



# Autism Spectrum Disorders

What Parents Should Know

Amy V. Davis, Ph.D., ABPP-CN

Alexian Neurosciences Institute

**AUTISM**

# Goals of this Talk



- History of Autism
- Symptoms of Autism Spectrum Disorders
- Etiology of Autism Spectrum Disorders
- Comorbidity (other conditions)
- How are Autism Spectrum Disorders diagnosed
- Treatment Implications (home and school)

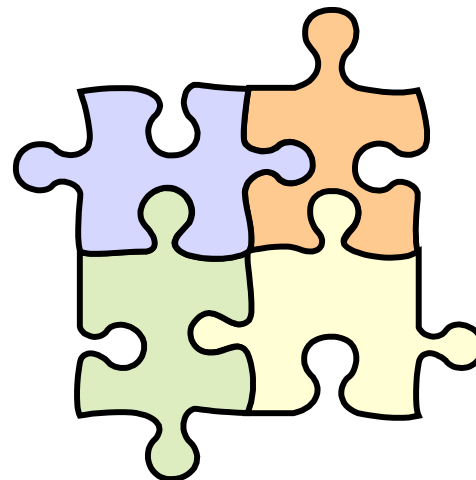
# History of Autism



- Eugene Bleuler 1911 coins term Autism
- Leo Kanner 1943 Autistic Disturbances of Affective Contact; “Early Infantile Autism”
- Hans Aspergers 1944 “Autistic Psychopathy”
- Bruno Bettelheim 1944: “refrigerator mother”
- 1980s on: looking at medical, genetic, and environmental factors contributing to autism

# Autism Spectrum Disorders

- Autism
- High-Functioning Autism
- Aspergers Syndrome
- Pervasive Developmental Disorder, Not Otherwise Specified (PDD)
- Nonverbal Learning Disability



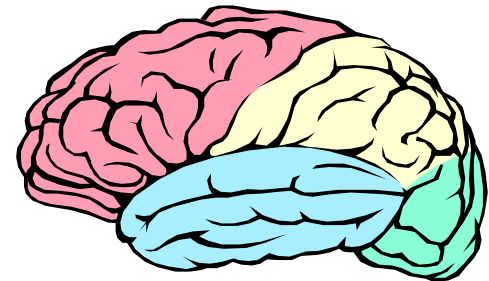
# What they All Share in Common



- Social Deficits:
  - Receptive Domain:
    - Reading nonverbal communication (tone of voice, faces)
    - Face Memory
    - Pragmatic Language Skills
    - Interpreting Social scenes/Interactions
  - Expressive Domain:
    - Use of nonverbal communication (eye-contact, facial expressions, body postures, gestures, self/other space)
    - Failure to develop peer relationships (appropriate)
    - Social Reciprocity
    - Social execution

# Where They Differ

- Level Of Intelligence
- Differential Cognitive Strengths and Weaknesses
  - Autism, HFA (language weak)
  - Asperger, NLD (language strong, nonverbal weak)
  - PDD (varies)



# Diagnostic Criteria for Autism

- A total of 6/more from 1, 2, and 3 (at least two from 1 and one from each of 2 and 3)
  - 1) Qualitative Impairment in Social Interaction
    - A) impaired use of nonverbal behaviors
    - B) failure to develop peer relationships appropriate to developmental level
    - C) a lack of spontaneous seeking to share enjoyment, interests, or achievements with others
    - D) a lack of social/emotional reciprocity

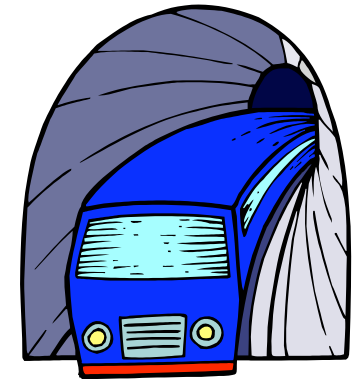


# Autism Criteria (cont)



- 2) Qualitative Impairments in communication:
  - A) delay, or total lack of development of spoken language
  - B) if speech OK, impaired ability to initiate/sustain a conversation with others
  - C) stereotyped and repetitive use of language or idiosyncratic speech
  - D) lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level

