AUTISM SPECTRUM DISORDER

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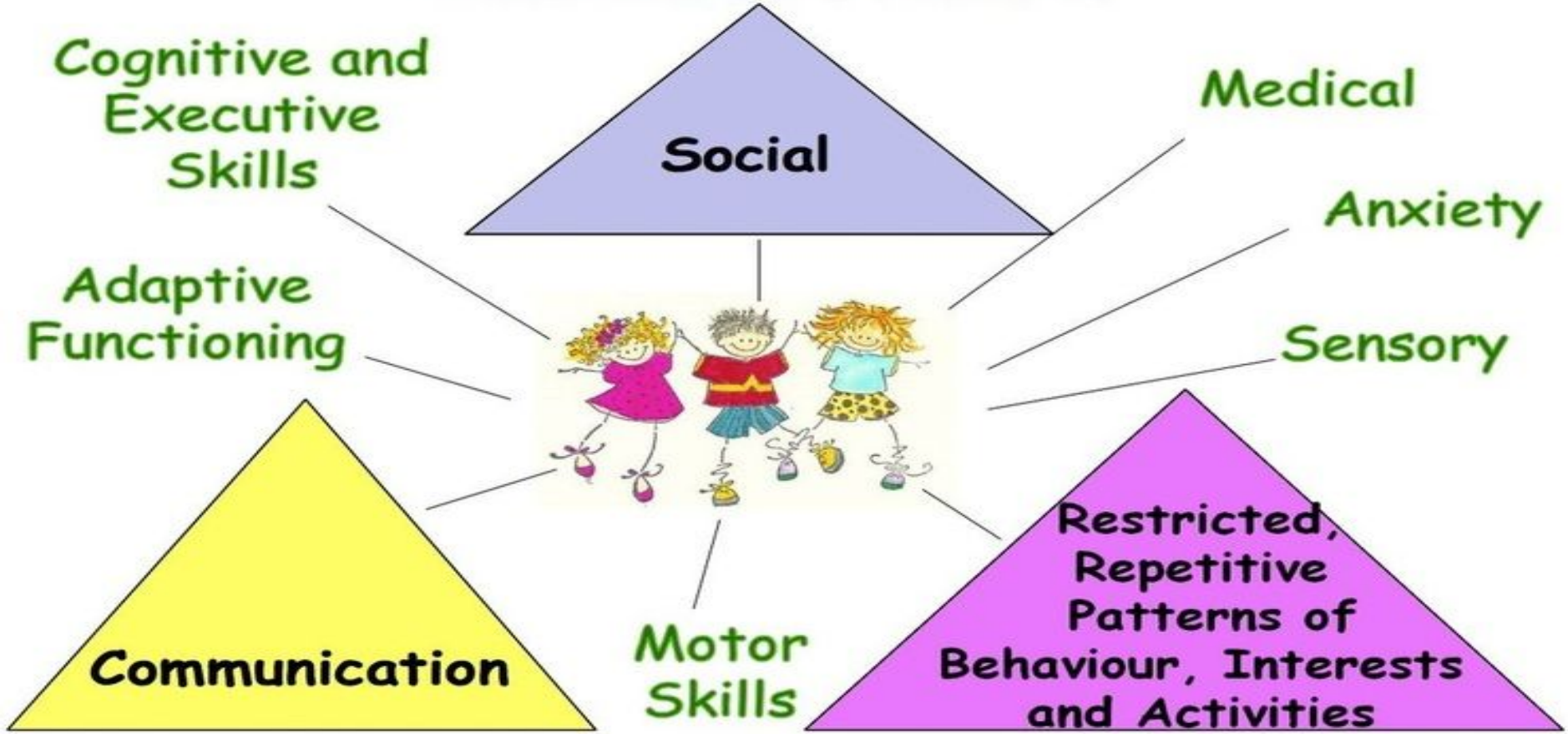
- The word "autism" comes from the Greek word "autos," which means "self." It describes conditions in which a person is removed from social interaction. In other words, they become an “isolated self.”


