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- 3. Causes of Autism
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- Definition
- History
- Statistics
- Myths and Fact
- Awareness



Definition

Autism is a neurodevelopmental disorder in which a person may have difficulties in communication, social interaction, and expressing emotions, often leading to challenges in understanding social cues, forming relationships, and adapting to changes in routine or environment.



- Definition
- History
- Statistics
- Myths and Fact
- Awareness



History

Before 1900

no formal term or understanding of autism.

After 1900

- Leo Kanner Austrian-American psychiatrist (1943 published a paper titled "Autistic Disturbances of Affective Contact" based on 11 children)
- Hans Asperger (1944) Austrian pediatrician, published a paper 1944 describing children with similar characteristics.



- Definition
- History
- Statistics
- Myths and Fact
- Awareness



History

1950s-1960s The
"Refrigerator Mother"
Theory

Bruno Bettelheim proposed that what caused their children's autism lack of maternal warmth and nurturing.



- Definition
- History
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- Myths and Fact
- Awareness



History

1980 DSM-III Includes Autism

Autism was formally recognized as a Diagnostic and Statistical Manual of Mental Disorders (DSM-III).

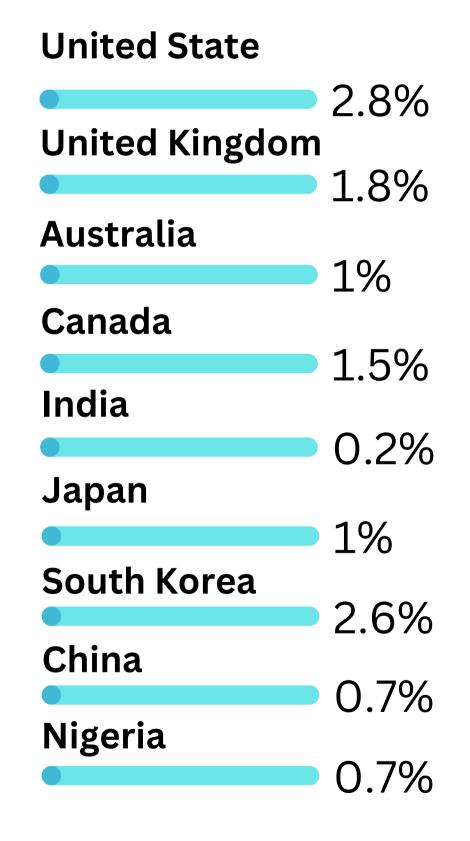
- 1990s Emergence of Asperger's Syndrome DSM-IV (1994)
- 2013 DSM-5 revised the diagnostic criteria in 2013
- Modern Era



- Definition
- History
- Statistics
- Myths and Fact
- Awareness



Statistics



approximately 1 in 100 people worldwide are diagnosed with

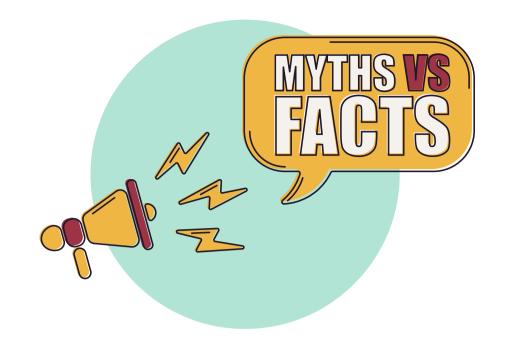
AUTISM

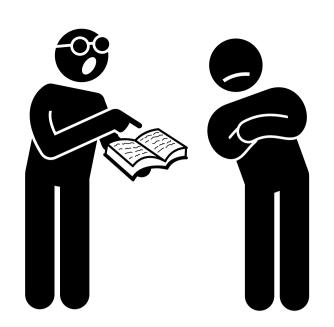




- History
- **Statistics**
- **Myths and Fact**
- **Awareness**











Autistic people lack empathy	Experience empathy but may express it differently
Autism is caused by vaccines	Extensive research shows no link between vaccines and autism
All autistic people have intellectual disabilities	some individuals have an average or above-average intelligence
Autism can be "cured"	Autism is a lifelong neurodevelopmental condition
Autistic people don't want friends	Autistic individuals struggle with social skills



