

Approach to autism spectrum disorder

Using the new DSM-V diagnostic criteria and the CanMEDS-FM framework

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Abstract

Objective To review the diagnostic criteria for autism spectrum disorder (ASD) from the *Diagnostic and Statistical Manual of Mental Disorders*, fifth edition (DSM-V), and to develop an approach to managing ASD using the CanMEDS-Family Medicine (CanMEDS-FM) framework.

Sources of information The DSM-V from the American Psychiatric Association, published in May 2013, provides new diagnostic criteria for ASD. The College of Family Physicians of Canada's CanMEDS-FM framework provides a blueprint that can guide the complex management of ASD. We used data from the Centers for Disease Control and Prevention to determine the prevalence of ASD, and we used the comprehensive systematic review and meta-analysis completed by the UK National Institute for Health and Care Excellence for their guidelines on ASD to assess the evidence for more than 100 interventions.

Main message The prevalence of ASD was 1 in 88 in 2008 in the United States according to data from the Centers for Disease Control and Prevention. The ASD classification in the fourth edition of the DSM included autism, Asperger syndrome, pervasive developmental disorder, and childhood disintegrative disorder. The new DSM-V revision incorporates all these disorders into one ASD umbrella term with different severity levels. The management of ASD is complex and requires a multidisciplinary team effort and continuity of care. The CanMEDS-FM roles provide a framework for management.

EDITOR'S KEY POINTS

- The prevalence of autism spectrum disorder (ASD) has risen dramatically, and ASD is now commonly encountered by family physicians in the clinical setting.
- The new definition of ASD in the *Diagnostic and Statistical Manual of Mental Disorders*, fifth edition, includes 4 different domains with subcriteria for diagnosis. It further classifies ASD by levels 1 to 3 for mild, moderate, or severe illness based on the degree of support the patient requires. It uses the one umbrella term ASD and no longer uses terms such as *Asperger syndrome*, *classic autism*, or *pervasive developmental disorder*.
- Using the roles in the CanMEDS-Family Medicine framework—communicator, collaborator, professional, scholar, manager, health advocate, and family medicine expert—as a guide, family doctors can provide support and advocate for families combating this challenging lifelong condition.



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Conclusion Family physicians are the key leaders of the multidisciplinary care team for ASD, and the CanMEDS-FM framework provides a comprehensive guide to help manage a child with ASD and to help the child's family.

The prevalence of autism spectrum disorder (ASD) in the United States has risen more than 75% in the past decade—from 1 in 150 in 2002 to 1 in 88 in 2008—according to data from the Centers for Disease Control and Prevention (CDC).¹ The CDC suggests that this increase is the result of a combination of better recognition of the disorder, improved diagnosis, and a true increase in prevalence. Only 10% of children with ASD have identifiable genetic or neurologic conditions such as fragile X syndrome, Down syndrome, or tuberous sclerosis. Common comorbidities include attention deficit hyperactivity disorder, obsessive-compulsive disorder, seizure, and anxiety.²

Using the new criteria for ASD from the *Diagnostic and Statistical Manual of Mental Disorders*, fifth edition (DSM-V),³ family physicians can make timely diagnoses, and they can play an important role in the management and follow-up of these children using the CanMEDS-Family Medicine (CanMEDS-FM) framework.⁴

Case

Mrs Smith brings her 2-year-old son, John, to see you for an introductory visit. She moved into the city last year and this is her first visit. John was born at 39 weeks after an uneventful labour and delivery. His weight and height have been at the 55th to 60th percentile and his immunizations are up to date. He has

an older sister, aged 6 years, and no family history of note. Mrs Smith has had concerns about John's development, especially after her daughter complained about his lack of interest in their playing together. She recalls that at age 2 her daughter had more social and verbal interactions. She has noticed that John seems to be in his own world more than other children his age are.

A focused history reveals more red flags: John only says *mama* and *dada* and does not make eye contact. He does not smile when others smile at him. He gestures toward objects he desires but does not make eye contact while gesturing. He plays by himself, often flaps his hands, loves watching spinning objects, and always lines up his toys in a straight line. The physical examination shows no dysmorphic facial features consistent with fragile X syndrome or Down syndrome. John only responds to his name after multiple attempts with you kneeling at his eye level. There is no vocalization, no joint attention (which is normal by 8 to 10 months' development), and no index finger pointing to attract his mother's attention (which is normal by 14 to 16 months' development). What are the next steps?

Sources of information

Our main sources of information included the American Psychiatric Association's DSM-V,³ the College of Family Physicians of Canada's CanMEDS-FM framework,⁴ data from the CDC,^{1,2} the M-CHAT (Modified Checklist for Autism in Toddlers) screening tool,⁵ and the UK National Institute for Health and Care Excellence (NICE) guideline for the management of ASD.⁶ The NICE guideline⁶ is based on the most comprehensive systematic review and meta-analysis of the literature to date, and at 883 pages it is probably the longest systematic review in existence. It was conducted according to Cochrane Collaboration criteria and it analyzes each intervention in more than 100 forest plots. The authors preferred to treat each intervention separately, rather than using broader groupings, so power is lost in drawing broader conclusions.

