

# Overview of Autism

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# What is Autism?

- Autism is a complex developmental disability that typically appears during the first three years of life
- It is widely recognized as a neurodevelopmental disorder that affects the functioning of the brain.
- It is a spectrum disorder
- Children with autism are unable to

# What is Autism?

- It impacts the normal development of the brain in the areas of social interaction and communication skills
- Children and adults with autism typically have difficulties in verbal and non-verbal communication, social interactions, and leisure or play activities
- Stereotypic (self-stimulatory) behaviors may be present
- In some cases, aggressive and/or self-injurious behaviors might be present

# History of Autism

- o Term *autism* originally used by Bleuler (1911)
  - o To describe withdrawal from social relations into a rich fantasy life seen in individuals with schizophrenia
  - o Derived from the Greek *autos* (self) and *ismos* (condition)
- o Leo Kanner - 1943
  - o Observed 11 children
  - o Inattention to outside world: "extreme autistic aloneness"
  - o Similar patterns of behavior in 3 main areas:
    1. Abnormal language development and use
    2. Social skills deficits and excesses
    3. Insistence on sameness

# History of Autism

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- Psychiatrist Hans Asperger (1944) - describes "little professor" syndrome
- Eisenberg and Kanner (1956)
  - Added autism onset prior to age 2
  - Further refined definition of autism
- Creak (1961)
  - Developed 9 main characteristics
  - Believed they described childhood schizophrenia
  - Incorporated into many descriptions of autism and commonly used autism assessment instruments today

# History of Autism

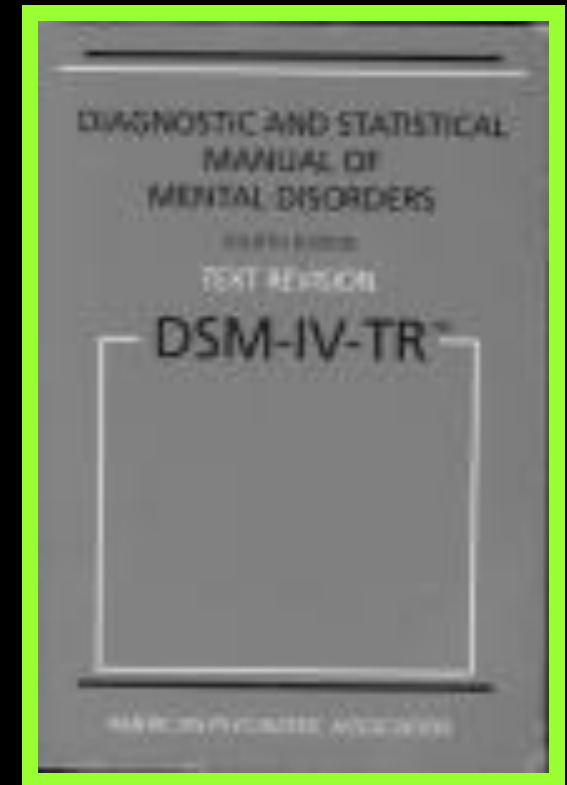
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- o Rutter (1968)
  - o Said the term *autism* led to confusion!
  - o Argued autism was different than schizophrenia
    - o Higher M:F ratio
    - o Absence of delusions & hallucinations
    - o Stable course (not relapse/marked improvement)
  - o Further defined characteristics (for science, research)
- o National Society for Autistic Children
  - o One of the 1<sup>st</sup> & most influential parent groups for children with autism in U.S.
  - o Wrote separate criteria (for public awareness, funding)
    - o Added disturbances in response to sensory stimuli & atypical development
    - o Did not include insistence on sameness

# Diagnostic and Statistical Manual of Mental Disorders

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- Published by the American Psychiatric Association
- Classification of mental disorders used in the US
- *Infantile autism* included for first time in *DSM-III*
- Changed to *autism* in *DSM-III-R*
- *DSM - IV* published in 1994
- Text Revision in 2000