- Definition
- History
- Statistics
- Myths and Fact
- Awareness



Awareness

Awareness about autism matters because it

- Promotes acceptance
- Reduces stigma
- Autistic individuals receive support and accommodations
- It helps in schools, workplaces, and communities
- Early diagnosis and intervention







Social interaction difficulties

Difficulty in initiating the communication

Difficulty making eye contact

Difficulty reading facial expressions and emotions

Feeling uncomfortable in social gatherings

- **∞** Social interaction difficulties
- **∞** Communication issues
- **∞** Behavior problem











Verbal

Non Verbal

- Social interaction difficulties
- **∞** Communication issues
- Behavior problem



Delayed Speech and language development

Difficulty in understanding funny talk

Echolalia, or repeating the same phrase

Difficulty in Gesture Talk











Repetitive Behavior, hand flapping, toe walking, self stimming

- Social interaction difficulties
- **∞** Communication issues
- Behavior problem





Rigid Routine, when the routine is disturbed they feel stress



Sensory sensitivity from light, texture, and sound







Behavior problem



Meltdowns and Shutdowns, due to sensory overload

- Social interaction difficulties
- **∞** Communication issues
- Behavior problem





Aggressive and self-injury behavior



Unnecessary crying and Laughing





Genetic Factor

Hereditary component If the mother or father were Autistic

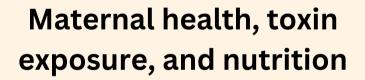
Gene Mutations like SHANK3, NRXN1, or MECP2 genes.

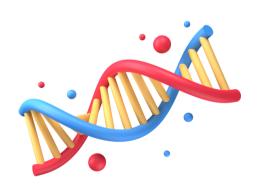


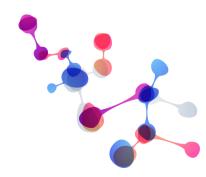


Myths and Controversy

















Myths and Controversy

Brain Development



Environmental Factor

Parental age (especially older parents)

Prenatal exposure to toxins, infections, or certain medications

Complications during birth, like low birth weight or oxygen deprivation







- **Genetic Factor**
- Environmental Factor
- Myths and Controversy
- **Brain Development**



Myths and Controversy

Vaccine and Autism relation is a myth It started with a 1998 study by Andrew Wakefield, which suggested a link between the MMR (measles, mumps, rubella) vaccine and autism.

The study was later discredited due to flawed methodology and ethical violations













Myths and Controversy





Brain Development

Amygdala and social behavior:
Amygdala responsible for emotions

Autistic individuals show rapid brain growth during early childhood

The cerebellum helps coordinate movement and attention

Neurotransmitter imbalances like Serotonin and Dopamine







Diagnostic Criteria (DSM-5)



Screening Tools and Assessments



Role of Healthcare Professionals



Early Signs of Autism

- Delayed speech
- lack of eye contact
- Not responding to their name











Diagnostic Criteria (DSM-5)



Screening Tools and Assessments



Role of Healthcare Professionals

Diagnostic Criteria (DSM-5)

- DSM-5 also categorizes ASD by severity levels (1, 2, 3)
- Social-emotional reciprocity,
 Challenges in nonverbal
 communication
- Problems with developing, maintaining, and understanding relationships









Diagnostic Criteria (DSM-5)



Screening Tools and Assessments



Role of Healthcare Professionals

Diagnostic Criteria (DSM-5)

- Stereotyped or repetitive movements
- Rigid routines, Abnormal in intensity or focus
- Hyper- or hypo-reactivity to sensory input Symptoms must be present in the early developmental period
- Symptoms cause significant impairment in social, occupational











Diagnostic Criteria (DSM-5)



Screening Tools and Assessments



Role of Healthcare Professionals



Modified Checklist for Autism in Toddlers (M-CHAT)

A questionnaire for parents that screen children aged 16-30 months for early signs of autism, focusing on communication, social behavior, and play.

Autism Diagnostic Observation Schedule (ADOS)

A standardized assessment conducted by a professional that evaluates communication, social interaction, and play or imaginative use of materials.