Social Communication
Social Interaction
Autism Spectrum
Social Imagination

The Triad of Characteristics and Associated Features



Definition of Autism

According to RPWD Act, 2016,

“Autism Spectrum Disorder”(ASD) means a neurodevelopmental condition typically appearing in the first three years of life that significantly affects a person's ability to communicate, understand relationships and relate to others and is frequently associated with unusual or stereotypical rituals or behaviours.”

HISTORY OF AUTISM

ORIGIN OF AUTISM

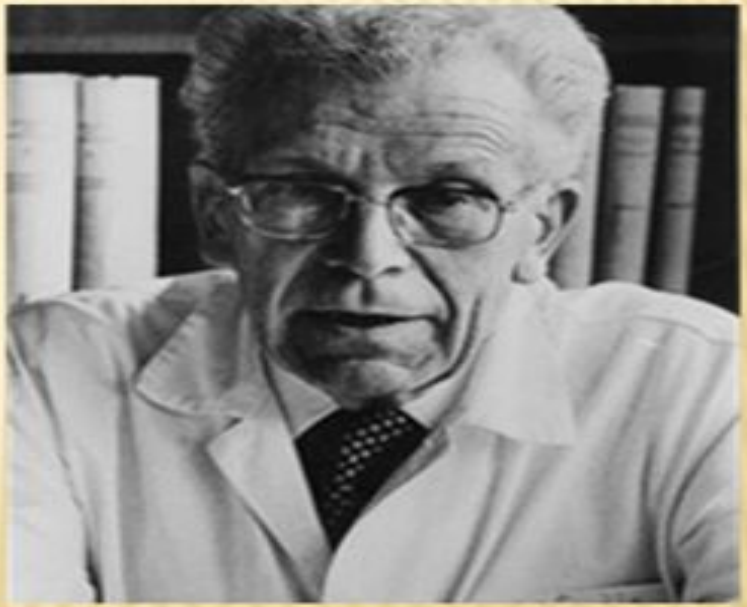
- Autism was first identified as a specific disorder in 1943 by child psychiatrist Dr. Leo Kanner. Based on a study of 11 children, Dr. Kanner published the first description of what he called “autistic disturbances of affective contact.”

1943- Autism first described as a condition.

- Dr. Leo Kanner was an Austria-American psychiatrist and physician. He received a 33 page letter from a father of a 5-year-old boy named Donald. The letter described in detail the different unusual behaviors Donald showed on a daily basis. After meeting and observing Donald, Leo Kanner published a paper in 1943 called, *Autistic Disturbances of Affective Contact,* which discussed Donald and 10 other children. He describes these 11 children in his paper as having "a powerful desire for aloneness and sameness".

ORIGIN OF ASPERGERS

- Around the same time that Kanner was researching autism, German scientist Dr. Hans Asperger, based on his study of 400 children, described another form of autism that became known as Asperger Syndrome. He referred to the individuals in his study as “little professors.”



A definition for autism is put in place by child psychiatrist Leo Kanner. He describes autism as "lack of affective contact, fascination with objects, desire for sameness and non-communicative language before 30 months of age." [2]

1944

German scientist Hans Asperger detects a condition with similar afflictions that is now called "Asperger's syndrome." There is still believed to be a link between autism and schizophrenia. [1, 2]

1950s

Autism is falsely suspected of being caused by cold and uncaring mothers. Parentectomy, or the removal of the afflicted child from his or her parents for long periods of time, is utilized for treatment by a doctor in a study. [3]

1960s

Various treatments are tested, but there is still a limited understanding of what helps patients. Pain and punishment are still inflicted on children to try to correct antisocial behavior. The use of LSD is implemented. As a serotonin inhibitor, it is believed that altering the

