid ADHD ◦ Prevalence estimated at 33-37%	Any troubles paying attention? Keeping focused at school or work? Do you get distracted easily?
• Schizophrenia ◦ Psychosis and schizophrenia is more common in those with ASD	Any hearing or seeing things that others cannot?
• Technology overuse ◦ Individuals with ASD appear to be at high risk of overuse of technology.	Do you have any concerns about child’s screen time?
• Catatonia ◦ More common in ASD	Is there new onset of symptoms (i.e. change in baseline) such as: • Pacing • Activation • Stupor • Echolalia • Stereotypies • Incontinence • Self-injurious behaviour • Not feeding themselves • Loss of skills

Comorbidity

Comorbidity is common

- 70% will have one mental disorder
- 40% will have two or more mental disorders

Conditions	Prevalence in ASD (Meng-Chaun L, 2020)	Screening Questions
ADHD • Under DSM-IV it was not possible by definition to have comorbid ADHD, but under DSM-5, it is now recognized that patients with ASD can indeed have comorbid ADHD.	28%	Any problems with • Inattention? Getting distracted? • Impulsivity? • Hyperactivity?
Learning disability		Any problems learning in specific areas, e.g. math, reading, etc.?
Intellectual disability • 20% normal range -- verbal skills generally more impaired than nonverbal skills • 35% mild to moderate, • 50% have severe/profound ID,	20-50%	Any troubles learning at school? Any troubles functioning at work?
Specific language impairment		
Anxiety disorder • People with ASD tend to feel anxious as the world is a dangerous place to them -- there are sensory stresses, social stresses, etc	20%	Any problems with anxiety?
Depressive disorder • Due to all the struggles that they have with social interactions and other stresses, people with ASD are at a high risk of depressed mood.	11%	Has your mood been low, sad or depressed?
Obsessive-compulsive disorder (OCD) • People with ASD have inflexible routines, which can sometimes be mistaken as OCD. • People with ASD may also develop classic OCD as well.	9%	Do you have any thoughts that you worry about over and over again, e.g. being contaminated? Do you have any rituals that you have to do over and over and over again, e.g. handwashing?
Disruptive mood dysregulation disorder (DMDD)		Any problems with explosive anger?
Sensory processing problems • Most people with ASD appear to have sensory sensitivities.		Any over (or under) sensitivity to light, touch, smells, etc.?
Motor problems, e.g. Developmental coordination disorder (DCD)		Any problems with fine motor? Gross motor?
Transgender • It has been noted an a higher than expected frequency of individuals with ASD tend to be transgender		Some people describe themselves as transgender -- this is when they experience a different gender identity from their sex at birth. For example, a person born into a male body, but who feels female or lives as a woman. Do you consider yourself to be transgender?
Eating disorders • It has been noted that a higher than expected frequency of individuals with ASD have eating disorders, e.g. female who is preoccupied with diet and nutrition		Are you happy with your eating patterns? Do you ever eat in secret? Does your weight affect how you feel about yourself?

Technology overuse • People with ASD have a higher risk of excessive use of technology such as video games. • Conversely, problematic video gaming impairs social skills and leads to disrupted relationships.		How much time every day do you spend using your screens for fun? E.g. video games? Videos? Social media? Over 2 hrs a day? Over 4-5 hrs a day?
Psychotic disorders such as schizophrenia • People with ASD may have unusual beliefs; their inability to see other's perspectives may lead them to feel paranoid when talking about others. • Unlike classic psychosis however, people with ASD do not typically have hallucinations.		Do you have any strong beliefs that others don't understand? Are there any people out to get you? Do you see any things that others cannot see? Hear any things that others cannot hear, e.g. voices?
Neurologic		
• Sleep disorders	13%	Any sleep problems? Sleep apnea? Restless legs? Sleep attacks? Cataplexy? Etc.
• Epilepsy,		Any seizures?
• Stereotypies		Do you have any movements that you do? Has anyone told you that there are particular movements that you do?
• Tics		Any repetitive movements?
Genetic: • Down syndrome • Fragile X syndrome • Tuberous sclerosis		

Prognosis and Outcome

Most people with ASD improve over time

- Language increases, symptoms decrease; those with better social skills do better.
- However, adaptive functioning remains poor for most.