Screening Tools and Assessments





Early Signs of Autism



Diagnostic Criteria (DSM-5)



Screening Tools and Assessments



Role of Healthcare Professionals



Autism Diagnostic Interview-Revised (ADI-R)

development, and repetitive behaviors.

Social Communication Questionnaire (SCQ):

A screening tool for children over 4 years old that evaluates social interaction, communication, and repetitive behaviors.

Childhood Autism Rating Scale (CARS)

A rating scale clinicians use to assess the severity of autism symptoms in children.





Early screening and detection

Role of Healthcare Professionals

Pediatricians and primary care doctors can use screening tools to identify early signs of autism





Early Signs of Autism



Diagnostic Criteria (DSM-5)



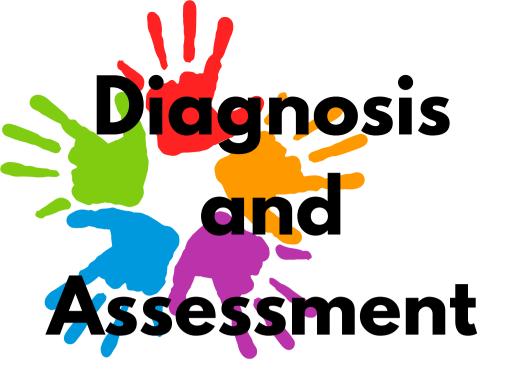
Screening Tools and Assessments



Role of Healthcare Professionals

Developmental pediatricians, child psychologists, and neurologists conduct assessments to diagnose **Autism Spectrum Disorder (ASD)**





Role of Healthcare Professionals



Therapists provide targeted therapies to improve communication, social skills, and daily functioning.



Healthcare professionals guide families on how to manage autism and access resources.





Early Signs of Autism



Diagnostic Criteria (DSM-5)



Screening Tools and Assessments



Role of Healthcare Professionals





- Early intervention
- Therapies
- Medical Management
- MeRT
- Education and Schooling
- Nutrition and Supplements



Early intervention of autistic children raises the percentage of improvement in communication and language development it is categorized into three levels.

- 1.Children speak or walk late
- 2.Enroll your child in School.
- 3. Developmental Pediatrician





- Compare the second of the s
- Medical Management
- MeRT
- Education and Schooling
- Nutrition and Supplements



Early intervention

Children speak or walk late

Our elders and relatives tell us not to worry, sharing stories like "your father also spoke late," which makes us feel better. But this can stop us from taking action. It's important to get help early for our child's development and to consider the environmental and lifestyle factors that may impact their progress.



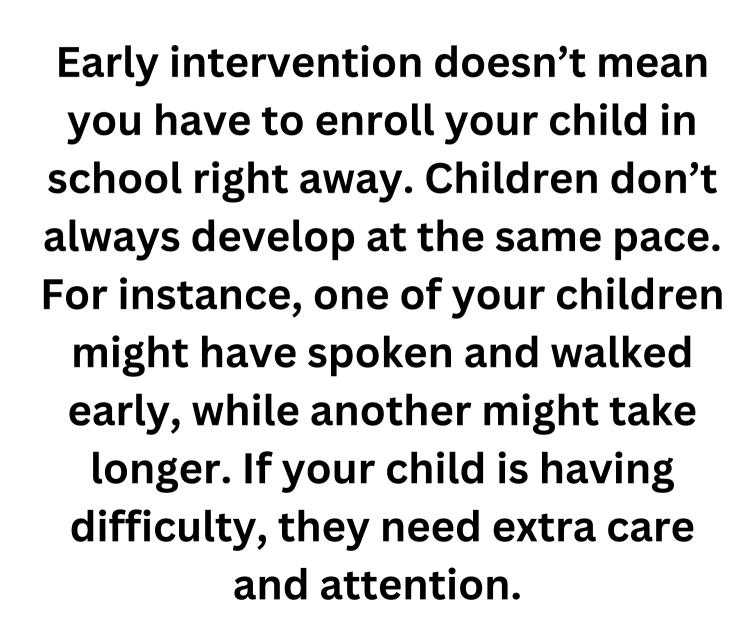


Enroll your child in School.

