

Autism



Health Care Quality Units

Disclaimer

- The information presented to you today is intended to increase your understanding of Autism.
- The information is not intended to replace medical advice.
- If you are in need of medical advice, please contact your physician.

Objectives

By actively participating, you will learn:

- An introduction to autism.
- Symptoms/characteristics.
- Cause/Theories.
- Diagnosis.
- Treatment.
- Caregiver strategies.
- Prognosis.

Introduction

- Is a complex developmental disorder of brain function.
- Is marked by abnormal communication, behaviors, and, social interactions.
- Individuals with autism process and respond to information in unique ways.

Introduction

- Is referred to as a “spectrum disorder” meaning the features/symptoms vary in number and severity.
- Autism Spectrum Disorders include:
 - Autism
 - Asperger’s Syndrome
 - Pervasive Developmental Disorder, Not Otherwise Specified
 - Rett’s Disorder
 - Childhood Disintegration Disorder

Introduction

- Usually evident in the first 3 years of life.
- Four times more common in males than females.
- Estimated to occur in 1 in 150 people (2-6 per 1000).
- Affects people of all racial, ethnic, social, and economic groups.
- Rates are relatively consistent around the world.

Introduction

Autism is not:

- ❑ A mental illness.
- ❑ Caused by poor parenting (“refrigerator mothers”) or psychological trauma.
- ❑ Always associated with mental impairment or behavioral challenges.

Introduction

Related/Accompanying disorders:

- Seizure disorder occurs in 25% to 30% of individuals with autism.
- Mental retardation occurs in 25% to 50 % of individuals with autism.
- Fragile X (the most common inherited form of mental retardation) occurs in 5% of individuals with autism.
- Tuberos Sclerosis (genetic disorder- tumors in the brain and on other vital organs) occurs in 6% of individuals with autism .

Symptoms / Characteristics

Impaired social interaction:

- ❑ Difficulty learning to engage in the give and take of everyday human interaction.
- ❑ Seem indifferent to others and prefer to be alone.
- ❑ Seldom respond to displays of anger or affection in usual ways. (resist attention, hugs, cuddling)
- ❑ Difficulty interpreting what others think and feel.

Symptoms / Characteristics

Impaired social interactions:

- Subtle social cues (wink, smile, frown) may have little meaning.
- May have difficulty regulating emotions (may lead to seemingly inappropriate outbursts).
- May have trouble seeing things from another person's perspective, making it difficult to predict or understand the actions of others.

Symptoms/Characteristics

Impaired communication:

- ❑ Lack of functional speech in 50% of people with autism.
- ❑ May use language in unusual ways.
- ❑ Echolalia- repeating word/phrase over and over.
- ❑ Impaired ability to initiate and maintain a conversation.

Symptoms / Characteristics

Impaired communication:

- Unusual voice volume, pitch and inflection (tone of voice fails to reflect their feelings.
- Difficulty with nonverbal communication-may not be able to “read” body language, facial expression and gestures of others.
- The use of nonverbal communication may not match their intent.

Symptoms / Characteristics

Unusual and/or over-focused behaviors
(stereotypical behaviors):

- Inflexible adherence to routine (a slight change in routine can be extremely disturbing.
- May appear to be oblivious to the outside world.
- Repetitive behaviors may take the form of persistent, intense preoccupation; frequently this is with numbers, symbols, charts science and technology.

Symptoms / Characteristics

Unusual and/or over-focused behaviors:
(stereotypical behavior)

- Inappropriate attachment to objects.
- Repetitive physical behaviors such as arm flapping, spinning, rocking etc.
- These behaviors could be in the form of self injury, such as head banging or skin picking.

Symptoms / Characteristics

Unusual sensory responses:

- The brain seems unable to balance the senses (touch, taste, smell, sight and sound).
- Over- or under-active sensory responsiveness. (abnormal responses to sensory stimulation may be present).

Symptoms / Characteristic

Unusual sensory responses:

Examples:

- *Touch* - the feel of clothes against skin may be unbearable, yet reaction to a severe injury may not be demonstrated.
- *Sight* - bright flashes, fluorescent lighting may feel visually painful .

Symptoms / Characteristics

Unusual sensory responses:

Examples:

- *Auditory*- normal sounds may sound amplified, multiple sounds may be overwhelming.
- *Taste*- may prefer bland foods or may crave highly seasoned foods.

Symptoms / Characteristics

Unusual sensory responses:

Examples:

- *Smell*-may be highly reactive to certain odors, (e.g., perfumes, cleaning products, room deodorizers).

Symptoms/Characteristics

Other possible characteristics:

- Hyperactivity or under activity.
- Laughing, crying, showing distress for no apparent reason.
- Does not smile when smiled at.
- Tantrums, aggression to self or others.
- Does not respond to his/her name.

Cause/Theories

There is no known single cause, research points to:

1. Genetics

There may be a specific or abnormal gene that increases susceptibility to autism.

