



Differential diagnosis and coexisting conditions

Many conditions, described as differential diagnosis, present with symptoms like autism. Some of these conditions may also coexist with autism.

Whenever a child is diagnosed with autism some questions must be asked:

- a. "Is it really ASD or could it be some other condition with symptoms like autism?" and
- b. "does the child have another condition coexisting with ASD?"

It is recommendedⁱ that we consider the following conditions for differential diagnosis and undertake specific assessment and/or obtain expert advice to exclude them:

- **Neurodevelopmental disorders:**
 - language delay or disorder
 - intellectual disability or global developmental delay
 - developmental coordination disorder (DCD).
- **Mental and behavioural disorders:**
 - attention deficit hyperactivity disorder (ADHD)
 - mood disorder e.g. depression
 - anxiety disorder
 - attachment disorders
 - oppositional defiant disorder (ODD)
 - conduct disorder
 - obsessive compulsive disorder (OCD)
 - psychosis.
- **Conditions in which there is developmental regression:**
 - Rett syndrome
 - epileptic encephalopathy.
- **Other conditions:**
 - severe hearing impairment
 - severe visual impairment
 - maltreatment
 - selective mutism.





Language impairment (LI)

Presenting features that make it look like ASD	Features that are different from ASD
Understanding and use of language is affected	LI children often use non-verbal communication to compensate
Play is often immature or delayed	Use of language in ASD remains poor or odd compared to the expressive language ability
Social communication is often affected when the language is poor	LI children have more difficulty in speaking than understanding; in ASD the understanding is more affected.
Making friends is difficult	Delayed echolalia, rigid repetitive behaviours and over focussed interests are present in ASD and not in LI.

Intellectual disability (ID)/global developmental impairment

Presenting features that make it look like ASD	Features that are different from ASD
Understanding and use of language is affected	Children with ID show more social interest and reciprocity than those with ASD
Play is often poor or delayed	Children with ID show social imitation
Social interaction is often limited	Sensory sensitivities and over focussed interests are more marked in ASD
Making friends is difficult	Social skills impairment becomes apparent at a later age in ID
Children with combined ASD and ID are more withdrawn, aloof, self-injurious and ritualistic than those with just ID.	

Developmental coordination disorder (DCD)

Presenting features that make it look like ASD	Features that are different from ASD
Poor sense of personal space	Children with DCD have good communicative intent and reciprocity and their language is not disordered.
Clumsiness	Children with DCD have normal imaginative play.
Difficulties with peer relationships.	Sensory sensitivities and over focussed interests seen in ASD are not seen in DCD.
Some children with ASD may get a diagnosis of DCD first because of their clumsiness.	

Attention deficit and hyperactivity disorder (ADHD)





Presenting features that make it look like ASD	Features that are different from ASD
Hyperactivity, poor attention and impulsivity	In ASD the child gives sustained attention to own interests
Interrupting and intruding in conversations and activities	In ADHD social norms are understood, though may not be followed
Poor awareness of danger	In ADHD the child is exposed to danger due to impulsivity; in ASD there is poor understanding of risks.
Difficulties with peer relationships	In ADHD the child has social interest and can demonstrate social reciprocity
ADHD commonly coexists with ASD; they are not mutually exclusive.	

Anxiety disorder

Presenting features that make it look like ASD	Features that are different from ASD
Repetitive questioning or seeking of reassurance	In ASD the repetitive questions or statements have an insistent and stereotyped quality e.g. asking about time or age; often the answers to these questions must be given in the same way to be accepted by the child.
Social avoidance	In Anxiety the social avoidance is based more on the fear of being judged or some other fear; in ASD social avoidance is due to a lack of interest.
Anxiety is commonly present in children with ASD; they are not mutually exclusive.	

Selective mutism (SM)

Presenting features that make it look like ASD	Features that are different from ASD
Lack of communication in social settings	Normal communication and social interaction present at home in SM
History of language delay may be present	Normal imaginative play in SM
Anxiety is seen in social settings	No repetitive behaviour, over focussed interests, sensory or motor mannerisms in SM.

