

Developmental Disorders

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Developmental Disorders

- Two levels of diagnosis:
 - Description of the problem
 - Autism, CP, MR, LD, etc
 - Cause of the problem
 - Down syndrome, Fragile X, FAS, etc.

Developmental Disorders

- Mental Retardation
- Cerebral Palsy
- Autism
- ADHD
- Learning Disabilities

Mental Retardation

Significantly subaverage general intellectual functioning coexisting with significant delays in adaptive function, occurring during the developmental period.

Mental Retardation

- Educational term = Cognitive Disabilities (CD)
- Euphemism = Global Developmental Delay

Mental Retardation

- By definition of tests, 3% of population
- Diagnosis made by someone who gives standardized tests (child psychologist, school psychologist)
- Physicians can raise the possibility or explain tests to parents, but rarely can they make a diagnosis of MR.
- CANNOT be "eyeballed" by a clinician

Levels of MR

Level	IQ	-SD<Mean
Mild	55-70	-2-3SD
Moderate	40-55	-3-4SD
Severe	25-40	-4-5SD
Profound	<25	>-5SD

- ### Errors and Myths about MR
- You can tell by the spark in the eye
 - Can underestimate:
 - Children with motor impairments
 - Children who are dysmorphic
 - Children with poor social skills
 - Can overestimate:
 - Children who are attractive
 - Children whom you know personally
 - Children who have good social skills

Cerebral Palsy:

Difficulty with movement or posture due to injury to the developing brain.

- ### Cerebral Palsy
- 1/2000 children
 - Most have prenatal origin
 - Role of infection of increasing importance
 - 10% of premature babies <1500g
 - Best predictors:
 - Maternal SES
 - Maternal MR

- ### Associated Problems
- Mental Retardation
 - Learning Disabilities
 - ADHD
 - Sensory Impairments
 - Epilepsy
 - Strabismus
 - Orthopedic complications

- ### Diagnosing Cerebral Palsy
- Clinical impression based on:
 - Muscle tone (hyper or hypotonia)
 - Deep tendon reflexes (hyperreflexic)
 - Gross motor delays

Problems with Dx of CP

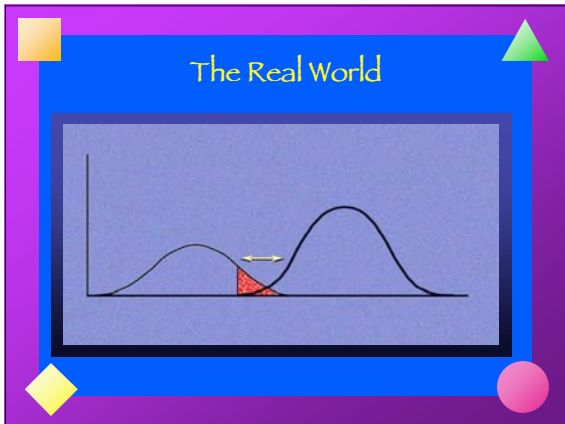
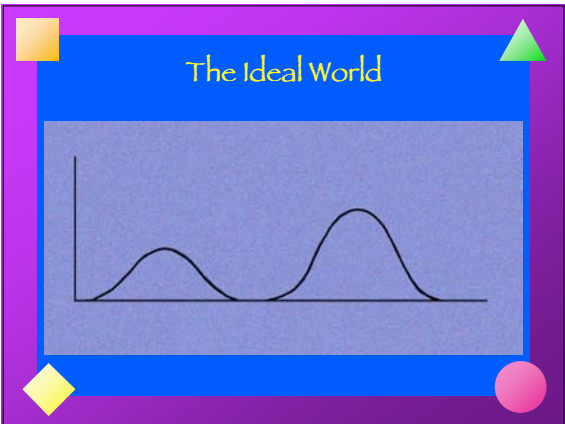
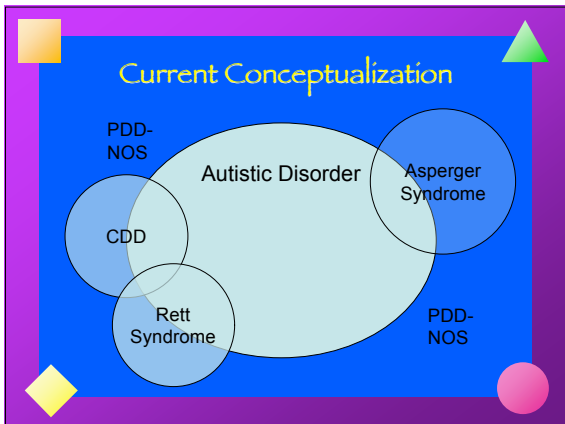
- Tone and reflexes can vary with state of infant
- Some of these findings are transient
- Can have normal MRI scan
 - Never diagnose or predict based on scan
- Some wait until 2 years to diagnose

