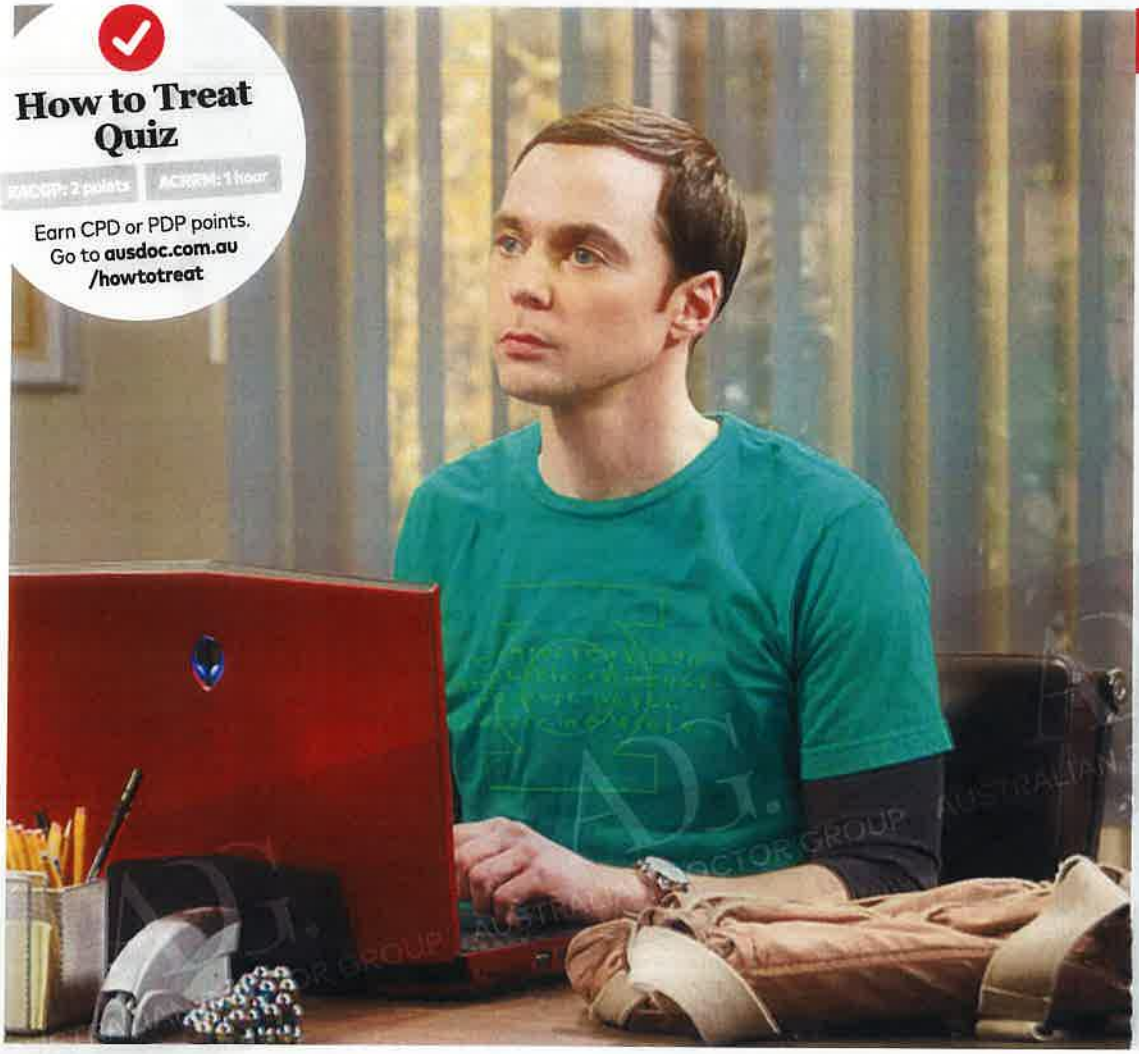

How to Treat Quiz

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NEED TO KNOW

- Autism is a specific delay in emotional/social development.
- It occurs in one in 70, with a male to female ratio of 3:1.
- DSM-5's tighter criteria specify two dimensions: delay in emotional/social engagement and repetitive rigidity of behaviour and thinking.
- It is rated on three severity levels of need for support; levels 2 and 3 can access the National Disability Insurance Scheme.
- Differential diagnoses include deafness, blindness, language disorder, intellectual disability, neurological disorder and other psychiatric disorders (eg, ADHD).
- Aetiology is mainly polygenic, with some specific causes where a CGH array is the preferred genetic test, plus some environmental causes.
- Intervention involves teaching attention, engagement, interaction skills, communication, and emotional and relationship problem-solving skills.
- Girls often present late because of 'camouflage skills', with comorbid psychiatric disorders, including anxiety, depression, eating disorder and personality disorder.
- There is a comorbid psychiatric disorder in 70% and two or more in 40%, causing as much impairment as the autism: anxiety disorders, mood disorders and ADHD.
- Medication response is different from the mainstream population but important in a multimodal mental health intervention.

Autism

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INTRODUCTION

AUTISTIC spectrum disorder (ASD) reflects that autism is a diverse condition or group of conditions that are chronic developmental disorders with a growing impact on our community. This disorder is a specific delay in emotional/social intelligence (behind other areas of development), with a delay in skills of emotional and social engagement, responsiveness and reciprocity, along with a rigidity (that is, lack of reciprocity) of thinking, imagination and behaviour (stereotypies).

