

The Identification, Assessment, and Treatment of Autism at School

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SACRAMENTO
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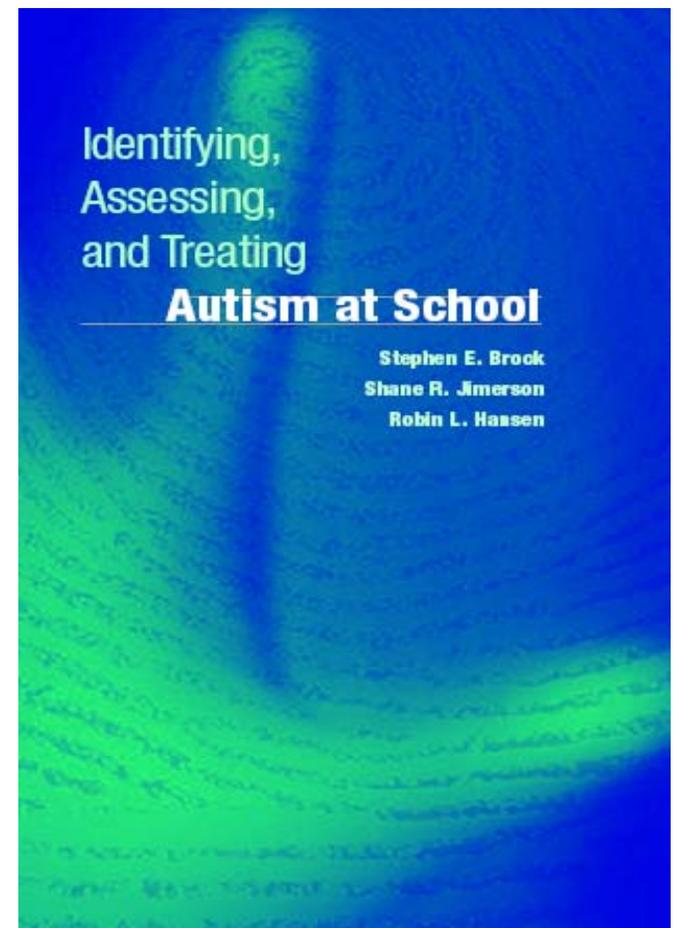
Steve Brock's University Webpage

<http://www.csus.edu/indiv/b/brocks/>

Acknowledgement

Adapted from...

Brock, S. E., Jimerson, S. R., & Hansen, R. L. (2006). *Identifying, assessing, and treating autism at school*. New York: Springer.



How Much do Know About Autism?

- A CDC Quiz (no Internet)
- Need to learn more?
 - Free materials from the CDC (great for parents)
 - <http://www.cdc.gov/ncbddd/autism/freematerials.html>
 - Growth Chart
 - Growth Card
 - Resources Fact Sheet
 - Developmental Screening Fact Sheet
 - Autism Spectrum Disorders Fact Sheet
 - Asperger Syndrome Fact Sheet

Workshop Outline

- Introduction
 - Reasons for Increased Vigilance
 - Diagnostic & Special Education Classifications
 - Psychologist Roles, Responsibilities, Limitations
 - Epidemiology
 - Etiology
- Case Finding
- Screening
- Diagnostic Evaluation
- Psycho-educational Evaluation (Treatment)

Introduction:

Reasons for Increased Vigilance

- Autistic spectrum disorders are much more common than once thought.
 - 70 (vs. 4 to 6) per 10,000 in the general population (Saracino, Noseworthy, Steiman, Reisinger, & Fombonne, 2010).
 - 1:110 children in the United States have an ASD.
 - (Rice, 2009; <http://www.cdc.gov/ncbddd/autism/data.html>).
 - 600% increase in the numbers served under the autism *IDEA* eligibility classification (Brock, 2006).
 - 95% of school psychologists report an increase in the number of students with ASD being referred for assessment (Kohrt, 2004).

Introduction:

Reasons for Increased Vigilance

- Autism can be identified early in development,

and...
- Early intervention is an important determinant of the course of autism.

Introduction:

Reasons for Increased Vigilance

- Not all cases of autism will be identified before school entry.
 - Median Age of ASD identification is 4.5 to 5.5 years of age.
 - Event though for 51–91% of children with an ASD, developmental concerns had been recorded before 3-years.

Introduction:

Reasons for Increased Vigilance

- Most children with autism are identified by school resources.
 - Only three percent of children with ASD are identified solely by non-school resources.
 - All other children are identified by a combination of school and non-school resources (57 %), or by school resources alone (40 %)

Introduction:

Reasons for Increased Vigilance

- Full inclusion of children with ASD in general education classrooms.
 - Students with disabilities are increasingly placed in full-inclusion settings.
 - In addition, the results of recent studies suggesting a declining incidence of mental retardation among the ASD population further increases the likelihood that these children will be mainstreamed (Chakrabarti & Fombonne, 2001).
 - Consequently, today's educators are more likely to encounter children with autism during their careers.

Introduction:

Diagnostic vs. Special Education Classifications

Diagnostic Classifications

- Pervasive Developmental Disorders (PDD)
 - A diagnostic category found in DSM IV-TR.
 - Placed within the subclass of *Disorders Usually First Diagnosed in Infancy, Childhood, or Adolescence*.
 - *PDD* includes...
 - *Autistic Disorder*
 - *Asperger's Disorder*
 - *Rett's Disorder*
 - *Childhood Disintegrative Disorder*
 - *PDD Not Otherwise Specified*.

Introduction:

Diagnostic vs. Special Education Classifications

DSM-IV-TR Diagnostic Classifications

- Autistic Disorder
 - Markedly abnormal or impaired development in social interaction and communication and a markedly restricted repertoire of activity and interests.
- Asperger's Disorder
 - Markedly abnormal or impaired development in social interaction and a markedly restricted repertoire of activities and interests (language abilities and cognitive functioning is not affected).

Introduction:

Diagnostic vs. Special Education Classifications

DSM-IV-TR Diagnostic Classifications (cont.)

- **Rett's Disorder**
 - Occurs primarily among females and involves a pattern of head growth deceleration, a loss of fine motor skill, and the presence of awkward gait and trunk movement.
- **Childhood Disintegrative Disorder**
 - Very rare. A distinct pattern of regression following at least two years of normal development.
- **PDD-NOS**
 - Experience difficulty in at least two of the three autistic disorder symptom clusters, but do not meet diagnostic criteria for any other PDD.

Introduction:

Diagnostic vs. Special Education Classifications

Pervasive Developmental Disorders

Autistic Disorder

Asperger's Disorder

PDD-NOS

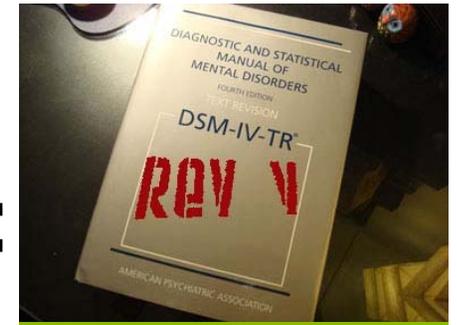
Rett's Disorder

Childhood Disintegrative Disorder

In this workshop the terms “Autism,” or “Autistic Spectrum Disorders (ASD)” will be used to indicate these PDDs.

[What is ASD? \(a CDC video\)?](#)

DSM V Proposed Revisions: Autism Spectrum Disorder

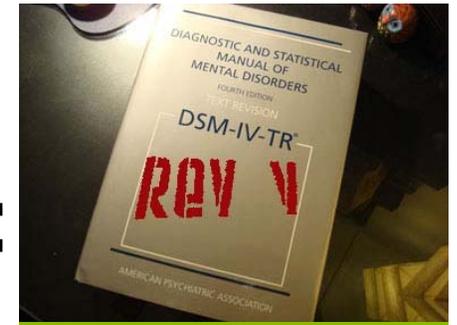


May 2013

“ASD” would include autistic disorder, Asperger’s disorder, childhood disintegrative disorder, and pervasive developmental disorder NOS.

“Because autism is defined by a common set of behaviors, it is best represented as a single diagnostic category that is adapted to the individual’s clinical presentation by inclusion of clinical specifiers (e.g., severity, verbal abilities and others) and associated features (e.g., known genetic disorders, epilepsy, intellectual disability and others.)”

DSM V Proposed Revisions: Autism Spectrum Disorder

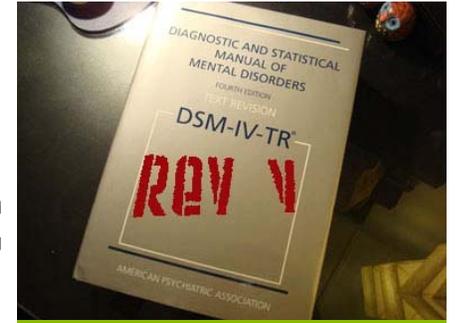


May 2013

“A single spectrum disorder is a better reflection of the state of knowledge about pathology and clinical presentation; previously, the criteria were equivalent to trying to ‘cleave meatloaf at the joints’.”

www.dsm5.org/ProposedRevisions/Pages/proposedrevision.aspx?rid=94#

DSM V Proposed Revisions: Autism Spectrum Disorder



May 2013

“Three domains become two:

- 1) Social/communication deficits
- 2) Fixated interests and repetitive behaviors”

“Deficits in communication and social behaviors are inseparable and more accurately considered as a single set of symptoms with contextual and environmental specificities. Delays in language are not unique nor universal in ASD and are more accurately considered as a factor that influences the clinical symptoms of ASD, rather than defining the ASD diagnosis.”

“Requiring both criteria to be completely fulfilled improves specificity of diagnosis without impairing sensitivity.”

Introduction:

Diagnostic vs. Special Education Classifications

Special Education Classification

IDEIA 2004 Autism Classification

- P.L. 108-446, Individuals with Disabilities Education Improvement Act (IDEIA), 2004, USDOE Regulations for IDEA 2004 [§ 300.8(c)(1)]
 - “Autism means a developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age three, that adversely affects a child’s education performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotypical movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences. (i) Autism does not apply if a child’s educational performance is adversely affected primarily because the child has an emotional disturbance, as defined in paragraph (c)(4) of this section. (ii) A child who manifest the characteristics of autism after age three could be identified as having autism if the criteria in paragraph (c)(1)(i) of this section are satisfied.”

Introduction: Diagnostic vs. Special Education Classifications

Special Education Classification

- CDE Eligibility Criteria
- Autism is a subcategory of “Physical Disability”
- [Worksheet](#)

www.cde.state.co.us/cdesped/SD-Autism.asp

<http://www.eiase.com/forms/Eligibility/autism.pdf>

Name: _____ Eligibility Determination (Autism) - Code O Date: _____

Definition - Autism is a developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age three, that adversely affects a child's educational performance. (A child who manifests the characteristics of autism after age 3 could be diagnosed as having autism if the other criteria of this section are satisfied.) 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 an emotional disturbance.

DETERMINANT FACTORS

The determinant factor for the student's suspected disability is:

Yes No Lack of appropriate instruction in reading, including the essential components of reading instruction. (Evidence Provided)

Yes No Lack of appropriate instruction in math (Evidence Provided)

Yes No Limited English Proficiency (Evidence Provided)

If any of the above answers is "yes," the student is not eligible for services under IDEA and the team must complete Step 3 below. If all of the answers are "no," complete Steps 1-3.

COMPLETE FOR STUDENTS SUSPECTED OF HAVING AUTISM

STEP 1 - INCLUSIONARY CRITERIA: The eligibility for special education and related services appropriate for students with autism shall be determined by behaviors from the following groups:

A. Failure to Develop Reciprocal Social Interactions (Minimum of 2)

Yes No Lack of awareness of others in the immediate environment (not responding when someone enters a room)

Yes No Lack of facial responsiveness (averting gaze, fleeting eye contact)

Yes No Lack of awareness of feelings of others.

Yes No Failure to make reciprocal responses to physical or social contact (indifference or aversion to affection)

Yes No Lack of responsiveness to other's stress or distress

Yes No Failure to seek comfort from others in time of stress

Yes No Utilizes others as an extension of self (using other's hands to pick up desired object)

Yes No Experiences difficulty differentiating self from others

Yes No Peer relationships may develop, but are superficial (lacking understanding or the conventions of social interaction)

Yes No Absence of or impaired imitation (imitating others in a mechanical way)

B. Qualitative Impairment in Verbal and Nonverbal Communication (Minimum of 1)

Yes No Delay in, or total lack of, the development of spoken language (not accompanied by an attempt to compensate through alternative modes of communication such as gesture or mime)

Yes No Lack of nonverbal responses (absent or delayed development of appropriate gestures, failure to assign symbolic meaning to gestures)

Yes No Immediate echolalia or delayed echolalia without communicative intent.

Yes No Marked abnormalities in the production of speech (volume, pitch, articulation, stress, rate, intonation, dysrhythmia)

Yes No Lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level

Yes No Marked abnormalities in the form and content of language (immature syntax, pronominal reversal, stereotyped and repetitive speech, idiosyncratic use of words and/or phrases)

Yes No Failure to develop the use of abstract terms, concepts and reasoning

C. Markedly Restricted Repertoires of Activities and Interests and/or Atypical Responses to Sensory Stimuli (Minimum of 1)

Yes No Stereotypic body movements (finger flicking, rocking, spinning, head banging, other self-injurious behavior)

Yes No Auditory symptoms (close attention to self-produced sounds, no response or over-response to varying levels of sound)

Yes No Tactile symptoms (hypo- or hyper- response to touch, pain, or temperature, prolonged rubbing of surfaces, sensitivity to food textures)

Yes No Vestibular symptoms (hypo- or hyper- reactions to gravity stimuli, whirling without dizziness, and preoccupation with spinning objects)

Yes No Olfactory and gustatory symptoms (repetitive sniffing, specific food preferences, mouthing, licking or swallowing of inedible objects)

Yes No Proprioceptive symptoms (posturing, darting, lunging movements, hand flapping, gestulating, grimacing, pressure seeking)

Yes No Unreasonable insistences on following routines (may seek consistency in environmental events to the point of exhibiting rigidity in routines)

Yes No Encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus (preoccupation or fixation on a certain color, number, object, texture)

If one or more of the above criteria are met, proceed to Step 2. If none of the above criteria are met, the student does not have an eligibility of autism, complete Step 3.

STEP 2 - EDUCATIONAL NEEDS (The following three criteria MUST be supported by intervention data)

Yes No Substantial adverse effect on the student's educational functioning - academic and/or medical support is required.

Yes No Evidence that regular education interventions have been found insufficient.

Initiation date of Interventions: _____

Interventions attempted: _____

Yes No Interventions require resources and services beyond those available in general education.

If all of the above criteria are marked "yes", proceed to Step 3. If one or more of the above criteria are marked "no" the student does not qualify for services with an eligibility of autism, complete Step 3.

STEP 3 - DECISION PROCESS

1. Has the information been obtained from multiple sources? Yes No

2. Has the criteria been supported by standardized measures of assessment? Yes No

3. Has the criteria been substantiated by the majority of data? Yes No

4. Does the above criteria support eligibility? Yes No

ALL FOUR QUESTIONS MUST BE ANSWERED YES TO SUPPORT THE TEAM'S ELIGIBILITY DECISION

The student meets the criteria for Autism? Yes No

Introduction:

Diagnostic vs. Special Education Classifications

Special Education Classification:

CDE Eligibility Criteria

2.08 (1)

- A child with a physical disability shall have a sustained illness or disabling physical condition which prevents the child from receiving reasonable educational benefit from regular education.

2.08 (1) (a)

- A sustained illness means a prolonged, abnormal physical condition requiring continued monitoring characterized by limited strength, vitality, or alertness due to chronic or acute health problems and a disabling condition means a severe physical impairment. Conditions such as, but not limited to, traumatic brain injury, **autism**, attention deficit disorder and cerebral palsy may qualify as a physical disability, if they prevent a child from receiving reasonable educational benefit from regular education.

Introduction:

Diagnostic vs. Special Education Classifications

Special Education Classification

CDE Eligibility Criteria (cont.)

2.08 (1) (b)

- Criteria for a physical disability preventing the child from receiving reasonable educational benefit from regular education should be dependent upon the child's diagnosis and degree of involvement in the regular school setting as characterized by any of the following:

2.08 (1) (b) (i)

- The child's chronic health problem or sustained illness requires continual monitoring, intervention, and/or specialized programming in order to accommodate the effects of the illness so as to reasonably benefit from the education program.

2.08 (1) (b) (ii)

- The child's disabling condition interferes with ambulation, attention, hand movements, coordination, communication, self-help skills and other activities of daily living to such a degree that it requires special services, equipment, and/or transportation.

Introduction:

Diagnostic vs. Special Education Classifications

Special Education Classification

“In the Colorado rules, autism is listed as a physical disability. School districts may use the criteria in the IDEA 2004 definition of autism to determine if a child is eligible for special education services. When a school district makes this determination, it is an educational identification only and should not be confused with a diagnosis, which can only be done by a doctor. The term “autism” includes all five subcategories of autism spectrum disorders. While parents may choose to seek a medical evaluation, it is not required for the IEP team to determine educational eligibility and start special education services.”