How many children lose their ASD diagnosis?

- Studies have followed children diagnosed with ASD from 3-years of age to middle childhood, and show that an ASD diagnosis is removed in 5.6-20% of children (Brian 20-16; Shephard, 2017).

Physical Exam

Especially if the patient has troubles expressing themselves verbally, ensure a physical exam to rule out physical contributor. If the psychiatrist is not doing a physical exam, then the psychiatrist should coordinate so that someone is doing a physical exam (JAACAP Practice Parameter for ASD, 2014).

General	Look for dysmorphic features which may suggest a genetic syndrome.
Head	Hearing screen Textbooks often mention Wood's lamp exam (for signs of tuberous sclerosis), though this is likely not feasible in the average practice. Any dental issues, e.g. dental abscess?
Abdomen	Abdominal tenderness, signs of constipation?
MSK	Any problems with arms, legs?

Rule out general medical conditions that may be contributing	Endocrine (e.g. hypothyroidism) Metabolic (e.g. homocystinuria) Traumatic (e.g. head injury) Toxic (e.g. fetal alcohol syndrome) Infections (e.g. encephalitis, meningitis)

Mental Status Exam (MSE)

General observations:

- Possible sensory overload, with signs of fight/flight or freeze.
- Technology overuse may be suggested by inability to put down an electronic device.

Communication / Language

- Tend to have poor eye contact
- May not recognize usual boundaries in social situations, e.g. make factually correct, but socially inappropriate comments about the interviewer's appearance, ethnicity, etc.
- Tone of voice may be unusual
- May have their unique use of words, language, or made up words

Insight

- Due to troubles with perspective taking, tend to see any problems/issues from their own perspective, and have troubles seeing from other's perspective, e.g. "everyone at school is being mean to me" without understanding that his/her own behaviours lead everyone to respond negatively.

Investigations

Based on clinical suspicion, consider:

- Genetic testing, such as G-banded karyotype, fragile X testing, chromosomal microarray
- EEG if history of seizure or history of significant regression in social or communication functioning.
    - EEG abnormal in 20 -25%.
- Neuroimaging
    - Referral for genetic or neurologic consultation

Additional assessments

- Psychoeducational testing to rule out comorbid learning disabilities or other conditions.
- Neuropsychological testing (include verbal skills, non-verbal skills, adaptive skills and overall function assessments)
- Guide future planning (e.g. educational needs)
- Adaptive skills
- Communication assessment
- Vision
- Hearing
- Speech Language Pathology
- Occupational Therapy
- Sleep assessment

Documenting the Diagnosis

Does the patient meet criteria for DSM-5 diagnosis of Autism Spectrum Disorder (ASD)? If so, then document the diagnosis, as this is important for many agencies in order to qualify for services.

How to Document Autism Spectrum Disorder (ASD) Diagnosis

State the diagnosis, e.g. "I am writing this letter to confirm a diagnosis of autism spectrum disorder (ASD)

- With / without intellectual impairment.
- With / without language impairment.

State the ASD severity such as

- Level 1: Requiring support, due to issues such as
  - Social difficulties, e.g. May find it difficult to initiate conversations with others and may respond inappropriately or lose interest quickly. As a result, it can be challenging for them to make friends, especially without the right support.
  - Inflexible behavior, e.g. May be difficult for them to cope with changing situations or contexts, such as new environments; and may need help with organization and planning.
- Level 2: Requiring substantial support
  - People in this category need more support than those with a level 1 diagnosis. They have more severe social deficits that make holding a conversation very challenging.
  - Even with support, they may struggle to communicate coherently and are more likely to respond inappropriately to others. They may speak in short sentences or only discuss very specific topics.
  - These individuals may also have issues with nonverbal communication and might display behaviors such as facing away from the person with whom they are communicating.
  - People with a level 2 diagnosis may also have inflexible behaviors that can interfere with daily functioning. They typically do not cope very well with changes, which can cause them significant distress.
- Level 3: Requiring very substantial support
  - Level 3 is the most severe autism diagnosis, with people having significant impairments in their verbal
  - Will often avoid interactions with others, but they may interact in a limited way if they must respond to others or communicate a need.
  - Behaviors are highly inflexible and repetitive. They may react strongly to changes and become highly distressed in a situation that requires them to alter their focus or task.