A delay in this domain of development for social beings is a major handicap with lifelong implications. It co-occurs with intellectual disability in 70% of cases (50% with severe intellectual disability), and recent epidemiology suggests its prevalence is one in 60-70 in our community, with boys at 1.3% and girls 0.5%.[1]

ASD has huge economic costs, estimated at between $3 million and $6 million per lifetime per individual.[2] Good outcomes in adulthood of independent living, employment and quality of life have increased to 10-20%, and up to half of those with above average IQ.[3]

Epidemiological research has confirmed that there are those of normal intellect who are clinically on the spectrum but do not meet the full diagnostic criteria.[4,5]

Over the past 20 years, the diagnosis of autism has grown with the rise in expertise in diagnosis. Research has expanded our clinical concepts, but DSM-5 has tightened descriptions of impairment and removed the broader diagnostic concepts of Asperger's and pervasive developmental disorder not otherwise specified (NOS). The new DSM-5 criteria appear to have reduced the number with full diagnostic criteria by 30%.[6] ICD-11, when published, has similar criteria.

Reports indicate that awareness of the condition is changing, so reaching a diagnosis is less often surprising to a family.

The demand for funding for families and schools pressures clinicians to provide a diagnosis of autism, creating challenges of determining whether the levels of impairment are sufficient to reach threshold for the diagnostic criteria.[7]

Some of the threshold issues arise in the presence of other developmental disorders, such as intellectual disability, communications disorders, ADHD, deafness and blindness, deprivation and abuse. Severe deprivation can significantly increase ASD, as found in Romanian orphans adopted abroad. Authorities refer to this as autistic-like, as it is assumed to have a different mechanism from other autism.

Early intervention is helpful for most developmental disorders before a more reliable diagnosis of ASD can be made, but these services are in short supply. There are significant problems of over- and underidentifying key features with different informants, with some clinicians accused of fraud following overdiagnosis under pressure to advocate for a child.[8] The Autism Clinical Research Consortium has developed guidelines to aid the raising of diagnostic reliability and standards.[9]

PREVALENCE

THE prevalence of autism in Australia has increased from one in 150 people in 2015 to one in 70 in 2019 and is thought to have stabilised with greater diagnostic reliability.[1]

AETIOLOGY

EMOTIONAL/social intelligence is a polygenic, multifactorial domain and an area of significant research enquiry. Problems of delays/deficits in social skills are highly predictive of emotional regulation and mental health problems (see box 1). Treatments that enhance emotional and social skills are of growing interest, and there is rising awareness of the co-occurrence of autism in other mental health conditions .

It is now appreciated that there is no single cause, and ASD is best seen in the context of a gaussian/normal distribution of emotional intelligence, where those with ASD are 2-4 standard deviations below the mean. Autism has been shown to be a specific delay in emotional and social development rather than a medical or categorical disorder.

Twin studies demonstrate 40-90% genetic heritability.[2] Twenty five per cent of cases of ASD are associated with a syndrome, such as tuberous sclerosis, valproate embryopathy, 15q deletions, trisomy 21,

This information was correct at the time of publication: 31 July 2020

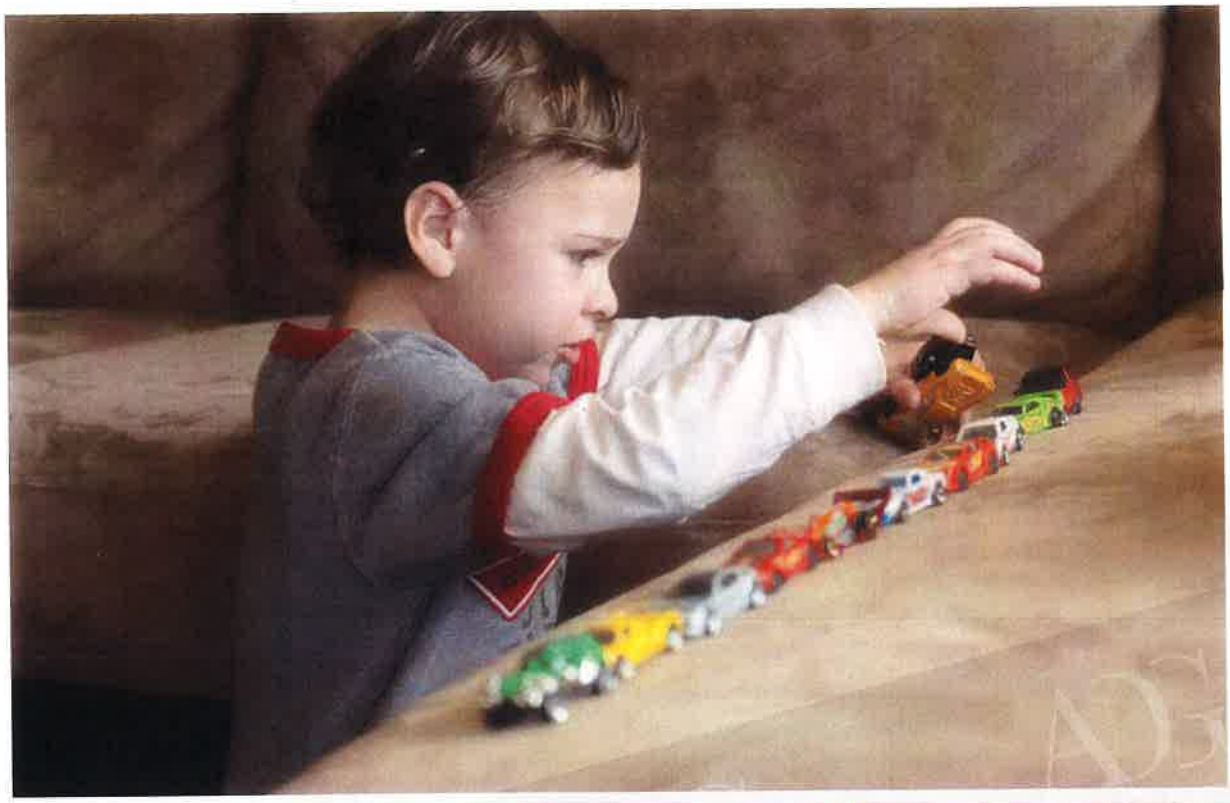

Figure 1. Boy with autism playing with cars.