Introduction:

Diagnostic vs. Special Education Classifications

Special Education Classification

- For special education eligibility purposes distinctions among PDDs may not be relevant.
- While the diagnosis of Autistic Disorder requires differentiating its symptoms from other PDDs, Shriver et al. (1999) suggest that for special education eligibility purposes “the federal definition of ‘autism’ was written sufficiently broad to encompass children who exhibit a range of characteristics” (p. 539) including other PDDs.

Introduction:

Diagnostic vs. Special Education Classifications

Special Education Classification

- However, it is less clear if students with milder forms of ASD are always eligible for special education.
- Adjudicative decision makers almost never use the *DSM IV-TR* criteria exclusively or primarily for determining whether the child is eligible as autistic” (Fogt et al.,2003).
- While *DSM IV-TR* criteria are often considered in hearing/court decisions, *IDEA* is typically acknowledged as the “controlling authority.”
- When it comes to special education, it is state and federal education codes and regulations (not *DSM IV-TR*) that drive eligibility decisions.

Introduction:

Psychologist Roles, Responsibilities, and Limitations

- **All psychologists need to be more vigilant for signs of autism among students they serve**
 - and better prepared to assist in the process of identifying these disorders.

Introduction:

Psychologist Roles, Responsibilities, and Limitations

- Case Finding
 - **All psychologists should be expected to participate in case finding** (i.e., routine developmental surveillance of children in the general population to recognize risk factors and identify warning signs of autism).
 - This would include training general educators to identify the risk factors and warning signs of autism.

Introduction:

Psychologist Roles, Responsibilities, and Limitations

- Screening
 - **All school psychologists should be prepared to participate in the behavioral screening of the student who has risk factors and/or displays warning signs of autism** (i.e., able to conduct screenings to determine the need for diagnostic assessments).
 - **All school psychologists should be able to distinguish between screening and diagnosis.**

Introduction:

Psychologist Roles, Responsibilities, and Limitations

- **Only those school psychologists with appropriate training and supervision should diagnose a specific autism spectrum disorder.**

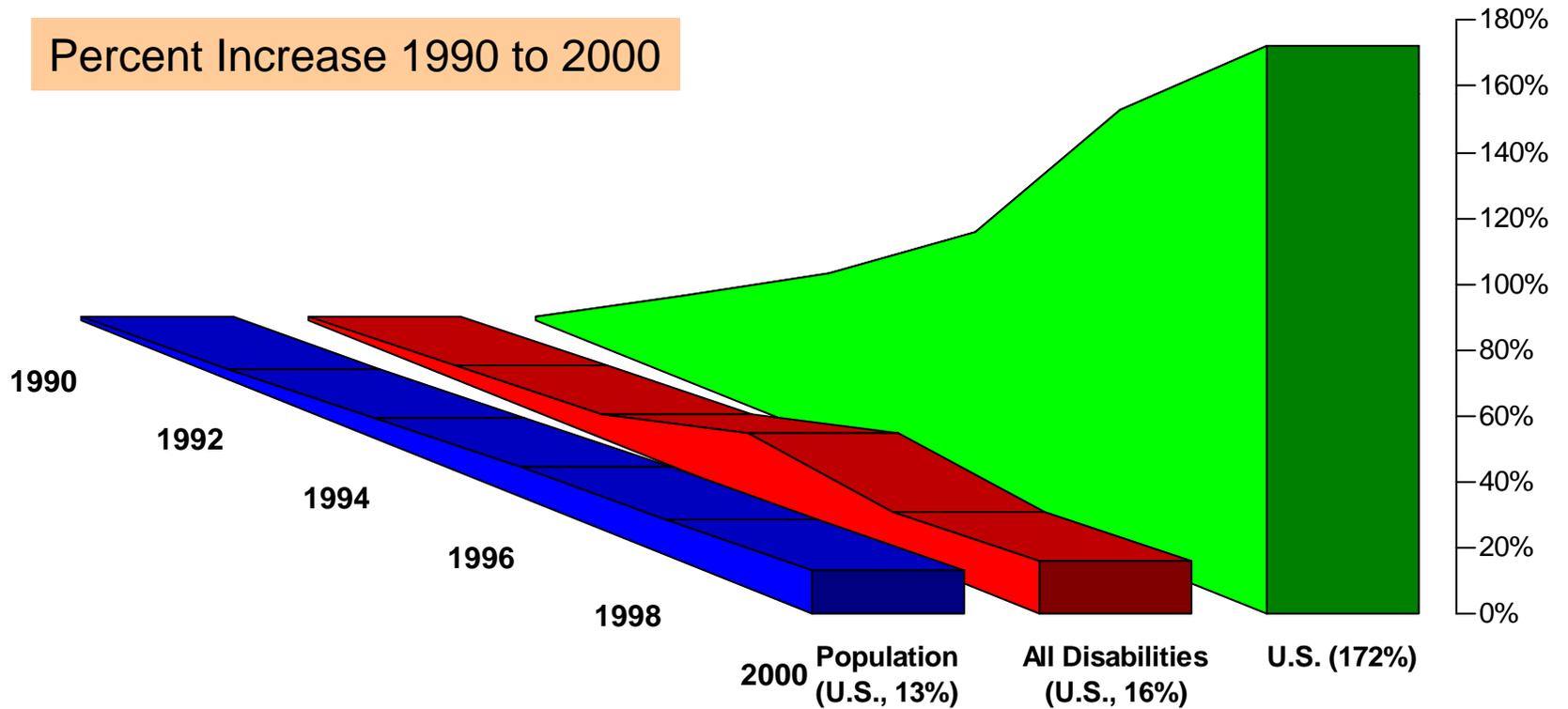
Introduction:

Psychologist Roles, Responsibilities, and Limitations

- **Special Education Eligibility**
 - **All psychologists should be expected to conduct the special education eligibility evaluation, which determines educational needs.**
 - **The ability to conduct such assessments will require psychologists to be knowledgeable of the accommodations necessary to obtain valid test results when working with the child who has an ASD.**

Introduction:

Epidemiology (General Population)



Introduction:

Epidemiology (General Population)

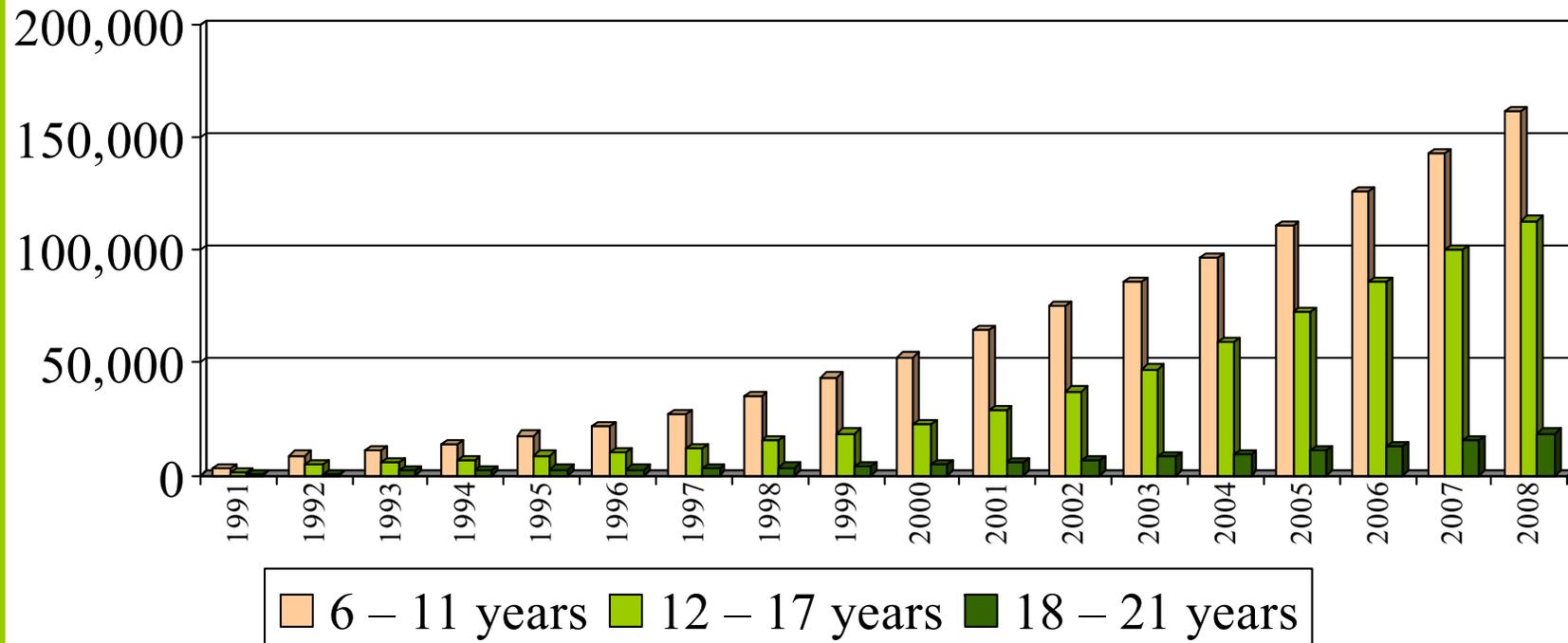
Explanations for Changing ASD Rates

- Changes in diagnostic criteria.
- Heightened public awareness of autism.
- Increased willingness and ability to diagnose autism.
- Availability of resources for children with autism.
- Yet to be identified environmental factors.

Introduction:

Epidemiology (Special Education)

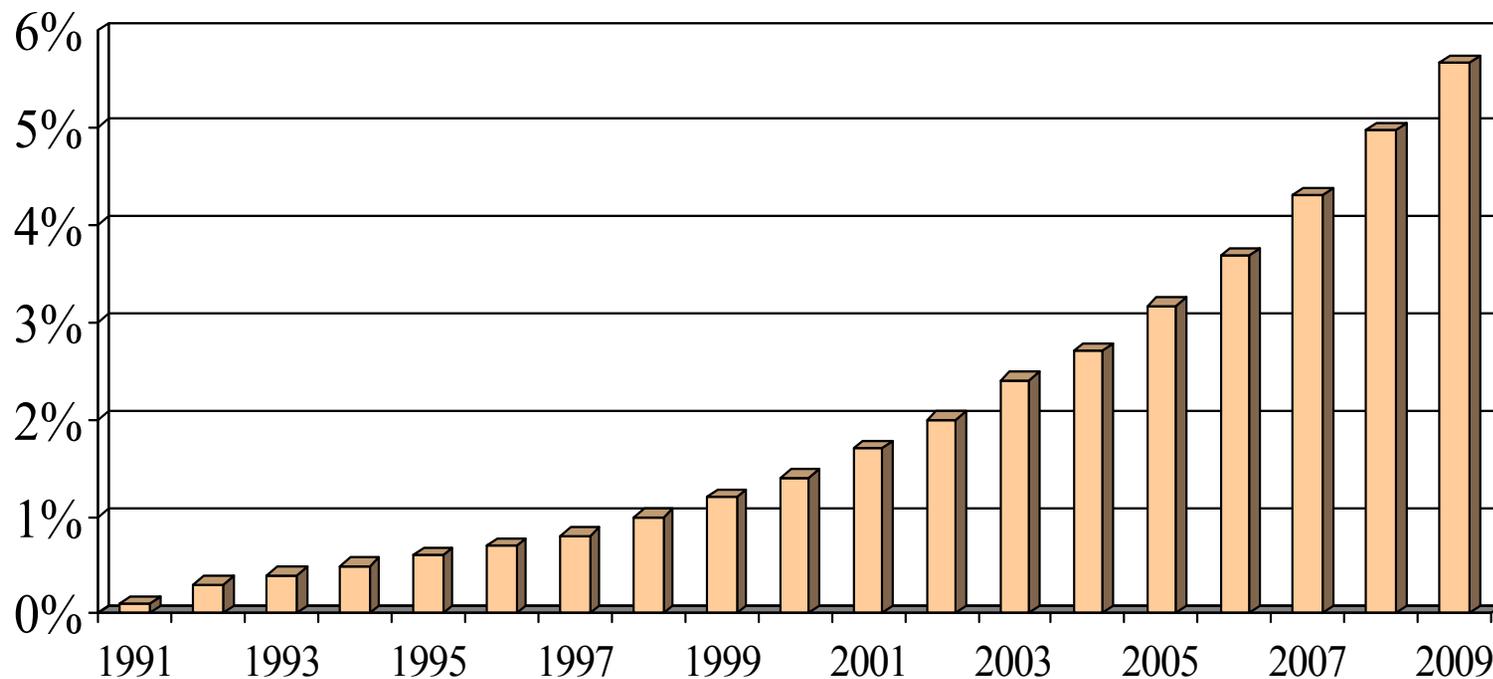
Total Number of Student Classified as Autistic and Eligible for Special Education Under IDEA by Age Group



Introduction:

Epidemiology (Special Education)

Student Classified as Autistic Under IDEA as a Percentage of all Students with Disabilities: 1991 to 2004



Introduction:

Epidemiology (Special Education)

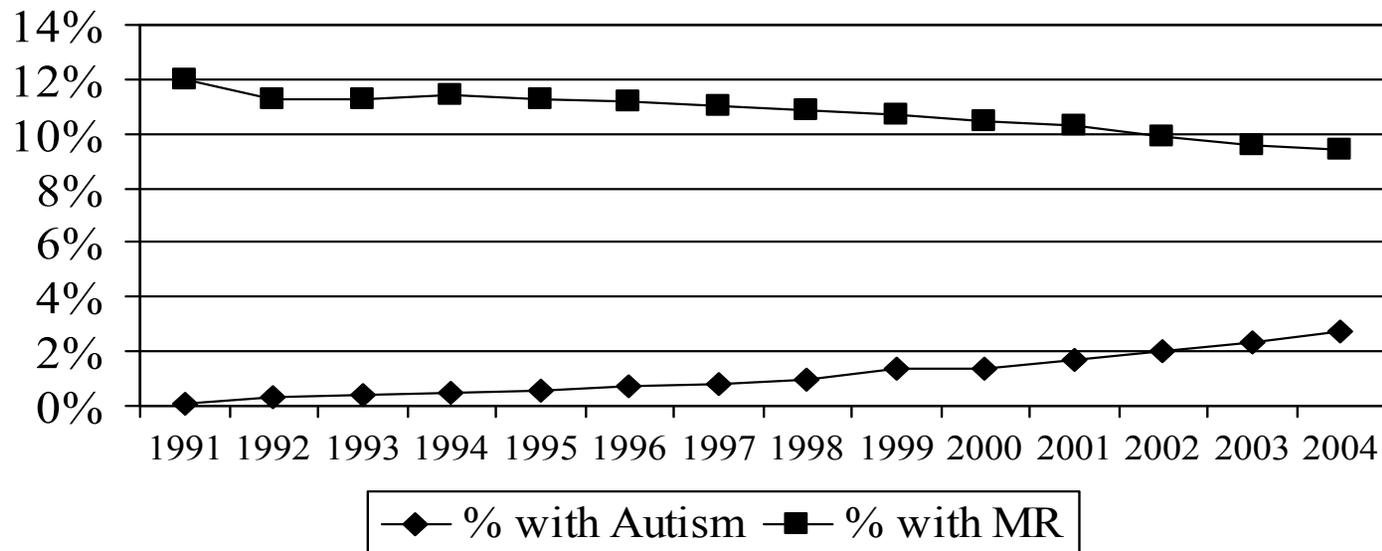
- Explanations for Changing Rates in Special Education
 - IEP teams have become better able to identify students with autism.
 - Autism is more acceptable in today's schools than is the diagnosis of mental retardation.
 - The intensive early intervention services often made available to students with autism are not always offered to the child whose primary eligibility classification is mental retardation.

Brock, S. E. (2006). An examination of the changing rates of autism in special education. *The California School Psychologist, 11*, 31-39.