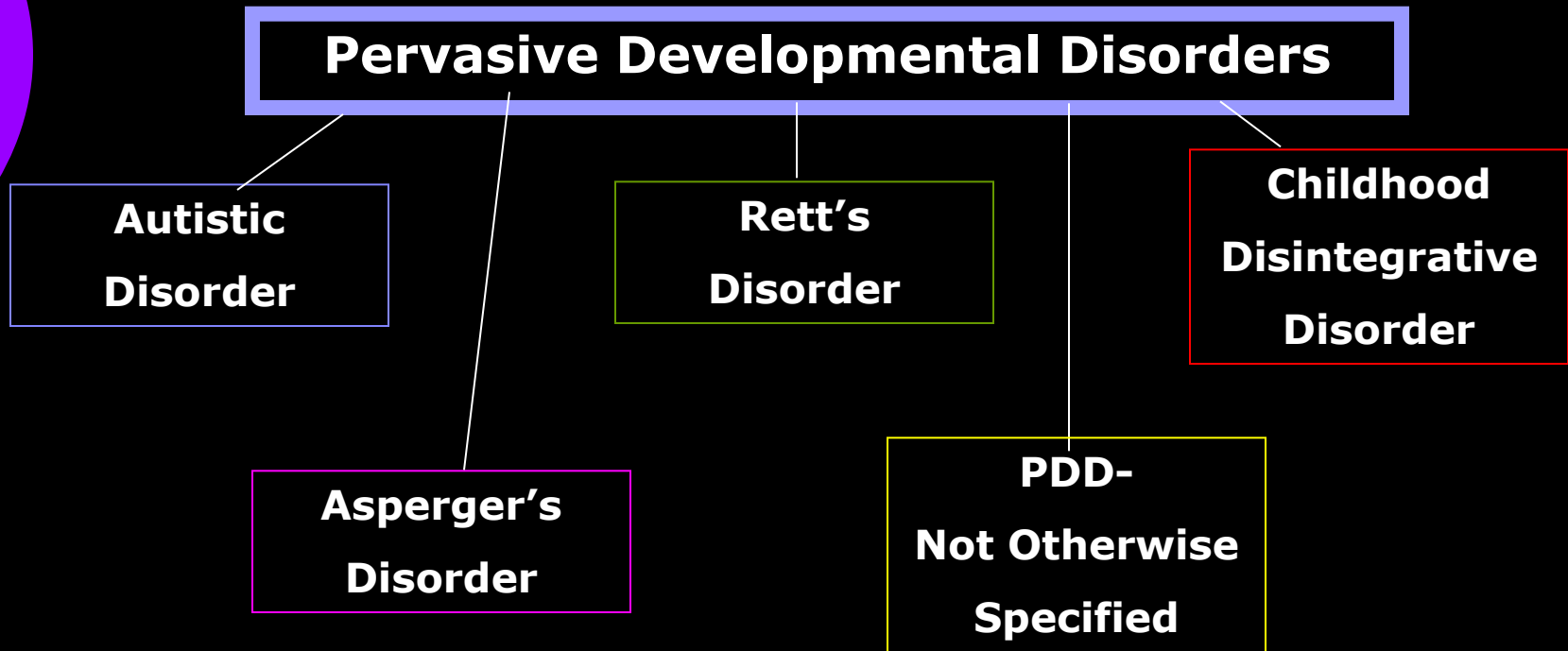


# Pervasive Developmental Disorders

- Come under section in *DSM-IV-TR* entitled...
  - *Disorders Usually First Diagnosed in Infancy, Childhood, or Adolescence*
  - Includes
    - Mental retardation
    - Learning disorders
    - Motor skills disorders
    - Communication disorders
    - Pervasive developmental disorders
    - Attention-deficit and disruptive behavior disorders
    - Feeding and eating disorders of infancy or early childhood
    - Tic disorders
    - Elimination disorders
    - Others: separation anxiety disorder, selective mutism, reactive attachment disorder of infancy or early childhood, stereotypic movement disorder, disorder of infancy, childhood, or adolescence - NOS