Management / Treatment

Provide education about ASD

- Consider ASD handouts from eMentalHealth.ca https://www.ementalhealth.ca/index.php?m=article&ID=8887

Service navigation

Any need for ASD services in general?	⇨	Autism agencies or child mental health agencies
Any problems with language, including social language?	⇨	Speech-language therapy (SLP)
Any concerns about learning?	⇨	Psychological assessment, and psychological services
Any sensory/motor or self-regulation issues?	⇨	Occupational therapy (OT)
Any need for diagnostic clarification, medications?	⇨	Psychiatrist

Family support:

- Do the caregivers require any supports such as:
  - Financial supports
  - Respite
- Do siblings require any supports, such as

    - Sibling support

Establish goals for interventions such as:

- Language / communication
- Social skills
- Behaviours
- Self-regulation
- Addressing behaviours that challenge (BTC) such as repetitive, self-stimulatory behaviors, tantrums, aggression and self-injurious behaviors.

Establish target symptoms for intervention

- Ask the family what goals they would like to work on
    - E.g. less anger?
    - E.g. more independence?

Treat any treatable comorbid conditions

- E.g. ADHD

Monitor multiple domains of functioning

- Behavioral adjustment, adaptive skills, academic skills, social/communicative skills, social interactions) (case coordination)

Monitor pharmacological interventions for efficacy and side-effects.
Liaise with the school

- Telephone call / email with school
- Letter to school stating diagnosis of ASD https://docs.google.com/document/d/111vPe2r4krjkHjdGChnR-LvGZtxvo1R6SFZJ7-ilEqo/edit#heading=h.a3sxhvcasswb
- Letter to school requesting any additional supports such as accommodations, modifications

Management/Treatment: Behavioural Interventions

Applied Behavior Analysis (ABA).

- Uses the principles of operant conditioning to teach specific social, communicative, and behavioral skills to children with ASD. It involves teaching new behaviors by explicit reinforcement of these behaviors, problem behaviors are often addressed by carefully analyzing triggers or antecedents of the problem behavior in order to change the factors in the environment that are contributing to the problems behavior.

- Effective intervention includes a minimum of 20 hours per week of carefully organized services, preferably initiated when a child is younger than 4.
- Outcomes of ABA (effect size 0.3 to >1):
    - Gains in verbal intelligence quotient, language communication domains if treatment is started earlier, with greater intensity or duration of intervention
- ABC's of ABA
    - ABA uses the following 3 step process to understand behaviour and teach new skills:
        - A: Antecedent/instruction
            - What happens right BEFORE the behavior?
        - B: Behavior/ the child's response
            - What the child does.
        - C: Consequence/ teacher feedback
            - What happens right AFTER the behavior?

Intensive Behaviour Intervention (IBI)

- Intensive Behaviour Intervention (IBI) is a more intense form of ABA which consists of >25 hours per week, adult directed, 1:1
- IBI has good evidence:
- Most gains are seen if IBI is
    - High level of intervention (30-40hrs per week)
    - 1:1 (therapist or parent)
    - >2yrs
    - Starts before 5yrs

Management/Treatment: Developmental Treatments

Many families report that their children do not respond to ABA nor IBI approaches, particularly those with higher functioning ASD.
Developmental-based treatments are more child directed and focus on the child's developmental level as well as social communication skills
Examples include:

- Early Start Denver Model,
- Pivotal response Training,
- Developmental Individual Difference Relationship-based approach (DIR or Floortime)

Evidence is weaker for developmental treatments compared to ABA treatments however.

Visual supports and strategies

Individuals with ASD benefit from visual supports and strategies which includes:

- Picture Exchange Communication Systems (PECS): Children are taught to select pictures of desired objects or activities as a way of requesting access to the object/activity. Examples of software include Proloquo on iPad.
- Visual schedules: Especially helpful for those who struggle with routines, a visual schedule helps the child know what to expect in their day.