Early intervention

SCHOOL

- Therapies
- Medical Management
- MeRT
- Education and Schooling
- Nutrition and Supplements







- Compare the second of the s
- Medical Management
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Early intervention

Developmental Pediatrician

It's important to get your child into an early intervention program as soon as possible. You can start by having them assessed by a developmental pediatrician, who specializes in children's growth. They will check your child's physical, mental, and language development and give you a plan to follow, including home exercises.





- R Therapies
- Medical Management
- MeRT
- Education and Schooling
- Nutrition and Supplements



Therapies

Applied Behavior Analysis (ABA)

Speech and Language Therapy

Occupational Therapy (OT)

Sensory Integration Therapy

Social Skills Training

Music therapy

Art therapy





Applied Behavior Analysis (ABA)

- Early intervention
- R Therapies
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- Nutrition and Supplements



ABA is considered one of the most effective treatments for autism. It helps improve skills in communication, social interaction, and daily living. The therapy can be intensive, often involving several hours of intervention per week.







- Early intervention
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Speech and Language Therapy

It can improve the ability to express needs, understand social cues, and engage in conversations. For nonverbal individuals, the focus may be on augmentative and alternative communication (AAC) strategies.





- Early intervention
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Speech and Language Therapy

- Blowing is the first step to initiating speech therapy
- In which children learn how to blow, suck, and use of vibrator brush daily for the strengthening of oral motor muscles
- Use of Speech Gears for speech development





- Early intervention
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- **Education and Schooling**
- Nutrition and Supplements





Occupational Therapy (OT)

It helps improve functional independence by teaching adaptive techniques and coping strategies for managing sensory sensitivities and motor coordination like gross motor skills, fine motor skills, and oral motor problems.





- Compare the second of the s
- Medical Management
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Therapies

Occupational Therapy (OT)

Fine motor skills

opening a lunch box
brushing teeth/using utensils
drawing/writing/coloring
cutting/pasting
muscle tone and strength

Visual-motor skills

Reading/Writing
completing puzzles/math problems
Dressing/coordination
Sensory processing
Taste/smell/sight/touch/hearing



Therapies Occupational Therapy (OT)

Self -care skills

Feeding ourselves
using the toilet
dressing/undressing
Handwashing/Bathing/Grooming

Gross motor skills

Bilateral coordination tasks
Crossing mid-line/range of motion
muscle tone and strength
stability/posture

- Early intervention
- Compare the second of the s
- Medical Management
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- R Therapies
- Medical Management
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Therapies

Sensory Integration Therapy

Involves activities that help
the brain process sensory
information more effectively,
such as swinging, deeppressure touch, or playing with
textured objects.

Can reduce meltdowns and improve focus, coordination, and participation in daily activities.





- Early intervention
- R Therapies
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Therapies

Sensory Integration Therapy

- Use of tunnel of focus and attention
- Use of blankets and roll the children tightly to reduce the hyperactivity
- To reduce hyperactivity trampolines, slides, rope climbing ladders etc were used







- Early intervention
- R Therapies
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Therapies Social Skills Training

Such training can enhance social relationships, increase self-confidence, and reduce social anxiety by providing real-life practice and role-playing scenarios.

Work on how to initiate communication like hello, how are you, a basic sentence that is necessary to initiate and finish the communication





Therapies

Music therapy

- Early intervention
- R Therapies
- Medical Management
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Uses music to promote emotional expression, social interaction, and communication. It can involve singing, playing instruments, or listening to music.

Helps improve mood, reduces anxiety, and enhances social and language skills by engaging multiple areas of the brain.





- Compare the second of the s
- Medical Management
- MeRT
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Therapies

Art therapy

Encourages self-expression through creative activities like drawing, painting, or sculpting. It can be particularly beneficial for individuals who struggle with verbal communication.