Main message

The previous ASD classification in the fourth edition, text revision, of the DSM included autism, Asperger syndrome, pervasive developmental disorder (PDD), and childhood disintegrative disorder.⁷ The new DSM-V in 2013 incorporated autism, Asperger syndrome, PDD, and childhood disintegrative disorder under the umbrella term *ASD* and provided new diagnostic criteria for ASD, with 4 domains and subcriteria in domains 1 and 2 (Table 1).³ Because ASD is a spectrum with mild, moderate, and severe illness, there are now 3 levels of severity in the DSM-V.³ Level 1 indicates the ASD patient requires support, level 2 requires substantial support, and level 3 requires very substantial support.³

The M-CHAT is a validated screening tool for ASD with 23 yes-or-no questions (www.mchatscreen.com).⁵ Screening results are positive if the answer is no for any 3 of the 23 items or 2 of the 6 critical items (interest in other children, using the index finger to point, bringing objects to show parents, imitating, responding to one's name, and using one's eyes to follow an object across the room). A second-stage telephone follow-up to the M-CHAT can reduce false-positive results and unnecessary referral.

Assessment, investigations, and diagnosis. In John's case, even his 6-year-old sister has noticed he shows impairment in social and emotional reciprocity, with a lack of smiling and absence of joint attention. The absence of index finger pointing shows impairment in nonverbal communication. Hence, John meets the 3 subcriteria in domain 1 for impairment in social interaction and communication listed in the DSM-V (Table 1).³

John is also exhibiting stereotyped behaviour (flapping his hands) and hypersensitivity to sensory input (loves watching spinning objects), so he meets 2 of the 4 subcriteria in domain 2 for abnormal restrictive and repetitive behaviour, activities, and interests.³ Because these impairments are also presenting in early childhood and affecting and hindering his everyday activities, clinically John has a suspected provisional diagnosis of ASD using the DSM-V classification. A hearing test and a blood test for complete blood count and ferritin, thyroid-stimulating hormone, and thyroxine levels will be useful to rule out other causes of developmental delay, and the M-CHAT screening questionnaire⁵ should be offered with a scheduled follow-up visit.

Management plan for ASD. You see John for follow-up, and results of both his hearing test and blood test

Table 1. Criteria for diagnosis of autism spectrum disorder from the DSM-V

DOMAIN	CRITERIA
1	Impairment in social interaction and communication Subcriteria (impairment in all 3 required) <ul style="list-style-type: none"> • social and emotional reciprocity • nonverbal communication • creating and maintaining relationships
2	Abnormal and repetitive behaviour, interests, and activities Subcriteria (2 of 4 required) <ul style="list-style-type: none"> • stereotyped speech and behaviour • resistance to change • fixated interests • hypersensitivity or hyposensitivity to sensory input
3	Presentation in early childhood development
4	Limited and hindered everyday activities

DSM-V—*Diagnostic and Statistical Manual of Mental Disorders*, 5th ed. Data from the American Psychiatric Association.³

are normal. His M-CHAT screening result is positive (the answer was no for 5 out of 6 critical items), so he has a provisional diagnosis of ASD. His treatment plan includes the following.

Referral to a developmental pediatrician, child psychiatrist, or psychologist with experience in ASD to confirm the diagnosis of ASD and to determine the level of severity: Arrange a referral to a developmental pediatrician. Advise Mrs Smith to contact the local chapter of the Autism Society (www.autismsocietycanada.ca) for peer group support and resources. Additional support groups for ASD include Autism Speaks (www.autismspeaks.ca).

An open discussion with John's parents about their concerns and feelings after receiving the diagnosis: Review the prevalence of ASD and its multifactorial causes, both genetic and nongenetic, with the Smiths. Order genetic bloodwork, including DNA microarray and testing for the FMR1 (fragile X mental retardation 1) gene. Screen for and address other comorbidities including sleep disturbance and gastrointestinal problems such as constipation, gastroesophageal reflux, and celiac disease.

Tips for Mrs Smith: Advise Mrs Smith to hold John's favourite snack or toy at eye level to encourage direct eye contact, and to interact and communicate before giving him the snack or toy. This is a simplified version of behavioural modification with stimulus, response, and reward. Remind her that children with ASD might have difficulties processing sensory input; she must be patient and allow at least 10 seconds for a response to occur. She can also try to download smartphone or tablet applications designed for children with ASD (who are frequently visual learners) to improve John's communication skills (eg, www.autismspeaks.org/autism-apps).

Help for Mrs Smith to start the process of referrals: Direct Mrs Smith to a social worker and applications for government funding to access speech therapy, occupational therapy, physiotherapy, behavioural modification, and respite care.

Follow-up care. You see John for follow-up after his consultation with the developmental pediatrician. It is confirmed that he has ASD with level 2 severity, and behavioural modification therapy is recommended. Mrs Smith is devastated and her whole family feels overwhelmed. What can a family physician do to help the Smith family in this difficult situation?

A useful approach for management of ASD is to use the CanMEDS-FM framework,⁴ which includes the following 7 roles: communicator, collaborator, professional, scholar, manager, health advocate, and family medicine expert.