Social skills training

Stories are a powerful and compelling way to teach many concepts. The Bible is an example of the use of stories to teach various concepts. Social stories (aka social scripts) can help individuals with ASD to function better by explaining various situations.
Examples might include:

- What to expect when I go to the dentist
- What does it mean when there are no more cookies
- How to introduce myself to someone
- And so on…

Sensory / Self-Regulation Interventions

Individuals with ASD tend to have sensory issues, motor issues, as well as self-regulation problems.
Professionals that can help include occupational therapy (OT) using:

- Sensory assessment, and developing an appropriate sensory diet
    - Individuals with ASD tend to have various sensory sensitivities, e.g. sensitivity to sound, light, touch, etc.
    - An OT can assess a patient's sensory profile using standardized tools, in order to develop an appropriate sensory diet, i.e. doing one's best to ensure that the patient's sensory environment is less overwhelming.
    - For example, if a patient with ASD is sensitive to sound, the OT can recommend accommodations/

modifications to the school to help the patient cope better, such as:
    - Instead of insisting the patient take a regular school bus to school, recommending that the patient be allowed to take special transportation, e.g. van
    - Accommodations for noisy school situations (such as noisy school assemblies, fire drills, etc.)
- Snoezelen room
  - A calming sensory environment that can often be found in schools or other organizations that work with children/youth on the spectrum.
- Safe and Sound Protocol (SSP)
  - Developed by Dr. Stephen Porges, this is a type of auditory desensitization to help children/youth tolerate frequencies of human interaction.

Management / Treatment: Behaviours that Challenge (BTC)

Terms

- Behaviours that Challenge (BTC)
- Challenging Behaviors (CB)

Etiology

- CB are largely due to environmental factors
- Causes of CB: gaining attention, escape from demands or undesired tasks, self-stimulation, seeking tangible items (food, toys), poor coping and social skills

Assess

- Method used to establish environmental causes: Functional Assessment
- Scatter plot: time of day that CB occurs across days/weeks
- Antecedent-behavior-consequence (ABC) charts
- Experimental functional analysis (EFA) research, time
- Questions about behavior function (QABF) reliab., valid

Behavioral Treatments

- Positive Behavioral Support (PBS): incorporate nonaversive behavioral interventions with increasing respect, improving interpersonal relationships and building personal competency

Differential Reinforcement (DR) :

- DRI (of incompatible behavior): reinforcing behavior that cannot be emitted simultaneously with the target behavior
- DRA (of alternate behavior): appropriate behavior are reinforced
- DRO (of other behavior) : reinforces specific time intervals during which the target behavior does not occur

Behavioral Treatments

- DR (solo or in combination) effective in reducing or eliminating CB: SIB, rumination, inappropriate vocalizations, aggression, pica, disruptive behaviors, hand mouthing, stripping, trichotillomania and property destruction
- Note if there is a skill deficit: need to teach an appropriate replacement behavior
- Anger management training or aggression with people with Mild-mod ID (capable of insight into their emotions and the connection to their target behaviors
- Relaxation training: use of the Snoezelen room (dark room with multiple form of sensory stimulation: music, light-up objects, vibrating objects, spinning lights). (careful not to reinforce CB)
- Restrictive interventions (restraints for ex): appropriate for crisis, dangerous situations

Management/Treatment: Address Stressors/Triggers

Stressors / triggers for problems:

- Transition/ phases: change of residence, new school, altered route to school/work, going into puberty, achieving majority.
- Interpersonal loss or rejection: Loss of parent, caregiver, friend, roommate; breakup of romantic attachment; being suspended from school.
- Environmental: excessive noise, reduced privacy, lack of satisfactory stimulation.
- Parenting/social support: lack of support, destabilizing visits, phone calls, letters, neglect, physical/sexual abuse.
- Illness or disability: chronic medical or psychiatric illness, acute illness, sensory deficits, seizures.
- Frustration: due to inability to communicate needs/wishes; due to lack of choice about residence, etc; because of realization of deficits

