Identifying & Screening Autism at School

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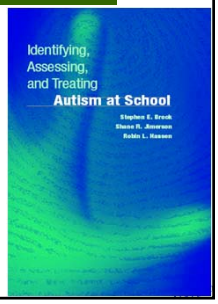
SACRAMENTO STATE

Acknowledgement

Adapted from…

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



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How Much do Know About Autism?

- A CDC Quiz
- 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

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Lecture Outline

- Introduction: Reasons for Increased Vigilance
- Diagnostic Classifications and Special Education Eligibility
- School Psychologist Roles, Responsibilities, and Limitations
- Case Finding
- Screening and Referral

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).

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Introduction:
Reasons for Increased Vigilance

- Autism can be identified early in development,

  and…

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

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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.

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Source: Rice (2007) http://www.cdc.gov/ncbddd/autism/data.html

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 %)

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Source: Yeargin-Allsopp et al. (2003)

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.

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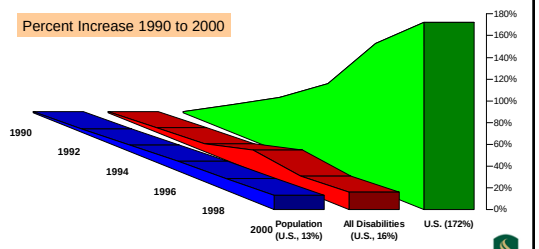
Introduction:
Epidemiology (General Population)



Source: Autism Society of America (2003)

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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.

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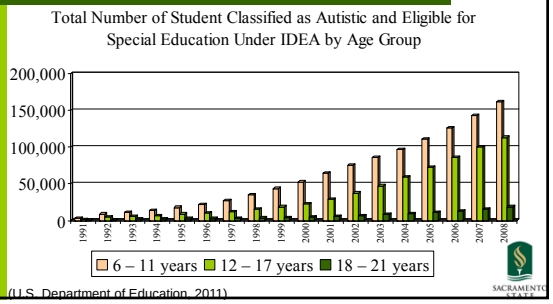
Introduction:
Epidemiology (Special Education)



(U.S. Department of Education, 2011)

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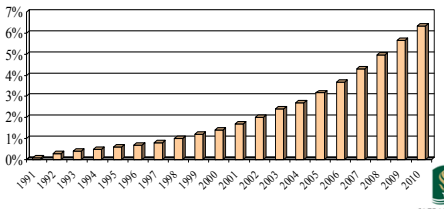
Introduction:
Epidemiology (Special Education)

Student Classified as Autistic Under IDEA as a Percentage of all Students with Disabilities: 1991 to 2010



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(U.S. Department of Education, 2011, https://www.ideadata.org/PartBData.asp)

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.

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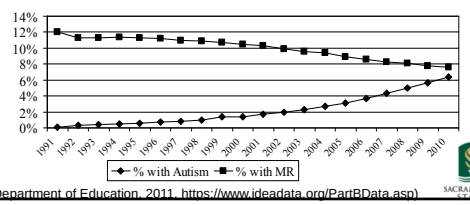
Brock, S. E. (2006). An examination of the changing rates of autism in special educa... *The California School Psychologist, 11,* 31-39.

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)



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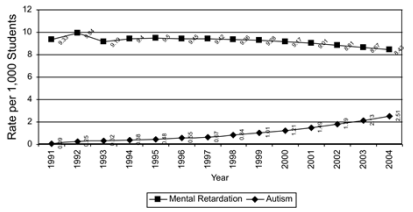
(U.S. Department of Education, 2011, https://www.ideadata.org/PartBData.asp)

Introduction:
Epidemiology (Special Education)

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



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(Brock, 2006)

Available: http://education.ucsb.edu/school-psychology/CSP-Journal/index.html

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

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Introduction:
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(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

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Available: http://education.ucsb.edu/school-psychology/CSP-Journal/index.html

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

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

Reasons for Increased Vigilance

- Autism can be identified early in development, and…
- Early intervention is an important determinant of the course of autism.