- Early intervention
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Medical Management

the FDA-approved medications specifically for autism-related irritability are Risperidone and Aripiprazole other medications are sometimes used "off-label" to address various symptoms associated with Autism Spectrum Disorder (ASD), although they are not FDAapproved specifically for autism





- Compare the second of the s
- **Medical Management**
- MeRT
- Education and Schooling
- Nutrition and Supplements



Medical Management

FDA approved medicine for Autism

- Risperidone
- Aripiprazole

Off-label medicine for Autism

- Selective Serotonin Reuptake Inhibitors (SSRIs)
- Stimulants
- Alpha-2 Adrenergic Agonists
- Anticonvulsants (Mood Stabilizers)





- Early intervention
- Compare the second of the s
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Medical Management

FDA approved medicine for Autism

Risperidone

Approved for treating irritability
 associated with Autism Spectrum Disorder
 (ASD) in children and adolescents aged 5 16 years.

Helps reduce aggression, self-injurious behavior, and severe tantrums

It is an atypical antipsychotic that works by altering the activity of certain neurotransmitters in the brain, such as dopamine and serotonin.





- Early intervention
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Medical Management FDA approved medicine for Autism

Aripiprazole

Approved for treating irritability associated with ASD in children and adolescents aged 6-17 years. Reducing symptoms like aggression, temper outbursts, and mood swings. Another atypical antipsychotic, it helps balance neurotransmitter activity, especially dopamine and serotonin.





- Early intervention
- Compare the second of the s
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Medical Management

Off-label medicine for Autism Selective Serotonin Reuptake Inhibitors (SSRIs)

- Used to manage anxiety, depression, or obsessive-compulsive behaviors, which can co-occur with autism.
- Examples: Fluoxetine (Prozac) and Sertraline (Zoloft).
- Works by increasing serotonin levels in the brain, which can help stabilize mood and reduce anxiety.



- Therapies
- Medical Management
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Medical Management Off-label medicine for Autism Stimulants

- Often used to address attentiondeficit/hyperactivity disorder (ADHD) symptoms in autistic individuals.
- Examples: Methylphenidate (Ritalin, Concerta).
- Helps improve attention, focus, and impulse control.





- Early intervention
- Therapies
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Medical Management

Off-label medicine for Autism Alpha-2 Adrenergic Agonists

- Used to manage hyperactivity, impulsivity, and aggression.
- Examples: Clonidine (Catapres),
 Guanfacine (Intuniv).
- May help reduce symptoms of ADHD and anxiety.





- Compare the second of the s
- Medical Management
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Medical Management

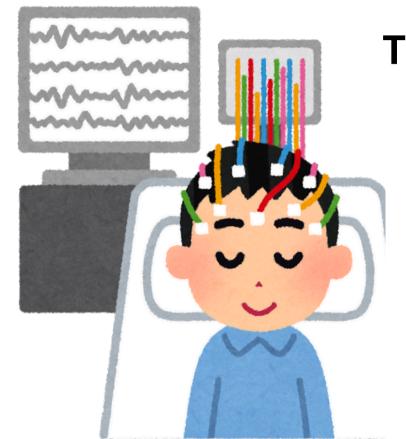
Off-label medicine for Autism Anticonvulsants (Mood Stabilizers)

- Sometimes used to manage mood swings or seizures, as some autistic individuals may experience epilepsy
- Examples: Valproic acid (Depakote), Lamotrigine (Lamictal).





- Early intervention
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MeRT

MeRT is a Magnetic e-resonance Therapy (MeRT) that is based on traditional Transcranial Magnetic Stimulation (TMS).

MeRT is a modified form of TMS.

Those performing this procedure target those areas that are underactive or overactive. The therapy aims to restore the balance of brain functions, it may result in a notable improvement in the behavior, social, and communication of your Autistic child.

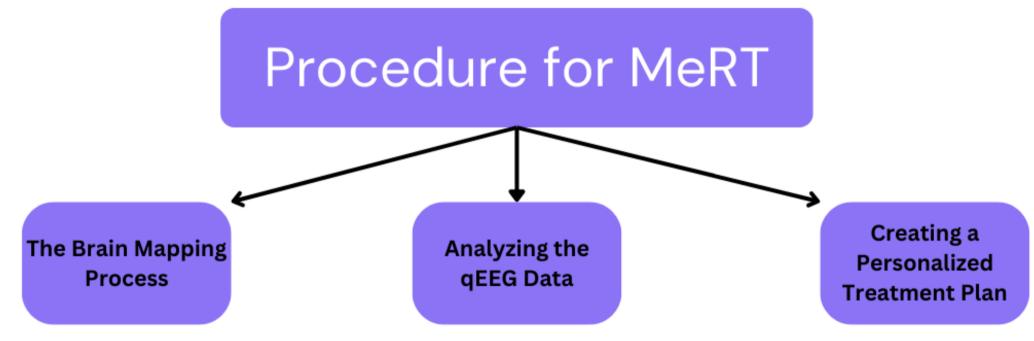




MeRT

In the MeRT procedure, magnetic pulses are mainly used for the stimulation of specific areas of the brain.