# Autism Criteria (cont)



- 3) Restricted repetitive and stereotyped patterns of behavior, interests, and activities:
  - A) encompassing preoccupation with 1/more stereotyped and restricted patterns of interest that is abnormal in intensity or focus
  - B) apparently inflexible adherence to specific nonfunctional routines or rituals
  - C) stereotyped and repetitive motor mannerisms
  - D) persistent preoccupation with parts of objects

# Autism Criteria (cont)

- B. Delays or abnormal functioning in at least one of the three areas prior to age 3
  - Social interaction
  - Language used in social communication
  - Symbolic/imaginative play
- Rule Outs





## PDD, NOS and HFA

- Garbage can diagnosis (PDD, NOS)
- Presents with some but not “all” of the other AS disorders
- Some clinicians might clump NLD and HFA in here
- No specific criteria for HFA; intelligence is what sets them apart

# Aspergers Disorder Diagnostic Criteria

- A. Qualitative Impairment in Social Interaction (2/ more):
  - Marked impairment in use of nonverbal behaviors
  - failure to develop peer relationships appropriate to developmental level
  - a lack of spontaneous seeking to share enjoyment, interests, or achievements with others
  - a lack of social/emotional reciprocity



# Aspergers Disorder Diagnostic Criteria (cont)

- B. Restricted repetitive and stereotyped patterns of behavior, interests, and activities:
  - encompassing preoccupation with 1/more stereotyped and restricted patterns of interest that is abnormal in intensity or focus
  - apparently inflexible adherence to specific nonfunctional routines or rituals
  - stereotyped and repetitive motor mannerisms
  - persistent preoccupation with parts of objects



# Aspergers Disorder Diagnostic Criteria (cont)

- What is not in the DSM, but what neuropsychological data tells us:
  - 50-80% present with a NLD profile
  - Not all Aspergers Children have NLD
  - Children with NLD don't have Aspergers Syndrome
  - Aspergers Syndrome developed based on a “clinical” classification system; NLD based on a “neuropsychological” classification system



# DSM-V

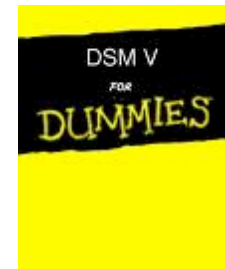
## Lots of Changes ahead!

- Discussion of removing all subtypes (only Autistic Disorder)
- Removal of Rhetts's Syndrome
- Communication Deficits removed from criteria
- Motor stereotypies and preoccupation with parts of objects combined with sensory interests
- Severity levels (under discussion)



# DSM-V

## New Proposed Criteria



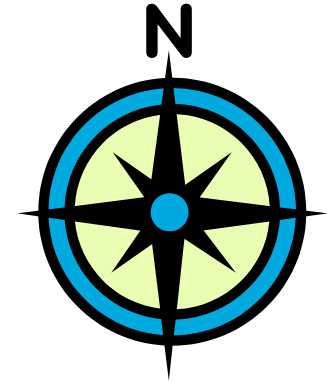
- Must meet criteria 1, 2, and 3:
- 1. Clinically significant, persistent deficits in social communication and interactions, as manifest by all of the following:
  - a. Marked deficits in nonverbal and verbal communication used for social interaction:
  - b. Lack of social reciprocity;
  - c. Failure to develop and maintain peer relationships appropriate to developmental level
- 2. Restricted, repetitive patterns of behavior, interests, and activities, as manifested by at least TWO of the following:
  - a. Stereotyped motor or verbal behaviors, or unusual sensory behaviors
  - b. Excessive adherence to routines and ritualized patterns of behavior
  - c. Restricted, fixated interests
- 3. Symptoms must be present in early childhood (but may not become fully manifest until social demands exceed limited capacities)

# NLD Criteria

- Classification scheme
  - Verbal Strengths
    - Acquired knowledge
    - Rote learning
    - Narrow interests
    - Academics: often good at decoding, spelling, and phonological awareness
    - Some aspects of attention are often strong (short-term auditory span)