Parents with an autistic child have a 5% chance of having another child with autism or Autism Spectrum Disorder.

Cause/Theories

2. Brain structure

- Abnormal brain development during fetal growth.
- Neurons are smaller than normal in some brain regions.
- Abnormalities in the brains “signaling chemicals” (neurotransmitters).

Major Brain Structures Implicated in Autism

Cerebral cortex -
 a thin layer of gray matter on the surface of the cerebral hemispheres. Folds deep in the fissures or grooves.
 Responsible for higher level of thought.
 Functions: general movement, perceptual, and behavioral reactions.

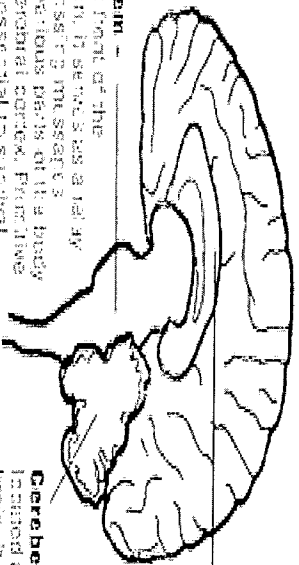
Amygdala -
 a pear shaped almond shaped structure that contains gray matter and has neural pathways to other parts of the brain.
 Functions: processing information related to emotion, fear, and aggression.

Hippocampus -
 a seahorse shaped structure that stores information in the form of memory.

Basal ganglia -
 gray masses deep in the cerebral hemispheres that serve as a control system for the initiation and execution of voluntary movement.

Major Brain Structures Implicated in Autism

Brain stem -
 located in front of the cerebellum. It serves as a relay station, passing messages between various parts of the body and the cerebral cortex. Primitive functions essential to survival (breathing and heartbeat) are located here.



Cerebellum -
 located at the back of the brain, it has many smaller motor activity, regulates balance, body movements, coordination, and fine muscle use in speaking.

Corpus callosum -
 consists primarily of closely packed bundles of fibers that connect the left and right hemispheres and allows for constant communication between them.

Cause/Theories

3. Environmental factors
 - Chemicals and pesticides.
 - Exposure to heavy metals (lead, mercury).
 - Air, water pollution.
4. Neurological, metabolic and immunologic.
5. Viruses and infections.

Cause/Theories

An important note about vaccinations:

After many in-depth, large scale studies, it is concluded that there is no causal relationship between vaccinations and autism.

Diagnosis

There is no specific diagnostic test.

Diagnosis is usually made by age 3 if these features are evident:

- Underdeveloped language skills.
- Poor or limited social skills.
- Unusual behaviors and responses.

Diagnosis

Screening in infancy and early childhood for normal developmental milestones:

- Parental observations and screening tools
- Diagnosis- observation of language, play socialization. Neurological, cognitive, and genetic assessment.

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Treatment

Autism cannot be *cured*, however, there are various treatment options that are helpful:

- Medications used for depression, anxiety, hyperactivity and other behaviors related to autism.
- Behavior management therapy can reduce unwanted behaviors, increase desirable behavior and help caregivers identify proper interventions.

Treatment

- Early education and intervention.
- Speech-language therapy can improve the ability to more effectively communicate.
- Physical therapy can help with motor control and balance.
- Occupational therapy.

Caregiver Strategies

- Create a structured environment.
- Maintain routine.
- Use a special interest or activity as a reinforcement.
- Allow the stereotypic behavior to continue, if it is not harmful.
- Engage in regular vigorous exercise.

Caregiver Strategies

- Give brief, simple, step-by-step instructions.
- Do not force or insist upon direct eye contact.
- To reduce negative response to sensory stimulation consider:
 - Using incandescent or natural light sources instead of fluorescent.
 - Provide a calm, quiet environment.

Caregiver Strategies

- Use natural or unscented cleaning products, clean when the person is not home.
- Check the temperature of bath/shower water and food and drink.

Autism and the Hospital

EXPERIENCE VISIT

- A familiar person frequently.
- Be available to communicate useful information regarding medical history, likes, dislikes, etc.
- Inform hospital staff of any known behavior “triggers” and how to manage them.
- Explain to staff how the person expresses pain.
- See Effective Communication With Hospital Staff PowerPoint.

Prognosis

Adults with Autism

Although individuals will not be cured of autism, individuals of all ages and ability levels can respond positively to well designed education and intervention.

Prognosis

Adults with Autism

- Many individuals are capable of employment in sheltered workshops, or participation in day programs.
- Communication, social, and behaviors issues may continue into adulthood. Ongoing support and encouragement must continue.

Prognosis

Adults with Autism

- Individuals with autism and mental retardation will probably require dependent living in supervised or skill development homes.
- Continuing strategies that include behavior management, education, supervised living and speech, physical and occupational therapies can help adults with autism learn new skills and behaviors that will help them reach their full potential.