1965

- **Eugen Bleuler coined the word "autism" in 1908 among severely withdrawn schizophrenic patients.**
- **In 1943 American child psychiatrist Leo Kanner studied 11 children. The children had features of difficulties in social interactions, difficulty in adapting to changes in routines, good memory, sensitivity to stimuli (especially sound), resistance and allergies to food, good intellectual potential, echolalia or propensity to repeat words of the speaker and difficulties in spontaneous activity.**
- **In 1944 Hans Asperger, working separately, studied a group of children. His children also resembled Kanner's descriptions. The children he studied, however, did not have echolalia as a linguistic problem but spoke like grownups. He also mentioned that many of the children were clumsy and different from normal children in terms of fine motor skills.**

- **Next Bruno Bettelheim studied the effect of three therapy sessions with children who he called autistic. He claimed that the problem in the children was due to coldness of their mothers. He separated the children from their parents. Kanner and Bettelheim both worked towards making hypothesis that showed autistic children had frigid mothers**
- **Bernard Rimland was a psychologist and parent of a child with autism. He disagreed with Bettelheim. He did not agree that the cause of his son's autism was due to either his or his wife's parenting skills. In 1964, Bernard Rimland published, *Infantile Autism: The Syndrome and its Implications for a Neural Theory of Behavior.***
- **Autism came to be better known in the 1970's. The Erica Foundation started education and therapy for psychotic children in the beginning of the 80s. Many parents still confused autism with mental retardation and psychosis.**
- **It was in 1980's that Asperger's work was translated to English and published and came into knowledge.**

- It was in the 1980's that research on autism gained momentum. It was increasingly believed that parenting had no role in causation of autism and there were neurological disturbances and other genetic ailments like tuberous sclerosis, metabolic disturbances like PKU or chromosomal abnormalities like fragile X syndrome.
- Lorna Wing, along with Christopher Gillberg at BNK (Children's Neuro-Psychiatric Clinic) in Sweden in the 1980's found the Wing's triad of disturbed mutual contact, disturbed mutual communication and limited imagination. In the 1990's they added another factor making it a square. The factor was limited planning ability.
- Ole Ivar Lovaas studied and furthered behavioural analysis and treatment of children with autism. Lovaas achieved limited success at first with his experimental behaviour analysis.

Treatment History

From the 1960s through the 1970s, research into treatments for autism focused on medications such as LSD (lysergic acid diethylamide (LSD)**, electric shock, and behavioral change techniques. The latter relied on pain and punishment.**

During the 1980s and 1990s, the role of behavioral therapy and the use of highly controlled learning environments emerged as the primary treatments for many forms of autism and related conditions. Currently, the cornerstones of autism therapy are behavioral therapy and language therapy. Other treatments are added as needed.

Pervasive Developmental Disorders (DSM-IV-TR)

Under the Umbrella:

Autistic Disorder:

- Onset before age 3
- Significant delays with social interaction
- Significant delays or differences with communication
- Restrictive interests or repetitive behaviors

Generally more boys than girls

Under the Umbrella:

Asperger's Syndrome:

High functioning form of autism.

Language skills develop but there are impairments in social interaction and social communication.

Under the Umbrella:

Rett's Disorder:

- Is diagnosed only in girls.
- Normal prenatal and peri natal development.
- Normal psychomotor development for the first 5 months.
- Head growth ceases between 5-48 months, with loss of previously acquired skills.
- Poorly coordinated gait and trunk movements and severely impaired expressive and receptive language development with severe psychomotor retardation.

Under the Umbrella:

Childhood Disintegrative Disorder:

Extremely rare.

When listed in DSM- IV, there were only 100 cases diagnosed.

Display normal development for at least the first 2 years after birth and then display clinically significant regression in communication, motor, and social interaction skills.

Under the Umbrella:

PDD-NOS:

This category is used when the criteria for autistic disorder are not met.

However, there are severe and pervasive impairments in social interactions, communication, or stereotypical behaviors.

It has also been called "atypical autism".