Reasons for Increased Vigilance

- Not all cases of autism will be identified before school entry.
  - Average Age of Autistic Disorder identification is 5 1/2 years of age.
  - Average Age of Asperger's Disorder identification is 11 years of age Howlin and Asgharian (1999).

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.
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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.

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Evolution of the Term "Autism"

- First used by Swiss psychiatrist Eugen Bleuler in 1911.
  - Derived from the Greek *autos* (self) and *ismos* (condition), Bleuler used the term to describe the concept of "turning inward on ones self" and applied it to adults with schizophrenia.
- In 1943 Leo Kanner first used the term "infantile autism" to describe a group of children who were socially isolated, were behaviorally inflexible, and who had impaired communication.
- Initially viewed as a consequence of poor parenting, it was not until the 1960's, and recognition of the fact that many of these children had epilepsy, that the disorder began to be viewed as having a neurological basis.

Evolution of the Term "Autism"

- In 1980, infantile autism was first included in the third edition of the *Diagnostic and Statistical Manual* (DSM), within the category of Pervasive Developmental Disorders.
- Also occurring at about this time was a growing awareness that Kranner's autism (also referred to a classic autism) is the most extreme form of a spectrum of autistic disorders.
- Autistic Disorder is the contemporary classification used since the revision of *DSM*'s third edition (APA, 1987).

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*.

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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).

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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.

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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)?

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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.)"

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

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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#

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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."

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

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Diagnostic vs. Special Education Classifications

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."

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Special Education Eligibility Current California Regulations

- CA Autism Classification
  - Title 5, CCR 3030(g):
    - *A pupil exhibits **any combination** of the following autistic-like behaviors, **to include but not limited to**: (1) an inability to use oral language for appropriate communication; (2) a history of extreme withdrawal or relating to people inappropriately and continued impairment in social interaction from infancy through early childhood; (3) an obsession to maintain sameness; (4) extreme preoccupation with objects or inappropriate use of objects or both; (5) extreme resistance to controls; (6) displays peculiar motoric mannerisms and motility patterns; (7) self-stimulating, ritualistic behavior.*

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.

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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.

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Legal Information

- For additional information…
- http://www.wrightslaw.com/info/autism.index.htm

Lecture Outline

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- Screening and Referral

School Psychologist Roles, Responsibilities, and Limitations

1. School psychologists need to be more vigilant for symptoms of autism among the students that they serve, and better prepared to assist in the process of identifying these disorders.

School Psychologist Roles, Responsibilities, and Limitations

2. Case Finding
   - ***All school 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.

School Psychologist Roles, Responsibilities, and Limitations

3. 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.***
4. Diagnosis
   - Only those school psychologists with appropriate training and supervision should diagnose a specific autism spectrum disorder.

School Psychologist Roles, Responsibilities, and Limitations

5. Special Education Eligibility
   - **All school psychologists should be expected to conduct the psycho-educational evaluation that is a part of the diagnostic process and that determines educational needs.**
   - **NOTE:**
     - **The ability to conduct such assessments will require school psychologists to be knowledgeable of the accommodations necessary to obtain valid test results when working with the child who has an ASD.**

Lecture Outline

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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]

Sources: [a]Filipek et al., 1999; [b]Greenspan, 1999; and [c]Ozonoff, 2003.

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: [a]Filipek et al., 1999; [b]Greenspan, 1999; and [c]Ozonoff, 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)

Sources: 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 Apserger 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.)

Sources: 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 Apserger 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

Sources: 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 Apserger Syndrome Diagnostic Scale* (Myles, Bock and Simpson, 2000)

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 regulations [see 17 CCR 52040(b)(7)]. Giving teachers the information they need to look for ASD (such as is presented in this workshop) 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)?