Rett syndrome, Smith Magenis syndrome and fetal alcohol spectrum disorder.[3] Up to 1000 genes are implicated, affecting a range of neuronal activity. Chang and colleagues describe how many of these genes are involved in different neuronal functions of polysynaptic density, chromatin modification and regulation, neuronal signalling, and cytoskeleton and channel activity.[10]

When the genetics of autism are associated with such fundamentals of brain structure and function, the author suspects this area of genetics and epigenetics will teach us as much about normal brain development as autism.

Low-level environmental risk factors include neonatal hypoxia, paternal age over 50, an older sibling with ASD, preterm birth, maternal obesity and gestational diabetes. Folate has a protective contribution.[11]

Constantino showed that being on the spectrum increases the genetic risk of a comorbid psychiatric disorder, which was more difficult to treat.[12] Severity of autism is linked to a developmental sequence of lack of affective reciprocity – a skill of the first year of life – joint attention in the second year of life and theory of mind in the third year of normal social development (see table 1).[13,14] This helps all involved with the person with autism understand how to relate to these individuals and to enable community engagement and quality of life.

There is no established cure for autism, but treatment is important for optimising skills in emotional recognition, social engagements and friendship, and an awareness of other needs of social adjustment and mental wellbeing. Predictors of better outcome include higher childhood intelligence, communicative phases before age six and fewer social impairments.[15] The best adjustment arises when the person with ASD is aware of their weaknesses (and strengths) and has trusted people to turn to for support and advice. A good relationship that includes trusting and accepting guidance from parents is critical for the young person with ASD coping with the complexities of the social world.

Table 1. Stages of social development

Age (years)	Stage	Features
0-1	Parent oriented	Develop primary attachment and wariness of strangers; develop preverbal babble; enjoy rough and tumble; affective reciprocity
1-2	Adult oriented	Develop capacity for short-lived separations; widens range of adult attachments; develop sense of play and humour with adults, such as 'peekaboo'. Develop capacity for joint attention. Respond to gross non-verbal emotional communication
2-2.5	Toddler independence	Copy adults; develop pretend and creative play; become aware of peer play in parallel; sensitive to subtle non-verbal communication and shame
2.5-4	Peer skill development	Move progressively towards skills of reciprocity with single age-related peer; develop skills of sharing and turn-taking; initially, can turn take if in charge or organised by another; becoming less egocentric; popularity comes from organising positive initiatives; develop first order of theory of mind
4-8	Peer group association	Understand reciprocity to maintain friendship and the practical needs a friend fulfils, eg, a friend helps you feel happy; learn to cope with group relations and social organisation by rules; second order theory of mind
9-13	Pre-adolescent	Learn to challenge and create group rules; clear gender split; friendships based on similarity, emotional support and how they might be viewed by others; capacity for guilt/sense of object constancy
13 and older	Adolescence	Based on trust, self-disclosure and mutual or admired aspects of personality. Abstract cognitive capacity

Source: Tanguay P et al 1998[13], Dossetor D 2004[14]

DIAGNOSIS

EARLY identification and diagnosis require early recognition of lack of social responsiveness skills, such as affect sharing, joint attention and increase in repetitive behaviour, which can be identified before age two despite considerable heterogeneity. Earlier diagnosis is less reliable, and most are diagnosed by age 3-5 (see box 2).

Evidence shows that early development can be normal with a decline in development, for example, at 18 months in 30% of cases.[15] Some may reach late childhood or adolescence and even adulthood before a diagnosis is made in the context of language disorders, being

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Table 2. Children's Hospital at Westmead investigations for complex developmental problems

Investigation	Detail
Formal developmental screening	Parents Evaluation of Developmental Status, and Ages and Stages Questionnaire
History and clinical examination	Including consideration of phenotypic morphology
Blood tests based on US and UK guideline consensus	FBC, ferritin, thyroid function tests, creatine kinase, LFTs, vitamin B12 and folate, fragile X, chromosome microarray-based comparative genomic hybridisation and a urine metabolic screen

Blood tests in global developmental delay have variable yield (10-81%), more likely in moderate-to-severe intellectual disability.

Source: Silove N et al 2013[19]

Box 1. Developmental delay

- Children develop in the domains of cognition, speech and language, motor, personal, social, play and activities of daily living in a predictable and organised manner, with a clear developmental trajectory.
- Development can be delayed or not occur in the expected order.
- Delay in one area is termed specific delay.
- Global delay occurs in two or more areas.
- Significant delay is two standard deviations or more below appropriate, standardised norm-referenced testing.
- Intellectual disability is significant sub-average IQ, accompanied by significant limitation in adaptive functioning.

Box 2. Red flags for ASD and developmental delays in the second year of life

- **ASD red flags:**
  - Lack of showing (of objects).
  - Lack of co-ordination of non-verbal communication.
  - Lack of sharing interest or enjoyment.
  - Lack of appropriate gaze.
  - Lack of response to name.
  - Lack of warm, joyful expressions.
  - Unusual prosody.
  - Repetitive movement or posturing of body.
- **ASD and developmental delay red flags:**
  - Lack of pointing.
  - Lack of playing with a variety of toys (see figure 1).
  - Lack of response to contextual cues.
  - Lack of communicative vocalisations with consonants.

Source: Fuentes J et al 2014[3] and includes a review of diagnostic instruments.

female or having psychiatric comorbidities.[15]

Table 2 lists the investigations indicated in the clinical suspicion of ASD.

DSM-5 introduced criteria changes in 2013 (see box 3).[6] This change of emphasis arose from concern that the number of cases being diagnosed was escalating, affecting the funding for those who most needed it.

The three main changes were, first, reducing the three dimensions of social reciprocity, communication problems and problems of stereotypic rigidity, whereby the first two dimensions have been merged to one of 'persistent deficits in social communication and social interaction across multiple contexts'. The second dimension is restricted, repetitive patterns of behaviour, interests, or activities.