Introduction:

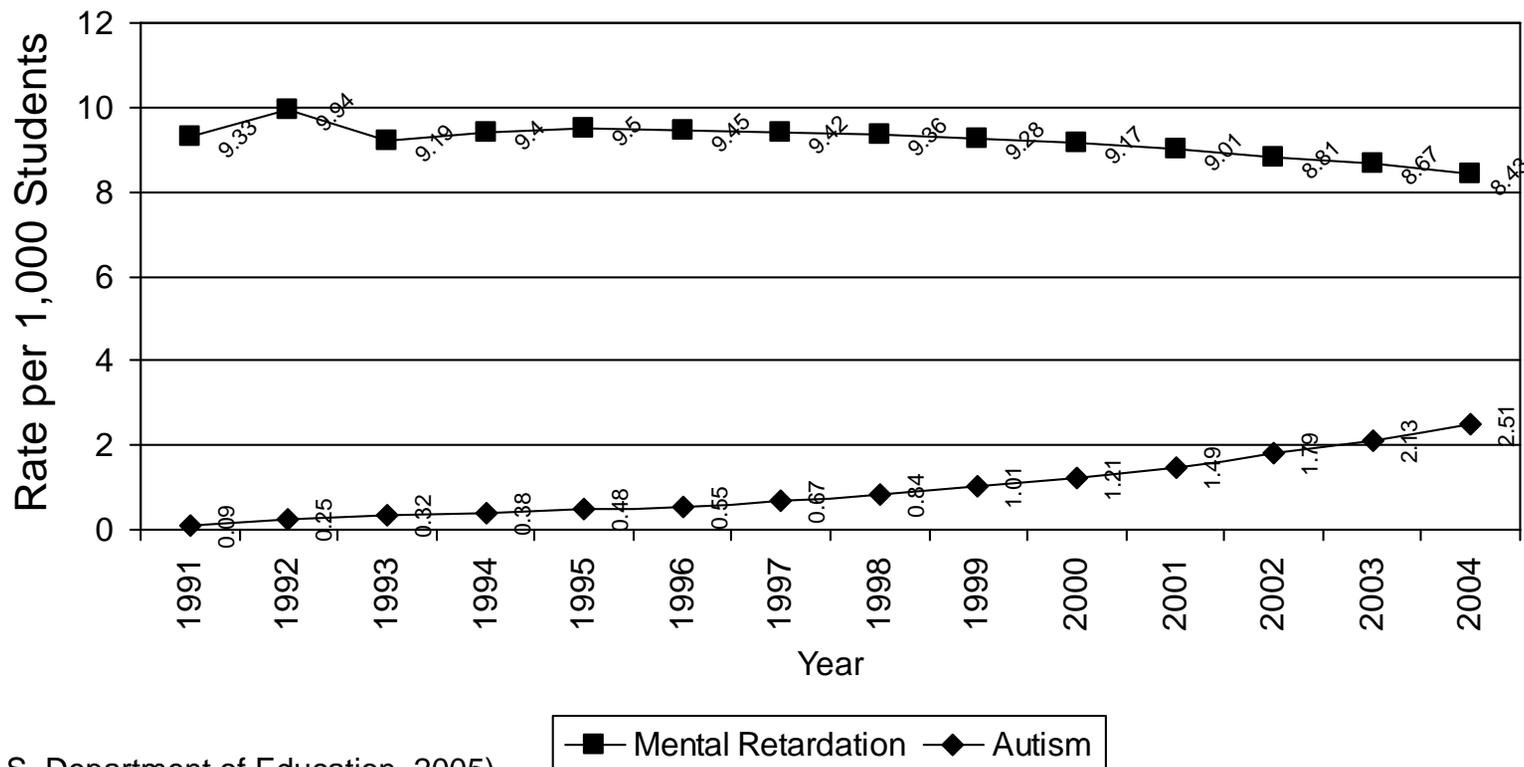
Epidemiology (Special Education)

Percentage of Students Classified with
Autism or Intellectual Disability Under IDEA
(as a Percentage of all Students with Disabilities: 1991 to 2010)



Introduction: Epidemiology (Special Education)

School Population Rates of Intellectual Disability and Autism
Special Education Eligibility Classifications: 1991 to 2004



Introduction:

Epidemiology (Special Education)

Changes in Special Education Classification Rates (1991 to 2004; for Children Ages 6 to 11)

Category	1991 Rate	2004 Rate	Rate Change
All eligibilities categories combined	106.65	114.30	+7.65
Autism	0.13	4.04	+3.91
OHI	1.32	8.91	+7.59
TBI	0.00	0.33	+0.33
OI	1.25	1.31	+0.06

Brock, S. E. (2006). An examination of the changing rates of autism in special education. *The California School Psychologist*, 11, 31-39.

Introduction:

Epidemiology (Special Education)

Changes in Special Education Classification Rates (1991 to 2004; for Children Ages 6 to 11)

Category	1991 Rate	2004 Rate	Rate Change
Autism	0.13	4.04	+3.91
Deaf-Blindness	0.03	0.03	0.00
Hearing Impairments	1.34	1.33	-0.01
Visual Impairments	0.52	0.48	-0.04
Multiple Disabilities	2.26	2.14	-0.12

Brock, S. E. (2006). An examination of the changing rates of autism in special education. *The California School Psychologist, 11*, 31-39.

Introduction:

Epidemiology (Special Education)

Changes in Special Education Classification Rates (1991 to 2004; for Children Ages 6 to 11)

Category	1991 Rate	2004 Rate	Rate Change
Autism	0.13	4.04	+3.91
ID (MR)	9.71	7.46	-2.25
SLD	43.56	38.67	-4.89
ED	6.43	5.74	-0.69
Speech/Language	40.10	40.79	+0.69
ID+SLD+ED+S/LI	99.80	92.66	-7.14

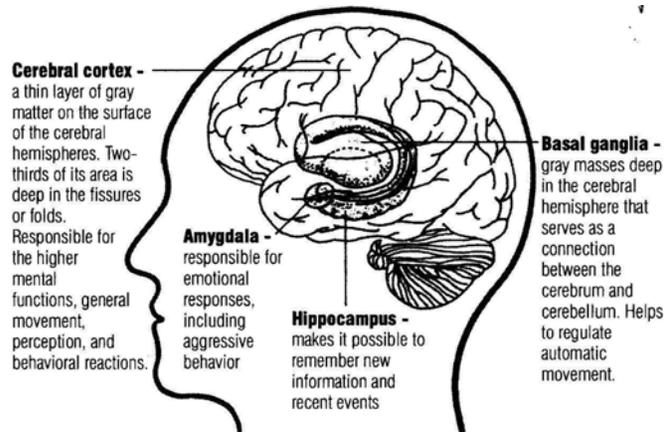
Brock, S. E. (2006). An examination of the changing rates of autism in special education. *The California School Psychologist*, 11, 31-39.

Introduction:

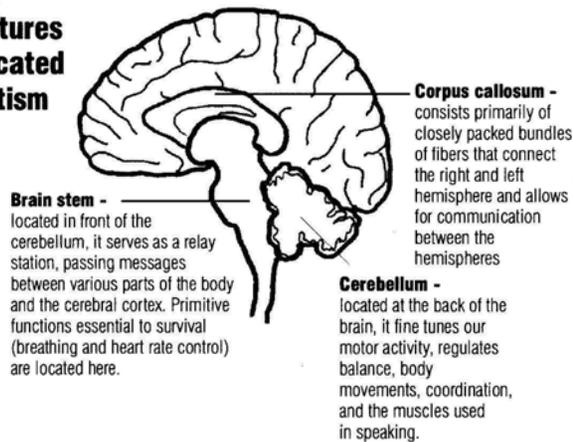
Causes

- While Kanner initially suggested ASD to have a biological basis, most early efforts to identify the causes of autism focused on inadequate nurturance by emotionally cold and indifferent parents.
- Today it is now accepted that the behavioral manifestations of autism are a consequence of abnormal brain development, structure, and function.

Introduction: Causes



Major Brain Structures Implicated in Autism



Strock, M. (2004). *Autism spectrum disorders (Pervasive developmental disorders)*. [NIH Publication No. NIH-04-5511] Bethesda, MD: National Institute of Mental Health, National Institutes of Health, U.S. Department of Health and Human Services. Retrieved 12-19-04 from www.nimh.nih.gov/publicat/autism.cfm

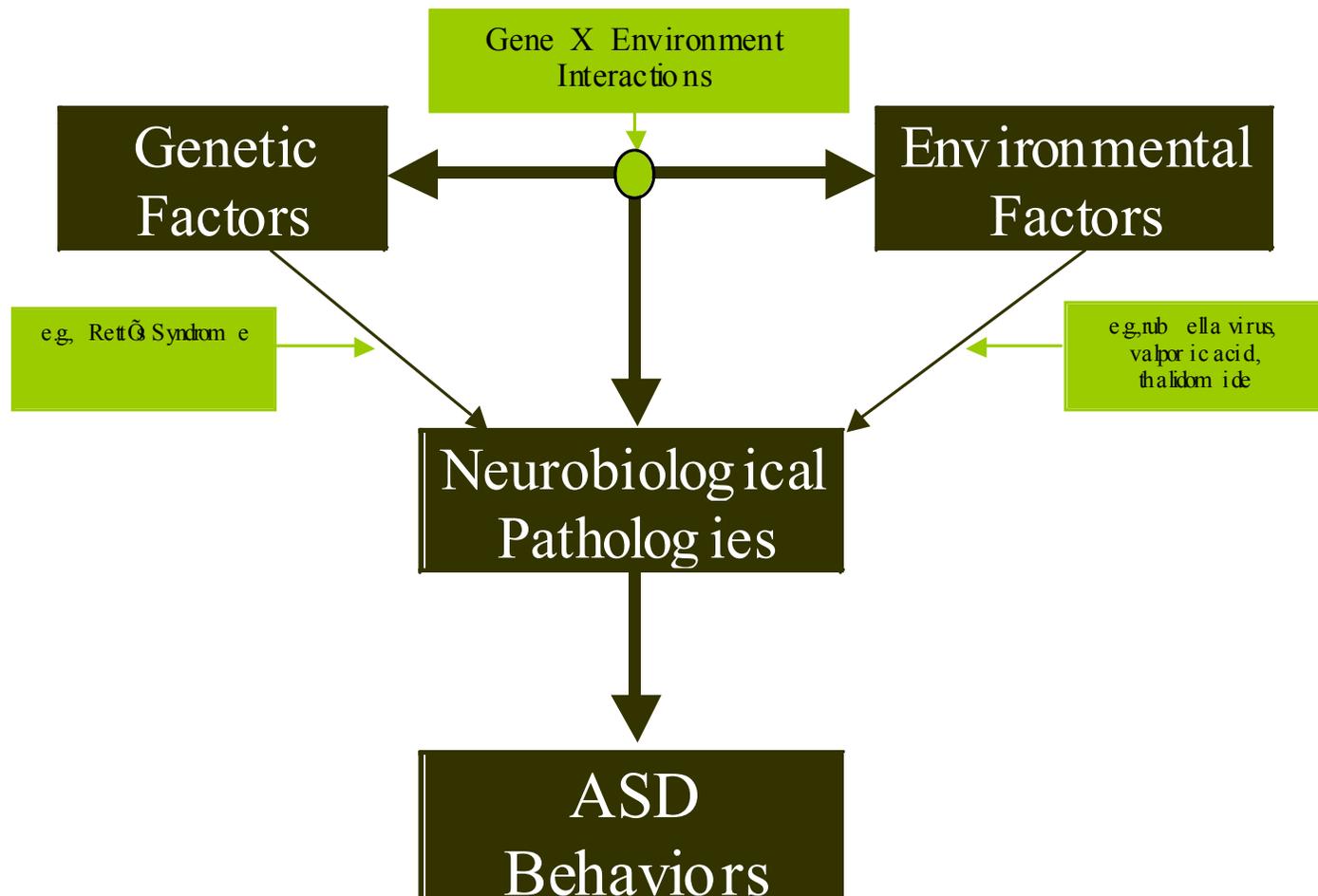
Introduction:

Causes

- While it is clear that autism has an organic etiology, the underlying causes of these neurological differences, and exactly how they manifest themselves, is much more controversial.
- The etiology of autism is complex and multifaceted; likely resulting from the interaction of genetic, neurological, and environmental factors.
- It has been suggested that some combination of...
 1. genetic predisposition(s) and
 2. gene by environmental interaction(s)
 3. result in the brain abnormalities, which in turn are the causes of the range of behaviors we currently refer to as autism spectrum behaviors.

Introduction:

Causes Flowchart (read from top down)



Introduction:

Causes

- **Genetics**

- ASD runs in families
 - Identical Twins (60 to 90 percent concordance)
 - Siblings (3 to 6% increased risk)
- However, with the exception of Rett's Syndrome, there is no conclusive evidence that ASD is associated with a specific genetic deficit.
- Thus, multiple genetic factors likely cause most cases of autism.
- The variability of ASD manifestations among even identical twins argues strongly that simple models of inheritance do not account for this spectrum of disorders.

Introduction:

Causes

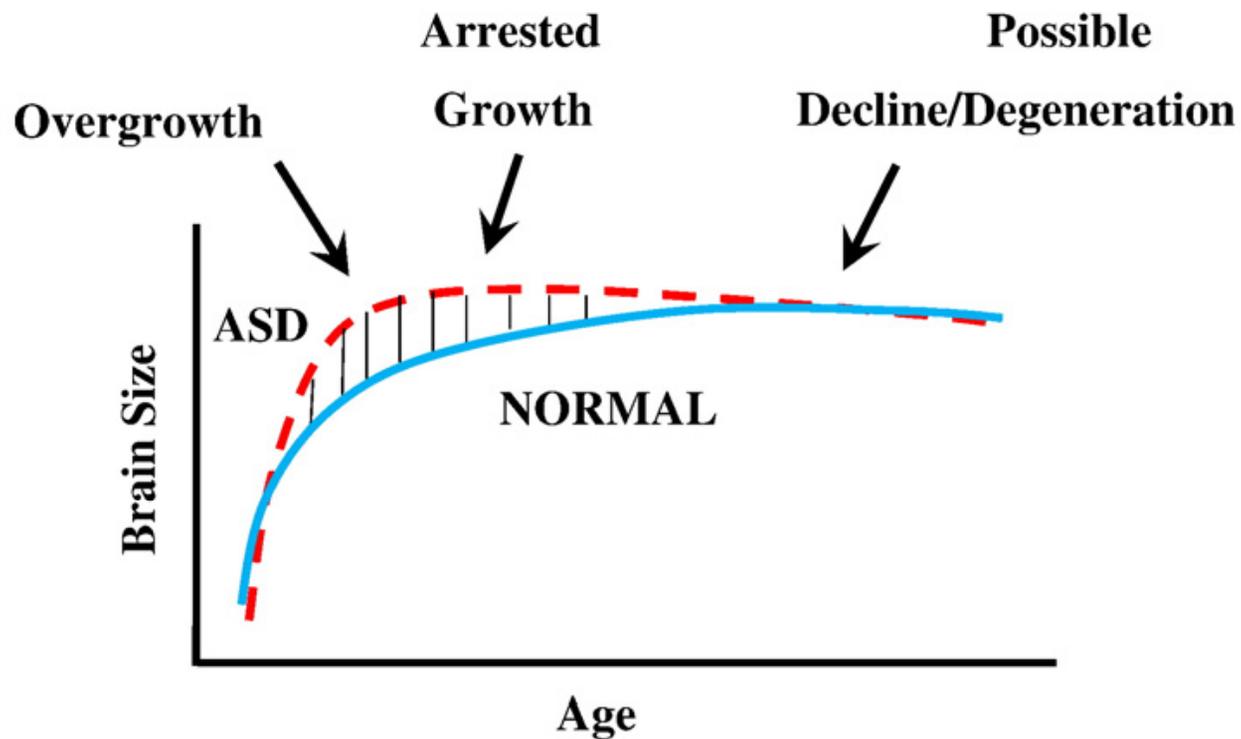
- Environment
 - To the extent the environment does have a role in causing autism, it has been suggested that it does so by interacting with certain genes. In other words, a certain gene or gene combinations may generate a susceptibility to autism that is in turn triggered by a certain environmental factor or factors.
 - Environmental factors currently being considered include obstetric suboptimality, prenatal, and postnatal factors.

Introduction:

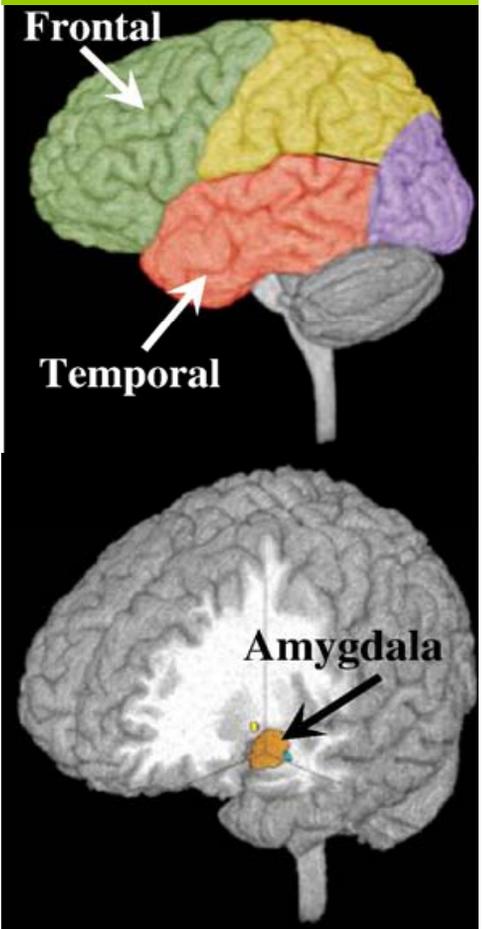
Causes

- Neurobiology
 - Brain Size
 - Rapid and excessive increase in head circumference during the first year
 - MRI data suggests brain size discriminates ASD children from typically developing peers
 - More rapid growth/larger brain size is associated with more severe ASD.

Introduction: Causes (Brain Growth)



Sites of brain overgrowth



Introduction:

Causes

- Neurobiology
 - Brain Structure
 - Postmortem and MRI research that has documented most major brain structures are affected. These areas include the hippocampus and amygdala, cerebellum, cerebral cortex, limbic system, corpus callosum, basal ganglia, and brain stem.
 - Individuals with autism differed from normally developing people in the size, number, and arrangement of minicolumns in the prefrontal cortex and in the temporal lobe.
 - Minicolumns are considered to be the basic anatomical and physiological unit of the brain; it takes in, processes, and then responds to stimuli. They have been compared minicolumns to information processing computer chips.