# NLD Criteria (cont).



- Classification Scheme (cont)
  - Weaknesses
    - Nonverbal Skills
      - Visuospatial skills
      - Visuospatial memory
      - Often show visual scanning problems
      - Route finding



# NLD Criteria (cont)

- Classification Scheme

- Weaknesses

- Social Skills

- Comprehension

- » Reading nonverbal cues/communication

- » Remembering faces

- » Understanding pragmatics of language

- » Interpreting social interactions/situations

- Expression/Execution

- » Poor eye-contact

- » Might show aprosody of speech

- » Poor execution of social skills



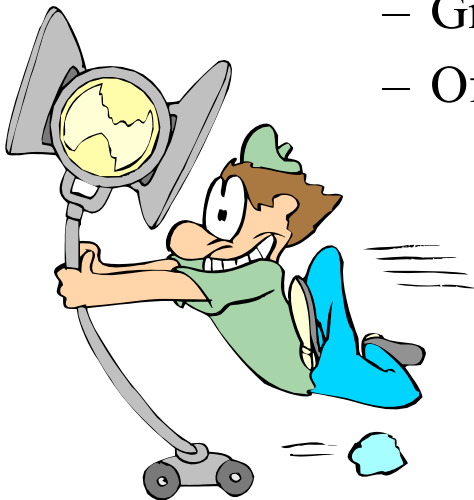
# NLD Criteria (cont)



## – Weaknesses

- Motor/Speed Skills

- Processing speed
- Academic fluency (math)
- Fine motor coordination
- Graphomotor and visuoprecision skills
- Often in need of OT and history of motor delays



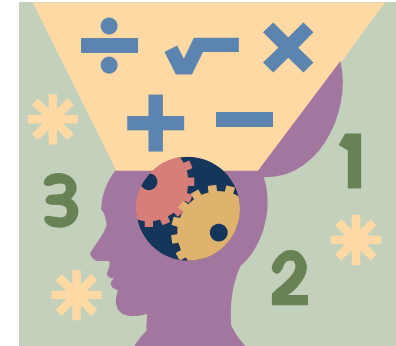
# NLD Criteria



- Classification Scheme
  - Weaknesses
    - Executive Functioning/ Attention
      - Problem solving
      - Working memory
      - Often diagnosed with ADHD



# NLD Criteria



## – Weaknesses

- Academic

- Math (spatial, problem solving; often math LD)
- Reading comprehension
- Written Expression



# NLD Criteria

- Classification Scheme

- Weaknesses

- Emotional Functioning

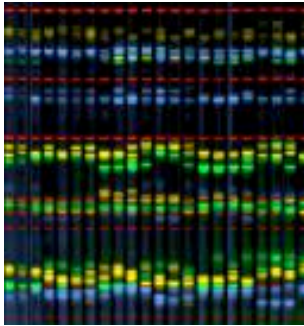
- At risk for internalizing disorders (depression, anxiety, withdrawal)
      - This often occurs at later age, as insight into problems increase



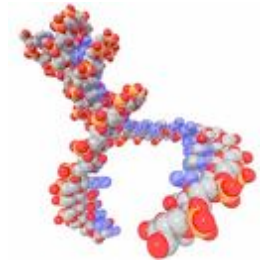
# Etiology of Autism

- Family History
  - Identical twins (60-80% heritability)
  - Fraternal twins = siblings (3% for autism; 6-8% for autism spectrum)
  - Higher rate of cognitive and learning disabilities in siblings
  - Higher rates of mental health disorders in siblings and parents





# Etiology of Autism



- Genetics
  - Not just one gene in most cases; case reports of patients with certain single-gene disorders
  - Duplication of maternally derived chromosome 15q 11-13
  - Males: Females (4:1)
  - Genetically heterogeneous condition
  - Genetic “predisposition” and environmental factors for expression to occur

# Etiology of Autism



- Environmental/Outside causes?
  - Increased complications of pregnancy, labor, delivery; perinatal problems
  - MMR/vaccination debate
  - Toxins in the environment
  - Autoimmune
  - Infections

