

Developmental Retardation



Dr. Roosy Aulakh
Assistant Professor
Gmch-32

Evaluation of Development



- Prerequisites
- Equipment
- Steps

Development Quotient



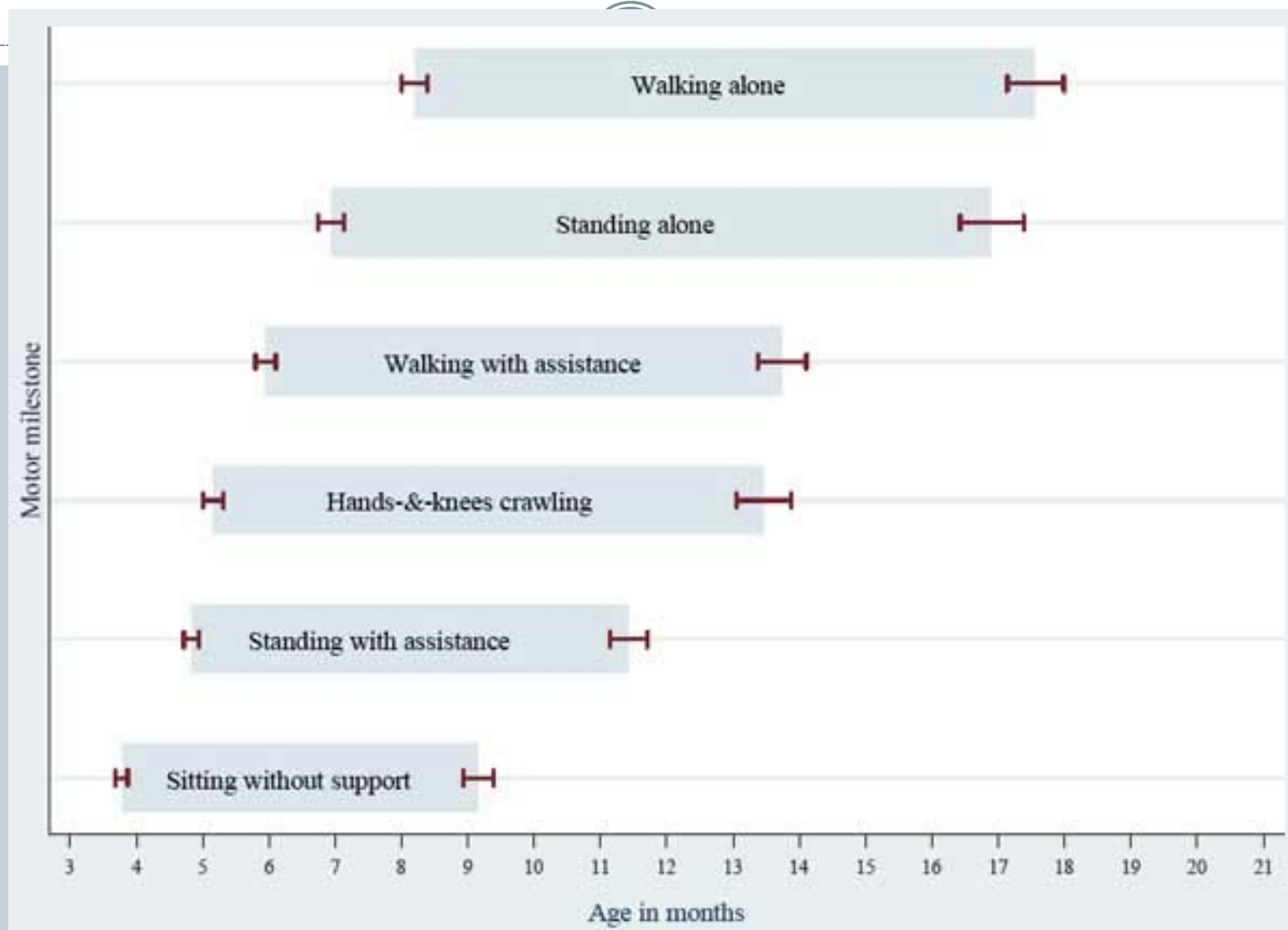
$DQ = \text{Avg age of attainment} / \text{Obs age of attainment} \times 100$