Introduction:

Causes

- Neurobiology
 - Brain Chemistry
 - Abnormal serotonin levels.
 - Serotonin is involved in the formation of new neurons in the brain (“neurogenesis”), and is thought to be important in the regulation of neuronal differentiation, synaptogenesis, and neuronal migration during development.
 - Supporting the hypothesis that abnormal serotonin metabolism is common among individuals with ASD, is the finding that depletion of tryptophan (a precursor of serotonin) in the diet worsens the behavior of a substantial percentage children of children with ASD.

Workshop Outline

- Introduction
- Case Finding
 - Looking
 - Listening
 - Questioning
- Screening
- Diagnostic Evaluation
- Psycho-educational Evaluation (Treatment)

Case Finding



- **Looking**

- for risk factors and warning signs of atypical development.

- **Listening**

- REALLY LISTENING to parental concerns about atypical development.

- **Questioning**

- caregivers about the child's development.

Case Finding:

Looking for Risk Factors

- **Known Risk Factors**

- High Risk

- Having an older sibling with autism.

- Moderate Risk

- The diagnosis of tuberous sclerosis, fragile X, or epilepsy.
- A family history of autism or autistic-like behaviors.

Case Finding:

Looking for Risk Factors

- Currently there is no substantive evidence supporting any one non-genetic risk factor for ASD.
- However, given that there are likely different causes of ASD, it is possible that yet to be identified non-heritable risk factors may prove to be important in certain subgroups of individuals with this disorder.
 - There may be an interaction between the presence of specific genetic defects and specific environmental factors.
 - Individuals with a particular genetic predisposition for ASD may have a greater risk of developing this disorder subsequent to exposure to certain non-genetic risk factors.
 - In particular, it has been suggested that prenatal factors such as maternal infection and drug exposure deserve further examination.

Case Finding:

Looking for Warning Signs

- Infants and Preschoolers
 - Absolute indications for an autism screening
 - No big smiles or other joyful expressions by 6 months.^b
 - No back-and-forth sharing of sounds, smiles, or facial expressions by 9 months.^b
 - No back-and-forth gestures, such as pointing, showing, reaching or waving bye-bye by 12 months.^{a,b}
 - No babbling at 12 months.^{a, b}
 - No single words at 16 months.^{a, b}

Case Finding:

Looking for Warning Signs

- Infants and Preschoolers
 - Absolute indications for an autism screening
 - No 2-word spontaneous (nonecholalic) phrases by 24 months.^{a, b}
 - Failure to attend to human voice by 24 months.^c
 - Failure to look at face and eyes of others by 24 months.^c
 - Failure to orient to name by 24 months.^c
 - Failure to demonstrate interest in other children by 24 months.^c
 - Failure to imitate by 24 months.^c
 - Any loss of any language or social skill at any age.^{a, b}

Sources: ^aFilipek et al., 1999; ^bGreenspan, 1999; and ^cOzonoff, 2003.

Case Finding: Looking for Warning Signs

- **School-Age Children (preschool through upper grades)**
 - **Social/Emotional Concerns**
 - Poor at initiating and/or sustaining activities and friendships with peers
 - Play/free-time is more isolated, rigid and/or repetitive, less interactive
 - Atypical interests and behaviors compared to peers
 - Unaware of social conventions or codes of conduct (e.g., seems unaware of how comments or actions could offend others)
 - Excessive anxiety, fears or depression
 - Atypical emotional expression (emotion, such as distress or affection, is significantly more or less than appears appropriate for the situation)

Citations: Adapted from *Asperger's Syndrome A Guide for Parents and Professionals* (Attwood, 1998), *Diagnostic and Statistical Manual of Mental Disorders, 4th ed.* (APA, 1994), and *The Asperger Syndrome Diagnostic Scale* (Myles, Bock and Simpson, 2000)

Case Finding:

Looking for Warning Signs

- **School-Age Children** (preschool through upper grades)
 - **Communication Concerns**
 - Unusual tone of voice or speech (seems to have an accent or monotone, speech is overly formal)
 - Overly literal interpretation of comments (confused by sarcasm or phrases such as “pull up your socks” or “looks can kill”)
 - Atypical conversations (one-sided, on their focus of interest or on repetitive/unusual topics)
 - Poor nonverbal communication skills (eye contact, gestures, etc.)

Citations: Adapted from *Asperger's Syndrome A Guide for Parents and Professionals* (Attwood, 1998), *Diagnostic and Statistical Manual of Mental Disorders, 4th ed.* (APA, 1994), and *The Asperger Syndrome Diagnostic Scale* (Myles, Bock and Simpson, 2000)

Case Finding:

Looking for Warning Signs

- **School-Age Children** (preschool through upper grades)
 - **Behavioral Concerns**
 - Excessive fascination/perseveration with a particular topic, interest or object
 - Unduly upset by changes in routines or expectations
 - Tendency to flap or rock when excited or distressed
 - Unusual sensory responses (reactions to sound, touch, textures, pain tolerance, etc.)
 - History of behavioral concerns (inattention, hyperactivity, aggression, anxiety, selective mute)
 - Poor fine and/or gross motor skills or coordination

Case Finding:

Looking for Atypical Development

- **Developmental Screening**
 - Ages and Stages Questionnaire
 - Paul H. Brookes, Publishers
 - Child Development Inventories
 - Behavior Science Systems
 - Parents' Evaluations of Developmental Status
 - Ellsworth & Vandermeer Press, Ltd.

Case Finding:

Looking for Atypical Development

- Staff Development
 - School psychologist efforts to educate teachers about the risk factors and warning signs of ASD would also be consistent with Child Find.
 - Giving teachers the information they need to look for ASD will facilitate case finding efforts.

Case Finding: Listening to Caregivers

- Referring Concerns That Signal the Need for Autism Screening
 - Communication Concerns
 - Does not respond to his/her name
 - Cannot tell me what s/he wants
 - Does not follow directions
 - Appears deaf at times
 - Seems to hear sometimes but not others
 - Does not point or wave bye-bye

Source: Filipek, P. A. et al. (1999). The screening and diagnosis of autistic spectrum disorders. *Journal of Autism and Developmental disorders*, 29, 439-484.

Case Finding: Listening to Caregivers

- Referring Concerns That Signal the Need for Autism Screening
 - Social Concerns
 - Does not smile socially
 - Seems to prefer to play alone
 - Is very independent
 - Has poor eye contact
 - Is in his/her own world
 - Tunes us out
 - Is not interested in other children

Source: Filipek, P. A. et al. (1999). The screening and diagnosis of autistic spectrum disorders. *Journal of Autism and Developmental disorders*, 29, 439-484.

Case Finding: Listening to Caregivers

- Referring Concerns That Signal the Need for Autism Screening
 - Behavioral concerns
 - Tantrums
 - Is hyperactive or uncooperative/oppositional
 - Doesn't know how to play with toys
 - Does the same thing over and over
 - Toe walks

Source: Filipek, P. A. et al. (1999). The screening and diagnosis of autistic spectrum disorders. *Journal of Autism and Developmental disorders*, 29, 439-484.

Case Finding: Listening to Caregivers

- Referring Concerns That Signal the Need for Autism Screening
 - Behavioral concerns (continued)
 - Has unusual attachments to toys (e.g., always is holding a certain object)
 - Lines things up
 - Is oversensitive to certain textures or sounds
 - Has odd finger and/or body movement patterns

Source: Filipek, P. A. et al. (1999). The screening and diagnosis of autistic spectrum disorders. *Journal of Autism and Developmental disorders*, 29, 439-484.

Case Finding: Questioning Caregivers

- Asking about socialization that probe for issues that would signal the need for an autism screening.
 - “Does s/he ...” or “Is there ...”
 - cuddle like other children?
 - look at you when you are talking or playing?
 - smile in response to a smile from others?
 - engage in reciprocal, back-and-forth play?
 - play simple imitation games, such as pat-a-cake or peek-a-boo?
 - show interest in other children?

Source: Filipek, P. A. et al. (1999). The screening and diagnosis of autistic spectrum disorders. *Journal of Autism and Developmental disorders*, 29, 439-484.

Case Finding: Questioning Caregivers

- Asking about communication that probe for issues that would signal the need for an autism screening.
 - “Does s/he ...” or “Is there ...”
 - point with his/hr finger?
 - gesture? Nod yes and no?
 - direct your attention by holding up objects for you to see?
 - anything odd about his/her speech?
 - show things to people?

Source: Filipek, P. A. et al. (1999). The screening and diagnosis of autistic spectrum disorders. *Journal of Autism and Developmental disorders*, 29, 439-484.

Case Finding: Questioning Caregivers

- Asking about communication that probe for issues that would signal the need for an autism screening (continued).
 - “Does s/he ...” or “Is there ...”
 - lead an adult by the hand?
 - give inconsistent response to his/her name? ... to commands?
 - use rote, repetitive, or echolalic speech?
 - memorize strings of words or scripts?

Source: Filipek, P. A. et al. (1999). The screening and diagnosis of autistic spectrum disorders. *Journal of Autism and Developmental disorders*, 29, 439-484.

Case Finding: Questioning Caregivers

- Asking about behavior that probe for issues that would signal the need for an autism screening.
 - “Does s/he ...” or “Is there ...”
 - have repetitive, stereotyped, or odd motor behavior?
 - have preoccupations or a narrow range of interests?
 - attend more to parts of objects (e.g., the wheels of a toy car)?
 - have limited or absent pretend play?
 - imitate other people’s actions?
 - play with toys in the same exact way each time?
 - strongly attached to a specific unusual object(s)?

Workshop Outline

- Introduction
- Case Finding
- Screening
 - Behavioral (Infants & Preschoolers)
 - Behavioral (School Age Youth)
- Diagnostic Evaluation
- Psycho-educational Evaluation (Treatment)

Screening



- Screening is designed to help determine the need for additional diagnostic assessments.

Screening

- School psychologists are exceptionally well qualified to conduct the behavioral screening of students suspected to have an ASD.
- Several screening tools are available
- Initially, most of these tools focused on the identification of ASD among infants and preschoolers.
- Recently screening tools useful for the identification of school aged children who have high functioning autism or Asperger's Disorder have been developed.

Screening: Infants & Preschoolers

- *Checklist for Autism in Toddlers (CHAT)*
 - Designed to identify risk of autism among 18-month-olds
 - Takes 5 to 10 minutes to administer,
 - Consists of 9 questions asked of the parent and 5 items that are completed by the screener's direct observation of the child.
 - 5 items are considered to be "key items." These key items, assess joint attention and pretend play.
 - If a child fails all five of these items they are considered to be at high risk for developing autism.

Screening: Infants & Preschoolers

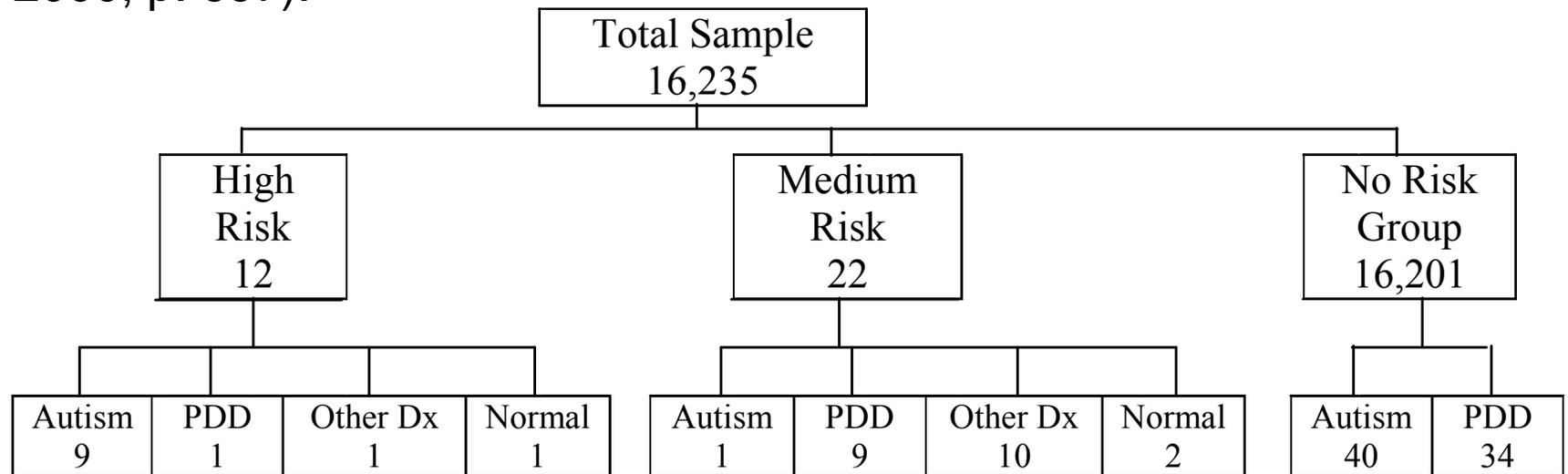
CHAT SECTION A: History: Ask parent...		
1. Does your child enjoy being swung, bounced on your knee, etc.?	YES	NO
2. Does your child take an interest in other children?	YES	NO
3. Does your child like climbing on things, such as up stairs?	YES	NO
4. Does your child enjoy playing peek-a-boo/hide-and-seak?	YES	NO
5. Does your child ever PRETEND, for example to make a cup of tea using a toy cup and teapot, or pretend other things?	YES	NO
6. Does your child ever use his/her index finger to point to ASK for something?	YES	NO
7. Does your child ever use his/her index finger to point to indicate INTEREST in something?	YES	NO
8. Can your child play properly with small toys (e.g., cars or bricks) without just mouthing, fiddling or dropping them?	YES	NO
9. Does your child ever bring objects over to you (parent) to SHOW your something?	YES	NO

Screening: Infants & Preschoolers

CHAT Section B: general practitioner or health visitor observation	
i. During the appointment, has the child made eye contact with your?	YES NO
ii. Get child's attention, then point across the room at an interesting object and say 'Oh look! There's a [name of toy]'. Watch child's face. Does the child look across to see what you are point at?	YES NO*
iii. Get the child's attention, then give child a miniature toy cup and teapot and say 'Can you make a cup of tea?' Does the child pretend to pour out tea, drink it, etc.?	YES NO†
iv. Say to the child 'Where is the light?', or 'Show me the light'. Does the child POINT with his/her index finger at the light?	YES NO‡
v. Can the child build a tower of bricks? (if so how many?) (No. of bricks:.....)	YES NO
<p>* To record Yes on this item, ensure the child has not simply looked at your hand, but has actually looked at the object you are point at.</p> <p>† If you can elicit an example of pretending in some other game, score a Yes on this item.</p> <p>‡ Repeat this with 'Where's the teddy?' or some other unreachable object, if child does not understand the word light. To record Yes on this item, the child must have looked up at your face around the time of pointing.</p>	
<p>Scoring:</p> <ul style="list-style-type: none"> <input type="checkbox"/> High risk for Autism: Fails A5, A7, Bii, Biii, and Biv <input type="checkbox"/> Medium risk for autism group: Fails A7, Biv (but not in maximum risk group) <input type="checkbox"/> Low risk for autism group (not in other two risk groups) 	

Screening: Infants & Preschoolers

6-year follow-up of a community sample screened with the 2 stage *CHAT* reveals extremely low false positive rate. However, higher functioning (high IQ) children are missed by this screening (Baird et al., 2000, p. 697).



Screening: Infants & Preschoolers

The *CHAT* is available at:

<http://www.paains.org.uk/Autism/chat.htm>

Screening: Infants & Preschoolers

- *Modified Checklist for Autism in Toddlers (M-CHAT)*
 - Designed to screen for autism at 24 months of age.
 - More sensitive to the broader autism spectrum.
 - Uses the 9 items from the original CHAT as its basis.
 - Adds 14 additional items (23-item total).
 - Unlike the *CHAT*, however, the *M-CHAT* does not require the screener to directly observe the child.
 - Makes use of a Yes/No format questionnaire.
 - Yes/No answers are converted to pass/fail responses by the screener.
 - A child fails the checklist when 2 or more of 6 critical items are failed **or** when any three items are failed.

Screening: Infants & Preschoolers

- *Modified Checklist for Autism in Toddlers* (M-CHAT)
 - The *M-CHAT* was used to screen 1,293 18- to 30-month-old children. 58 were referred for a diagnostic/developmental evaluation. 39 were diagnosed with an autism spectrum disorder (Robins et al., 2001).
 - Will result in false positives.
 - Data regarding false negative is not currently available, but follow-up research to obtain such is currently underway.

Screening: Infants & Preschoolers

Modified Checklist for Autism in Toddlers (M-CHAT)

Please fill out the following about how your child **usually** is. Please try to answer every question. If the behavior is rare (e.g., you've seen it once or twice), please answer as if the child does not do it.

1.	Does your child enjoy being swung, bounced on your knee, etc.?	Yes	No
2.	Does your child take an interest in other children?	Yes	No
3.	Does your child like climbing on things, such as up stairs?	Yes	No
4.	Does your child enjoy playing peek-a-boo/hide-and-seek?	Yes	No
5.	Does your child ever pretend, for example, to talk on the phone or take care of		No
6.	Does your child ever use his/her index finger to point, to ask for something?		No
7.	Does your child ever use his/her index finger to point, to indicate interest in		No
8.	Can your child play properly with small toys (e.g. cars or bricks) without just		No
9.	Does your child ever bring objects over to you (parent) to show you something?		No
10.	Does your child look you in the eye for more than a second or two?	Yes	No
11.	Does your child ever seem oversensitive to noise? (e.g., plugging ears)	Yes	No

Screening: Infants & Preschoolers

Modified Checklist for Autism in Toddlers (M-CHAT)

Please fill out the following about how your child **usually** is. Please try to answer every question. If the behavior is rare (e.g., you've seen it once or twice), please answer as if the child does not do it.