# Etiology of Autism



- Neurosubstrates
  - Higher rates of neurological “soft signs”
  - Abnormal EEGs and seizures common
  - CT/MRI abnormalities often found
  - Macrocephaly
  - Neurobiological findings heterogeneous, findings often subtle, and “non-specific”
  - No causal mechanism found

# Comorbidity

- Mental Health Disorders (also seen in family)
  - Depression
  - Anxiety and OCD
  - Social phobia
  - ADHD
- Sensory Integration Disorder
- Medical conditions
  - Tics/Tourette's Syndrome
  - 9-37% have identified neurological disorders
  - Autoimmune disorders
  - Genetic syndromes



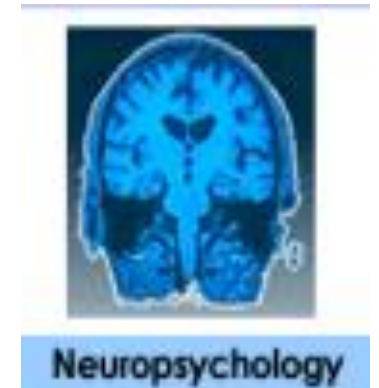
# Sad facts about missed diagnoses

- 6 (average age of diagnosis)
- <10% diagnosed at initial presentation
- 10% told “would grow out of it”
- 80% referred to another doctor
  - 40% given formal diagnosis
  - 25% told “not to worry”
  - 25% referred to 3<sup>rd</sup> or 4<sup>th</sup> professional (following parent pressure)
- Only 30% were offered any help/recommendations
- Only 10% stated that the professional explained the child’s problems



# Contribution of the Neuropsychological Evaluation to Child Evaluation

- More similarities than differences in child vs. neuropsychological evaluation
- Emphasis on science of the brain-behavior relationship
- Training is a little different
  - Clinical psychologists first
  - Neuropsychological Specialty training (internship, postdoctoral fellowship)
  - Board Certification (ABPP-CN)



# How Does this Apply for Autism Spectrum Children

- Measurement of Intelligence
- Measurement of Adaptive Functioning
- Measurement of Language Functioning
- Social-Emotional Processing (specific to Autism question)

# AS Neuropsychological Assessment (cont)

- Other Areas that might be assessed
  - Academic Functioning (if school age)
  - Especially if NLD/Aspergers Question
    - Visuospatial/Motor Processing
    - Memory and Learning
    - Executive functioning
    - Attention
    - Emotional Functioning





## What Else Do We Collect/ Gather?

- Thorough history/intake process
- Review of all medical and school records
- Behavioral/Emotional information through parent/teacher report (and forms), self-report, clinical interview, and emotional/personality testing
- Behavior Observations (might include school observation)

# What do we do next (cont)?

- Generation of report with diagnostic formulations (when appropriate), and thorough recommendations (parent feedback to discuss):
  - School (IEP/504?)
  - Outside Services
  - Home Recommendations



# What do we do next (cont)?

- Often involved with continuity of care/ case management
  - Kids that come back for re-evals
  - Parents that call for follow-up recommendations or guidance

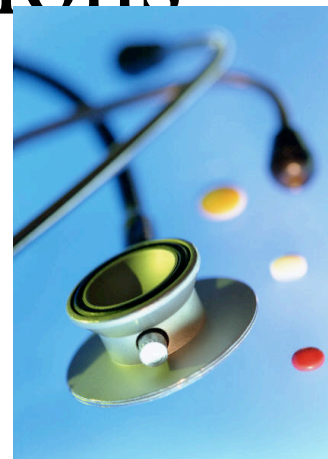
# Interventions/Recommendations

- IEP vs Section 504 Plan
  - Autism Categorization
  - Other Health Impaired
  - Learning Disabled
  - Emotional Disabled



# Interventions/Recommendations

- Outside Interventions
  - Therapies (private and through school)
    - Speech, Occupational, Physical
    - Psychological: Individual, Social skills groups, autism specific therapies
    - Controversial therapies
  - Medications (to treat symptoms, not disorder)
  - Tutoring