- Early intervention
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Preparation

The child or patient is comfortably seated while a cap with electrodes is placed on their scalp. This cap is connected to the qEEG machine.

Recording

The qEEG records electrical activity from various regions of the brain, capturing brainwave patterns in real-time for around 30 minutes.

Data collection

The recorded brainwave data is collected and stored for analysis. This data includes different frequency bands such as Delta, Theta, Alpha, Beta, and Gamma waves.

Pattern Identification

Neuroscientists and clinicians analyze the qEEG data to identify specific brainwave patterns associated with ASD symptoms.

Dysregulation Detection

The analysis helps detect areas of neural dysregulation, where brainwave activity is either underactive or overactive compared to typical patterns.

Brain Heart Relation

The qEEG data is also combined with Electrocardiogram (ECG) readings to assess brain-heart coherence, which can influence overall brain function and emotional regulation.

Customized protocol

Based on the qEEG analysis, a personalized MeRT treatment protocol is developed. this protocol includes the list of area of the brain which needs stimulation

Targeted stimulation

The treatment plan targets the identified areas of dysregulation with precisely calibrated magnetic pulses, aiming to restore optimal brain function.

Adaptive adjustments

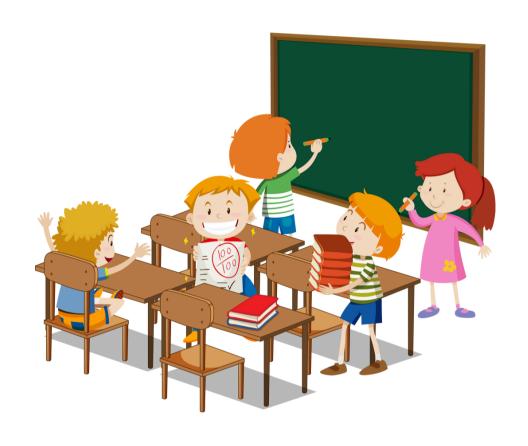
The treatment plan is dynamic, allowing for adjustments based on the patient's progress and response to therapy.





Inclusion vs. Special Education Classrooms

- Early intervention
- Therapies
- Medical Management
- MeRT
- Education and Schooling
- Nutrition and Supplements



Teaching Strategies for Autism

Autistic Students and Bullying

Collaboration with Parents





- Early intervention
- Contract Therapies
- Medical Management
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Inclusion Classrooms

Promotes social skills by allowing autistic students to engage with a diverse group of peers.

Special Education Classrooms

Designed specifically for students with special needs, with a lower student-to-teacher ratio and specialized instruction.





- Early intervention
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Teaching Strategies for Autism

- Use visual skills, charts, and icons to aid understanding and follow routines.
- Personalized learning plans
- Break tasks into smaller steps
- With visual aids like flashcards, picture boards, or diagrams.
- Short, personalized stories that describe social situations to teach appropriate responses and behaviors.





- Early intervention
- R Therapies
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Teaching Strategies for Autism

- Reward good behavior and achievements
- Reduce sensory overload
- Provide sensory tools
- Role-playing and modeling
- Facilitate small group work to encourage interaction
- Use tools like speech-generating devices
- Allow for rest between activities to help students stay focused





- Early intervention
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Autistic Students and Bullying

Autistic students are more vulnerable to bullying due to differences in social communication, behavior, and sensory processing.

- Bullying can lead to increased anxiety, depression
- bullying may cause difficulty concentrating
- Bullying can trigger meltdowns, withdrawal, increase in behaviors.





- Early intervention
- Character Therapies
- Medical Management
- MeRT
- Education and Schooling
- Nutrition and Supplements





Autistic Students and Bullying

Verbal bullying

Name-calling, mocking making negative comments about behaviors.