13.	Does your child imitate you? (e.g., you make a face-will your child imitate it?)		No
14.	Does your child respond to his/her name when you call?	Yes	No
15.	If you point at a toy across the room, does your child look at it?	Yes	No
16.	Does your child walk?	Yes	No
17.	Does your child look at things you are looking at?	Yes	No
18.	Does your child make unusual finger movements near his/her face?	Yes	No
19.	Does your child try to attract your attention to his/her own activity?	Yes	No
20.	Have you ever wondered if your child is deaf?	Yes	No
21.	Does your child understand what people say?	Yes	No
22.	Does your child sometimes stare at nothing or wander with no purpose?		No
23.	Does your child look at your face to check your reaction when faced with		No

Screening: Infants & Preschoolers

M-CHAT Scoring Instructions

A child fails the checklist when 2 or more critical items are failed OR when any three items are failed. Yes/no answers convert to pass/fail responses. Below are listed the failed responses for each item on the M-CHAT. Bold capitalized items are CRITICAL items.

Not all children who fail the checklist will meet criteria for a diagnosis on the autism spectrum. However, children who fail the checklist should be evaluated in more depth by the physician or referred for a developmental evaluation with a specialist.

1. No	6. No	11. Yes	16. No	21. No
2. NO	7. NO	12. No	17. No	22. Yes
3. No	8. No	13. NO	18. Yes	23. No
4. No	9. NO	14. NO	19. No	
5. No	10. No	15. NO	20. Yes	

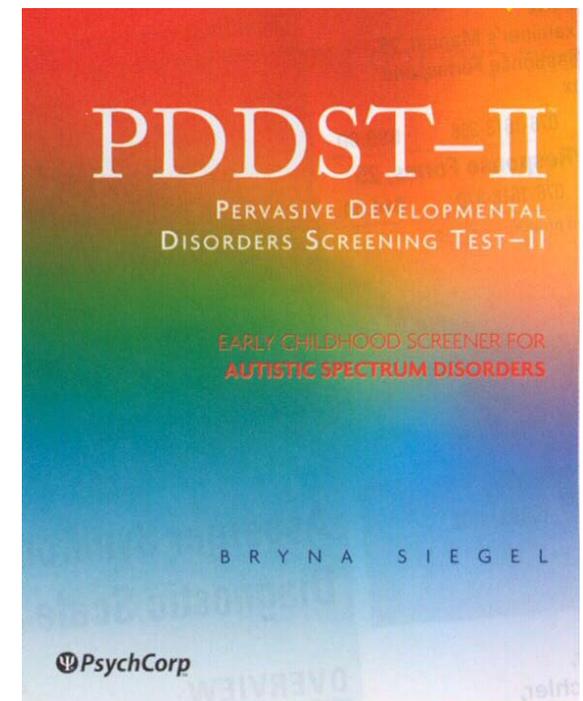
Screening: Infants & Preschoolers

The *M-CHAT* is available at

<http://www.firstsigns.org/downloads/m-chat.PDF>

Screening: Infants & Preschoolers

- *Pervasive Developmental Disorders Screening Test - II* (PDDST-II)



Screening: Infants & Preschoolers

- *Pervasive Developmental Disorders Screening Test - II* (PDDST-II)
 - Has three stages
 - The *PDDST-II: Stage I* designed to help determine if a given child should be evaluated for an ASD.
 - Designed to be completed by parents
 - Should take no more than 5 minutes.
 - Odd numbered items are the critical questions used for autism screening.
 - If three or more of the odd numbered items are checked as being “YES, Usually True,” then the result is considered a positive finding for possible ASD and a diagnostic evaluation indicated.

Screening: Infants & Preschoolers

- *Pervasive Developmental Disorders Screening Test - II* (PDDST-II)
 - The odd numbered critical questions are ordered by age in order from highest predictive validity.
 - This means the more odd numbered items scored positive, and the more odd numbered items scored positive on the upper half of each section, the more strongly positive the screen.
 - Even numbered items significantly differentiate ASD-referred children from those with mild developmental disorders.
 - These items are also are ordered by age in order from highest to lowest predictive validity.

Screening: Infants & Preschoolers

Measure	Sensitivity	Specificity
CHAT: Stage 1	.35	.98
CHAT: Stage 2	.21	.99
M-CHAT: 2/6	.95	.99
M-CHAT: 3/23	.97	.95
CHAT-23: Part A, 2/7	.93	.77
CHAT-23: Part A, 6/23	.84	.85
CHAT-23, Part B	.74	.92
PDD-II: Stage 1	.89	.84

Screening: School Aged Youth

- *Autism Spectrum Screening Questionnaire (ASSQ)*
 - The 27 items rated on a 3-point scale.
 - Total score range from 0 to 54.
 - Items address social interaction, communication, restricted/repetitive behavior, and motor clumsiness and other associated symptoms.
 - The initial ASSQ study included 1,401 7- to 16-year-olds.
 - Sample mean was 0.7 (*SD* 2.6).
 - Asperger mean was 26.2 (*SD* 10.3).
 - A validation study with a clinical group ($n = 110$) suggests the ASSQ to be “a reliable and valid parent and teacher screening instrument of high-functioning autism spectrum disorders in a clinical setting” (Ehlers, Gillber, & Wing, 1999, p. 139).

Screening: School Aged Youth

- *Autism Spectrum Screening Questionnaire (ASSQ)*
 - Two separate sets of cutoff scores are suggested.
 - Parents, **13**; Teachers, **11**: = socially impaired children
 - Low risk of false negatives (especially for milder cases of ASD).
 - High rate of false positives (23% for parents and 42% for teachers).
 - Not unusual for children with other disorders (e.g., disruptive behavior disorders) to obtain ASSQ scores at this level.
 - Used to suggest that a referral for an ASD diagnostic assessment, while not immediately indicated, should not be ruled out.
 - Parents, **19**; Teachers, **22**: = immediate ASD diagnostic referral.
 - False positive rate for parents and teachers of 10% and 9 % respectively.
 - The chances are low that the student who attains this level of ASSQ cutoff scores will not have an ASD.
 - Increases the risk of false negatives.

Screening: School Aged Youth

Different parent and teacher *ASSQ* cutoff scores with true positive rate (% of children with an ASD who were rated at a given score), false positive rate (% of children without an ASD who were rated at a given score), and the likelihood ratio a given score predicting an ASD.

Cutoff Score	True Positive Rate (%)	False Positive Rate (%)	Likelihood Ratio
Parent			
7	95	44	2.2
13	91	23	3.8
15	76	19	3.9
16	71	16	4.5
17	67	13	5.3
19	62	10	5.5
20	48	8	6.1
22	42	3	12.6
Teacher			
9	95	45	2.1
11	90	42	2.2
12	85	37	2.3
15	75	27	2.8
22	70	9	7.5
24	65	7	9.3

Screening: School Aged Youth

- *Childhood Asperger Syndrome Test (CAST)*
 - Scott, Baron-Cohen, Bolton, & Brayne (2002).
 - A screening for mainstream primary grade (ages 4 through 11 years) children.
 - Has 37 items, with 31 key items contributing to the child's total score.
 - The 6 control items assess general development.
 - With a total possible score of 31, a cut off score of 15 "NO" responses was found to correctly identify 87.5 (7 out of 8) of the cases of autistic spectrum disorders.
 - Rate of false positives is 36.4%.
 - Rate of false negatives is not available

Screening: School Aged Youth

Childhood Asperger Syndrome Test (CAST)

1. Does s/he join in playing games with other children easily?	YES	NO
2. Does s/he come up to you spontaneously for a chat?	YES	NO
3. Was s/he speaking by 2 years old?	YES	NO
4. Does s/he enjoy sports?	YES	NO
5. Is it important to him/her to fit in with the peer group?	YES	NO
6. Does s/he appear to notice unusual details that others miss?	YES	NO
7. Does s/he tend to take things literally?	YES	NO
8. When s/he was 3 years old, did s/her spend a lot of time pretending (e.g. play-acting begin a superhero, or holding a teddy's tea parties)?	YES	NO
9. Does s/he like to do things over and over again, in the same way all the time?	YES	NO
10. Does s/he find it easy to interact with other children?	YES	NO
11. Can s/he keep a two-way conversation going?	YES	NO
12. Can s/he read appropriately for his/her age?	YES	NO
13. Does s/he mostly have the same interest as his/her peers?	YES	NO
14. Does s/he have an interest, which takes up so much time that s/he does little else?	YES	NO
15. Does s/he have friends, rather than just acquaintances?	YES	NO
16. Does s/he often bring you things s/he is interested in to show you?	YES	NO

From Scott et al. (2002, p. 27)

Screening: School Aged Youth

17. Does s/he enjoy joking around?	YES	NO
18. Does s/he have difficulty understanding the rules for polite behavior?	YES	NO
19. Does s/he appear to have an unusual memory for details?	YES	NO
20. Is his/her voice unusual (e.g., overly adult, flat, or very monotonous)?	YES	NO
21. Are people important to him/her?	YES	NO
22. Can s/he dress him/herself?	YES	NO
23. Is s/he good at turn-taking in conversation?	YES	NO
24. Does s/he play imaginatively with other children, and engage in role-play?	YES	NO
25. Does s/he often do or say things that are tactless or socially inappropriate?	YES	NO
26. Can s/he count to 50 without leaving out any numbers?	YES	NO
27. Does s/he make normal eye-contact?	YES	NO
28. Does s/he have any unusual and repetitive movements?	YES	NO
29. Is his/her social behaviour very one-sided and always on his/her own terms?	YES	NO
30. Does s/he sometimes say "or" when s/he means "and"?	YES	NO
31. Does s/he prefer imaginative activities such as play-acting or story-telling, rather than numbers or lists of facts?	YES	NO
32. Does s/he sometimes lose the listener because of not explaining what s/he is talking about?	YES	NO
33. Can s/he ride a bicycle (even if with stabilizers)?	YES	NO
34. Does s/he try to impose routines on him/herself, or on others, in such a way that it causes problems?	YES	NO
35. Does s/he care how s/he is perceived by the rest of the group?	YES	NO
36. Does s/he often turn the conversations to his/her favorite subject rather than following what the other person wants to talk about?	YES	NO
37. Does s/he have odd or unusual phrases?	YES	NO

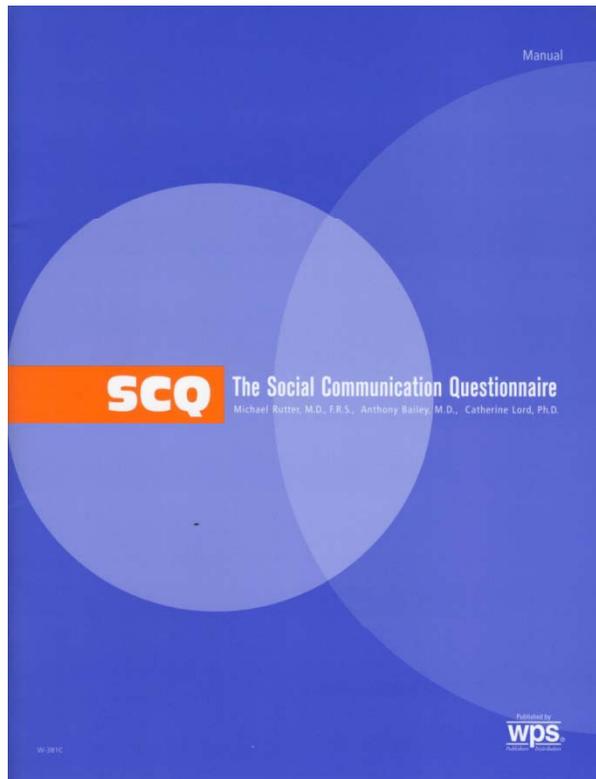
From Scott et al. (2002, p. 27)

Screening: School Aged Youth

The *CAST* is available at
www.autismresearchcentre.com/tests/cast_test.asp

Screening: School Aged Youth

- *Social Communication Questionnaire (SCQ)*



Screening: School Aged Youth

- *Social Communication Questionnaire (SCQ)*
 - Two forms of the *SCQ*: a *Lifetime* and a *Current* form.
 - **Current** ask questions about the child's behavior in the past 3-months, and is suggested to provide data helpful in understanding a child's "everyday living experiences and evaluating treatment and educational plans"
 - **Lifetime** ask questions about the child's entire developmental history and provides data useful in determining if there is need for a diagnostic assessment.
 - Consists of 40 Yes/No questions asked of the parent.
 - The first item of this questionnaire documents the child's ability to speak and is used to determine which items will be used in calculating the total score.

Screening: School Aged Youth

- *Social Communication Questionnaire (SCQ)*
 - An “AutoScore” protocol converts the parents’ Yes/No responses to scores of 1 or 0.
 - The mean SCQ score of children with autism was 24.2, whereas the general population mean was 5.2.
 - The threshold reflecting the need for diagnostic assessment is 15.
 - A slightly lower threshold might be appropriate if other risk factors (e.g., the child being screened is the sibling of a person with ASD) are present.

Screening: School Aged Youth

- *Social Communication Questionnaire (SCQ)*
 - While it is not particularly effective at distinguishing among the various ASDs, it has been found to have good discriminative validity between autism and other disorders including non-autistic mild or moderate mental retardation.
 - The SCQ authors acknowledge that more data is needed to determine the frequency of false negatives (Rutter et al., 2003).
 - This SCQ is available from Western Psychological Services.

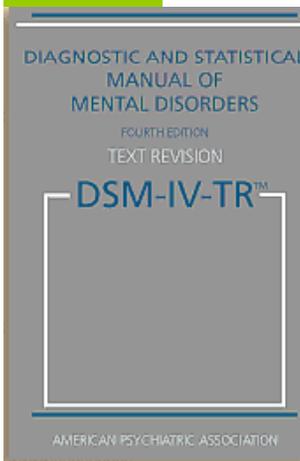
Workshop Outline

- Introduction
- Case Finding
- Screening
- Diagnostic Evaluation
 - DSM-IV-TR Criteria
 - Differential Diagnosis
 - Health & Developmental Histories
 - Indirect Assessment
 - Direct Assessment
- Psycho-educational Evaluation (Treatment)

Diagnostic Evaluation:

DSM-IV-TR Criteria

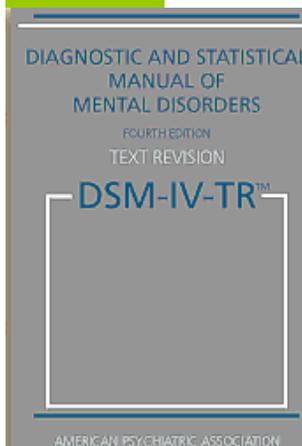
- A. A total of six (or more) items for (1), (2), and (3), with at least two from (1), and one each for (2) and (3):
- (1) qualitative impairment in social interaction, as manifested by at least two of the following:
 - a) marked impairment in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body postures, and gestures to regulate social interaction
 - b) failure to develop peer relationships appropriate to developmental level
 - c) a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g., by lack of showing, bringing, or pointing out objects of interest)
 - d) lack of social or emotional reciprocity



Diagnostic Evaluation:

DSM-IV-TR Criteria

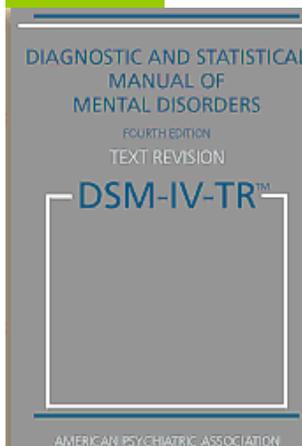
- A. A total of six (or more) items for (1), (2), and (3), with at least two from (1), and one each for (2) and (3):
- (2) qualitative impairments in communication as manifested by at least one of the following:
 - a) delay in, or total lack of, the development of spoken language (not accompanied by an attempt to compensate through alternative modes of communication such as gesture or mime)
 - b) in individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others
 - c) stereotyped and repetitive use of language or idiosyncratic language
 - d) lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level



Diagnostic Evaluation: DSM-IV-TR Criteria



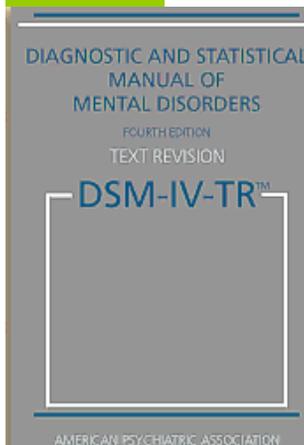
- A. A total of six (or more) items for (1), (2), and (3), with at least two from (1), and one each for (2) and (3):
- (3) restricted repetitive and stereotyped patterns of behavior, interests, and activities, as manifested by at least one of the following:
 - a) encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus
 - b) apparently inflexible adherence to specific, nonfunctional routines or rituals
 - c) stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting, or complex whole-body movements)
 - d) persistent preoccupation with parts of objects



Diagnostic Evaluation:

DSM-IV-TR Criteria

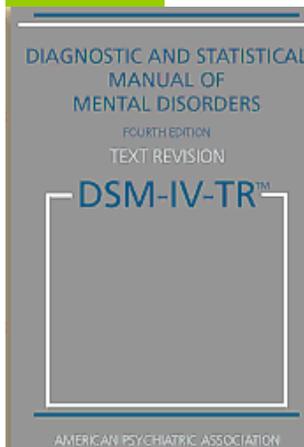
- B. Delays or abnormal functioning in at least one of the following areas, with onset prior to age 3 years: (1) social interaction, (2) language as used in social communication, or (3) symbolic or imaginative play.
- C. The disturbance is not better accounted for by Rett's Disorder or Childhood Disintegrative Disorder.