# Interventions/Recommendations

- School Services
  - Special education services (classroom setting)
  - ST, OT, PT
  - Social Work
  - One-on-one Aide
- School Accommodations
  - Tests
  - classroom



# Interventions/Recommendations

- Social Skills
  - Social Stories: [www.TheGrayCenter.org](http://www.TheGrayCenter.org)
  - Affect Identification Skills:  
[www.autismresearchcentre.com/books/dvdvideo.asp](http://www.autismresearchcentre.com/books/dvdvideo.asp)
- Behavioral Recommendations
  - Explicit rules
  - Figure out the source/origin of the troubling behavior

# Resources



- Autism Therapies
  - TEACCH: [www.teacch.com/teacch.htm](http://www.teacch.com/teacch.htm)
  - ABA Resources: [www.wiautism.com/books.htm](http://www.wiautism.com/books.htm)
  - Floor-Time: [www.med.umich.edu/1libr/yourchild/playproject.htm](http://www.med.umich.edu/1libr/yourchild/playproject.htm)
  - RDI: [www.rdiconnect.com](http://www.rdiconnect.com)
  - a website listing all of the current autism therapies available and brief descriptors:  
[www.autismtherapies.com/faq.htm](http://www.autismtherapies.com/faq.htm)

# Resources (books)



- Lower functioning Autism Spectrum
  - *The World of the Autistic Child* by B. Siegel
  - *Activity Schedules for Children with Autism: Teaching Independent Behavior* by McClannahan & Krantz
  - *Let me Hear Your Voice and Behavioral Intervention for Young Children with Autism* by Catherine Maurice
  - *There's a Boy in Here* by Barron & Barron
  - *Children with Autism: A Parents' Guide* by Michael Powers
  - *Facing Autism* by Lynn Hamilton

# Resources (books)



- Higher Functioning Autism Spectrum
  - *A Parent's Guide to Asperger Syndrome and High-Functioning Autism* by S. Ozonoff, G. Dawson, & J. McPartland
  - *Asperger Syndrome and Sensory Issues: Practical Solutions for Making Sense of the World* by B. Smith Myles et al.
  - *Incorporating Social Goals in the Classroom: A Guide for Teachers and Parents of Children with High-Functioning Autism and Asperger Syndrome* by R. Moyes & S. Moreno
  - *Addressing the Challenging Behavior of Children with High-Functioning Autism/Asperger Syndrome in the Classroom: A Guide for Teachers and Parents* by R. Moyes

# Resources (books)



- Adolescents/Adults with Autism
  - *Asperger Syndrome and Adolescence: Practical Solutions for School Success* by Myles and Adreon
  - *Right Address, Wrong Planet: Children with Asperger Syndrome Becoming Adults* by G.P. Barnhill
  - *Asperger Syndrome Employment Workbook: An Employment Workbook for Adults with Asperger Syndrome*, by R.N. Meyer
  - *A Guide to Successful Employment for Individuals with Autism*, by Smith, Belcher and Juhrs

# Resources

- Educational Rights:
  - [www.frcd.org](http://www.frcd.org) and [www.nichcy.org](http://www.nichcy.org)
- Websites
  - [www.autism-society.com](http://www.autism-society.com)
  - [www.autismillinois.org](http://www.autismillinois.org)
  - [www.autism.meetup.com](http://www.autism.meetup.com)



# What Happens when they grow up?

## A story to be learned:

- Donald Triplett
- Diagnosed by Leo Kanner (Case 1): 1943
- Early History
- Early Adulthood
- And Now?

[www.theatlantic.com/magazine/archieve/2010/10/autism-8217-s-first-child/8227/](http://www.theatlantic.com/magazine/archieve/2010/10/autism-8217-s-first-child/8227/)

# ***Contact Information***

Amy V. Davis, Ph.D., ABPP-CN  
Board Certified Clinical Neuropsychologist  
Pediatric Neuropsychologist  
Alexian Brothers Neurosciences Institute  
Amy.davis@abbhh.net  
1-847-981-3630 (schedule appointment)