Strengths and Difficulties in Persons with ASD

Typical strengths of those with ASD

- Attention to details, memory (especially rote memory)
- Skilled in a particular area (have passion, conviction)
- Deep study resulting in encyclopedic knowledge on areas of interest
- Tendency to be logical, often very verbal (provide detailed descriptions, great if you are lost)
- Different way to look at things, ideas or concepts
- Visual processing (think in pictures or video)
- Communicate directly, loyal, honest, nonjudgmental listening

Difficulties

- Getting the “big” picture
- Uneven set of skills
- Difficulty to be motivated or interested to study areas not of interest
- Difficulty perceiving/understanding the emotional states of other
- Difficulty to perceive unwritten rules of social interactions.
- Sensory integration problems where input may register unevenly, difficulty screening out background noise
- Generalization of skills and concepts

Management/Treatment: Medications

What’s the evidence?

- There is no treatment for core symptoms of social and relationship problems in ASD.
- FDA-approved medications for “irritability in children and adolescents with autism” are:
    - Aripiprazole (Abilify) for age 6-17 y
        - Note that Aripiprazole theoretically has less metabolic effects than Risperidone
    - Risperidone (Risperdal) for age 5-16 y
- Periodic attempts to decrease or discontinue medication is prudent since most require long-term treatment.

Have non-medication strategies been tried without success?

- If so, consider medication options, along with behavioural interventions (Ip et al., 2019). Remember that medications do not address underlying issues.

Symptom Targets for Medications

Depression	SSRI
	• Fluoxetine
	  ◦ Advantages: Being able to swallow pill
	• Sertraline
	  ◦ Advantages are shorter half-life, being able to titrate slower

Anxiety	SSRI
	• Fluoxetine
	  ◦ Advantages: Being able to swallow pill
	• Sertraline
	  ◦ Advantages are shorter half-life, being able to titrate slower

ADHD symptoms such as	
• Inattention and hyperactivity	Methylphenidate (Ritalin) or other stimulant medications for ADHD Atomoxetine (Strattera)
◦ Impulsivity	Clonidine (Catapres) Guanfacine (Intuniv)
Repetitive, compulsive self-injurious behaviors	Is there an 'addictive', compulsive quality to the self-injurious behaviours? • Consider naltrexone
Motor and/or vocal tics	Risperidone

Aggression and irritability	Consider
	• Antiadrenergics such as
	  ◦ Clonidine
	  ◦ Guanfacine XR
	• Atypical antipsychotics such as
	  ◦ Risperidone
	• Newer atypicals with less metabolic effects such as
	  ◦ Aripiprazole
	  ◦ Lurasidone
	Monitoring is required for metabolic issues, such as weight gain and dyslipidemia; visit www.camesa.org for monitoring guidelines

Sleep disturbances	Have sleep hygiene and behavioural strategies already been tried but without success? Consider options such as: • Melatonin 3-9 mg qhs or 5-10 mg qhs • May reduce sleep onset time, and increase sleep duration • May not reduce nocturnal or early awakening • Side effects may include difficulty waking, daytime sleepiness, enuresis • Sedating anti-psychotics at bedtime are sometimes used off-label to help with sleep (e.g. Risperidone)
Catatonia	Consider lorazepam • Start Lorazepam low dose 0.25-0.5 mg daily, • Increase up to bid/tid/qid • Therapeutic target: 6 mg /day before seeing results • Monitor with rating scales

Findling R et al.: An update on pharmacotherapy for ASD in Child/Adolescents,Curr Opin Psychiatry 2015 28: 91-101.

Medication Dosage Charts

Atypicals

Generic Name	Brand name	Dosage for children	Dosage for adolescents / adults	Comment

Risperidone	Risperdal	0.25-1 mg daily	4-16 mg daily	FDA approved for irritability in youth with ASD
Aripiprazole	Abilify	5-10 mg daily	10-30 mg daily	FDA approved for irritability in youth with ASD
Olanzapine	Zyprexa	2.5-5 mg daily	5-20 mg daily	
Quetiapine	Seroquel	50-300 mg daily	300-600 mg daily	
Lurasidone	Latuda	20-60 mg daily	40-120 mg daily	Off-label; studies showing mixed results.

