

DEVELOPMENTAL ASSESSMENT

Development is the progressive, orderly, acquisition of skills and abilities as a child grows. It is influenced by genetic, neurological, physical, environmental and emotional factors.

Key Development Warning Signs

1. discrepant head size or crossing centile lines (too large or too small).
 2. persistence of primitive reflexes > 6 months of age
 3. no response to environment or parent by 12 months
 4. not walking by 18 months
 5. no clear spoken words by 18 months
 6. no two word sentences by 2 years
 7. problems with social interaction at 3 years
 8. congenital anomalies, odd facies
 9. any delay or failure to reach normal milestones
- parental concerns must always be taken seriously*

Important points to note:-

- child must be co-operative, not tired, fretful, hungry nor sick. Remember that a child may behave differently in an unfamiliar environment
- allowance must be made for prematurity up to two years.
- take note of parental account of what child can/cannot do. Note comments on abnormal gait, speech defects, etc.
- normal development is dependent on integrity of child's hearing and vision.
- normal pattern of speech and language development is essential for a normal social, intellectual and emotional development.
- delay in development may be global i.e. affecting all areas equally, or specific areas only e.g. oro-motor dysfunction causing speech delay.

ASSESSMENT OF CHILDREN WITH GLOBAL DEVELOPMENTAL DELAY

History

- consanguinity
- family history of developmental delay
- maternal drugs, alcohol, illness and infection in pregnancy
- prematurity, perinatal asphyxia
- severe neonatal jaundice, hypoglycaemia or seizures
- serious childhood infections, hospital admissions or trauma
- home environment conditions (environmental deprivation)

Investigations

(individualised according to findings)

- visual and auditory testing
- T4, TSH
- Chromosomal Analysis
- consider
 - creatine kinase in boys
 - MRI Brain
 - metabolic screen
 - specific genetic studies (Prader Willi/Angelman syndrome, Fragile X PCR, subtelomeric rearrangements) or refer for genetic consultation.
 - EEG if history of seizures

Examination

- head circumference
- neurocutaneous markers
- dysmorphic features
- neurological abnormalities
- full developmental assessment

Consider

- structural brain disorder
- chromosomal anomaly e.g. Down or Fragile X
- cerebral palsy
- congenital infection
- hypothyroidism & metabolic disorders
- autism & hyperactivity
- previous head injury, intracranial bleed, CNS infections.
- syndromes, e.g. tuberous sclerosis
- muscular dystrophies

ASSESSMENT OF CHILDREN WITH HEARING IMPAIRMENT / SPEECH DELAY

History

- congenital infection, perinatal drugs
- severe neonatal jaundice
- family history of deafness / speech delay
- chronic ear infections
- quality, quantity of speech

Examination

- check ears, dysmorphic features
- Distraction Test
- assess expressive, receptive speech
- neurological / development assessment

Management

- formal hearing test
- speech-language therapy

Warning signs for hearing impairment

- child appears not to hear or has no attempt to listen.
- no respond to name, "No" or to clue words e.g. "Shoe", by 12 mths age
- speech / language delay

Consider

- congenital sensorineural deafness
- familial, genetic causes
- congenital rubella
- oro-motor dysfunction

Table 1. Hearing tests at different ages

age	type of test	comments
newborn screening	Automated Otoacoustic Emission (AOAE) test	determines cochlear function. Negative test in conductive hearing loss, middle ear infections, or with moderate - severe sensorineural hearing loss.
any age	Brainstem Auditory Evoked Response (BAER)	measures brainstem responses to sound. Negative test in sensorineural hearing loss
7 - 9 months	Infant Distraction Test (IDT)	determines response to sound whilst presented during a visual distraction.
infants	Behavioural observation assessment (BOA) test	audiologist identifies bodily reactions to sound i.e. cessation of activity, body movement, eye widening / opening
> 2.5 years age	Conditioned play audiometry	earphones placed on child and various games are done when test tone is heard.
older children	Pure tone audiometry (Traditional hearing test)	patient presses a response button or raises a hand when the test tone is heard

ASSESSMENT OF CHILDREN WITH VISUAL IMPAIRMENT

At risk

- prematurity.
- Intrauterine Infection (TORCHES)
- family history of cataract, retinoblastoma, squint.
- previous meningitis, asphyxia
- dysmorphic babies

Warning signs for poor vision

- does not fix on mother's face by 6 wks
- wandering / roving eyes after 6 wks or has abnormal head postures.
- leukocoria (white eye reflex)
- holds objects very close to eye.
- squint after 6 months of age.

ASSESSMENT OF CHILDREN WITH LEARNING DIFFICULTIES

History

- perinatal or childhood problems
- developmental delay
- family history of developmental delay or learning difficulty
- areas of learning difficulties – specific or general

Examination/Assessment

- past, current education performance
- neurological, development assessment

Consider

- autism & ADHD
- specific learning difficulty (e.g. dyslexia)
- mild intellectual impairment
- limited environmental stimulation

Plan of management

- specific learning disorder tests e.g. Dyslexia screening test, DSM IV, Conners' Rating Scales-Revised, etc
- referral to a developmental paediatrician or clinical / educational psychologist