The second was loosening of the onset time, from starting before the age of three to onset 'in the early developmental period', giving greater latitude to include atypical or later-onset ASD.

The third change was a severity grading of each dimension into level 1 'requiring support', level 2 'requiring substantial support' and level 3 'requiring very substantial support', and guidance on these levels are now available.[3]

The differential diagnoses for autism appear in box 4.

Separate consideration is given to intellectual disability or comorbid emotional and behavioural disorder as they have a huge impact on the level of support. The National Disability Insurance Agency funded the Autism Clinical Research Consortium to develop 'A National Guideline for the Assessment and Diagnosis of Autism Spectrum Disorders in Australia'.[9] Cases that might previously have been diagnosed with Asperger's syndrome or pervasive disorder NOS that do not reach criteria for ASD should be considered for social (pragmatic) communication disorder.

Although there is a focus on the early identification and intervention of ASD, there is a proportion who present later. The study of monozygotic twins (or cohorts of children with speech and language disorders) showed that the later you assess the co-twin for ASD, the greater the likelihood they will also be diagnosed.[15]

ASD may be an outcome of progressive intellectual and neurological decline, of which some continue to progressively decline, such as Hunter syndrome, but others recover or partly recover and may resume some potential for further development. Other cases of autism may present late because of diagnostic overshadowing of their social skills deficits, for example, due to severe dreaminess, anxiety or rages. Girls often present later than boys because they have a superficial engageability, have preoccupations that do not draw attention and are less disruptive, contributing to a 'capacity for camouflaging' their real social/communication deficits.[16] The failure to recognise their autistic disability may contribute to their presenting with another psychiatric disorder, such as anorexia nervosa, depression and recurrent self-harm and personality disorder. Such late diagnosis, plus the comorbid psychiatric problems, makes treatment more challenging and the prognosis worse. Late presentation occurs in other minorities, such as race or religion, because of the challenge of 'coming out' and problems of recognition and acceptance in some population groups.

The diagnosis is always a clinical judgement by a clinician or multidisciplinary team experienced in ASD, based on history from multiple sources and medical, developmental and mental state examination. This may be supported, but not substituted, by a research interview, such as an autism diagnostic observation schedule.[17]

The Royal Commission into Violence, Abuse and Neglect of People with Disability highlighted multiple instances in which people with disability receive a substandard health service, which contributes to their premature mortality – 25 years earlier than the average population – often from avoidable causes. This is due to the greater need for medication, causing weight gain; their disadvantage and lack of access to lifestyle-positive health; poor-quality diet; and limited access to community-based exercise or dietitians. Screening for the metabolic syndrome and its consequences and early intervention, including metformin to delay weight gain, are required.[18]

Figure 2. Joint attention: 'Look Mummy it's an aeroplane!'

Box 3. Autism DSM-5 diagnostic criteria

A. Persistent deficits in social communication and social interaction across multiple contexts.
B. Restricted, repetitive patterns of behaviour, interests or activities.
C. Symptoms must be present in the early developmental period (but may not fully manifest until social demands exceed limited capacities or may be masked by learned strategies in later life).
D. Symptoms cause clinically significant impairment in social, occupational or other important areas of current functioning.
E. These disturbances are not better explained by intellectual disability or global developmental delay. Intellectual disability and autism spectrum disorder frequently co-occur; to make comorbid diagnoses of autism spectrum disorder and intellectual disability, social communication should be below that expected for general developmental level.

Specify if:
With or without accompanying intellectual impairment.
With or without accompanying language impairment.
Associated with another neurodevelopmental, mental or behavioural disorder.
With catatonia.
Associated with a known medical or genetic condition or environmental factor.
Severity levels for autism spectrum disorder in social communication and restricted, repetitive behaviours.

Severity level*:
Level 3: Requiring very substantial support.
Level 2: Requiring substantial support.
Level 1: Requiring support.
*Guidance on these levels is now available.
Source: Fuentes J et al 2014[3], American Psychiatric Association 2013.[4]

Box 4. Differential diagnoses

- Deafness.
- Blindness.
- Language disorder.
- Intellectual disability.
- Neurological disorder.
- Other psychiatric disorder, eg, ADHD.
- Comorbid emotional and behavioural disorder.
- Social (pragmatic) communication disorder.

Box 5. Some causes of progressive intellectual and neurological decline and later-onset autism

- Idiopathic/developmental.
- Leukoencephalopathies.
- Neuronal ceroid lipofuscinoses.
- Mitochondrial disease.
- Mucopolysaccharidoses.
- Gangliosidoses.
- Peroxisomal disorders.
- Creutzfeldt-Jakob disease (mad cow disease).
- Hunter syndrome.

GP role

Recently, there has been a dramatic rise in the number of GP consultations for people with ASD, confirming they have complex health needs.[20] The GP is an appropriate first contact for health, developmental and mental health concerns and their family context. GPs, therefore, have a role in screening for the early presence of autism and other developmental disorders, managing medical comorbidities, being aware of developmental and mental health comorbidities, and supporting treatment and crisis management, both pharmacological and non-pharmacological.

GPs are knowledgeable on ASD but may want specialist support in the diagnosis of uncertain threshold, complex cases and managing complex psychopharmacology.[21] They have an important role in considering a differential diagnosis, such as deafness or epilepsy (in 25%) or other developmental or genetic disorders, and in managing medical comorbidities.[15] A collaborating allied health professional with expertise in communication and social disorders is also of value.

Comorbidities, particularly in those with limited communication skills, are an important cause of exacerbation of emotional and behavioural disturbance, including self-injurious behaviour. Gastrointestinal problems (constipation or reflux and increased risk of *Helicobacter pylori* infection) commonly occur, and dental and sinus problems are common causes of distress.[22] GPs are a viable and familiar alternative to an ED, and to in-patient services, where specialist examination may require anaesthesia.