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Characteristics of Autism

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DSM V – AUTISM SPECTRUM DISORDER

A

Persistent deficits in social communication and social interaction across contexts, not accounted for by general developmental delays, and manifest by 3 of 3 symptoms

B

Restricted, repetitive patterns of behavior, interests, or activities as manifested by <u>at least 2 of 4 symptoms:</u>

C

Symptoms must be present in early childhood (but may not become fully manifest until social demands exceed limited capacities)

D

Symptoms together limit and impair everyday functioning.

A. PERSISTENT DEFICITS IN SOCIAL COMMUNICATION AND SOCIAL INTERACTION ACROSS CONTEXTS, NOT ACCOUNTED FOR BY GENERAL DEVELOPMENTAL DELAYS, AND MANIFEST BY 3 OF 3 SYMPTOMS

A1. **Deficits in social-emotional reciprocity; ranging from abnormal social approach and failure of normal back and forth conversation through reduced sharing of interests, emotions, and affect and response to total lack of initiation of social interaction**

Abnormal social approach

✓Unusual social initiations (e.g. intrusive touching; licking of others)
✓Use of others as tools

Failure of normal back and forth conversation

- ✓ Poor pragmatic/social use of language (e.g. does not clarify if not understood; does not provide background information)
- ✓ Failure to respond when name called or when spoken directly to
- ✓ Does not initiate conversation
- ✓ o One-sided conversations/monologues/tangential speech

Reduced sharing of interests

- Doesn't share
- Lack of showing, bringing, or pointing out objects of interest to other people
- Impairments in joint attention

Reduced sharing of emotions/affect

- Lack of responsive social smile (*note: the focus here is on the response to another person's smile; other aspects of emotional expression should be considered under A2*).
- Failure to share enjoyment, excitement, or achievements with others
- Failure to respond to praise
- Does not show pleasure in social interactions
- Failure to offer comfort to others
- Indifference/aversion to physical contact and affection

Lack of initiation of social interaction

- Only initiates to get help; limited social initiations

Poor social imitation

- Failure to engage in simple social games

A2. Deficits in nonverbal communicative behaviors used for social interaction; ranging from poorly integrated- verbal and nonverbal communication, through abnormalities in eye contact and body-language, or deficits in understanding and use of nonverbal communication, to total lack of facial expression or gestures.

Impairments in social use of eye contact

Impairment in the use and understanding of body postures (e.g. facing away from a listener)

Impairment in the use and understanding of gestures (e.g. pointing, waving, nodding/shaking head)

Abnormal volume, pitch, intonation, rate, rhythm, stress, prosody or volume in speech

Abnormalities in use and understanding of affect (note: responsive social smile should be considered under A1, while affect that is inappropriate for the context should be considered under A3)

Impairment in the use of facial expressions (may be limited or exaggerated)

Lack of warm, joyful expressions directed at others

Limited communication of own affect (inability to convey a range of emotions via words, expressions, tone of voice, gestures)

Inability to recognize or interpret other's nonverbal expressions

Lack of coordinated verbal and nonverbal communication (e.g. inability to coordinate eye contact or body language with words)

Lack of coordinated non-verbal communication (e.g. inability to coordinate eye contact with gestures)

A3. Deficits in developing and maintaining relationships, appropriate to developmental level (beyond those with caregivers); ranging from difficulties adjusting behavior to suit different social contexts through difficulties in sharing imaginative play and in making friends to an apparent absence of interest in people

Deficits in developing and maintaining relationships, appropriate to developmental level

Lack of "theory of mind"; inability to take another person's perspective (CA ≥ 4 years)

Difficulties adjusting behavior to suit social contexts

- ➔ **Does not notice another person's lack of interest in an activity**
- ➔ **lack of response to contextual cues (e.g. social cues from others indicating a change in behavior is implicitly requested)**
- ➔ **Inappropriate expressions of emotion (laughing or smiling out of context) (note: other abnormalities in the use and understanding of emotion should be considered under A2)**