Diagnostic Evaluation:

DSM-IV-TR Criteria

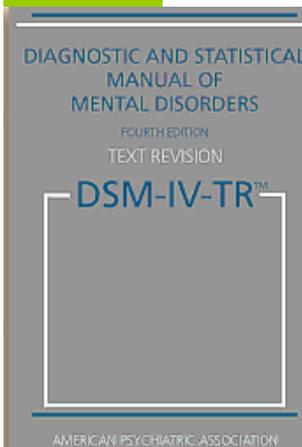
- Asperger's Disorder
 - The criteria for Asperger's Disorder are essentially the same as Autistic Disorder with the exception that there are no criteria for a qualitative impairment in communication.
 - In fact Asperger's criteria require "... no clinically significant general delay in language (e.g., single words used by 2 years, communicative phrases used by 3 years").



Diagnostic Evaluation:

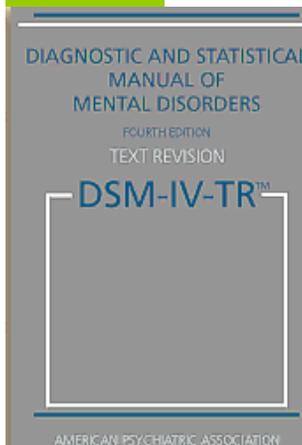
DSM-IV-TR Criteria

- Childhood Disintegrative Disorder (CDD)
 - Criteria are essentially the same as Autistic Disorder.
 - Differences include that in CDD there has been ...
 - (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;” and that there is
 - (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.”



Diagnostic Evaluation: DSM-IV-TR Criteria

- Rett's Disorder
 - Both Autistic Disorder and Rett's Disorder criteria include delays in language development and social engagement (although social difficulties many not be as pervasive).
 - Unlike Autistic Disorder, Rett's also includes
 - (a) head growth deceleration,
 - (b) loss of fine motor skill,
 - (c) poorly coordinated gross motor skill, and
 - (d) severe psychomotor retardation.

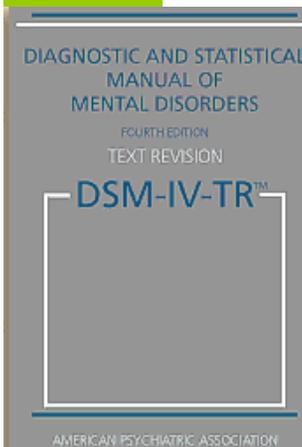


Diagnostic Evaluation:

DSM-IV-TR Criteria

Symptom Onset

- Autistic Disorder is before the age of three years.
 - Before three years, there must be “delays or abnormal functioning” in at least one of the following areas: (a) social interaction, (b) social communicative language, and/or (c) symbolic or imaginative play.
- Asperger’s Disorder may be somewhat later.

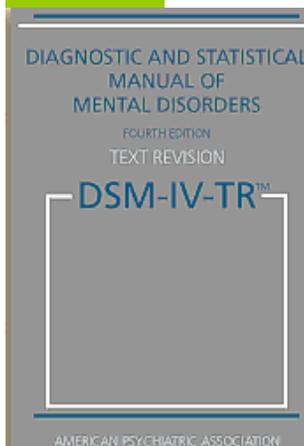


Diagnostic Evaluation: DSM-IV-TR Criteria



Symptom Onset

- Childhood Disintegrative Disorder is before the age of 10 years.
 - Preceded by at least two years of normal development.
- Rett's Disorder is before the age of 4 years.
 - Although symptoms are usually seen by the second year of life.

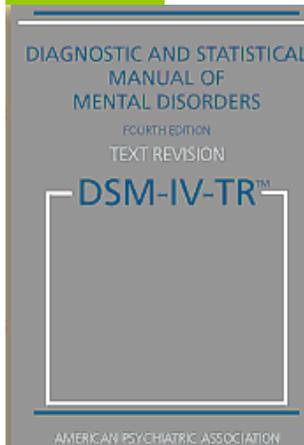


Diagnostic Evaluation:

DSM-IV-TR Criteria

Developmental Course

- Autistic Disorder:
 - Parents may report having been worried about the child's lack of interest in social interaction since or shortly after birth.
 - In a few cases the child initially developed normally before symptom onset.
 - However, such periods of normal development must not extend past age three.

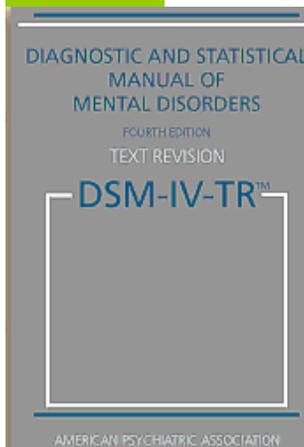


Diagnostic Evaluation:

DSM-IV-TR Criteria

Developmental Course

- Autistic Disorder:
 - Duration of Autistic Disorder is typically life long, with only a small percentage being able to live and work independently and about 1/3 being able to achieve a partial degree of independence.
 - Even among the highest functioning adults symptoms typically continue to cause challenges.

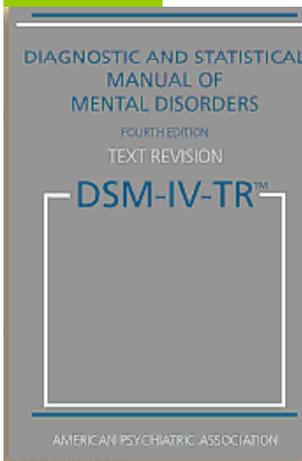


Diagnostic Evaluation:

DSM-IV-TR Criteria

Developmental Course

- Asperger's Disorder:
 - Motor delays or clumsiness may be some of the first symptoms noted during the preschool years.
 - Difficulties in social interactions, and symptoms associated with unique and unusually circumscribed interests, become apparent at school entry.
 - Duration is typically lifelong with difficulties empathizing and modulating social interactions displayed in adulthood.

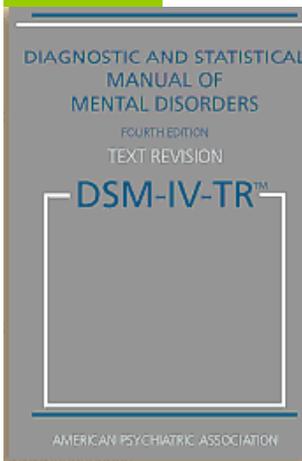


Diagnostic Evaluation:

DSM-IV-TR Criteria

Developmental Considerations

- Rett's and Childhood Disintegrative Disorders:
 - Lifelong conditions.
 - Rett's pattern of developmental regression is generally persistent and progressive. Some interest in social interaction may be noted during later childhood and adolescence.
 - The loss of skills associated with Childhood Disintegrative Disorder plateau after which some limited improvement may occur.

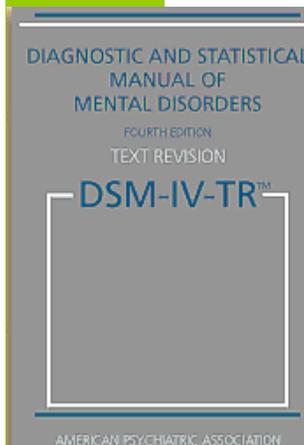


Diagnostic Evaluation:

DSM-IV-TR Criteria

Associated Features

- Asperger's Disorder is the only ASD not typically associated with some degree of mental retardation.
- Autistic Disorder is associated with **moderate** mental retardation. Other associated features include:
 - unusual sensory sensitivities
 - abnormal eating or sleeping habits
 - unusual fearfulness of harmless object or lack of fear for real dangers
 - self-injurious behaviors
- Childhood Disintegrative Disorder is associated with **severe** mental retardation.
- Rett's Disorder is associated with **severe to profound** mental retardation.

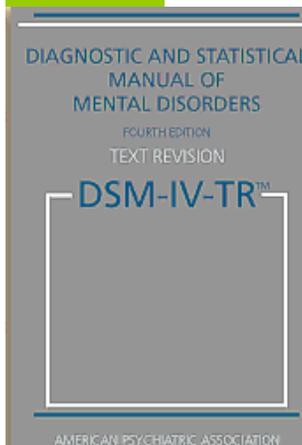


Diagnostic Evaluation:

DSM-IV-TR Criteria

Age Specific Features

- Chronological age and developmental level influence the expression of Autistic Disorder.
 - Thus, assessment must be developmentally sensitive.
 - For example, infants may fail to cuddle; show indifference or aversion to affection or physical contact; demonstrate a lack of eye contact, facial responsiveness, or socially directed smiles; and a failure to respond to their parents' voices.
 - On the other hand, among young children, adults may be treated as interchangeable or alternatively the child may cling to a specific person.

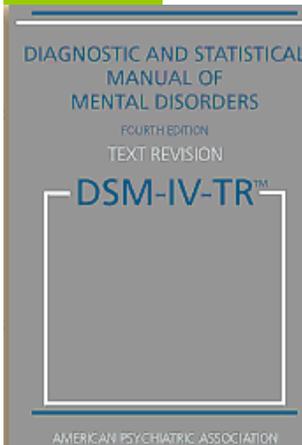


Diagnostic Evaluation:

DSM-IV-TR Criteria

Gender Related Features

- With the exception of Rett's Disorder, which occurs primarily among females, all other ASDs appear to be more common among males than females.
 - The rate is four to five times higher in males than in females.



Diagnostic Evaluation:

Differential Diagnosis

Rett's Disorder

- Affects primarily girls
- Head growth deceleration
- Loss of fine motor skill
- Awkward gait and trunk movement
- Mutations in the MECP2 gene

Childhood Disintegrative Disorder

- Regression following at least two years of normal development

Asperger's Disorder

- Expressive/Receptive language not delayed
- Normal intelligence
- Later symptom onset

Diagnostic Evaluation:

Differential Diagnosis

Schizophrenia

- Years of normal/near normal development
- Symptoms of hallucinations/delusions

Selective Mutism

- Normal language in certain situations or settings
- No restricted patterns of behavior

Language Disorder

- No severe impairment of social interactions
- No restricted patterns of behavior

Diagnostic Evaluation:

Differential Diagnosis

ADHD

- Distractible inattention related to external (not internal) stimuli
- Deterioration in attention and vigilance over time

Mental Retardation

- Relative to developmental level, social interactions are not severely impaired
- No restricted patterns of behavior

OCD

- Normal language/communication skills
- Normal social skills

Reactive Attachment Disorder

- History of severe neglect and/or abuse
- Social deficits dramatically remit in response to environmental change

Diagnostic Evaluation:

Health & Developmental Histories

Health history

- Prenatal and perinatal risk factors
 - Greater maternal age
 - Maternal infections
 - Measles, Mumps, & Rubella
 - Influenza
 - Cytomegalovirus
 - Herpes, Syphilis, HIV
 - Drug exposure
 - Obstetric suboptimality

Diagnostic Evaluation:

Health & Developmental Histories

Health history

- Postnatal risk factors
 - Infection
 - Case studies have documented sudden onset of ASD symptoms in older children after herpes encephalitis.
 - Infections that can result in secondary hydrocephalus, such as meningitis, have also been implicated in the etiology of ASD.
 - Common viral illnesses in the first 18 months of life (e.g., mumps, chickenpox, fever of unknown origin, and ear infection) have been associated with ASD.
 - Chemical exposure?
 - MMR?

Diagnostic Evaluation:

Health & Developmental Histories

- Developmental Milestones
 - Language development
 - Concerns about a hearing loss
 - Social development
 - Atypical play
 - Lack of social interest
 - Regression

Diagnostic Evaluation:

Health & Developmental Histories

- Medical History
 - Vision and hearing
 - Chronic ear infections (and tube placement)
 - Immune dysfunction (e.g., frequent infections)
 - Autoimmune disorders (e.g., thyroid problems, arthritis, rashes)
 - Allergy history (e.g., to foods or environmental triggers)
 - Gastrointestinal symptoms (e.g., diarrhea, constipation, bloating, abdominal pain)

Diagnostic Evaluation:

Health & Developmental Histories

- Diagnostic History
 - ASD is sometimes observed in association other neurological or general medical conditions.
 - Mental Retardation (up to 80%)
 - Epilepsy (3-30%)
 - May develop in adolescence
 - EEG abnormalities common even in the absence of seizures
 - Genetic Disorders
 - 10-20% of ASD have a neurodevelopmental genetic syndrome
 - Tuberous Sclerosis (found in 2-4% of children with ASD)
 - Fragile X Syndrome (found in 2-8% of children with ASD)

Diagnostic Evaluation:

Health & Developmental Histories

- Family History
 - Epilepsy
 - Mental Retardation
 - Genetic Conditions
 - Tuberous Sclerosis Complex
 - Fragile X Syndrome
 - Schizophrenia
 - Anxiety
 - Depression
 - Bipolar disorder
 - Other genetic condition or chromosomal abnormality

Diagnostic Evaluation

- Indirect Assessment
 - Interviews and Questionnaires/Rating Scales
 - Easier to obtain
 - Reflect behavior across settings
 - Subject to interviewee/rater bias
- Direct Assessment
 - Behavioral Observations
 - Can be more difficult and time consuming to obtain
 - Reflect behavior within limited settings/times
 - Not subject to interviewee/rater bias

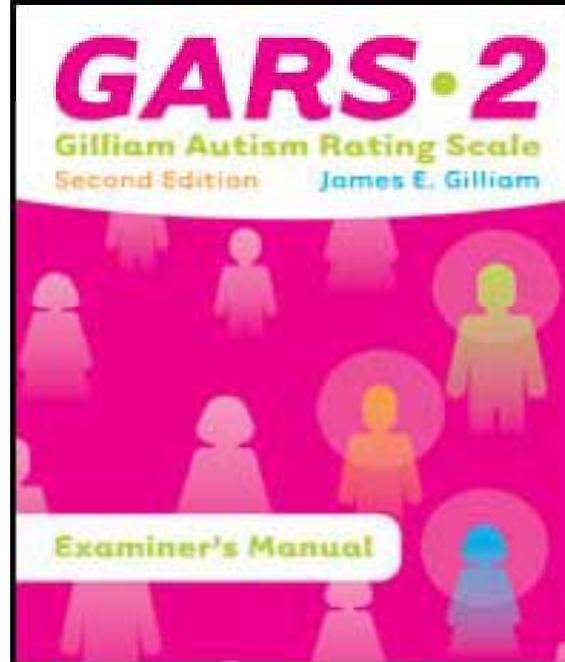
Diagnostic Evaluation

- **Indirect ASD Interview/Rating Scale Measures**
 - Gilliam Autism Rating Scale-2 (GARS)
 - Autism Behavior Checklist (ABC)
 - Asperger Syndrome Diagnostic Scale (ASDS)
 - Autism Diagnostic Interview-Revised (ADI-R)
- **Direct ASD Observational Measures:**
 - Childhood Autism Rating Scales (CARS)
 - Autism Diagnostic Observation Schedule (ADOS)

Diagnostic Evaluation:

Indirect Assessment

- The *Gilliam Autism Rating Scale 2nd ED.*
Gilliam, J. E. (2005). *Gilliam autism rating scale* (2nd ed.).
Austin, TX: Pro-Ed.

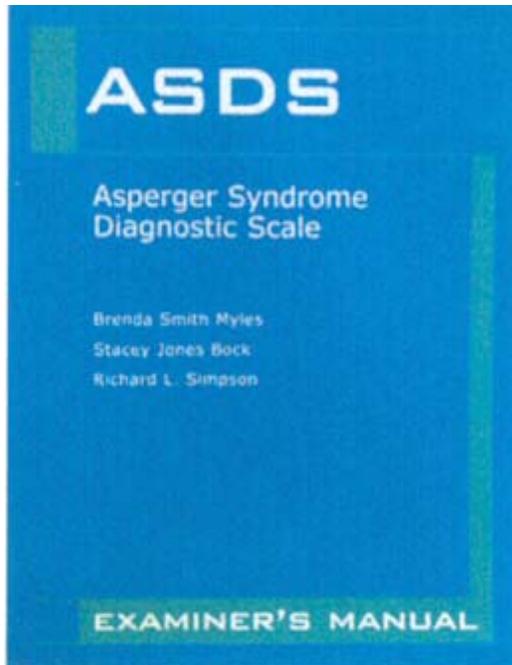


Diagnostic Evaluation: Indirect Assessment

- **The *Gilliam Autism Rating Scale, 2nd Ed. (GARS-2)***
 - New normative group: 1,107 individuals ages 3 to 22 reported to have autism
 - 42 items, 3 Subscales and an Autism Index (AI) Score
 - Subscales: Social Interaction, Communication, and Stereotyped Behaviors assess current behavior
 - A structured parent interview form replaces the Early Development subscale to investigate parent perceptions and observations.
 - GARS-2 items have been rewritten for clarity and operationally defined in manual.
 - New guidelines for interpreting scales and index.
 - Includes “Instructional Objectives for Children Who Have Autism” to use GARS-2 for developing goals.