Developmental Assessment



- Calculate DQ
- Corrected age vs postnatal age
- Dissociation
- Delay vs Regression
- Normal range of developmental milestones

WHO Motor Development Milestones



Red Flag Signs in Child Development



Milestone	Age
No visual fixation or following	2 months
No vocalization	6 months
Not sitting without support	9-10 months
Not standing alone	16 months
Not walking alone	18 months
No single words	18 months
Lack of imaginative play	3 years
Loss of comprehension, single words, phrases	Any age

Developmental Screening



Brief assessment procedure designed to identify children who undergo more detailed evaluation

Developmental Surveillance



Repeated observations on development made by skilled caregiver over time to see rate & pattern of development

Screening Tools



- **Phatak's Baroda Screening Test**
- **Denver Development Screening Test**
- **Trivandrum Development Screening Chart**
- **CAT/CLAMS**
- **Goodenough Harris Drawing Test**

Definitive Tests



- **Bayley Scale of Infant Development II**
- **Stanford Binet Intelligence Scale**
- **Wechsler Intelligence Scale for Children IV**
- **Vineland Adaptive Behavior Scales**
- **DAS II**

Learning Disabilities



- Arise from specific neurodevelopmental dysfunction that prevents expectable learning in one or more academic areas
- Unexpected in relation to overall intellectual functioning of the child
- Not because of GDD, major visual or hearing handicaps or major social & emotional stressors

Dyslexia



- **Commonest LD**
- **Difficulty with accurate and/or fluent word recognition and poor word spelling & decoding abilities**
- **Etiology: genetic (50%)**
- **Co-occur with ADHD in 15-40% children**

Case based approach



Case 1:

The parents of a 9-month old boy are concerned because he is unable to sit without support and speaks bisyllables only.

Impression

Isolated Motor Delay

Isolated Language Delay

Global Developmental Delay

Case based approach



Case 2:

The parents of a 16-month old boy are concerned because he cannot walk without support, can stand without support and doesn't speak any meaningful words.

Impression

Isolated Motor Delay

Isolated Language Delay

Global Developmental Delay

Case based approach



Case 3:

The parents of a 9-month old boy are concerned because he is unable to sit without support, does not actively reach for objects, and coos but does not babble.

Impression

Isolated Motor Delay

Isolated Language Delay

Global Developmental Delay

GDD: Etiology



Genetic causes:

- a. Metabolic disorders, i.e. storage diseases, PKU
- b. Down syndrome
- c. Fragile X
- d. Rett syndrome.
- e. DiGeorge syndrome
- g. Neurocutaneous syndromes
- h. Leukodystrophy

GDD: Etiology cont...



Acquired causes:

- a. Prenatal or perinatal causes:
 - i. Exposure to teratogens or toxins
 - ii. Intrapartum asphyxia
 - iii. Prematurity
 - iv. Congenital infections
 - v. Congenital hypothyroidism
 - vi. Intracranial hemorrhage

- b. Postnatal causes:
 - i. Infection (meningitis, encephalitis)
 - ii. Cranial trauma
 - iii. Environmental causes,

Evaluation of GDD



- **History**
- **Examination**
- **Investigations:**
 - a. Karyotyping
 - b. Fragile X testing (FMR1 triplet repeat analysis)
 - c. Rett syndrome testing
 - d. Fluorescence In Situ Hybridization (FISH)
 - e. Metabolic Screening
 - f. Neuroimaging
 - g. EEG

Evaluation cont...



- h. Thyroid screening**
- i. Visual & Hearing assessment**
- j. Lead levels**
- k. Autism/LD screening**

Treatment



- Treatment of underlying cause
- Multisensory & early stimulation
- Supportive therapy



Thank You