



# Diagnosis and Evaluation of Global Developmental Delay (GDD) and Intellectual Disability (IDD)

A systematic approach to assessment, screening, and management

## Child with suspected Developmental Delay / Intellectual Disability

### History + Developmental Surveillance + Physical Examination

- Prenatal, perinatal and postnatal history
- Family history
- Developmental history across all domains
- Neurological & physical examination

### ① Red Flag Signs

- |                  |                    |                  |                                    |
|------------------|--------------------|------------------|------------------------------------|
| <b>2 months</b>  | No visual fixation | <b>6 months</b>  | No vocalization                    |
| <b>10 months</b> | Not sitting        | <b>18 months</b> | Not walking alone                  |
| <b>18 months</b> | No single words    | <b>Any age</b>   | Loss of previously acquired skills |

If any red flag sign is present → proceed with evaluation

### GDD

Age < 5 years |  $\geq 2$  SD delay in  $\geq 2$  developmental domains

Domains: Gross motor • Fine motor • Speech/Language • Cognition • Social/Personal • Activities of Daily Living

### IDD

Age > 5 years | Deficits in intellectual function + Deficits in adaptive function

Onset must occur during the developmental period

Also: If delay < 2 domains → Isolated delay

### Screening Tools

ASQ-3\* | DDST-II\* | TDSC\*

### Non-risk Infants

- 9–12 months Routine screening
- 18–24 months Routine screening
- School entry Developmental review

### High-risk Infants

- 6-monthly Till 24 months
- Yearly Till 5 years
- Once At school entry

### ASD Screening

- 18–24 months GDD: primary screen
- 3 years If prior screen negative

### Etiology by Period

#### Prenatal

- Genetic (Down syndrome, Fragile X)
- CNS malformations
- Metabolic disorders
- Congenital infections
- Toxins/teratogens

#### Perinatal

- Hypoxic ischemic encephalopathy
- Prematurity
- CNS infections
- Metabolic disturbances

#### Postnatal

- Brain injury
- CNS infections
- Lead toxicity
- Nutritional deficiency
- Psychosocial deprivation

### Investigations

#### First-tier Investigations

- Hearing & vision assessment
- Chromosomal microarray (CMA)
- Fragile X testing
- Thyroid function tests
- Basic metabolic screening
- Creatine Kinase
- MRI Brain

#### Second-tier Investigations

- Whole exome sequencing (WES)
- Targeted gene panels
- Advanced metabolic tests
- EEG (if seizures or regression)

Identify underlying cause

Early intervention + Multidisciplinary management

\*ASQ: Ages and Stages Questionnaire

\*DDST: Denver Developmental Screening Test

\*TDSC: Trivandrum Developmental Screening Chart



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