- ➔ Unaware of social conventions/appropriate social behavior; asks socially inappropriate questions or makes socially inappropriate statements
- ➔ Does not notice another's distress or disinterest
- ➔ Does not recognize when not welcome in a play or conversational setting
- ➔ Limited recognition of social emotions (does not notice when he or she is being teased; does not notice how his or her behavior impacts others emotionally)

Difficulties in sharing imaginative play (Note: solitary imaginative play/role playing is NOT captured here)

- Lack of imaginative play with peers, including social role playing (>4 years developmental age)

Difficulties in making friends

- Does not try to establish friendships
- Does not have preferred friends
- Lack of cooperative play (over 24 months developmental age); parallel play only
- Unaware of being teased or ridiculed by other children
- Does not play in groups of children
- Does not play with children his/her age or developmental level (only older/younger)
- Has an interest in friendship but lacks understanding of the conventions of social interaction (e.g extremely directive or rigid; overly passive)
- Does not respond to the social approaches of other children

Absence of interest in others

- Lack of interest in peers
- Withdrawn; aloof; in own world
- Does not try to attract the attention of others
- Limited interest in others;
- Unaware or oblivious to children or adults
- Limited interaction with others
- Prefers solitary activities

A3 reflects problems with social awareness and insight, as well as with the broader concept of social relationships

https://www.youtube.com/watch?v=E-XgK_LaFKI

B. RESTRICTED, REPETITIVE PATTERNS OF BEHAVIOR, INTERESTS, OR ACTIVITIES AS MANIFESTED BY AT LEAST 2 OF 4 SYMPTOMS:

B1. Stereotyped or repetitive speech, motor movements, or use of objects; (such as simple motor stereotypies, echolalia, repetitive use of objects, or idiosyncratic phrases).

- *Stereotyped or repetitive speech*
  - Pedantic speech or unusually formal language (child speaks like an adult or "little professor")
  - Echolalia (immediate or delayed); may include repetition of words, phrases, or more extensive songs or dialog
  - "Jargon" or gibberish (mature jargoning after developmental age of 24 months)
  - Use of "rote" language
  - Idiosyncratic or metaphorical language (language that has meaning only to those familiar with the individual's communication style); neologisms
  - Pronoun reversal (for example, "You" for "I"; not just mixing up gender pronouns)
  - Refers to self by own name (does not use "I")
  - Perservative language (note: *for perseveration on a specific topic, consider B3*)

B1 includes atypical speech, movements, and play

- Repetitive vocalizations such as repetitive guttural sounds, intonational noise-making, unusual squealing, repetitive humming

B3 includes preoccupations with objects or topics

- *Stereotyped or repetitive motor movements*
  - Repetitive hand movements (e.g., clapping, finger flicking, flapping, twisting)
  - Stereotyped or complex whole body movements (e.g., foot to foot rocking, dipping, & swaying; spinning)
  - Abnormalities of posture (e.g., toe walking; full body posturing)
  - Intense body tensing
  - Unusual facial grimacing
  - Excessive teeth grinding
  - Repetitively puts hands over ears (*note: if response to sounds, consider B4*)
  - Perseverative or repetitive action / play / behavior (note: *if 2 or more components, then it is a routine and should be considered under B2*)
  - Repetitive picking (unless clear tactile sensory component, then consider B4)
- *Stereotyped or repetitive use of objects*
  - Nonfunctional play with objects (waving sticks; dropping items)
  - Lines up toys or objects
  - Repetitively opens and closes doors
  - Repetitively turns lights on and off

B2. Excessive adherence to routines, ritualized patterns of verbal or nonverbal behavior, or excessive resistance to change; (such as motoric rituals, insistence on same route or food, repetitive questioning or extreme distress at small changes).