Obsessive compulsive disorder (OCD)

Presenting features that make it look like ASD	Features that are different from ASD
Obsessive, ritualistic and repetitive behaviour pattern.	The onset of OCD is usually after 4 years of age.





	Social communication and reciprocity are normal in OCD
	In OCD the behaviours are distressing for the child e.g. having to repeatedly wash hands.
	In ASD the routines are more about insistence on sameness.
OCD can co-occur with ASD.	

Severe behaviour problems (oppositional defiant disorder (ODD) or conduct disorder)

Presenting features that make it look like ASD	Features that are different from ASD
A lack of concern or empathy for others and a lack of remorse	In ODD the child understands the nature of behaviour but justifies, and deliberately persists
Poor peer relationships	In ODD behaviour can be modified when the child is motivated
	In ODD there are often no repetitive behaviours with normal early development of social skills.
	In ASD the focus is the behaviour with no awareness of its impact.
Severe behavioural problems can co-occur with ASD.	

Attachment disorder (AD)

Presenting features that make it look like ASD	Features that are different from ASD
Unusual, odd or disinhibited social behaviour e.g. becoming overfriendly with strangers.	Child with AD seeks social attention through their disinhibited behaviour; in ASD there is no such seeking.
Being negative or withdrawn from parents particularly with a lack of reaction or odd reaction at separation or reunion.	In AD the imaginative play is normal and there is lack of intense or unusual interests
	There is a history of maltreatment/abuse in AD

Rett Syndrome (RS)

Presenting features that make it look like ASD	Features that are different from ASD





Regression of language skills with loss of social communication behaviour around the 1 st birthday	Loss of purposeful hand movements, general motor skills and ataxia are seen in RS, not in ASD.
Stereotyped hand movements	Autistic hand and finger mannerisms are different from the “hand-wringing” in RS
	Social interest is relatively preserved in RS
	In Rett syndrome MECP2 mutation is confirmed on testing
Mild RS is more likely to be associated with ASD.	

Epileptic Encephalopathy (EE)/ Landau Kleffner Syndrome (LKS)

Presenting features that make it look like ASD	Features that are different from ASD
Loss of language, broad development skills and social impairment in early childhood	Onset of LKS is between 2 and 7 years after a period of normal development
Absence seizures may be mistaken for social withdrawal	Social interest and play is relatively preserved in LKS
	There are no preoccupations, over-focused interests, sensory or motor mannerisms in LKS
	Specific EEG findings in LKS

Severe visual impairment (VI)

Presenting features that make it look like ASD	Features that are different from ASD
Lack of communicative eye contact, facial expressions and gestures and joint attention.	Social interest, effort and reciprocity is present in VI
Delayed language, play skills and persistence of echolalia	Children with VI want to share their interest with others and have good exploratory play
Narrow range of interests	Children with VI express empathy
Repetitive mannerisms may be present	Motor mannerisms are different: eye poking and rocking are seen more in VI
ASD and severe VI can co-occur	

Severe hearing impairment (HI)

Presenting features that make it look like ASD	Features that are different from ASD
Delayed understanding and use	Social interest, initiation and reciprocity are intact in HI
Social awkwardness and isolation	Imaginative play is intact in HI
	Non-verbal communication is good in HI
	No rigidity or repetitiveness seen in HI
ASD and severe HI can co-occur.	





Co-existing conditions with ASD

The following is the prevalence of the main co-existing conditions:

Conditions	Prevalence (%) in children with classical autism	Prevalence (%) in children with ASD	Population prevalence
Intellectual disability	76	65	3-14/1000
ADHD	41	45	3-5%
Anxiety	62	27	
Self-injurious behaviour	49	Not known	
OCD	37	8	
Depression	14	9	
Seizures	24	15	
Tourette syndrome	Not known	12	
Cerebral palsy	5	5	2/1000
Sleep problems	37	61	
Gastrointestinal problems	3	62	
Vision deficits	7	6	2/1000
Hearing deficits	3	8	1/1000

ⁱ Autism spectrum disorder in under 19s: recognition, referral and diagnosis. CG 128. NICE: Sept 2011.

