Autism Spectrum Disorders (ASD)

- Complex neurobiological disorders
- Range of developmental problems
- Lifelong condition
- Involves triad of symptoms
- ASD includes Autism, Pervasive Developmental Disorder, Asperger’s syndrome, Rett’s syndrome, Childhood Disintegrative Disorder

Key Definitions (DSM-IV-TR)

- Autism
  - Onset before age 3 years
  - Qualitative impairments in three core areas
    - Communication (gestures, words)
    - Social Interactions (joint attention)
    - Interests and activities (symbolic play)
  - 50-70% have MR
  - Prevalence 4 of every 1,000
Key Definitions (DSM-IV-TR)

• Pervasive Developmental Disorder, NOS
  - Unusual development in core areas of communication, or social interactions, or interests/attention
  - Does not meet criteria for any of the other ASD
  - Often occurs with cognitive impairment
  - Prevalence 1 in every 1,000

Key Definitions (DSM-IV-TR)

• Asperger’s syndrome
  - Qualitative impairment in social interaction
  - Restricted, repetitive patterns of behavior, interest and activities
  - No obvious delays in language (single words by 12 months, 2-words by age 2, phrases by age 3)
  - No clinically significant delays in cognitive or adaptive functioning
  - Appear clumsy
  - Prevalence 2.5 in every 1,000 individuals

Key Definitions (DSM-IV-TR)

• Rett’s Disorder
  - Normal development first 5-18 months
  - Normal head circumference at birth, deceleration between 5 and 48 months
  - Loss of hand skills, then stereotypical hand movements
  - Loss of social engagement, language, motor skills
  - X-linked MeCP2 gene
  - Prevalence 1:15,000 live female births
### Key Definitions (DSM-IV-TR)

- **Childhood Disintegrative Disorder**
  - Normal development first 2 years
  - Loss of acquired skills by age 10
    - Language/IQ
    - Bowel and bladder
    - Play
    - Motor skills
  - IQ moderate to profound MR
  - Emergence of stereotypic behaviors
  - Prevalence 1: 100,000 individuals

### Features of ASD

- Prevalence ASD 1:150 children
  - Autism 4 per 1,000
  - PDD and Asperger's 1-2 per 1,000
- 3 to 4 times more common in boys
- Genetic factors thought to underlie ASD's
- Severity of symptoms varies
- Prognosis varies
- No known cures

### ASD Signs and Symptoms

- Symptoms present in three crucial areas
  - Communication
  - Social skills
  - Behavior/Play
- Development may seem normal first few months or years of life
- Symptoms and skills vary among children with same diagnosis
Red Flags: Communication

- No babbling by 12 months
- No pointing by 12 months
- No single words by 16 months
- No 2-word spontaneous phrases by 24 months
- Speaks with abnormal rhythm or tone
- Can't start a conversation or keep it going
- May repeat certain words or phrases but doesn't use them appropriately
- Loses ability to say words

Red Flags: Social Skills

- No smiling by 6 months
- No imitation facial expressions by 9 months
- Fails to respond to own name at 12 months
- Has poor eye contact
- Appears not to hear you
- Resists cuddling and holding
- Appears unaware of other’s feelings
- Seems to prefer to play alone
- Retreats into "own" world

Red Flags: Behavior

- Performs repetitive movements: rocking, spinning, hand flapping
- Develops specific routines or rituals
- Becomes disturbed with slight changes in routines or rituals
- Moves constantly
- Fascinated with parts of objects
- May be unusually sensitive to light, noise, or touching
ASD and Learning Problems

- Majority have academic deficits
- Poor coping skills and problem-solving
- Communication problems
- Concrete thoughts
- Attention problems
- Challenging behaviors
- Most will need some assistance as adults
- Less than 5% have genius-like abilities

ASD and Mental Health Disorders

- Shared symptoms
  - ADHD
  - Anxiety
  - Bipolar
  - Depression
  - OCD
  - Mental Retardation

ASD and Medical Disorders

- Shared symptoms and genetics
  - Epilepsy
  - Fragile X
  - Tuberous sclerosis
  - Tourette’s syndrome
  - Prader-Willi
  - Angelman’s syndrome
Causes of ASD

- No single, identifiable cause
- Seems to be related to abnormalities in several areas of brain
- Environmental factors, e.g. viruses may trigger symptoms
- Structural (anatomic, cellular)
- Genetic component
  - Identical twins 60%
  - Siblings 6-8%
  - Other family members 2%