- *Adherence to routine*
  - Routines: specific, unusual multiple-step sequences of behavior
  - Insistence on rigidly following specific routines (*note: exclude bedtime routines unless components or level of adherence is atypical*)
  - Unusual routines
- *Ritualized Patterns of Verbal and Nonverbal Behavior*
  - Repetitive questioning about a particular topic (distinguish from saying the same word or phrase over and over, which goes under B1)
  - Verbal rituals - has to say one or more things in a specific way or requires others to say things or answer questions in a specific way
  - Compulsions (e.g. insistence on turning in a circle three times before entering a room) (*note: repetitive use of objects,, including lining up toys, should be considered under B1*).
- *Excessive resistance to change*
  - Difficulty with transitions (should be out of the range of what is typical for children of that developmental level)
  - Overreaction to trivial changes (moving items at the dinner table or driving an alternate route)
- Rigid thinking
  - Inability to understand humor
  - Inability to understand nonliteral aspects of speech such as irony or implied meaning
  - Excessively rigid, inflexible, or rule-bound in behavior or thought

B2 includes rituals and resistance to change

B3. Highly restricted, fixated interests that are abnormal in intensity or focus; (such as strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interests).

- Preoccupations; obsessions
- Interests that are abnormal in intensity
- Narrow range of interests
- Focused on the same few objects, topics or activities
- Preoccupation with numbers, letters, symbols
- Being overly perfectionistic
- Interests that are abnormal in focus
- Excessive focus on nonrelevant or nonfunctional parts of objects
- Preoccupations (e.g. color; time tables; historical events; etc)
- Attachment to unusual inanimate object (e.g., piece of string or rubber band)
- Having to carry around or hold specific or unusual objects (not common attachment objects such as blankets, stuffed animals, etc.)
- Unusual fears (e.g. afraid of people wearing earrings)

B4. Hyper-or hypo-reactivity to sensory input or unusual interest in sensory aspects of environment; (such as apparent indifference to pain/heat/cold, adverse response to specific sounds or textures, excessive smelling or touching of objects, fascination with lights or spinning objects).

- High tolerance for pain
- Poking own eyes
- Preoccupation with texture or touch (includes attraction/aversion to texture)
    - Tactile defensiveness; does not like to be touched by certain objects or textures
    - Significant aversion to having hair or toenails cut, or teeth brushed
- Unusual visual exploration / activity
    - Close visual inspection of objects or self for no clear purpose (for example, holding things at unusual angels) (no vision impairment)
    - Looks at objects, people out of corner of eye
    - Unusual squinting of eyes
    - Extreme interest or fascination with watching movement of other things (e.g., the spinning wheels of toys, the opening and closing of doors, electric fan or other rapidly revolving object)
- In all domains of sensory stimuli (sound, smell, taste, vestibular, visual), consider:
    - Odd responses to sensory input (e.g. becoming extremely distressed by the atypical sound)
    - Atypical and/or persistent focus on sensory input
- Unusual sensory exploration with objects (sound, smell, taste, vestibular)
    - Licking or sniffing objects (*note: as part of a ritual, consider B2; licking or sniffing people consider A1*)

B4 includes atypical sensory behaviors

Severity Level for ASD	Social Communication	Restricted Interests & Repetitive Behaviors
Level 3 'Requiring very substantial support'	Severe deficits in verbal and nonverbal social communication skills cause severe impairments in functioning; very limited initiation of social interactions and minimal response to social overtures from others.	Preoccupations, fixated rituals and/or repetitive behaviors markedly interfere with functioning in all spheres. Marked distress when rituals or routines are interrupted; very difficult to redirect from fixated interest or returns to it quickly.
Level 2 'Requiring substantial support'	Marked deficits in verbal and nonverbal social communication skills; social impairments apparent even with supports in place; limited initiation of social interactions and reduced or abnormal response to social overtures from others.	RRBs and/or preoccupations or fixated interests appear frequently enough to be obvious to the casual observer and interfere with functioning in a variety of contexts. Distress or frustration is apparent when RRB's are interrupted; difficult to redirect from fixated interest.
Level 1 'Requiring support'	Without supports in place, deficits in social communication cause noticeable impairments. Has difficulty initiating social interactions and demonstrates clear examples of atypical or unsuccessful responses to social overtures of others. May appear to have decreased interest in social interactions.	Rituals and repetitive behaviors (RRB's) cause significant interference with functioning in one or more contexts. Resists attempts by others to interrupt RRB's or to be redirected from fixated interest.