SSRIs

Generic Name	Brand Name	Dosage for children	Dosage for adolescents / adults
Fluoxetine	Prozac	Start 2.5-5 mg daly Target 5-10 mg daily Max 10 mg daily	Start 10 mg daily Target 10-20 mg daily Max 60 mg daily
Citalopram	Celexa	Start 2.5-5 mg daily Target 5 mg daily Max 10 mg daily	Start 5-10 mg daily Target 10-20 mg daily Max 40 mg daily
Escitalopram	Cipralex	Start 1.25-2.5 mg daily Target 5 mg daily Max 10 mg daily	Start 2.5-5 mg daily Target 10 mg daily Max 20 mg daily
Sertraline	Zoloft	Start 12.5-25 mg daily Target 50-100 mg daily Max 150 mg daily	Start 25-50 mg daily Target 50-200 mg daily Max 300 mg daily
Fluvoxamine	Luvox	Start 12.5-25 mg daily Target 50-100 mg daily Max 150 mg daily	Start 25-50 mg daily Target 50-200 mg daily Max 300 mg daily

ADHD medications

Generic Name	Brand name	Dosage for children	Dosage for adolescents / adults
Methylphenidate	Concerta	Start 9-18 mg daily Target 1 mg/kg/daily Max 72 mg daily	Start 18 mg daily Target 1 mg/kg/daily Max 90 mg daily
Methylphenidate	Ritalin	Start 5 mg daily Target 1 mg/kg/daily Max 60 mg daily	Start 10 mg daily Target 1 mg/kg/daily Max 90 mg daily
Dextroamphetamine salts	Adderall XR	Start 2.5-5 mg daily Target 0.5 mg / kg/daily Max 30 mg daily	Start 5-10 mg daily Target 0.5 mg/kg/daily Max 50 mg daily
Lisdexamfet-amine	Vyvanse	Start 10 mg daily Target 0.5 mg/kg/daily Max 60 mg daily	Start 10-20 mg daily Target 0.5 mg/kg/daily Max 70 mg daily
Atomoxetine	Strattera	Start 0.5 mg/kg/day Max 1.4 mg/kg/daily	Start 0.5 mg/kg//day or 40 mg daily Max 1.4 mg/kg/daily or 100 mg daily

Alpha Adrenergics

Generic Name	Brand name	Dosage for children	Dosage for adults
Guanfacine XR	Intuniv XR	Start 1 mg qhs Max 4 mg daily	Start 1 mg qhs Max 7 mg daily

* Clonidine is not listed here as it is not approved by Health Canada at the present time.

Management: Complementary and Alternative Medicine (CAM) Treatments

Does the family report using CAM?

- Discuss risks / benefits of CAM (Ip et al., 2019)
  - Risks include actual risks of the treatment, but also the family burden of paying for an ineffective treatment
- Does a family wish to use CAM?
  - Recommend that they use one at a time
  - Set a target symptom or goal, and monitor progress on that goal
    - E.g. if goal is “less anger”, then consider getting a baseline, e.g. “On a scale between 0 and 10, if 0 is no anger, and 10 is the worst, how much anger is there?”

A review by Brondino reviewed studies on various CAM treatments.

- Biologically based CAMs that have studies are:
  - Gluten/casein-free diet (Elder, 2006) -- inconclusive.
  - Omega 3 (Amminger, 2007; Bent, 2011) -- inconclusive.
  - Vitamin supplementation (vitB6, vitB12, and tetrahydrobiopterin) -- inconsistent results.
  - Hyperbaric Oxygen Therapy -- results promising, but not entirely consistent.
  - Elimination diet does not appear effective in treating ASD core symptoms in general, though individual patients who do have intolerance may benefit from elimination diet[111].
  - Omega 3 supplementation -- no evidence for recommendation in ASD: the only positive results come from a single open label trial [26].

Unfortunately,, there is no conclusive evidence supporting the efficacy of CAM therapies in ASD at this time (Brondino, 2015.)
Nonetheless, Brondino reported promising results for the following:

- Music therapy;
- Sensory integration therapy
- Acupuncture
- Massage

System Navigation in Ontario

Would you like a diagnostic assessment from an Autism Diagnostic Hub?

