The Evaluation of a Child with Developmental Delay

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Developmental Spheres

- Gross motor
- Fine motor
- Language
- Cognitive

Developmental milestones are the cornerstone of the developmental history and allow the clinician to identify delay or confirm normality.


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Variations of Development

- Developmental delay—refers to a significant lag in one or more areas of development
- Developmental dissociation—there is a discrepancy between the developmental rates of two streams of development, with one stream significantly more delayed
- Developmental deviance—there is nonsequential unevenness in the achievement of milestones within one or more streams of development


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Developmental Surveillance

- Physician elicits and monitors parental concerns by obtaining a developmental history
- Developmental milestones monitored at each well-child visit
- Developmental screening used to identify children who might need more comprehensive assessment


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Developmental Screening

- **Informal screening (direct observation of child)**

- **Formal screening (parent-completed questionnaires, check-lists, direct examination of the child)**

- **Screening tests are not used to make a diagnosis**

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Examples of Screening Tests

- Bayley Infant Neurodevelopmental Screener (BINS)—3-24 months
- Checklist for Autism in Toddlers (CHAT)—18-36 months
- Denver II—0-6 years
- Parents Evaluation of Developmental Status (PEDS)—0-8 years
Developmental Delay or Mental Retardation?

- Global developmental delay—defined as significant delay in 2 or more developmental domains (gross/fine motor, speech/language, cognition, social/personal, and activities of daily living)
- Significant delay—defined as performance 2 standard deviations or more below the mean on age-appropriate, standardized norm-referenced testing
- Global developmental delay usually applied to younger children, whereas mental retardation is usually applied to older children when IQ testing is more valid


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Mental Retardation

Diagnostic Criteria for Mental Retardation:
A. Significantly subaverage intellectual functioning: an IQ of approximately 70 or below on an individually administered IQ test (for infants, a clinical judgment of significantly subaverage intellectual functioning).

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B. Concurrent deficits or impairments in present adaptive functioning (i.e., the person’s effectiveness in meeting the standards expected for his or her age by his or her cultural group) in at least two of the following areas: communication, self-care, home living, social/interpersonal skills, use of community resources, self-direction, functional academic skills, work, leisure, health, and safety.
Mental Retardation

c. The onset is before 18 years.

Mild Mental Retardation: IQ 50-55 to 70
Moderate Mental Retardation: IQ 35-40 to 50-55
Severe Mental Retardation: IQ 20-25 to 35-40
Profound Mental Retardation: IQ below 20-25

Prevalence of Mental Retardation

- Approximately 1% of the population has mental retardation.
- Mental retardation is more common in:
  -- older children (>6 years)
  -- boys
  -- African-American children (cultural bias of test material)

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Etiology of Mental Retardation

Hereditary Disorders:

- inborn errors of metabolism—PKU, Tay-Sachs disease, Hurler syndrome
- single gene abnormalities—neurofibromatosis, tuberous sclerosis
- chromosomal aberrations—fragile X syndrome, Down syndrome, translocations, microdeletions
Etiology of Mental Retardation

- Acquired Childhood Diseases
  - infection (meningitis, encephalitis)
  - cranial trauma (automobile accident, shaken baby syndrome)
  - other (asphyxiation, near drowning, intoxications)
Etiology of Mental Retardation

- Environmental Problems and Behavioral Syndromes:
  - psychosocial deprivation
  - emotional and behavioral disorders
  - autism
  - childhood psychosis
Evaluation of a Child with Developmental Delay/Mental Retardation

- Complete history, physical, and neurological examination
- Metabolic studies (urine amino acids, serum organic acids, serum ammonia and lactate levels)
- Routine chromosome analysis
- High resolution chromosome analysis
- Molecular screening for subtelomeric chromosomal rearrangements (FISH)
Evaluation of a Child with Developmental Delay/Mental Retardation

- DNA for fragile X testing
- MECP 2 (Rett syndrome)
- EEG (if history or findings on physical exam suggest epilepsy)
- MRI of brain
- Audiology evaluation
- Vision assessment

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Mental Retardation

- 85% of persons thought to have mental retardation (MR) are mildly retarded
- Disorders associated with MR:
  - seizure disorder (15-30%)
  - cerebral palsy (20-30%)
  - impairments of hearing and/or vision (10-20%)


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Comorbidity of Mental Illness and Mental Retardation

- Pervasive Developmental Disorder (PDD)
- Attention deficit hyperactivity disorder (ADHD)
- Conduct Disorder (CD)
- Tic Disorders
- Stereotypic Movement Disorder (self-stimulatory, nonfunctional, motor behaviors)
- Schizophrenia and other Psychotic Disorders


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Comorbidity of Mental Illness and Mental Retardation

- Mood Disorders
- Anxiety Disorder
- Posttraumatic Stress Disorder (PTSD)
- Obsessive-Compulsive Disorder (OCD)
- Eating Disorders
- Personality Disorders


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Treatment of Children with Developmental Delay/Mental Retardation

- Treatment is supportive
- Children 0-3 years:
  - develop individual family service plan (IFSP)
  - enroll in Early Intervention (EI) through local regional center
  - provide supportive services: physical therapy (PT), occupational therapy (OT), speech and language (S/L)
Children greater than 3 years:
- transition from IFSP to school-based services and provide an individualized education plan (IEP)
- continue PT, OT, S/L as needed
Treatment of Children with Developmental Delay/Mental Retardation

- Children 16 years of age and older
  - provide a Transitional Services Outcome Plan
- Treat medical conditions as needed (seizures, metabolic disorders, etc.)
- Address mental health issues
  - psychotherapy
  - medication

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Resources

- **The Arc of the United States**
  1010 Wayne Avenue, Suite 650
  Silver Spring, MD 20910
  301.565.3842
  [www.thearc.org](http://www.thearc.org)

- **American Association on Mental Retardation (AAMR)**
  444 North Capitol Street NW, Suite 846
  Washington, DC 20001-1512
  202.387.1968; 800.424.3688 (outside DC)
  [www.aamr.org](http://www.aamr.org)

- **Division on Developmental Disabilities**
  The Council for Exceptional Children
  1110 North Glebe Road, Suite 300
  Arlington, VA 22201-5704
  888.232.7733; 703.620.3660
  866.915.5000 TTY
  [www.dddcec.org](http://www.dddcec.org)
Resources

- **National Dissemination Center for Children with Disabilities (NICHCY)**
  P.O. Box 1492
  Washington, DC 20013
  (800) 695-0285 · v/tty
  (202) 884-8441 · fax
  www.nichcy.org (can look up resources by state)

- **California Assistive Technology Systems (CATS)**
  California Department of Rehabilitation
  2000 Evergreen
  P. O. Box 944222
  Sacramento, CA 94244-2220
  Project Director: Richard Devylder
  Phone: 916-274-6325
  TTY: 916-263-8685
  Fax: 916-263-7472
  www.atnet.org/resources/about_cats.htm

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