# DSM Category: PDDs



- PDDs are characterized by severe and pervasive impairment in 3 main areas
  - Social interaction
  - Communication
  - Repetitive and restricted behaviors

# Diagnostic Criteria for Autistic Disorder (299.00)

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- To receive a diagnosis of autism, a child must have at least 6 of the characteristics in the 3 areas (note minimums in each area)
  - In one of the areas, onset must be before age 3

# DSM Criteria for an Autism Diagnosis: Social Interaction

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- Must meet 2 of the following:
  - Marked impairment in multiple nonverbal behaviors (e.g., eye contact, facial expressions)
  - Failure to develop peer relationships for age
  - Lack of spontaneous seeking to share enjoyment, interests or achievement with others
  - Lack of social or emotional reciprocity

# DSM Criteria for an Autism Diagnosis: Communication

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- **Must meet 1 of the following:**
  - Delay in, or total lack of, the development of spoken language (not accompanied by an attempt to compensate through alternative modes of communication)
  - Marked impairment in ability to initiate or sustain conversation with others
  - Stereotyped and repetitive use of language
  - Lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level

# DSM Criteria for an Autism Diagnosis: Restricted Repetitive and Stereotyped Patterns of Behavior, Interests, and Activities

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- Must meet 1 of the following:
  - Encompassing preoccupation with one or more stereotyped and restricted patterns of interest that's abnormal in intensity or focus
  - Inflexible adherence to specific, non-functional routines or rituals
  - Stereotyped and repetitive motor mannerisms (e.g., hand flapping, rocking)
  - Persistent preoccupation with parts of objects

## Diagnostic criteria for 299.80 Asperger's Disorder

- A. Qualitative impairment in social interaction, as manifested by at least two of the following:
  - (1) marked impairment in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body postures, and gestures to regulate social interaction
  - (2) failure to develop peer relationships appropriate to developmental level
  - (3) a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g., by a lack of showing, bringing, or pointing out objects of interest to other people)
  - (4) lack of social or emotional reciprocity
- B. Restricted repetitive and stereotyped patterns of behavior, interests, and activities, as manifested by at least one of the following:
  - (1) encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus
  - (2) apparently inflexible adherence to specific, nonfunctional routines or rituals
  - (3) stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting, or complex whole-body movements)
  - (4) persistent preoccupation with parts of objects
- C. The disturbance causes clinically significant impairment in social, occupational, or other important areas of functioning.
- D. There is no clinically significant general delay in language (e.g., single words used by age 2 years, communicative phrases used by age 3 years).
- E. There is no clinically significant delay in cognitive development or in the development of age-appropriate self-help skills, adaptive behavior (other than in social interaction), and curiosity about the environment in childhood.
- F. Criteria are not met for another specific Pervasive Developmental Disorder or Schizophrenia.

# DSM Criteria for PDD-NOS

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- Severe and pervasive impairment in the development of reciprocal social interaction along with
  - Communication skills OR
  - Presence of stereotyped behavior, interests, and activities
- But criteria are not met for any other PDD



# Rett's Disorder

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## **Diagnostic criteria for 299.80 Rett's Disorder**

A. All of the following:

- (1) apparently normal prenatal and perinatal development
- (2) apparently normal psychomotor development through the first 5 months after birth
- (3) normal head circumference at birth

B. Onset of all of the following after the period of normal development:

- (1) deceleration of head growth between ages 5 and 48 months
  - (2) loss of previously acquired purposeful hand skills between ages 5 and 30 months with the subsequent development of stereotyped hand movements (e.g., hand-wringing or hand washing)
  - (3) loss of social engagement early in the course (although often social interaction develops later)
  - (4) appearance of poorly coordinated gait or trunk movements
  - (5) severely impaired expressive and receptive language development with severe psychomotor retardation
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# Childhood Disintegrative Disorder