INTERVENTION AND TREATMENT

THERE is a long history of

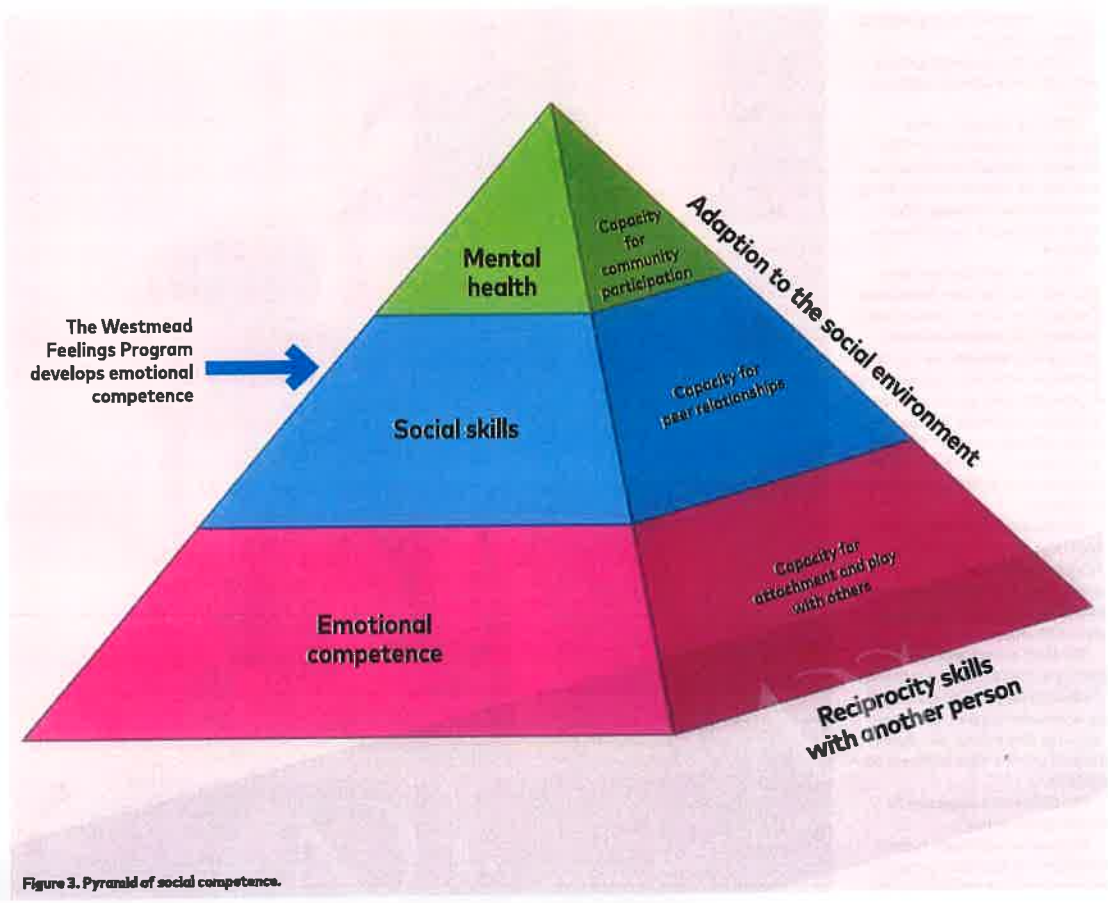

Figure 3. Pyramid of social competence.

intervention research, but those studies with the strongest outcome data tend to be of small unrepresentative samples and not a real-life service intervention. Interventions are best considered in a developmental context. As a lifelong developmental disorder, ASD needs a long-term approach, and the evidence on intervention research is well reviewed by Reed.[23]

Specialised parenting programs, such as Stepping Stones Triple P, have the best cost-effectiveness data, particularly for helping with behavioural disturbance, acceptance and community integration, but they are not funded by National Disability Insurance Scheme (NDIS).[24] Stepping Stones has a range of intensities of intervention – from brief clinical intervention, to lecture version, to 13 or more group intervention sessions. A critical change factor is helping parents use alternative behavioural approaches to coercion and hostility.

Behavioural approaches, such as those of applied behavioural analysis (ABA) is best practice for early intervention.[23] This involves breaking down skills of communication and reciprocal play to small steps, with human, and sometimes food, reinforcement. However, this is costly and time and labour intensive (up to 20 hours a week). Parents or carers can be trained to provide intense in-home intervention, sometimes with a weekly professional booster. Behavioural programs work better on patients aged 2-4 with severe ASD symptoms. Although there is evidence of improved functioning and even intelligence from ABA in 25%, there is also a group that deteriorates.[23] The author's explanation is that there is a developmental stage at which engagement and attachment, along with encouraging personal motivation and initiative, is required, focusing on the interactive emotional skills, not just task accomplishment.

The mainstream of early intervention involves teaching skills in a suitable environment. This is best articulated by TEACCH (the treatment and education of children with ASD and related communication disabilities) and the Early Start Denver Model. Both are more suitable for a (pre)school context, as well as home, and can be maintained for longer.

TEACCH, which includes some ABA early on, is characterised by a highly structured learning environment adapted to the limitations of the child, and it maximises opportunities to learn with instruction techniques and clear social models. This includes control through classroom structure, schedules and tasks, using visual cues, including the influence of typical peers, relying on special interests to motivate. It may also include music, dance and other therapies.

The Early Start Denver Model is based on social-developmental framework and interpersonal models of ASD – for example, focus on joint attention (see figure 2) and imitation, as well as linguistic behaviours and challenging behaviours.

Other models include Pivotal Response Training, Floortime, Hanen more than Words, SCERTS (Social Communication and Emotional Regulation and Transactional Support) and RDI (Relationship Development Intervention).