Communicator: It is essential to show empathy and support for Mrs Smith. Listen to her story and her concerns. Encourage her to view John as a child with a different ability to learn rather than as a child with a disability. Remind her to build on his strengths and work on his weaknesses.

Collaborator: Autism spectrum disorder is a lifelong illness. Treatment is aimed at improving communication and social interaction while reducing abnormal restrictive and repetitive behaviour, interests, and activities. There is evidence that the prognosis is better when joint attention is present by age 4 and functional speech by age 5, and there is better cognitive function if IQ is greater than 70 and the patient shows interest in interacting with typically developing peers.⁸ This requires a multidisciplinary team that might include an experienced developmental pediatrician, a psychiatrist, a speech pathologist, a physiotherapist, an occupational therapist, a psychologist, and a behavioural care consultant, with the family physician being the main collaborator. Work with the social worker and sign the necessary forms for Mrs Smith to apply for government funding. When John reaches school age, collaborate with his teachers for individualized educational plans and advocate for appropriate aide time in class.

Professional: Have a high index of suspicion for early detection of ASD and provide timely referral and ongoing follow-up. It is important to discuss with Mrs Smith that the recurrent risk of ASD in subsequent pregnancies could be as high as 18.7%.⁹ Arrange for peer group support via local chapters of the Autism Society.

Scholar: Review the latest literature on ASD to offer evidence-based treatment options. Myers and Johnson from the American Academy of Pediatrics suggested treatment tailored to the child's needs.¹⁰ Ospina et al reviewed 101 studies of therapies for ASD and concluded that clinical management should be guided by individual needs and available resources.¹¹ The UK clinical guideline from NICE recommends the following:

Good communication between healthcare professionals and children and young people with autism and their families and carers is essential. It should be supported by evidence-based written information tailored to the person's needs.⁶

Box 1 provides a summary of the NICE 2013 recommendations relevant to searches for resources that parents might initiate.⁶ If Mrs Smith asks about proven interventions, the NICE systematic review provides a meta-analysis of all interventions to date.⁶

Manager: Offer to complete the Disability Tax Credit form (T2201) so that Mrs Smith can apply for a tax refund for John's impairment. Remind her to apply for guardianship for John before he turns 18 years of age. In terms of financial guidance, inform Mrs Smith to help John set up a registered disability savings plan once he is 18 years old. By contributing \$1500 yearly to a registered disability savings plan, John could get up to \$4500 from government matching grants and bonds.¹²

Health advocate: Advocate for physical fitness and social interaction using local resources.

Box 1. Summary of NICE 2013 recommendations relevant to searches for resources that parents might initiate

Specific interventions for the core features of autism

Psychosocial interventions

- Consider a specific social-communication intervention for the core features of autism in children and young people that includes play-based strategies with parents, carers, and teachers to increase joint attention, engagement, and reciprocal communication in the child or young person. Strategies should
 - be adjusted to the child's or young person's developmental level;
 - aim to increase the parents', carers', teachers', or peers' understanding of, and sensitivity and responsiveness to, the child's or young person's patterns of communication and interaction;
 - include techniques of therapist modeling and video-interaction feedback; and
 - include techniques to expand the child's or young person's communication, interactive play, and social routines.
- The intervention should be delivered by a trained professional. For preschool-aged children consider parent, carer, or teacher mediation. For school-aged children consider peer mediation.

Interventions for challenging behaviour

Anticipating and preventing challenging behaviour

- Assess factors that might increase the risk of challenging behaviour in routine assessment and care planning in children and young people with autism, including
 - impairments in communication that might result in difficulty understanding situations or in expressing needs and wishes;
 - coexisting physical disorders, such as pain or gastrointestinal disorders;
 - coexisting mental health problems, such as anxiety or depression and other neurodevelopmental conditions such as ADHD;
 - the physical environment, such as lighting and noise levels;
 - the social environment, including home, school, and leisure activities;
 - changes to routines or personal circumstances;
 - developmental change, including puberty;
 - exploitation or abuse by others;
 - inadvertent reinforcement of challenging behaviour; and
 - the absence of predictability and structure.


Interventions for life skills

Offer children and young people with autism support in developing coping strategies and accessing community services, including developing skills to access public transport, employment, and leisure facilities.

ADHD—attention deficit hyperactivity disorder, NICE—National Institute for Health and Care Excellence. Reproduced from NICE.⁶

Family medicine expert: It is important to screen for parental and sibling depression in Mrs Smith's family. Encourage them to take advantage of respite care to avoid burnout. Maintain continuity of care for the whole family.

Conclusion

Autism spectrum disorder, with its alarming rise in prevalence, is a common condition that family physicians will encounter in the clinical setting. The new DSM-V definition of ASD has 4 different domains with subcriteria for diagnosis. It uses one umbrella term of *ASD* with different levels of severity and no longer uses terms such as *Asperger syndrome*, *classic autism*, or *PDD*. By using the elements of the CanMEDS-FM framework, family doctors can provide support and advocate for families in combating this challenging lifelong condition. 

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Contributors

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Competing interests

None declared

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