IAP Management Algorithms for Common Pediatric Illnesses

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Growth and Development

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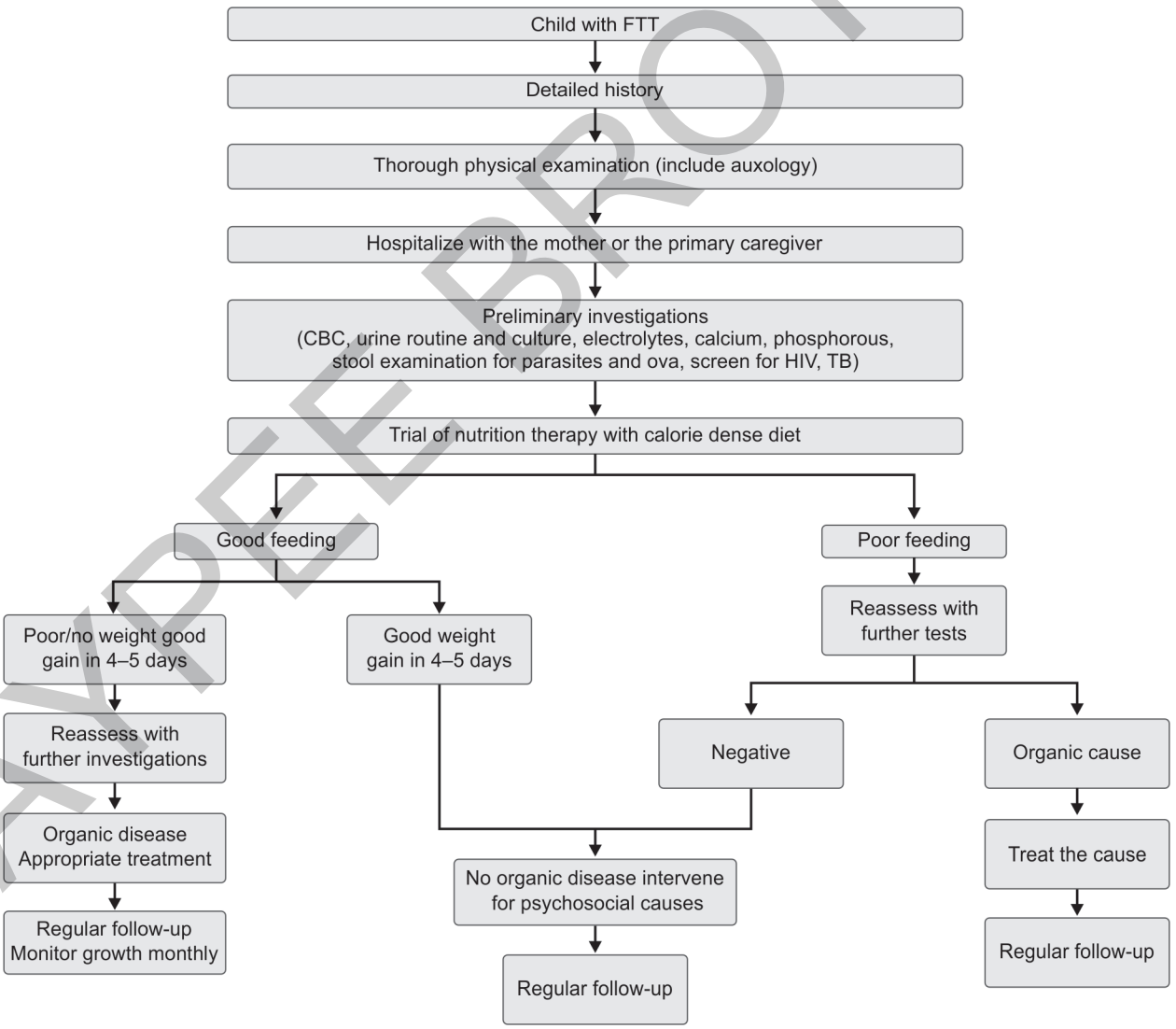
2.1 Failure to Thrive

DEFINITION

Failure to thrive (FTT) is defined as inadequate physical growth diagnosed by observing growth over time using a standard growth chart such as the WHO growth chart. FTT can also be defined as weight below the third percentile for age on the growth chart or more than two standard deviations below the mean for children of the same age and sex or a weight-for-age (weight-for-height) Z-score less than minus two. A downward change in growth that has crossed two major growth percentiles in a short time is also suggestive of FTT. If a child less than 6 months old has not grown for two consecutive months or a child older than 6 months has not grown for three consecutive months, it indicates FTT. The weight-for-age approach is the simplest and most reasonable marker of FTT. The definition of FTT is limited to children less than 3 years old **(Algorithm 2.1.1)**.