- In Ontario, there are five Autism Diagnostic Hubs where you can refer https://www.ontario.ca/page/autism-assessment-diagnosis#section-3

Western Ontario	McMaster Children’s Hospital, Ron Joyce 905-521-2100, ext. 78222 https://www.hamiltonhealthsciences.ca/mcmaster-childrens-hospital/areas-of-care/developmental-pediatrics-and-rehabilitation/asd-diagnostic-hub/
Central Ontario	Children’s Treatment Network of Simcoe York 1-866-377-0286 https://www.ctnsy.ca

Northern Ontario	Child and Community Resources, 1-877-996-1599 | 705-525-0055 https://ccrconnect.ca
Eastern Ontario	CHEO / OCTC 613-737-2757 | 1-800-565-4839 www.cheo.on.ca
Toronto	Holland Bloorview Kids Rehabilitation Hospital 416-425-6220, ext. 3334 https://hollandbloorview.ca

Have you seen a patient and confirmed a diagnosis of ASD? If so, then:

- Write a letter confirming the diagnosis -- here is an example of such a letter https://docs.google.com/document/d/1eeZYWg-J3obVJ9SHelSjaHqNE8wEJKdVzdJ3w1C4h68/edit#heading=h.174yugffznrk
- Ask the family to apply to the Ontario Autism Program (OAP), using the letter you have written for confirmation of the diagnosis https://www.ontario.ca/page/ontario-autism-program
- Useful agencies
    - Autism Ontario

System Navigation in Ottawa

- Services and Supports
    - Private practice
    - CHEO Autism Program

References

Amminger G. P., Berger G. E., Schäfer M. R., Klier C., Friedrich M. H., Feucht M. Omega-3 fatty acids supplementation in children with autism: a double-blind randomized, placebo-controlled pilot study. Biological Psychiatry. 2007;61(4):551–553. doi: 10.1016/j.biopsych.2006.05.007.
Bent S., Bertoglio K., Ashwood P., Bostrom A., Hendren R. L. A pilot randomized controlled trial of omega-3 fatty acids for autism spectrum disorder. Journal of Autism and Developmental Disorders. 2011;41(5):545–554. doi: 10.1007/s10803-010-1078-8.
Brian J. et al. Stability and change in autism spectrum disorder diagnosis from age 3 to middle childhood in a high-risk sibling cohort. Autism Int. J. Res. Pract. 2016 Oct; 20(7): 888–892.
Daniels AM, Mandell DS. Explaining differences in age at autism spectrum disorder diagnosis: A critical review. Autism 2014;18(5):583–97.
Elder J. H., Shankar M., Shuster J., Theriaque D., Burns S., Sherrill L. The gluten-free, casein-free diet in autism: results of a preliminary double blind clinical trial. Journal of Autism and Developmental Disorders. 2006;36(3):413–420. doi: 10.1007/s10803-006-0079-0.
Kirkovski M, Enticott PG, Fitzgerald PB. A review of the role of female gender in autism spectrum disorders. J Autism Dev Disord 2013;43(11):2584–603.
Meng-Chuan L et al.: Prevalence of co-occurring mental health diagnoses in the autism population: a systematic review and meta-analysis. The Lancet Psychiatry. 2019 Oct 1, 6(10): P819-829. https://doi.org/10.1016/S2215-...
Government of Canada. Autism Spectrum Disorder Among Children and Youth in Canada 2018: A Report of the National Autism Spectrum Disorder Surveillance System. https://www.canada.ca/en/publi... (Accessed Mar 7, 2020).
Guthrie W, Swineford LB, Nottke C, Wetherby AM. Early diagnosis of autism spectrum disorder: Stability and change in clinical diagnosis and symptom presentation. J Child Psychol Psychiatry 2013;54(5):582–90.
Loomes R, Hull L, Mandy WPL. What is the male-to-female ratio in autism spectrum disorder? A systematic review and meta-analysis. J Am Acad Child Adolesc Psychiatry 2017;56(6):466–74.
Shephard, E. et al. Mid-childhood outcomes of infant siblings at familial high-risk of autism spectrum disorder.