Generally, intervention works better on participants with better language and adaptive social skills who are younger at the start. However, older children still make gains, although young people with a high IQ do less well with behavioural programs.[23] Social adaptive skills are generally stronger when implemented by parents. This may partly be as the skills and insight enable attachment.

Many interventions comprise a smorgasbord of these approaches, and children with ASD are exposed to multiple interventions at a time (4.5-8.7 in one study).[23] Sensory and physical stimulation treatments, including sensory integration and massage therapy, have limited evidence and tend to focus on externalising behaviours or anxiety, but 90% of people with ASD have abnormal hyper- or hyposensory reactivity.[23] Auditory integration therapy and oculomotor/prism therapies have no orthodox evidence. ASD is plagued with as yet unproven therapies, including diet, secretin, chelating agents for putative heavy metals, stem cell therapy and microbiome intervention. Discourage alternative therapies, as the false hope and financial burden can cause significant harm.

National Disability Insurance Scheme

ECEI (Early Childhood Early Intervention) is available for those aged 0-6 with a recognised disability (not diagnosis based). It is funded by the NDIS and guides families to locally available services that aim to help children develop the skills they need to take part in daily activities and achieve the best possible outcomes throughout their life.[24] This is supported by the national guidelines on best practice in early childhood intervention. The guidelines provide motherhood statements, the first three of the seven are the following: "Infants and toddlers learn best through everyday experiences and interactions with familiar people in familiar contexts; all families, with the necessary supports and resources, can enhance their children's learning and development; and the primary role of the service provider in early intervention is to work with and support the family members and carers in a child's life".[24]

School-aged intervention

Following on from early intervention is school-based and disability-based intervention. NDIS funding is based on evidence of a young person's level of functioning and is designed to improve greater choice for the individual for independence and community access. This includes promoting skill building and positive behaviour support for complex problems of emotional and behavioural disturbance. With the frustrations of establishing appropriate funding, it is important to remember that, as an insurance scheme, the funding is a legal entitlement and should be resolved with advocacy and persistence and, if necessary, recourse to legal process.

INCLUSIVE EDUCATION

This is the practice of mainstreaming children with special educational needs on the basis that exclusion reinforces elements of disability and stigma. However, there is little evidence on the effect of mainstreaming, and children with ASD are 20 times more likely to be excluded, and 20% are suspended. School non-attendance for ASD includes sickness (60%), refusal (21%), and being kept at home (16%) and medical appointments (16%).[23]

In those with mild intellectual disability, some academic gain can be seen, but for those with behavioural difficulties, progress is better in special classes or schools. Although parents generally want mainstreaming, evidence suggests it leads to greater psychiatric comorbidity.[23] Thus, greater academic achievement may come at the cost of greater depression and reduced self-concept. Factors that improve mainstreaming include specialised education methods, smaller class size, clear leadership with positive attitudes, teacher special training and individualised approaches to teaching (see figure 4). Most mainstream teachers feel unqualified to deal with a child with special educational needs, which is associated with stress and burnout. Training enables more realistic expectations, especially by reducing expectations and sense of failure. Teacher knowledge improves child-teacher relationships, which are more important because of impoverished peer relationships, improving inclusion in the classroom and reduced behaviour problems. Accordingly, teachers require training in ASD. In Australia, school-aged intervention has developed and is potentially leading the way. The Westmead Feelings Program is available for primary school-aged children with verbal but not literacy skills (version I) and for those with literacy skills (version II). A version for adolescents with mild intellectual disability will be released shortly.[25,26] This program has demonstrated large effect sizes with improved mental health. It also demonstrates that emotional and behavioural regulation is related to emotional and social skills.[27] The Secret Agent Society for high-functioning ASD has an emphasis on

computer-based skills rather than face-to-face learning of emotions.[28] Both interventions focus on emotional learning, emotional perspective taking and emotional problem-solving as the key to developing attachments, social relationships, mental wellbeing and acceptance (see figure 3). There is still a need for interventions for adults, and the author thinks there may be a role for ASD social clubs.

MENTAL HEALTH COMORBIDITIES AND THEIR TREATMENT

SEVENTY to eighty per cent of young people with ASD have psychiatric comorbidity.[10] In those with intellectual disability, the emotional/behavioural disturbance is a greater burden to the family that the intellectual disability itself. Young people with intellectual disability constitute 14% of the mental-health burden of care for children and adolescents, and this increases to 25% when ASD is included.[11] Yet in our 'free market economy of health', people with disability have real problems of access. Services lack an awareness of need, and specialised services are inadequate. Traditionally, diagnostic overshadowing prevented progress, whereby all symptoms were attributed to the ASD or intellectual disability and, therefore, lacked recognition of the need to access health or mental health services.

Mental health avoids responsibility by focusing on 'serious mental health' – that is, psychosis and suicidality, expecting community-based services to provide. It may be, in part, that the difficulty in the treatment of these chronically disruptive and disabling conditions prevents services engaging. One study found that 70% of school-aged children with ASD had a comorbid psychiatric problem, and 41% had two or more.[12] Of psychiatric clinic populations, Joshi and colleagues reported 95% had three or more conditions, and 75% had five or more, with these incidences increasing with age.

Those with autism have increased rates of anxiety (42-56%), including phobias, physical anxiety, separation, social, generalised, PTSD and OCD, and these often co-occur. They also have elevated rates of ADHD (50%), oppositional defiant disorder (7-24%), conduct disorder, tics (22%), Tourette syndrome (11%), enuresis, encopresis, motor co-ordination disorder, language disorder, depression/mood disorder (12-70%), bipolar disorder, schizophrenia, catatonia, pica, self-injurious behaviour (up to 50%), somatisation disorder, stereotypic behaviours, disorders of eating and sensory processing disorder. Sleep disorders occur in 50-80%. Aggression is found in up to 68%, often towards carers, contributed by problems of empathy, anxiety, sensory overload, disruption of routines and difficulties with communication.[12]

The author's most common presentation is unmodulated over-arousal, and in the absence of a subjective account, it is difficult to know whether this is anxiety, ADHD or just a failure to learn mood regulation. A careful history from parents, teachers and one's own observations can provide a best bet for a primary diagnosis.