Social exclusion

Intentionally leaving autistic students out of group activities or isolating them.

Physical bullying

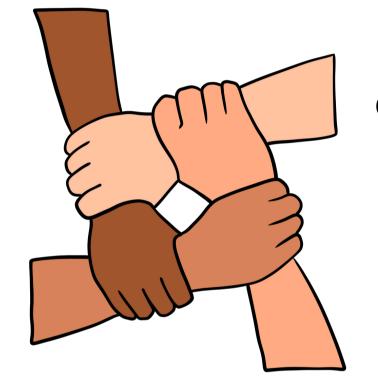
Hitting, pushing, or other forms of physical aggression.

Cyberbullying

Harassment through social media, messaging apps, or online platforms.



- Early intervention
- Compare the second of the s
- Medical Management
- MeRT
- Education and Schooling
- Nutrition and Supplements



Collaboration with Parents

Monitor for signs of bullying

Educators and parents should look out for changes in behavior that may indicate a child is being bullied.

Encourage open communication

Foster an environment where autistic students feel comfortable reporting bullying incidents.

Collaborate to create a safety plan

Work together to develop strategies that protect the student and address bullying issues.





- Early intervention
- Therapies
- Medical Management
- MeRT
- Education and Schooling
- Nutrition and Supplements



Collaboration with Parents

- Parent involvement in IEP meetings
- Collaborate with parents to create a plan that reflects their child's unique needs and accommodates both academic and social goals.
- Offer workshops that teach skills for managing behaviors, supporting social skills, or using assistive technology.
- Discuss long-term planning, including life skills, vocational training, or post-secondary education.



- R Therapies
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Nutrition and Supplements

Balanced Diet Importance

Nutrient deficiencies

Digestive issues

Nutritional Strategies

Common Supplements Used

Gluten-Free and Casein-Free (GFCF) Diet





- Therapies
- Medical Management
- MeRT
- Education and Schooling
- Nutrition and Supplements



Nutrition and Supplements

Balanced Diet Importance

A well-rounded diet supports general well-being, physical development, and energy levels.

Proper nutrition may help improve focus, reduce irritability, and enhance mood.





- Therapies
- Medical Management
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Nutrition and Supplements

Nutrient deficiencies

Selective diets may lead to deficiencies in essential nutrients like vitamins, minerals, or protein.

Autistic individuals have food aversions due to sensory sensitivities (e.g., texture, taste, smell).





- R Therapies
- Medical Management
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Nutrition and Supplements

Digestive issues

- Some autistic individuals
 experience gastrointestinal
 problems such as constipation or
 food intolerance.
- Most autistic individuals showed food intolerance with Glutein and Casein most parents prefer the GFCF diet for their autistic child.





- Character Therapies
- Medical Management
- MeRT
- Education and Schooling
- Nutrition and Supplements



Nutrition and Supplements

Nutritional Strategies

- Introduce new foods gradually
- Prepare foods in ways that are more acceptable (e.g., pureed, blended, or seasoned differently).
- Keep a food diary to monitor dietary habits and identify potential deficiencies.





- Therapies
- Medical Management
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Nutrition and Supplements

Common Supplements Used

Omega-3 fatty acids

Believed to support brain health and may help with hyperactivity or attention issues.

Vitamin D

Essential for bone health and may help with mood regulation.

Vitamin B6 and magnesium used to address behavioral symptoms

Probiotics

Improve gut health, especially for those with gastrointestinal issues.



- Early intervention
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Nutrition and Supplements

Gluten-Free and Casein-Free (GFCF) Diet

- Some families choose GFCF diets to reduce digestive problems or behavioral symptoms
- The effectiveness varies,
 Autistic individuals see
 benefits while others do not



Conclusion

Understanding its history, causes, and characteristics is essential for fostering acceptance and inclusion. With rising prevalence, awareness efforts, and early diagnosis have become crucial in supporting those on spectrum. Effective interventions, autism the supportive learning environments, and collaboration with families can significantly improve the quality of life for autistic individuals.





SPEAK WITH SIM

A Journey of Love and Acceptance