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

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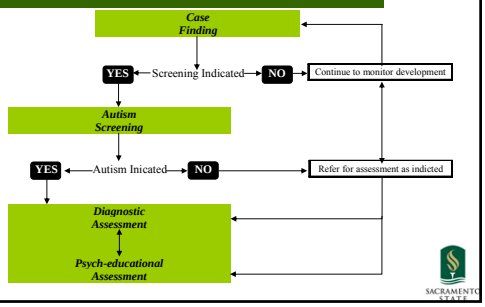
- Screening and Referral

Adaptation of Filpek et al.'s (1999) Algorithm for the Process of Diagnosing Autism



Screening and Referral

- Screening is designed to help determine the need for additional diagnostic assessments.
- In addition to the behavioral screening (which at school should typically be provided by the school psychologist), screening should include medical testing (lead screening) and a complete audiological evaluation.

Behavioral Screening for ASD

- 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.

Behavioral Screening of Infants and Preschoolers

- *CHecklist for Autism in Toddlers* (CHAT)
  - Baron-Cohen, S., Allen, J., & Gillberg, C. (1992). Can autism be detected at 18 months? The needle, the haystack, and the CHAT. *British Journal of Psychiatry, 161,* 839-43.
  - Baron-Cohen, S., Cox, A., Baird, G., Swettenham. J., Nightingale, N., Morgan, K., Drew, A., & Charman, T. (1996). Psychological markers in the detection of autism in infancy in a large population. *British Journal of Psychiatry, 168,* 158-163.

Behavioral Screening of Infants and Preschoolers

- *CHecklist for Autism in Toddlers* (CHAT)
  - Baird, G., Charman, T., Baron-Cohen, S., Cox, A., Swettenham, J., Wheelwright, S., & Drew, A. (2000). A screening instrument for autism at 18 months of age: A 6-year follow-up study. *Journal of the American Academy of Child and Adolescent Psychiatry, 39,* 694-702.
  - Baron-Cohen, S., Wheelwright, S., Cox, A., Baird, G., Charman, T., Swettenham, J., Drew, A., Coehring, P. (2000). Early identification of autism by the CHecklist for Autism in Toddlers (CHAT). *Journal of the Royal Society of Medicine, 93,* 521-525.

Behavioral Screening of Infants and 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.

CHecklist for Autism in Toddlers

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

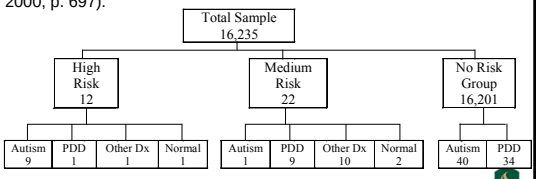
From Baron-Cohen et al (1996, p. 159).

CHecklist for Autism in Toddlers

CHAT Section B: general practitioner or health visitor observation	
i. During the appointment, has the child made eye contact with you?	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
* 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. † If you can elicit an example of pretending in some other game, score a Yes on this item. ‡ 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.	
Scoring: ☐ High risk for Autism: Fails A5, A7, Bii, Biii, and Biv ☐ Medium risk for autism group. Fails A7, Biv (but not in maximum risk group) ☐ 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).



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CHecklist for Autism in Toddlers

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

Behavioral Screening of Infants and Preschoolers

- *Modified Checklist for Autism in Toddlers* (M-CHAT)
  - Robins, D. L., Fein, D., Barton, M. L., & Green, J. A. (2001). The modified checklist for autism in toddlers: An initial study investigating the early detection of autism and pervasive developmental disorders. *Journal of Autism and Developmental Disorders, 31,* 131-144.

Behavioral Screening of Infants and 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.

Behavioral Screening of Infants and 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.

Modified Checklist for Autism in Toddlers

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

Robins et al. (2001, p. 142)

Modified Checklist for Autism in Toddlers

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

Robins et al. (2001, p. 142)

Modified Checklist for Autism in Toddlers

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	

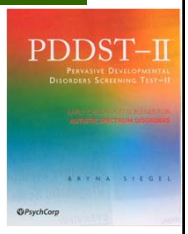
Robins et al. (2001)

Modified Checklist for Autism in Toddlers

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

Behavioral Screening of Infants and Preschoolers

- *Pervasive Developmental Disorders Screening Test - II* (PDDST-II)
  - Siegel, B. (2004). Available from PsychCorp.