Although behavioural intervention is always a first-line intervention, in the author's training, if you are going to help the most troubled, disabled children, one needs to be prepared to prescribe.

The psychotropic medications commonly used in children and adolescents are often not as successful and have increased rates of side effects.[13] For example, stimulants only work in 25%, and SSRIs have side effects in 50%, particularly behavioural activation. But when they work, they can be 'life-saving'.[13] Clonidine is the most useful first-line intervention as it helps both anxiety and ADHD, as long as the dose is titrated. It is recognised that it only works for four hours. Advice on medications in intellectual disability and ASD is available.[14,15]

Seventy to eighty per cent of young people with ASD have psychiatric comorbidity.

REFERRAL PATHWAYS AND ROLE OF NDIS

DIAGNOSIS of autism is based on the diagnostic criteria. However, the Autism CRC has made recommendations on the levels of experience required to make a diagnosis, particularly for access to funding for NDIS.[9] Where there is debate arising over assessing the thresholds of impairments, or because of the coexistence of another (psychiatric) disorder, then a fuller assessment with access to a multidisciplinary team is indicated. The team may include a developmental paediatrician, clinical or neuropsychologist, speech therapist, possibly an occupational therapist for co-occurring sensory processing problems, physiotherapist for co-ordination problems and a social worker to assess the social and family context. Their comprehensive evaluation and observations may be supported, but not supplanted, by research-validated interviews, such as the Social Responsiveness Scale (useful questionnaire to collect different informants' perspective); Autistic Diagnostic Interview - Revised; Diagnostic Interview for Social and Communication Disorders; the developmental, dimensional and diagnostic interview; and the autism diagnostic observation schedule.[16-19,17] However, such multidisciplinary teams are in short supply, and most diagnoses are made by a doctor with experience in ASD, possibly supported by an assessment from an experienced allied health clinician. Both the Autistic Diagnostic Interview - Revised and the Diagnostic Interview for Social and Communication Disorders take several hours to administer and score on one informant. NDIS will generally only provide funding for level 2 or 3 ASD (not level 1, see box 3).

Paediatricians, mostly in private practice, are the main source of medical expertise and diagnosis, although many work in conjunction with a range of allied health for some of the complementary assessments. Paediatricians are largely the source of expertise for what might be called comorbid 'developmental psychiatric disorders', including anxiety, OCD, PTSD, depression, ADHD, oppositional defiant disorder and increasingly for early-presenting bipolar disorder.

EDs are used for acute distress, self-injury and violence (see figure 5) but generally only provide short-term intervention with recommendation for community-based follow-up unless a major psychiatric disorder, such as schizophrenia or psychotic depression, is identified.

However, disturbed behaviour needs to be considered in the light of physical health problems, particularly in those who cannot describe their symptoms. Since the advent of the NDIS, access to multidisciplinary disability teams – particularly for behaviour disturbance and the need for positive behaviour support for complex and violent behaviour – has declined because of an absence of funding for complex cases. One needs to build relationships with allied health who have established a reputation in the private sector. Large data studies have shown that those with intellectual disability or ASD are twice as likely to attend EDs as those without disability, are less likely to receive a follow-up appointment and, if they do get admitted, they stay more than twice as long.[40] People with ASD have a suicide rate of twice the general population.[41]

Figure 4. Specialised education methods may be required.

Figure 5. ED may be used for self-harm or violence.

CASE STUDY

ETHAN, 10, weighing 70kg, has autism and ADHD. He is of normal intellect. Ethan is involved in a violent incident requiring ambulance and police, capsicum spray, handcuffs and transport in a paddy wagon to the ED. This is the culmination of two years of increasing violence involving emergency services, an issue of great concern to his paediatrician.

Ethan's anger and aggression last for hours, leading to multiple minor injuries to his parents and destruction to furniture and the home. He has broken several bones in his mother's hand with a hammer and has tried stabbing her with a screwdriver.

Ethan's parents fear further assault and are afraid to take him home. Mental health services diagnose 'no major psychiatric disorder' and will not admit him to the adult mental health unit because 'he is too young'. His paediatrician feels admission to a paediatric ward is unsafe, and there is no child and adolescent mental health service in-patient bed available.

The initial telephone advice from Ethan's child psychiatrist is olanzapine 10mg tds for aggression and stereotypic rumination. Multi-agency case conference between child and adolescent mental health service, the department of communities and justice, NGOs and emergency services does not provide a place of safety. Ethan is cared for in ED with special nursing for six days and discharged home.

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An urgent outpatient consultation on day four initiates treatment for ADHD, anxiety and mood lability, with additional specific treatments over a few weeks: four hourly clonidine 50-75µg, titrating amitriptyline over three weeks to 25mg tds and carbamazepine 200mg bd.

At four-week follow-up, there are no further acute/dangerous episodes. The improvement has enabled alternative behavioural and communication approaches.

Ethan is out of school for 12 months until a placement is found in a multi-categorical class. His parents are highly committed, but parent training interventions provide no benefit. Because of the danger to his mother, Ethan's father stops work to be the primary carer. Both parents are dejected and depressed, with the father responding to an antidepressant and the mother to returning to work. Ethan remains 'high demand' but does reasonably well over the next eight years.

This case illustrates a regular presentation in someone with autism with or without intellectual disability and the importance of treating comorbid psychiatric disorders. Autistic thinking and ADHD can lead to dangerous, insightless behaviour even at a young age. Early intervention for behaviour is more complex but critical with autism.