## Diagnostic criteria for 299.10 Childhood Disintegrative Disorder

- A. Apparently normal development for at least the first 2 years after birth as manifested by the presence of age-appropriate verbal and nonverbal communication, social relationships, play, and adaptive behavior.
- B. Clinically significant loss of previously acquired skills (before age 10 years) in at least two of the following areas:
  - (1) expressive or receptive language
  - (2) social skills or adaptive behavior
  - (3) bowel or bladder control
  - (4) play
  - (5) motor skills
- C. Abnormalities of functioning in at least two of the following areas:
  - (1) qualitative impairment in social interaction (e.g., impairment in nonverbal behaviors, failure to develop peer relationships, lack of social or emotional reciprocity)
  - (2) qualitative impairments in communication (e.g., delay or lack of spoken language, inability to initiate or sustain a conversation, stereotyped and repetitive use of language, lack of varied make-believe play)
  - (3) restricted, repetitive, and stereotyped patterns of behavior, interests, and activities, including motor stereotypies and mannerisms
- D. The disturbance is not better accounted for by another specific Pervasive Developmental Disorder or by Schizophrenia.



# Medical Conditions and Autism

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## Strongest associations

Fragile X, tuberous sclerosis

Epilepsy

## Associations

Congenital Rubella

# What are ASDs?

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- Autism Spectrum Disorders
- Continuum comprised of autism, Asperger's, and PDD-NOS (Volkmar & Klin, 2005)
- "the concept of *autism* is evolving from the singular autistic disorder into the plural *autistic spectrum disorders (ASDs)*" (Filipek, 2005, p.535)
- Wing (1997) said that attempts to differentiate b/w these disorders have been "arbitrary...difficult to apply and unhelpful in clinical practice" (p. 1761)

# Prevalence

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- Prevalence of ASD has continued to increase since first survey in 1966 - why?
- Because of:
  - Increases in requests for service
  - Changes in diagnostic criteria
  - Increased assessment opportunities
  - Better awareness by pediatricians, teachers, parents
  - An actual increase in cases?

# Statistics

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- Occur in all racial, ethnic, and socioeconomic groups
- Four times more likely to occur in boys than in girls
- Parents who have a child with an ASD have a 2%-8% chance of having a second child who is also affected.

# Statistics - ASDs

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- In 2003, 62% of the children who had an ASD had at least one additional disability
- Of those children, 68% had mental retardation/intellectual impairment
- 8% had epilepsy - lower than previous
  - In 1997, 18%-42%
- Other associated features
  - Hyperactivity
  - Short attention span
  - Impulsivity
  - Aggressiveness
  - Self-injury
  - Unusual responses to touch, smell, sound, and other sensory input.
  - Abnormal eating habits (e.g., selectivity, pica)
  - Abnormal sleeping habits.
  - Abnormal moods or emotional reactions.
  - Gastrointestinal issues such as chronic constipation or diarrhea

# Statistics - ASDs

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- Some children with ASDs show hints of future problems within the first few months of life.
  - In others, symptoms may not show up until 24 months or later.
  - Studies have shown that one third to half of parents of children with ASDs noticed a problem before their child's first birthday, and nearly 80%-90% saw problems by 24 months.
  - Some children with ASDs seem to develop normally until 18-24 months of age and then they stop gaining new language and social skills, or they lose the skills they had.
- Children with ASDs develop at different rates in different areas of growth.
  - Splinter skills
  - Delays in one area and age-appropriate in another and in some cases even advances
  - Inconsistent in how skills get developed
    - Can read but can't tell you what sound a "b" makes

# Statistics - ASDs

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- Can often be detected as early as 18 months.
- But average age of diagnosis is between 4 and 5
- While all children should be watched to make sure they are reaching developmental milestones on time, children in high-risk groups—such as children who have a parent or brother or sister with an ASD—should be watched extra closely...