Diagnostic Evaluation: Indirect Assessment

- The *Asperger Syndrome Diagnostic Scale* (ASDS)



ASDS				Section I. Identifying Information					
Asperger Syndrome Diagnostic Scale				Student's Name _____					
Summary/Response Form				Address _____					
				Date tested: Year _____ Month _____ Day _____					
				Date of Birth: _____					
				Age: _____					
				School: _____					
				Parents/Guardians' Names: _____					
				Examiner's Name: _____					
				Examiner's Title: _____					
				Rater's Name: _____					
Section II. Score Summary				Section IV. Profile of Scores					
Subscales	Raw Score	Standard Score	%ile	ASDS Subscales					
Language	_____	_____	_____	Autism	ASD	Autism Spectrum	ASD	Autism Spectrum	ASD
Social	_____	_____	_____	Autism	ASD	Autism Spectrum	ASD	Autism Spectrum	ASD
Maladaptive	_____	_____	_____	Autism	ASD	Autism Spectrum	ASD	Autism Spectrum	ASD
Cognitive	_____	_____	_____	Autism	ASD	Autism Spectrum	ASD	Autism Spectrum	ASD
Sensorymotor	_____	_____	_____	Autism	ASD	Autism Spectrum	ASD	Autism Spectrum	ASD
Total Raw Score	_____	_____	_____	Autism	ASD	Autism Spectrum	ASD	Autism Spectrum	ASD
Asperger Syndrome Quotient _____									
Section III. ASQ Interpretation Guide									
Asperger Syndrome Quotient	Probability of Asperger Syndrome								
>110	Very Likely								
90-110	Likely								
80-89	Possibly								
70-79	Unlikely								
<69	Very Unlikely								
				Additional copies of this form (ASDS) may be purchased from PRO-ED, 6700 Snell Creek Blvd., Austin, TX 78757-6897, 800/997-3202, fax 800/997-7433, www.proedinc.com					
Copyright © 2001 by PRO-ED, Inc. 1 2 3 4 5 04 03 02 01 00				1					

Diagnostic Evaluation:

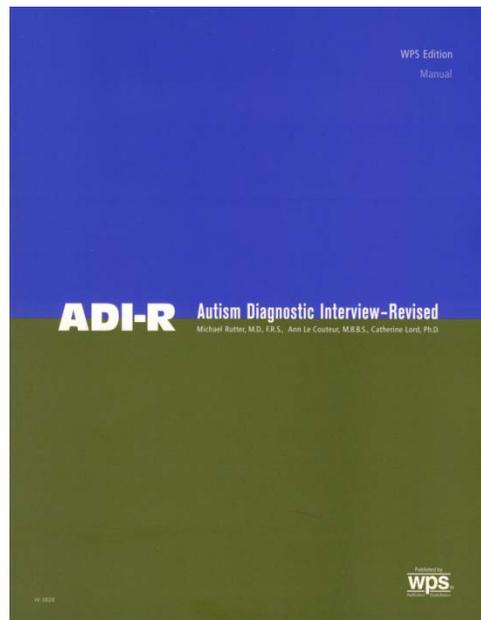
Indirect Assessment

- The *Asperger Syndrome Diagnostic Scale (ASDS)*
 - Age range 5-18.
 - 50 yes/no items.
 - 10 to 15 minutes.
 - Normed on 227 persons with Asperger Syndrome, autism, learning disabilities, behavior disorders and ADHD.
 - ASQs are classified on an ordinal scale ranging from “Very Low” to “Very High” probability of Asperger’s Disorder. A score of 90 or above specifies that the child is “Likely” to “Very Likely” to have Asperger’s Disorder.

Diagnostic Evaluation:

Indirect Assessment

- The *Autism Diagnostic Interview-Revised (ADI-R)*
 - Rutter, M., Le Couteur, A., & Lord, C. (2003). *Autism diagnostic interview-revised (ADI-R)*. Los Angeles, CA: Western Psychological Services.



Diagnostic Evaluation:

Indirect Assessment

- The *Autism Diagnostic Interview-Revised* (ADI-R)
 - Semi-structured interview
 - Designed to elicit the information needed to diagnose autism.
 - Primary focus is on the three core domains of autism (i.e., language/communication; reciprocal social interactions; and restricted, repetitive, and stereotyped behaviors and interests).
 - Requires a trained interviewer and caregiver familiar with both the developmental history and the current behavior of the child.
 - The individual being assessed must have a developmental level of at least two years.

Diagnostic Evaluation: Indirect Assessment

- The *Autism Diagnostic Interview-Revised* (ADI-R)
 - The 93 items that comprise this measure takes approximately 90 to 150 minutes to administer.
 - Solid psychometric properties.
 - Works very well for differentiation of ASD from nonautistic developmental disorders in clinically referred groups, provided that the mental age is above 2 years.
 - False positives very rare,
 - Reported to work well for the identification of Asperger's Disorder.
 - However, it may not do so as well among children under 4 years of age.
 - According to Klinger and Renner (2000): “The diagnostic interview that yields the most reliable and valid diagnosis of autism is the *ADI-R*” (p. 481).

Diagnostic Evaluation:

Direct Assessment

- The *Autism Diagnostic Observation Schedule* (ADOS)
 - Lord, C., Rutter, M., Di Lavore, P. C., & Risis, S. *Autism diagnostic observation schedule*. Los Angeles, CA: Western Psychological Services.



Diagnostic Evaluation:

Direct Assessment

- A standardized, semi-structured, interactive play assessment of social behavior.
 - Uses “planned social occasions” to facilitate observation of the social, communication, and play or imaginative use of material behaviors related to the diagnosis of ASD.
- Consists of four modules.
 - Module 1 for individuals who are preverbal or who speak in single words.
 - Module 2 for those who speak in phrases.
 - Module 3 for children and adolescents with fluent speech.
 - Module 4 for adolescents and adults with fluent speech.

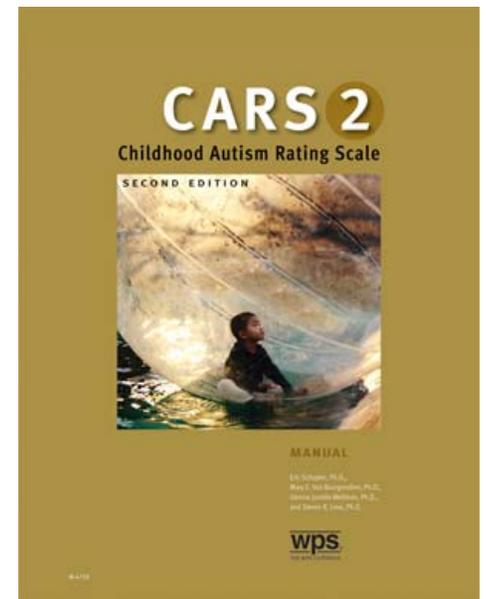
Diagnostic Evaluation:

Direct Assessment

- Administration requires 30 to 45 minutes.
- Because its primary goal is accurate diagnosis, the authors suggest that it may not be a good measure of treatment effectiveness or developmental growth (especially in the later modules).
- Psychometric data indicates substantial interrater and test-retest reliability for individual items, and excellent interrater reliability within domains and internal consistency.
- Mean test scores were found to consistently differentiate ASD and non-ASD groups.

Diagnostic Evaluation: Direct Assessment

- The *Childhood Autism Rating Scale, 2nd ed. (CARS2)*
 - Schopler, E., Van Bourgondien, M. E., Wellman, G. J., & Love, S. R. (2010). *The Childhood Autism Rating Scale (CARS)*. Los Angeles, CA: Western Psychological Services.



Diagnostic Evaluation:

Direct Assessment

- Consists of two 15-item rating scales completed by the practitioner and a Parent/Caregiver Questionnaire.
 - The Standard Version Rating Booklet (CARS2-ST) used with children younger than 6 years of age and those with communication difficulties or below-average cognitive ability. 15 items duplicate those on the original CARS.
 - The High-Functioning Version Rating Booklet (CARS2-HF) is used for assessing verbally fluent children and youth, 6 years of age and older, with average or above IQ. 15 items reflect characteristics of higher functioning autism.
 - The Questionnaire for Parents or Caregivers (CARS2-QPC) is an unscored questionnaire designed to obtain pertinent developmental information from parents or caregivers.

Workshop Outline

- Introduction
- Case Finding
- Screening
- Diagnostic Evaluation
- Psycho-educational Evaluation (Treatment)
 - Testing Accommodations
 - Behavioral Observations
 - Specific Tests
 - Psycho-educational Report Recommendations

Psycho-educational Evaluation: Testing Accommodations



- The core deficits of autism can significantly impact test performance.
 - Impairments in communication may make it difficult to respond to verbal test items and/or generate difficulty understanding the directions that accompany nonverbal tests.
 - Impairments in social relations may result in difficulty establishing the necessary joint attention.
- Examiners must constantly assess the degree to which tests being used reflect symptoms of autism and not the specific targeted abilities (e.g., intelligence, achievement, psychological processes).

Psycho-educational Evaluation: Testing Accommodations

- It is important to acknowledge that the autistic population is very heterogeneous.
- There is no one set of accommodations that will work for every student with autism.
- It is important to consider each student as an individual and to select specific accommodations to meet specific individual student needs.

Psycho-educational Evaluation: Testing Accommodations

- Prepare the student for the testing experience.
- Place the testing session in the student's daily schedule.
- Minimize distractions.
- Make use of pre-established physical structures and work systems.
- Make use of powerful external rewards.
- Carefully pre-select task difficulty.
- Modify test administration and allow nonstandard responses.

Psycho-educational Evaluation:

Behavioral Observations

- Students with ASD are a very heterogeneous group, and in addition to the core features of ASD, it is not unusual for them to display a range of behavioral symptoms including hyperactivity short attention span impulsivity, aggressiveness, self-injurious behavior, and (particularly in young children) temper tantrums.
- Observation of the student with ASD in typical environments will also facilitate the evaluation of test taking behavior.
- Observation of test taking behavior may also help to document the core features of autism.

Psycho-educational Evaluation:

Specific Tests

Choice of Assessment Instruments

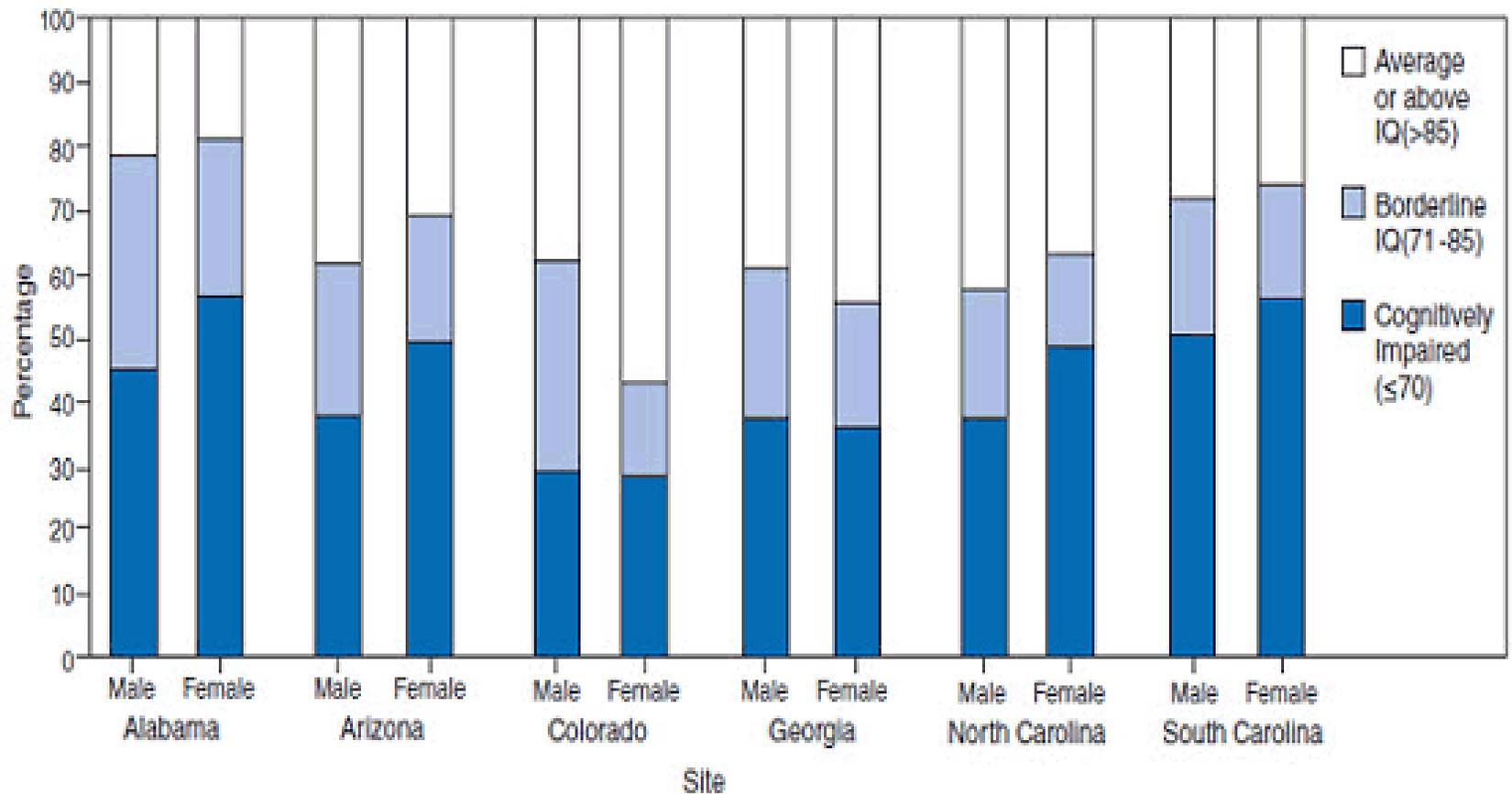
- Child's level of verbal abilities.
- Ability to respond to complex instructions and social expectations.
- Ability to work rapidly.
- Ability to cope with transitions during test activities.
- In general, children with autism will often perform best when assessed with tests that require less social engagement and verbal mediation.

Psycho-educational Evaluation: Specific Tests

Cognitive Functioning

- Assessment of cognitive function is essential given that, with the exception of Asperger's Disorder, a significant percentage of students with ASD will also be mentally retarded.
- Severity of mental retardation can also provide some guidance regarding differential diagnosis among ASDs.
- IQ is associated with adaptive functioning, the ability to learn and acquire new skills, and long-term prognosis.
 - Thus, level of cognitive functioning has implications for determining how restrictive the educational environment will need to be.

IQs of Children Aged 8 with ASD



Psycho-educational Evaluation: Specific Tests

Cognitive Functioning

- A powerful predictor of ASD symptom severity.
- However, given that children with ASD are ideally first evaluated when they are very young, it is important to acknowledge that it is not until age 5 that childhood IQ correlates highly with adult IQ.
 - Thus, it is important to treat the IQ scores of the very young child with caution when offering a prognosis, and when making placement and program planning decisions.
 - However, for school aged children it is clear that the appropriate IQ test is an “...excellent predictor of a student’s later adjustment and functioning in real life” (Frith, 1989, p. 84).

Psycho-educational Evaluation: Specific Tests

Cognitive Functioning

- Regardless of the overall level of cognitive functioning, it is not unusual for the student being tested to display an uneven profile of cognitive abilities.
- Thus, rather than simply providing an overall global intelligence test score, it is essential to identify these cognitive strengths and weaknesses.
- At the same time, however, it is important to avoid the temptation to generalize from isolated or “splinter” skills when forming an overall impression of cognitive functioning, given that such skills may significantly overestimate typical abilities.

Psycho-educational Evaluation: Specific Tests

Cognitive Functioning

- Selection of specific tests is important to obtaining a valid assessment of cognitive functioning (and not the challenges that are characteristic of ASD).
- The *Wechsler* and *Stanford-Binet* scales are appropriate for the individual with spoken language.

Psycho-educational Evaluation: Specific Tests

Cognitive Functioning

- On the other hand, for students who have more severe language delays measures that minimize verbal demands are recommended (e.g., the *Leiter International Performance Scale – Revised*, *Raven Coloured Progressive Matrices*)

Psycho-educational Evaluation: Specific Tests

Functional/Adaptive Behavior

- Given that diagnosing mental retardation requires examination of both IQ and adaptive behavior, it is also important to administer measures of adaptive behavior when assessing students with ASD.
- Other uses of adaptive behavior scales when assessing students with ASD are:
 - a) Obtain measure of child's typical functioning in familiar environments, e.g. home and/or school.
 - b) Target areas for skills acquisition.
 - c) Identifying strengths and weaknesses for educational planning and intervention
 - d) Documenting intervention efficacy
 - e) Monitoring progress over time.

