DSM-5 changes in autism spectrum definition

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History

• 1943 – Leo Kanner first described autism
• 1944 – Hans Aspergers described autism in German
• 1950 -1960 – “refrigerator mothers”
• 1980 – Autism included in the DSM –III
• 1990 – IDEA, autism recognized as an educational classification
• 1994 – DSM – IV published
• 2013 - DSM-5 published
Autism Prevalence History

• 1980’s – frequently cited prevalence of 4 per 10,000
• 1993 – Gelberg study indicated 1 in 330 with Aspergers
• 2001 – Cambridge study indicated 1 per 166
• 2006 – Baird study indicated 1%
• 2012 – CDC studies indicate prevalence of 1 per 88
• 2014 – CDC studies indicate prevalence of 1 in 68

Increasing autism prevalence

• Changing DSM criteria
• Improved recognition
• Diagnostic substitution
• ? Absolute increase in numbers due to unknown etiology
Etiologic Factors

• Brain abnormalities
  – Macrocephaly, brainstem, frontal lobe, temporal lobe
• Genetic Syndromes
  – Fragile X Syndrome, Angelman Syndrome, Down Syndrome, Smith-Lemli-Opitz Syndrome, genetic microdeletions, Tuberous Sclerosis, Phenylketonuria
• ? Epigenetics
  – How the environment changes the way genes work

Evidence for genetic etiology

• 4 – 5 times more common in boys
• Twin studies indicate high concordance rate in identical twins
• Research by the MIND Institute in 2011 indicates a risk in siblings of 19% (26% for males and 9% for females) if older sibling has autism. If more than one sibling - autism recurrence risk increased to 32%
Risk Factors for Autism

• Maternal Age
• Paternal Age
• Prematurity
• Birth complications

DSM-VI

Diagnostic and Statistical Manual of Mental disorders

• Pervasive Developmental Disorders
  – Autism
  – Aspergers Syndrome
  – Pervasive Developmental Disorder(Not Otherwise Specified)
  – Childhood Disintegrative Disorder
  – Rett’s Syndrome
DSM-5

Autism Spectrum Disorder

DSM-5 Criteria for Autism Spectrum Disorder

• A) Persistent deficits in social communication and social interaction across multiple contexts
• B) Restricted, repetitive patterns of behavior, interests, or activities
• C) Symptoms must be present in the early developmental period (but may not become fully manifest until social demands exceed limited capacities, or may be masked by learned strategies in later life)
• D) Symptoms cause clinically significant impairment in social, occupational, or other important areas of functioning
A) Persistent deficits in social communication and social interaction

1. Deficits in social emotional reciprocity
2. Deficits in nonverbal communicative behaviors used for social interaction
3. Deficits in developing, maintaining, and understanding relationships

B) Restricted, repetitive patterns of behavior, interests or activities (at least 2)
   • 1) Stereotyped or repetitive motor movements, use of objects, or speech
   • 2) Insistence on sameness, inflexible adherence to routines, or ritualized patterns of verbal or nonverbal behavior
   • 3) Highly restricted, fixated interests that are abnormal in intensity or focus
   • 4) Hyper-or-hyporeactivity to sensory input or unusual interest in sensory aspects of the environment
Comorbidities

- Intellectual Disability
- Learning Disabilities
- ADHD
- Disruptive behaviors (Aggression/Self Injurious Behavior)
- Anxiety
- Depression
- Seizures
- Sleep Disorders

Etiologic workup for autism

- Hearing evaluation
- Genetic Testing – Chromosomes, Microarray, Genome testing, Fragile X. Could also consider MECP2 testing and PTEN testing
- Metabolic testing if unusual features include ataxia, cyclic vomiting, lethargy, coarse facial features, hypotonia
- MRI and/or EEG – if microcephaly, seizures, regression, neurocutaneous lesions, abnormal neurologic exam
Interventions

- Applied Behavioral Analysis
- Discrete Trial Teaching
- Pivotal Response Treatment
- TEACCH (Treatment and Education of Autistic and Related Communication-Handicapped Children)
- Verbal Behavior
- Floortime
- Relationship Development Intervention
- SCERTS (Social Communication, Emotional Regulation and Transactional Support)
- Early Start Denver Model

Complementary and Alternative Treatments

- Gluten Free/Casein Free Diet
- Vitamin Supplements
- Omega-3 Fatty Acids
- Probiotics
Historical treatments for Autism

- Parentectomy ("Refrigerator mother")
- Holding Therapy
- Facilitated Communication
- Secretin

Psychopharmacology

- 2006 – Risperidone was first medication to get FDA approval for use with children with Autism. Specifically approved for treatment of irritability associated with autism.
- 2009 – Aripiprazole was second medication approved by FDA to treat irritability associated with autism.
Medical decision making

• What is the target behavior? Intensity? Duration? Behavioral triggers?
• Are there appropriate behavioral supports? School, home, respite care.
• Any medical cause for symptoms?

Psychotropic medications

• Base decision on target symptom, likely efficacy of medication, side effect profile of medication
• Monitoring effectiveness of medication
• Monitoring side effects of medication
• Always consider appropriate behavioral supports
• Medications can help with challenging behaviors but will not completely eliminate the behavior.

Atypical Antipsychotic

Examples: Risperidone, Aripiprazole, Olanzapine, Quetiapine, ziprasidone

May be useful for aggression and self-injurious behavior, repetitive behavior, behavioral rigidity, obsessive compulsive symptoms, bipolar phenotype

Side Effects: Weight gain, risk for Type II diabetes, extrapyramidal symptoms
SSRI

- Examples: Fluoxetine, fluvoxamine, citalopram, escitalopram, sertraline

- May be useful for depression, anxiety, repetitive behavior, obsessive compulsive symptoms, aggression or self injurious behavior.

- Side effects” GI symptoms, dry mouth, restlessness, dizziness, insomnia, weight gain/loss

Stimulants

- Examples: Methylphenidate, Dextroamphetamine, mixed amphetamine salts

- May be helpful with ADHD symptoms

- Side Effects: Weight loss, insomnia, headaches, stomach aches, tics
## Alpha2 agonists

- Examples: Clonidine, Guanficine

May be useful in ADHD symptoms, aggression, self-injurious behavior, sleep dysfunction

Side Effects: drowsiness, decreased BP, constipation

## Anticonvulsant Mood Stabilizers

- Examples: Valproic Acid, Topirimate, levetiracetam

- May be useful in aggression and self-injurious behavior, bipolar type behavior

- Side effects: dependent upon mood stabilizer
Sleep

- Variety of medications have been used for sleep.
- NO medication is FDA approved for sleep in children.
- Medications that have been found to be helpful include Melatonin, Alpha2-agonists, antihistamines, Certain antidepressants

Visits to the doctor office

- Practice visits
- Verbal preparation for visit
- Visual support/social story
- Clear, concise verbal instruction (Don’t make request) during visit. Could model behavior for child.
- Distractions
LOOK IN EARS

Today I am going to the nurses office. The nurse is going to look in my ears.

She is going to look to make sure my ears are healthy!

The nurse is going to shine a light in my ears.

I will need to sit still. It will not hurt.

I can have nice hands, nice feet, and a nice mouth.

Today I am going to the nurses office. The nurse is going to look in my mouth.

She is going to look to make sure my teeth are healthy!

I will need to open my mouth as big as I can. It will not hurt.

I can have nice hands, nice feet, and a nice mouth.

When I am finished, I can walk back to my classroom.