# Current Prevalence Rates

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- Since 1992, autism prevalence has increased at an average of 22% each year



# Neurobiological Findings

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- High peripheral levels of serotonin
- High rates of seizure disorder
- Persistent primitive reflexes
- Increased head size (toddlers)
- Morphological changes in CNS
- Minicolumns, mirror neurons
- Placental abnormalities

# Autism and The Brain

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○ Areas of Possible Difficulty	Functions
○ Prefrontal Cerebral Cortex	Social thinking
○ Hypothalamus	Attachment behaviors
○ Amygdala	Social orientation, emotional
○ learning	
○ Fusiform Gyrus	Face recognition
○ Middle Temporal Gyrus	Recognition facial Expression
○ Pulvinar	Emotional relevance

# Ideally, what does the diagnostic process look like?

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- Assess all characteristics/abilities
  - 3 major areas, adaptive behavior, IQ
- Assess in multiple ways with multiple sources
  - Interview, observation, checklist/rating scales
  - Parent, teacher, professional examiner
- Assess over time with multiple observations in multiple settings
  - Home, school, daycare
  - Structured, unstructured

# IDEA definition of Autism

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- A developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age 3, that adversely affects a child's educational performance.
- Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences.
- The term does not apply if a child's educational performance is adversely affected primarily because the child has a serious emotional disturbance as defined below.

# Etiology: Parental Pathology

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- Initial theory
- Autism considered an emotional disturbance inherited from parents
- Kanner (1943): "inborn autistic disturbances of affective contact"
- No empirical support

# Etiology: Psychodynamic Theory

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- Eveloff (1960) - parents are cold, detached, ritualistic
- Bruno Bettelheim (1967)
  - Coined term "refrigerator mothers"
- No empirical support

# Etiology: Genetic Evidence

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- Strong evidence for genetic component, but nature of the component is unknown
- Doesn't look like a single gene
- Monozygotic twin concordance high, but less than 100%



# Etiology: Neurotransmitters

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## ○ Serotonin

- Some studies have found higher levels in children with ASD

## ○ Opioids

- Display properties similar to morphine
- Administration can result in stereotypy, insensitivity to pain, reduced socialization
- Some studies have found higher levels in children with ASD

# So...what's the cause of autism?

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- Cause is likely multifactorial
  - Physiology and environment are *ALWAYS* interacting from day 1
  - May be several types of autism with different causes

It can be safely said that:

- Autism is not caused by bad parenting or 'refrigerator mothers' as was suggested by psychiatrist Bruno Bettelheim in the 1950s.

# Treating Autism

- ***Behavioral Interventions*** – research suggests that early, intensive behavioral interventions may improve outcomes for children with autism and help the children achieve their maximum potential.

- ***Sensory Integration*** – integration and interpretation of sensory

***Diet*** – people with autism are more susceptible to allergies and food sensitivities than the average person. The most common food sensitivity in children with autism is to gluten and casein.

***Vitamin Therapy*** – parents have reported that they have tried B6/magnesium and/or DMG, often with good or even spectacular

# Teaching Tips for Children with Autism

- Use visuals
- Avoid long strings of verbal instruction
- Encourage development of child's special talents
- Use child's fixations to motivate school work
- Use concrete, visual methods to teach numbers
- Let child use a typewriter instead of writing
- Protect child from sounds that hurt his/her ears
- Place child near a window and avoid using fluorescent lights

# Teaching Tips for Children with Autism

- Interact with child while he/she is swinging or rolled in a mat
- Don't ask child to look and listen at the same time
- Teach with tactile learning materials (e.g., sandpaper alphabet)
- Use printed words and pictures on a flashcard

# Parenting a Child with a Disability

- Seek the assistance of other parents
- Rely on positive resources in your life (e.g., church, counselors)
- Take it one day at a time
- Learn the terminology
- Seek information (e.g., internet, support groups, library)
- Do not be intimidated
- Maintain a positive outlook



# Parenting a Child with a Disability

- Find programs for your child
- Take care of yourself
- Decide how to deal with others
- Keep daily routines as normal as possible
- Know that you are not alone
- Most importantly, keep your sense of humor