Psycho-educational Evaluation: Specific Tests

Functional/Adaptive Behavior

- Profiles of students with ASD are unique.
 - Individuals with only mental retardation typically display flat profiles across adaptive behavior domains
 - Students with ASD might be expected to display relative strengths in daily living skills, relative weaknesses in socialization skills, and intermediate scores on measures of communication abilities.
- To facilitate the use of the *Vineland Adaptive Behavior Scales* in the assessment of individuals with ASD, Carter et al. (1998) have provided special norms for groups of individuals with autism

Psycho-educational Evaluation:

Specific Tests

Functional/Adaptive Behavior

- Other tools with subtests for assessing functional/adaptive behaviors:
 - Brigance Inventory of Early Development.
 - Early Learning Accomplishment Profiles.
 - Scales of Independent Behavior-Revised.
 - AAMD Adaptive Behavior Scale.
 - Learning Accomplishments Profile.
 - Developmental Play Assessment Instrument.

Psycho-educational Evaluation:

Specific Tests

Social Functioning

- Tools that provide an overview of social functioning (i.e., social needs and current repertoire)
 - Vineland Adaptive Behavior Scales.
 - Scales of Independent Behavior-Revised.
- More specific information may be obtained from:
 - Preschool curriculum assessments that contain social subscales.
 - Battelle Developmental Inventory.
 - Learning Accomplishment Profile.
 - Michigan Scales.
 - Assessment, Evaluation, and Programming System.

Psycho-educational Evaluation: Specific Tests

Language Functioning

- *Peabody Picture Vocabulary Test – Third Edition*
- *Expressive One-Word Picture Vocabulary Test*
 - When interpreting the results of such measures, it is important to keep in mind that these tests may overestimate language abilities as they do not require sentence production or comprehension, nor do they assess social language or pragmatics.
 - Also, in many higher functioning students with ASD receptive language may be lower than expressive language.

Psycho-educational Evaluation: Specific Tests

Psychological Processes

- Helps to further identify learning strengths and weakness.
- Depending upon age and developmental level, traditional measures of such processes may be appropriate.
- It would not be surprising to find relatively strong rote, mechanical, and visual-spatial processes; and deficient higher-order conceptual processes, such as abstract reasoning.
- While IQ test profiles should never be used for diagnostic purposes, it would not be surprising to find the student with Autistic Disorder to perform better on non-verbal (visual/spatial) tasks than tasks that require verbal comprehension and expression.
 - The student with Asperger's Disorder may display the exact opposite profile.

Psycho-educational Evaluation: Specific Tests

Academic Achievement

- Assessment of academic functioning will often reveal a profile of strengths and weaknesses.
 - It is not unusual for students with ASD be hyperverbal/hyperlexic, while at the same time having poor comprehension and difficulties with abstract language. For others, calculation skills may be well developed, while mathematical concepts are delayed.
- For students functioning at or below the preschool range and with a chronological age of 6 months to 7 years, the *Psychoeducational Profile – Revised* may be an appropriate choice.
- For older, higher functioning students, the *Woodcock-Johnson Tests of Achievement* and the *Wechsler Individual Achievement Test* would be appropriate tools.

Psycho-educational Evaluation: Specific Tests

Emotional Functioning

- 65% present with symptoms of an additional psychiatric disorder such as AD/HD, oppositional defiant disorder, obsessive-compulsive disorder and other anxiety disorders, tics disorders, affective disorders, and psychotic disorders.
- Given these possibilities, it will also be important for the school psychologist to evaluate the student's emotional/behavioral status.
- Traditional measures such as the *Behavioral Assessment System for Children* would be appropriate as a general purpose screening tool, while more specific measures such as *The Children's Depression Inventory* and the *Revised Children's Manifest Anxiety Scale* would be appropriate for assessing more specific presenting concerns.

Psycho-educational Evaluation:

Psycho-Educational Report Recommendations

- From a review of the literature we have identified interventions often recommended when addressing some of the specific challenges associated with these disorders.
- The slides that follow offer some of these recommendations (along with the accompanying background information) that we feel you might find useful when writing a psycho-educational report.
- It is important to acknowledge that without a careful assessment of specific student needs this information will not be relevant.
- However, following a comprehensive psycho-educational evaluation, and the identification of specific student needs, this information will be helpful in stimulating thinking about appropriate psycho-educational report recommendations for the student with autism.

Psycho-educational Evaluation:

Psycho-Educational Report Recommendations

- ***If the student is challenged by social situations, then the following intervention and support recommendations might be appropriate:***

Psycho-educational Evaluation:

Psycho-Educational Report Recommendations

- Provide interpretation of social situations as indicated. Specifically, the following are suggested:
 - Make use of social stories.™
 - A social story is a short story that explains a specific challenging social situation. The goal is to find out what is happening in a situation and why.

Psycho-educational Evaluation:

Psycho-Educational Report Recommendations

- The following is an example of a social story:

When Other Students Get Upset

Sometimes other students get upset and cry. When this happens their teacher might try to help them. The teacher might try to help them by talking to them or holding them. This is okay.

Sometimes when other students get upset and cry, it makes me upset and angry. I can use words to tell my teacher that I am upset. I can say, "That makes me mad!" or "I'm upset!" It is okay to use words about how I feel. When I get upset I will try to use words about how I feel.

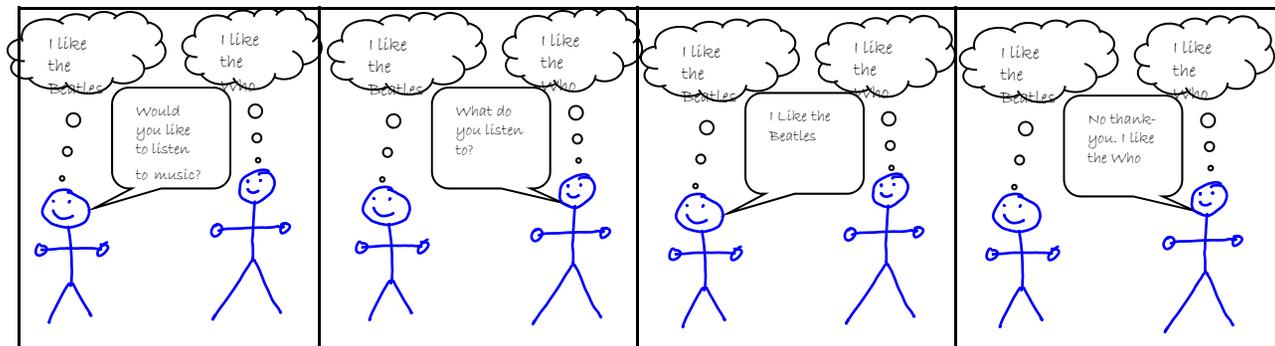
Psycho-educational Evaluation:

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- For more information about social stories go to
 - <http://www.thegraycenter.org/>
 - <http://www.polyxo.com/socialstories/introduction.html>
- A variety of sample stories can be found at
 - http://www.frsd.k12.nj.us/autistic/Social%20Stories/social_stories.htm

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- Use cartooning to illustrate the rules of challenging social situations.
- For example, ...



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- Explain problematic social situations and in doing so let _____ know that there are specific choices to be made and that each choice has a specific consequence. Specific steps in this process are as follows:
 - Help the _____ understand the problematic social situation (i.e., who was involved, what happened, etc.)
 - Facilitate _____'s brainstorming of options for responding to the situation.
 - Help _____ explore the consequences for each option identified.
 - Help _____ identify the response that has the most desirable consequences.
 - Develop and action plan.
 - Practice the response to the problematic social situation by role playing, visualizing, writing a plan or talking it out with a peer.

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- To address _____'s difficulty making friends, the following interventions are recommended:
 - Establish structured activities with peers. These activities should have pre-assigned roles that can be practiced.
 - Provide direct instruction on how to approach an individual or group.
 - Provide direct instruction on the skills needed to interact with peers.
 - Structure social opportunities around _____'s special interests

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- After a challenging social situation conduct a “social autopsy.” Such a conversation involves an examination and inspection of _____’s social errors to discover their causes, better understand the consequences of such errors, and to decide what can be done to prevent it from happening again.

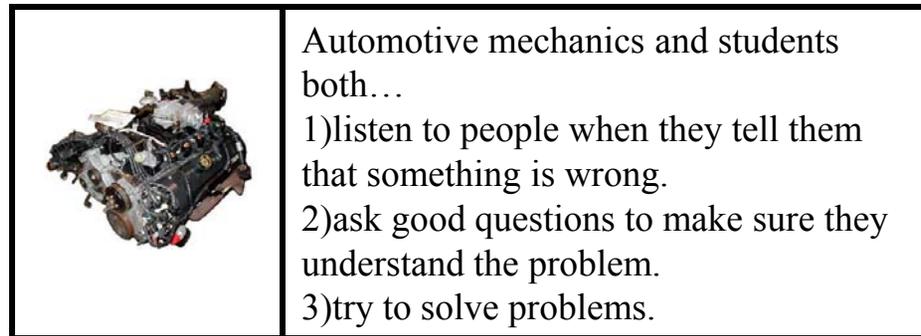
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- Identify specific social conventions that need to be taught and then provide direct instruction. Examples, of social conventions that _____ may need to be taught include the following (**LIST SPECIFIC SOCIAL RULES THAT ASSESSMENT DATA SUGGESTS TO BE PROBLEMATIC. EXAMPLES FOLLOS**):
 - “Do not ask to be invited to someone’s party
 - Do not correct someone’s grammar when he or she is angry.
 - Never break laws – no matter what your reason.
 - Do not touch someone’s hair even if you think it is pretty.
 - Do not ask friends to do things that will get them in trouble.
 - Do not draw violent scenes.
 - Do not sit in a chair that someone else is sitting in – even if it is ‘your’ chair.
 - Do not tell someone you want to get to know better that he or she has bad breath.”

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- Make use of _____ 's special interests to develop “power cards” that facilitate understanding of social rules. **(TRY TO LINK THE STUDENTS SPECIAL INTERESTS TO PROBLEMATIC SOCIAL SITUATIONS.)** For example, make use of _____ 's interest in automotive mechanics and provide him/her with the following card that can be placed on his/her desk and/or placed in his/her pocket.



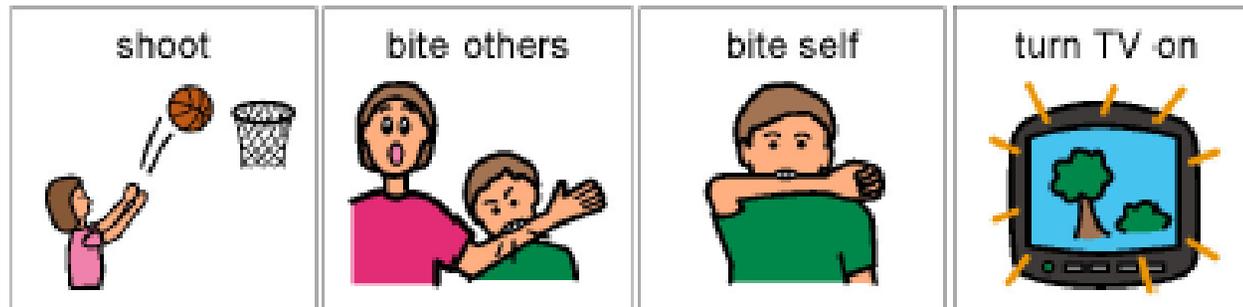
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- *If the student has difficulties with expressive language, then the following might be appropriate:*

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- Consider making use of a Picture Exchange Communication System (PECS).
- PECS is a picture based communication system where the student gives a picture or symbol of a desired item in exchange for the item itself.
- The intent of PECS is to assist the student in developing spontaneous communication. The following are examples of PECS symbols:



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- Sample PECS IEP objectives can be found at www.pecs.com/Brochures/Objectives/IEP%20Objectives%202002.pdf
- PECS pictures and photos can be found at
- www.childrenwithspecialneeds.com/downloads/pecs.html
- Blank PECS image grids, and daily and weekly picture card schedule forms
- www.do2learn.com/picturecards/forms/index.htm

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- For more information about PECS go to
 - http://www.bbbautism.com/pecs_contents.htm
 - <http://www.polyxo.com/visualsupport/pecs.html>
 - <http://www.usd.edu/cd/autism/topicpages/printer/PECS.pdf>
 - <http://www.nas.org.uk/nas/jsp/polopoly.jsp?d=297&a=3642&view=print>
 - http://www.iidc.indiana.edu/irca/communication/Whatis_thePEC.html

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- Specific PECS cards should include the following (**AS INDICATED BY ASSESSMENT DATA**):
 - “Break” Cards that assist _____ in communicating when he/she needs to escape a task or situation.
 - “Choice” cards that provide _____ some control by indicating a choice from a prearranged set of possibilities
 - “All done” cards that assist _____ in communicating when he/she is finished with an activity or task.
 - “Turn-taking” cards that can be used to visually represent and mark whose turn it is.
 - “Wait” cards that can be used to visually teach the concept of waiting.
 - “Help” cards that assist in teaching _____ to raise his/her hand to indicate the need for assistance.

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- *If disruptive behavior problems are present, then following might be appropriate:*

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- Functional behavioral assessment is recommended.

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- Students with autism frequently engage in disruptive behaviors to escape demands and gain or maintain access to perseverative items and activities. Thus, the focus of any functional assessment should include special attention to perseverative behaviors that might serve to obtain desirable sensory stimuli.

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- Students with autism also frequently engage in disruptive behaviors to escape aversive sensory stimuli. Thus, the focus of any functional assessment should also direct attention to perseverative behaviors that might serve to escape from aversive sensory stimuli.

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- ***If disruptive behavior problems are present and known to be related to perseverative activities, then following might be appropriate:***
 - Identify and decrease environmental and/or physiological conditions that are related to perseverative behavior.
 - Determine if the behavior is an attempt to avoid aversive sensory stimulation or a strategy to obtain desirable sensory stimulation.

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- ***If a student needs predictability (e.g., becomes anxious when new materials/activities are introduced), then the following might be appropriate:***
 - Employ “priming.” This involves showing the actual instructional materials that will be used in a lesson the day, evening, or morning before the given classroom activity is going to take place. Priming should be brief (10 to 15 minutes) and built into _____’s daily schedule and should take place in a relaxing environment.

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- ***If disruptive behaviors appear to be related to anxiety and/or a desire to avoid aversive sensory stimulation, then the following might be appropriate:***
 - The problem (perseverative) behaviors appear to have a calming or organizing effect and might be related to anxiety. Thus, the following strategies are recommended as they appear to reduce anxiety (and in doing so may decrease the need for the perseverative behaviors):
 - Establish predictable routines
 - Use visual schedules to facilitate coping with change
 - Practice alternative coping behaviors such as relaxation

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- ***If disruptive behaviors appear to be related to obtaining desirable sensory stimulation, then the following might be appropriate:***
 - The problem (perseverative) behaviors appear to be positively reinforcing. Thus, the following strategies are recommended:
 - Provide appropriate access to the desired sensory stimulation on a regular basis. Provide instruction on how to appropriately obtain the desired stimuli. This will decrease the need to engage in behaviors that have as their function obtaining the stimuli.
 - Providing contingent access to the desired sensory stimulation may be used as a positive reinforcer for the completion of instructional tasks.

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- ***If the student has weaknesses in social, language, attention, organizational, transitioning, and auditory processing, then the following might be appropriate:***
 - The instructional program should center on an _____'s strengths (TYPICALLY ROTE MEMORY AND VISUAL PROCESSING), special interests, and needs. It may include the following:
 - Visual schedules that depict the student's daily routine
 - Work systems
 - Calendars to help the student understand when regularly scheduled events may occur
 - To facilitate transitions, make use of visual cues that forewarn the student when something is going to end, stop or be all done. This assists in transitions.
 - Place classroom rules in a visual form on the student's desk.

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- ***If a student has reading fluency and/or comprehension difficulties, then the following might be appropriate:***
 - Highlighted text
 - Study guides

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- ***If a student has written expression (e.g., handwriting) difficulties, then the following might be appropriate:***
 - When assessing _____'s content knowledge allow for verbal, instead of written responses.
 - When completing written assignments allow _____ to use the computer instead of pen or pencil.
 - Multiple-choice tests can be used instead of short answer to assess subject matter knowledge
 - Allow _____ to create projects, rather than producing written reports.

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- ***If a student has difficulty with note taking, then the following might be appropriate:***
 - Provide _____ with a complete outline including the main idea and supporting details.
 - Provide _____ with a skeletal outline that he/she can use to fill in details.

Treatments

- **Behavior and Communication Approaches**
 - **Applied Behavior Analysis (ABA):**
 - Discrete Trial Training (DTT)
 - Early Intensive Behavioral Intervention (EIBI)
 - Pivotal Response Training (PRT)
 - Verbal Behavior Intervention (VBI)

Treatments

- **Behavior and Communication Approaches**
 - **Other therapies that can be part of an ASD treatment program include:**
 - Developmental, Individual Differences, Relationship-Based Approach (DIR; also called “Floortime”)
 - Treatment and Education of Autistic and related Communication-handicapped CHildren (TEACCH)
 - Occupational Therapy
 - Sensory Integration Therapy
 - Speech Therapy
 - The Picture Exchange Communication System (PECS)

Treatments

- **Dietary Approaches?**
- **Medication?**
- **Complementary and Alternative Treatments?**

Treatment

- CDE Program Quality Indicators
 - <http://www.cde.state.co.us/cdesped/download/pdf/AutismQualityIndicators.pdf>

The Identification, Assessment, and Treatment of Autism at School

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