Genetic Investigation

- As many as 12 genes may be involved (NIH, 2005)
  - HOX genes (brain stem and cerebellum)
  - Chromosome 7 (AUTS1-speech and language disorders)
  - Chromosome 13 (families with ASD)
  - Chromosome 15 (Angelman and Prader-Willie)
  - Chromosome 16 (seizures and tuberous sclerosis)
  - Chromosome 17 (problems with serotonin, OCD)
  - X Chromosome (46 chromosomes: XX, XY)

ASD Myths

- Parents/parenting styles cause ASD
- Vaccines containing thimerosal (mercury) cause ASD
- More white children affected
- Children grow out of ASD
- One proven approach (e.g. ABA, Floor Time)
- Dietary changes will cure core symptoms
**Components of ASD Diagnosis**

- Hearing evaluation
- Developmental assessment
  - Levels of performance in 5 domains
  - ASD specific tools
- Developmental history
  - Address core features of ASD
  - Health history
- Speech and language
  - Form, content, and pragmatics

**Specialized ASD Tools**

- Caregiver report and observational measures
  - Autism Diagnostic Observation Schedule (ADOS)
  - Child Autism Rating Scale (CARS)
  - Child Behavior Checklist (CBCL)
  - Gilliam Autism Rating Scale (GARS-2)
  - Gilliam Asperger’s Disorders Scale (GADS)

**Medical Tests**

- Electroencephalogram (EEG)
- Metabolic Screening (blood & urine)
  - Lead screening
- Magnetic Resonance Imaging (MRI)
- Computer Assisted Axial Tomography (CAT Scan)
- Genetics (FISH)
Evidence-Based Interventions

- Educational interventions
  - Behavioral Approaches
    - Positive Behavior Support (e.g. HOT DOCS®)
    - Discrete Trials (Applied behavior analysis)
    - TEACCH Program
  - Speech and language (e.g. Hanen)
  - Social skills training (e.g. Social Stories)
  - Early relationships (e.g. Greenspan's Floor time)

Pharmacological Interventions

- No medications address core features of ASD
  - Anti-infection medication (sinuses, fungal, bacteria)
  - Antipsychotics (Risperidone*)
  - Stimulants-off label only
  - Sleep aides-off label only
  - SSRIs-off label only
  - Anticonvulsants-off label only

Non-Evidenced Based, Complementary Approaches

- Detoxification
- Dietary modifications
- Nutritional supplements
- Herbal medications
- Hyperbaric Oxygen (HBOT)
- Sensory Integration Therapy
- Auditory Integration Therapy
- Music Therapy
- Facilitated communication
- Others...
Effectiveness of Intervention for Children with ASD

- What works more often opinion than evidence
- Belief that particular intervention can change outcomes
- Many individuals already receiving multiple treatments (eclectic approach)
- Difficulty in transferring intervention from research to practice setting

Evidence-base for ASD Interventions

- Interventions work best for:
  - Higher functioning children
  - Children with less severe behavioral symptoms
  - Children who begin intervention early (<60 months)
  - 25 hours per week of engagement
  - Intervention across natural settings
  - Multiple methods used

Issues Related to Early Intervention

- Dilemma in early identification
  - Children identified early show less severe symptoms compared with those identified later
  - Children flagged early for ASD may not meet criteria later on
    - Changes in natural course?
    - Result of early intervention?
    - Misidentified?
Health Care Providers' Role

- What is my role as a provider of infant mental health services?
  - M-CHAT (18 month & 24 month visit)*
- Referral for formal evaluation (IDEA, 2004)
  - Early Steps (0-3)
  - Child Find Public Schools (3-21)
  - FDLRS
  - http://www.paec.org/fdlrsweb/childfind.htm

- Ongoing care management

HOT DOCS®


- Here, you will find annotated web sites of organizations, programs, and educational/legal issues related to Autism Spectrum Disorders.

Thank you!!!!

Kathleen Armstrong, Ph.D., NCSP
J.C. Smith, MS
Division of Child Development
Department of Pediatrics
College of Medicine
University of South Florida
karmstro@health.usf.edu
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 dolls, 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 you something?  
   Yes  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

12. Does your child smile in response to your face or your smile?  
    Yes  No

13. Does your child imitate you? (e.g., you make a face - will your child imitate it?)  
    Yes  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?  
    Yes  No

23. Does your child look at your face to check your reaction when faced with something unfamiliar?  
    Yes  No

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