Emergency clinicians are fearful of using necessary amounts of sedation in 'children', and sedation protocols and safety planning need to cater for such examples. Child and adolescent mental health services are often unfamiliar with intellectual disability and autism and lack back-up from emergency or adult mental health services.

Paediatricians care for many of these cases without collaborative pathways with mental health. Medication is often an essential part of treating psychiatric comorbidity, especially when severe. Stimulants and SSRIs often cause side effects in this population. Stimulants may be first-line treatment for ADHD, but clonidine, atomoxetine and amitriptyline are second line, and major tranquillisers and mood stabilisers are third line.

Neurodevelopmental psychiatric disorders can disrupt the parenting and behavioural skills of normal families.

CONCLUSION

THIS is an update on our developing state of knowledge in diagnosing and supporting young people with ASD, with brief mention on access to current services. As a lifelong, chronically disabling condition, it is particularly important for GPs to be involved with these families, as intercurrent medical problems are associated with emotional and behavioural crises. GPs are well placed to provide support for the chronic comorbid psychiatric disorders.

FURTHER READING

- **Dossetor D. Some personal guidelines for prescribing for the mental health needs of children and adolescents with intellectual disability and/or autism. *Journal for the Mental Health of Children and Adolescents with Intellectual and Developmental Disabilities* 2019; 10:4-16: bit.ly/38rQb6Y**
- **Howes O, et al. Autism spectrum disorder: Consensus guidelines on assessment, treatment and research from the British Association for Psychopharmacology. *Journal of Psychopharmacology* 2018; 32:3-29: orcid.org/0000-0002-7685-2977.**
- **Fuentes J, et al. Autism Spectrum Disorder. Chapter 2 in JM Rey's IACAPAP e-Textbook of Child and Adolescent Mental Health, 2014: bit.ly/2BRAdXP**
  This is a valuable e-resource, including podcasts, and is available in different languages.
- **Whitehouse A, et al. A national guideline for the assessment and diagnosis of autism spectrum disorder in Australia. Autism CRC Ltd, 2018 (www.autismcrc.com.au): bit.ly/38E5gSU**

RESOURCES

- **Stepping Stones -Triple P:** bit.ly/31NXCnN
- **TEACCH: teacch.com/**
- **Early Start Denver Model:** www.autismspeaks.org/early-start-denver-model-esdm
- **Pivotal Response Training:** www.autismspeaks.org/pivotal-response-treatment-prt-0
- **Floortime:** www.floortime.org/
- **Hanen more than Words:** www.hanen.org/Programs/For-Parents/More-Than-Words.aspx
- **Social Communication and Emotional Regulation and Transactional Support:** scerts.com/
- **Relationship Development Intervention:** www.autismspeaks.org/relationship-development-intervention-rdi-0
- **Early Childhood Early Intervention:** bit.ly/31Di6cG
- **National guidelines on best practice in early childhood intervention:** bit.ly/3gIQZgu
- **The Westmead Feelings Program:** bit.ly/2NMZhBB
- **The Secret Agent Society:** www.sst-institute.net/

References on request from howtotreat@adg.com.au

How to Treat Quiz.

AUTISM

GO ONLINE TO COMPLETE THE QUIZ **ausdoc.com.au/howtotreat**

1. **Which THREE statements regarding autism are correct?**
   - a This disorder is a specific delay in emotional/social intelligence.
   - b The condition co-occurs with intellectual disability in 70% of cases.
   - c Autism is more common in girls than boys.
   - d Epidemiological research has confirmed that there are those of normal intellect who are clinically on the spectrum but do not meet the full diagnostic criteria.

2. **Which THREE are low-level environmental risk factors for autism?**
   - a Neonatal hypoxia.
   - b Older sibling with ASD.
   - c Preterm birth.
   - d Low maternal folate.

3. **Which TWO are features of the toddler independence stage (aged 2-3)?**
   - a Development of primary attachment and wariness of strangers.
   - b Development of pretend and creative play.
   - c Starting to develop joint attention.
   - d Sensitivity to subtle non-verbal communication and shame.

4. **Which THREE statements regarding autism are correct?**
   - a Autism has been shown to be a delay in global development.
   - b Autism has been shown to be a specific delay in emotional and social development rather than a medical or categorical disorder.
   - c Being on the spectrum increases the genetic risk of a comorbid psychiatric disorder.
   - d ASD is best seen in the context of a gaussian distribution of emotional intelligence, where those with ASD are 2-4 standard deviations below the mean.

5. **By which ONE method is the diagnosis of autism made?**
   - a Early diagnosis (before age two) of lack of social responsiveness skills.
   - b Clinically, by an experienced clinician or a multidisciplinary team.
   - c By at least three research interviews.
   - d Concordance between parental and school reports over a 12-month period.

6. **Which THREE are red flags for ASD?**
   - a Faltering growth.
   - b Lack of co-ordination of non-verbal communication.
   - c Lack of response to name.
   - d Lack of playing with a variety of toys.

7. **Which THREE are differential diagnoses of ASD?**
   - a Down syndrome.
   - c Other psychiatric disorders.
   - c Deafness.
   - d Intellectual disability.

8. **In which THREE areas of ASD do GPs have a role?**
   - a Making a definitive diagnosis irrespective of their level of experience with ASD.
   - b Screening for the early presence of autism and other developmental disorders.
   - c Managing medical comorbidities.
   - d Supporting treatment and crisis management.

9. **Which THREE statements regarding the management of autism are correct?**
   - a Predictors of better outcome include higher childhood intelligence, communicative phases before age six and fewer social impairments.
   - b There is no established cure for autism.
   - c Best practice for early intervention is medication as this facilitates behavioural approaches.
   - d A good relationship that includes trusting and accepting guidance from parents is critical for the young person with ASD.

10. **Which TWO medications have been proven to have a role in the management of autism?**
    - a SSRIs.
    - b Secretin.
    - c Clonidine.
    - d Chelating agents.

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