Autism Res. J. Int. Soc. Autism Res. 2017 Mar; 10(3): 546–557.
Szatmari P et al. Prospective Longitudinal Studies of Infant Siblings of Children With Autism: Lessons Learned and Future Directions. J Am Acad Child Adolesc Psychiatry. 2016 Mar; 55(3): 179–187.
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4871151/

Review Articles

Autism spectrum disorder: advances in evidence-based practice
Evdokia Anagnostou, Lonnie Zwaigenbaum, Peter Szatmari, Eric Fombonne, Bridget A. Fernandez, Marc Woodbury-Smith, Jessica Brian, Susan Bryson, Isabel M. Smith, Irene Drmic, Janet A. Buchanan, Wendy Roberts and Stephen W. Scherer
CMAJ April 15, 2014 186 (7) 509-519; DOI: https://doi.org/10.1503/cmaj.121756
http://www.cmaj.ca/content/186/7
Zwaigenbaum L, Brian JA, Ip A; Canadian Paediatric Society, Autism Spectrum Disorder Guidelines Task Force. Position statement. Early detection for autism spectrum disorder in young children. Paediatr Child Health 2019;24:424-32. https://www.cps.ca/en/documents/position/asd-early-detection (accessed October 31, 2019).
Brian JA, Zwaigenbaum L, Ip A; Canadian Paediatric Society, Autism Spectrum Disorder Guidelines Task Force. Position statement. Standards of diagnostic assessment for autism spectrum disorder. Paediatr Child Health 2019;24:444-51. https://www.cps.ca/en/documents/position/asd-diagnostic-assessment (accessed October 31, 2019).
Ip A, Zwaigenbaum L, Brian JA; Canadian Paediatric Society, Autism Spectrum Disorder Guidelines Task Force. Position statement. Post-diagnostic management and follow-up care for autism spectrum disorder. Paediatr Child Health 2019;24:461-8. https://www.cps.ca/en/documents/position/asd-post-diagnostic-management (accessed October 31, 2019).

Clinical Practice Guidelines

Volkmar F et al.: Practice parameter for the assessment and treatment of children and adolescents with autism spectrum disorder. J Am Acad Child Adolesc Psychiatry. 2014 Feb;53(2):237-57. doi: 10.1016/j.jaac.2013.10.013.
https://www.ncbi.nlm.nih.gov/pubmed/24472258

Addendum

Sample “To Whom It May Concern Letter” that confirms the child/youth’s diagnosis of ASD

DATE
To whom it may concern

Re:	Chart No.: Name: DOB:

This letter is to document that this youth meets criteria for a diagnosis of Autism Spectrum Disorder (ASD).
Date of Child’s Assessment: ____
This child meets DSM-5 Criteria which include the following:

Criteria	Comments
A. Persistent deficits in social communication and interaction across multiple context, as manifested by the following, currently or by history	
1. Deficits in social-emotional reciprocity (conversation, sharing of interests/emotions/affect, initiate/respond to social interaction)	
2. Deficits in nonverbal communication and behavior used for social interaction: poorly integrated verbal/nonverbal communication, eye contact/body language/use of gestures/lack of facial expressions	
3. Deficits in developing, maintaining/understanding relationships	

B. Restricted, repetitive patterns of behavior, interests, or activities, as manifested by at least 2, currently or by history.

1. Stereotyped or repetitive motor movements, use of objects, or speech?

2. Insistence on sameness, inflexible adherence to routines, ritualized patterns of verbal/nonverbal behavior?

3. Highly restricted, fixated interests that are abnormal in intensity or focus

4. Hyper- or hypoactivity to sensory input or unusual interest in sensory aspects of the environment? E.g. Sound? Touch? Light? Fascination with movement?

C. Symptoms must be present in the early developmental period (may not become fully manifest until social demands exceed limited capacities, or may be masked by learned strategies in later life)

D. Causes clinically significant impairment in social, occupational, other important areas of functioning.

E. Not better explained by intellectual disability (ID) or global developmental delay

Thank you for your support of this youth and family.
Feel free to contact me if you have any further questions,
YOUR NAME
YOUR ADDRESS

About this Document

Written by Dr's Michael Cheng, FRCP(C), Psychiatrist, CHEO, uOttawa; Dhiraj Aggarwal, Psychiatrist, CHEO, uOttawa.
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