Behavioral Screening of Infants and 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 indicted.

Behavioral Screening of Infants and 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.

Behavioral Screening of Infants and 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
PDD-II: Stage 1	.89	.84

Behavioral Screening of School Age Children

- *Autism Spectrum Screening Questionnaire* (ASSQ)
  - Ehlers, S., Gillberg, G., & Wing, L. (1999). A screening questionnaire for Asperger syndrome and other high functioning autism spectrum disorders in school age children. *Journal of Autism and Developmental Disorders, 29,* 129-141.

Behavioral Screening of School Age Children

- *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).

Behavioral Screening of School Age Children

- *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.

Autism Spectrum Screening Questionnaire

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 and 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

Behavioral Screening of School Age Children

- *Childhood Asperger Syndrome Test* (CAST)
  - Scott, F. A., Baron-Cohen, S., Bolton, P., & Brayne, C. (2002). The CAST (Childhood Asperger Syndrome Test). *Autism, 6,* 9-31.
    - 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

Childhood Asperger Syndrome Test

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 5 years old, did s/her spend a lot of time pretending (e.g. play-acting begin a superhero, or holding a teddy/dolls 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 interests 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)

Childhood Asperger Syndrome Test

17. Does s/he enjoy joking around?	YES	NO
18. Does s/he have difficulty understanding the rules for polite behaviour?	YES	NO
19. Does s/he appear to have an unusual memory for details?	YES	NO
20. Is his/her voice unusual (e.g., over-fly 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 rigid/or stereotypic mannerisms?	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 (loudly) what s/he means (IQ)	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 bore the listener but none of us1 explaining what s/he is talking about?	YES	NO
33. Can s/he ride a bicycle (even if with stabilisers)?	YES	NO
34. Does s/he try to impose routines on him/herself, or on others, in such a way that is 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 conversation to his/her favorite subject rather than following what s/he other person wants to talk about?	YES	NO
37. Does s/he have odd or unusual phrases?	YES	NO

From Scott et al. (2002, pp. 27-28)

Childhood Asperger Syndrome Test

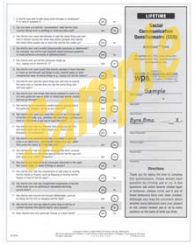
http://www.autismresearchcentre.com/tests/cast_test.asp

Behavioral Screening of School Age Children

- *Social Communication Questionnaire* (SCQ)
  - Berument, S. K., Rutter, M., Lord, C., Pickles, A., & Bailey, A. (1999). Autism screening questionnaire: Diagnostic Validity. *British Journal of Psychiatry, 175,* 444-451.
  - Rutter, M., LeCouteur, A., & Lord, C. (2003). *Social Communication Questionnaire*. Los Angeles, CA: Western Psychological Services.

Behavioral Screening of School Age Children

- *Social Communication Questionnaire* (SCQ)



Behavioral Screening of School Age Children

- *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.

Behavioral Screening of School Age Children

- *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.

Behavioral Screening of School Age Children

- *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.

ASD Video Glossary

- http://www.autismspeaks.org/video/glossary.php
  - An innovative web-based tool designed to help parents and professionals learn more about the early red flags and diagnostic features of autism spectrum disorders (ASD).
  - This glossary contains over a hundred video clips and is available to you free of charge. Whether you are a parent, family member, friend, physician, clinician, childcare provider, or educator, it can help you see the subtle differences between typical and delayed development in young children and spot the early red flags for ASD.
  - All of the children featured in the ASD Video Glossary as having red flags for ASD are, in fact, diagnosed with ASD.

Next Week

- Read Brock et al. (2006), Chapters 5-7.
- Recommended Reading:
  - Thomas & Grimes, Chapter 94.
- Autism group project/lecture due.