Types of Cerebral Palsy

- Spastic (upper motor neuron)
 - Diplegia
 - Quadriplegia
 - Hemiplegia
- Hypotonic (be careful!)
- Ataxic (cerebellar)
- Extrapyramidal (basal ganglia)

Autism:

Difficulty with reciprocal social interactions, verbal and nonverbal communication and is associated with unusual or repetitive behaviors. Signs should be present before 3 years of age for autistic disorder.



Autism Diagnosis

- Another clinical impression
- Audiology essential, BUT...
- Developmental history
- Developmental testing (0-3 reports)
- Interactions with the child
 - Try to elicit reciprocal social interactions
 - Use of ADOS

Medical evaluation

- Audiology, if not done
- Chromosomes with fragile X DNA
- Lead level, if mouthing present
- Imaging for micro or macrocephaly
- No other required testing, unless clinical indications

Myths About Autism

- He can't have autism because:
 - He made eye contact with his mom
 - He hugged his mom.
 - He's so smart.
 - He has an imagination.
 - He made eye contact with me.

Learning Disabilities:
Difficulty with a particular aspect of learning, in the context of normal or near-normal intelligence.

Learning Disabilities

- Classic LD is dyslexia
 - Although thought of as a reading disorder, also involves language and phonemic awareness
- Nonverbal LD
 - Overlap with Asperger Syndrome
- Educationally, other types
 - Dysgraphia, dyscalculia, language LD

ADHD

- Problems with impulsivity, hyperactivity and inattention
- Also thought of as deficits in "executive function"
- Prefrontal cortex involved

Types of ADHD

- Hyperactive/Impulsive
- Inattentive
- Combined

ADHD-H/I

- General agreement on validity
- 70-90% responsive to stimulants
- More consistent CNS findings
- High prevalence in:
 - FAS
 - Very premature babies
 - Children whose parents have ADHD
- Stable prevalence, 2-3% of children

ADHD-Inattentive

- Lack of consensus
- Represents rapid increase in #s
- Everything that can make a child inattentive--
VERY DIFFICULT diagnosis
 - LD/CD
 - Mood disorders
 - Abuse
 - Psychosocial stressors

Developmental Disorders

- Mental Retardation--cognitive
- Cerebral Palsy--motor
- Autism--social, language
- ADHD--executive functions
- Learning Disabilities--specific difficulty

Developmental Screening

- The Denver is DEAD as screener.
- Parental concern is the best "flag."
- Select tests for your purpose.
- Primary care use of PEDS and CDR
- Once you have developmental test results, you are past screening level.

Interviewing Families

- What services does your child receive?
 - 0-3, ECP, OT, PT, S/L? Public/private?
- What is hard for your child to do?
- What are your child's strengths?
 - What does your child do that is like other children her age?
 - Given your knowledge of other children, what age do you think your child's skills are at today?
- What do you hope for?
 - Parent's perception of future

Important Milestones

- One year olds
 - Take first steps
 - Say first single words
 - Point with index finger
- Two year olds
 - Put 2 words together flexibly
 - Jump off 2 feet

Important Milestones

- Three year olds
 - Copy a circle
 - Make 3 word sentences
 - Pedal a 3-wheeled trike
- Four year olds
 - Know 4 prepositions
 - Have friends
 - Ask questions, have conversations

Role of Developmental Peds

- Clarify developmental profile
 - Developmental diagnostics
- Behavioral problem solving
- Interface for family among other medical subspecialties and therapies
- Follow-up of high-risk populations
- Teach medical trainees