Causes of Autism

- There is no single cause for autism
- It is generally accepted that it is caused by abnormalities in brain structure or function.

Prenatal Causes

- ➔ **Genetic /Inherent Causes - Retts Syndrome or Fragile X syndrome**
- ➔ **https://www.youtube.com/watch?v=H2iKz1Cx-HQ**
- ➔ **Phenylketonuria (PKU)**
- ➔ **Maternal Infections**
- ➔ **Maternal Use of Psychiatric drugs, alcohols - serotonin reuptake inhibitors (SSRIs) - Antidepressants.**
  https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5516223/
- ➔ **Maternal health conditions - diabetes, thyroxine deficiencies**
- ➔ **Maternal psychological stress**
- ➔ **Advanced age in either parent**

PERINATAL CAUSES

- Low Birth Weight
- Prematurity
- Hypoxia / anoxia
- Birth trauma
- Use of Instruments

Post Natal Causes

- ★ **Environmental toxins - Mercury, Lead**
- ★ **Certain vaccines - thimerosal - containing vaccines**
- ★ **https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3018252/**
- ★ **Viral infections - Herpes Virus**
- ★ **Vitamin deficiencies - Vitamins B12, B6, D and folic acid**
- ★ **Mineral deficiencies - Calcium, Zinc, iodine, Selenium, lithium and potassium**

PREVALENCE OF AUTISM

- About 1 in 100 children has autism.
- 1 in 36 (or 2.8%) of children in the US were identified with ASD using estimates from CDC's Autism and Developmental Disabilities Monitoring (ADDM) Network
- These stats were based on eight-year-olds living in 11 ADDM Network sites in the United States
- The 2023 prevalence estimate from data collected in 2020 is roughly 317% higher than estimates from 2000
- The last estimate, reported in 2021, showed 1 in 44 kids identified with ASD. A mere two years later, the reported estimate increased to 1 in 36

In INDIA

According to a report by *ETHealthWorld*, about 18 million people in India are diagnosed with autism. About 1 to 1.5 per cent of children aged two to nine years are diagnosed with ASD.

Read more at:
https://economictimes.indiatimes.com/magazines/panache/18-million-indians-have-autism-learn-more-about-3rd-most-common-developmental-disorder-know-the-basics-of-parenting-children-with-asd/articleshow/99182225.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

AUTISM SPECTRUM DISORDER

MYTHS VS. FACTS

Individuals on the autism spectrum avoid social contact.	Individuals on the autism spectrum are often keen to make friends, but may find this difficult.
Individuals on the autism spectrum cannot lead independent and successful lives.	Given appropriate education, many will grow up to be successful contributors to society.
Autism is the result of bad parenting.	Evidence shows that autism is caused from a difference in the way the brain develops before the child is born.
All individuals on the autism spectrum have special talent or 'savant' skills.	It is estimated that 10% of individuals on the autism spectrum may have special abilities.
Autism can be cured.	There is currently no documented cure for autism. Individuals on the spectrum respond very well to structured early intervention, education, and vocational placements.
People with autism do not make eye contact.	When they feel relaxed and confident with the communication partner, eye contact can be quite spontaneous.
People with autism cannot talk.	Some will develop speech seemingly effortlessly. Others will require assistance to communicate using a combination of words, gestures, and augmentative communication systems.
Autism can be outgrown.	Children do not 'outgrow' autism but symptoms may lessen or change as the child develops and receives appropriate interventions.
Individuals on the autism spectrum do not have feelings and thus are unable to show affection.	Individuals on the autism spectrum can show affection. Due to differences in sensory processing and social understanding, the display of affection may appear different from typical people.

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thank
you