Algorithm 2.1.1 Failure to thrive management



Abbreviations: FTT, failure to thrive; CBC, complete blood count; HIV, human immunodeficiency virus; TB, tuberculosis.

CAUSES OF FAILURE TO THRIVE

I. **Prenatal causes:**
- Prematurity with its complications
- Exposure in utero to toxic agents, such as alcohol, tobacco smoke, medications
- Infections (e.g. rubella, cytomegalovirus, HIV)
- Intrauterine growth restriction from any cause
- Chromosomal abnormalities (e.g. Down syndrome, Turner syndrome, etc.)
- Dysmorphic syndromes.

II. **Postnatal causes based on pathophysiology:**
- Inadequate caloric intake which may result from:
- Under feeding
- Incorrect preparation of formula
- Behavior problems affecting eating (e.g. child's temperament)
- Unsuitable feeding habits (e.g. uncooperative child)
- Poverty leading to food shortages
- Child abuse and neglect
- Mechanical feeding difficulties e.g. congenital anomalies (cleft lip or palate), oromotor dysfunction
- Prolonged dyspnea of any cause.

III. **Inadequate absorption which may be associated with:**
- Malabsorption syndromes, e.g. celiac disease, cystic fibrosis
- Cow's milk protein allergy, giardiasis, food sensitivity or intolerance
- Vitamins and mineral deficiencies, e.g. zinc, vitamin A and C deficiency
- Hepatobiliary diseases, e.g. biliary atresia
- Necrotizing enterocolitis
- Short gut syndrome.

IV. **Increased caloric requirement due to:**
- Hyperthyroidism
- Chronic or recurrent infections, e.g. urinary tract infections (UTI), respiratory tract infection, tuberculosis, HIV infection
- Chronic anemia.

V. **Defective utilization of calories:**
- Inborn errors of metabolism, e.g. galactosemia, aminoacidopathies, organic acidurias, storage diseases
- Diabetes insipidus or mellitus
- Renal tubular acidosis
- Chronic hypoxemia.

INITIAL EVALUATION

- A thorough history, including an itemized psychosocial review
- Careful physical examination, including determination of the auxological parameters
- Direct observation of the child's behavior and of parent-child interaction
- **Prenatal:**
  - General obstetrical history
  - Recurrent miscarriages
  - Was the pregnancy planned?
  - Use of medications, drugs, or cigarettes.
- **Labor, delivery, and neonatal events:**
  - Neonatal asphyxia or Apgar scores
  - Prematurity
  - Small for gestational age
  - Birth weight and length
  - Congenital malformations or infections
  - Maternal bonding at birth
  - Length of hospitalization
  - Breastfeeding support
  - Feeding difficulties during neonatal period.
- **Medical history of child:**
  - Immunizations
  - Development
  - Medical or surgical illnesses
  - Frequent infections.
- **Growth history:**
  - Plot previous measurements, if available in the growth chart.
- **Nutrition history:**
  - Feeding behavior and environment
  - Perceived sensitivities or food allergies
  - Quantitative assessment of intake (3-day diet record, 24-hour food recall).
- **Social history:**
  - Age and occupation of parents
  - Who feeds the child?
  - Life stressors (loss of job, divorce, death in family)
  - Availability of social and economic support
  - Perception of growth failure as a problem
  - History of violence or abuse of caregiver.
- **Review of systems or clues to organic disease:**
  - Pallor
  - Cyanosis
  - Jaundice
  - Edema
  - Breathlessness during activity or rest
  - Anorexia
  - Change in mental status
  - Dysphagia
  - Stooling pattern and consistency
  - Vomiting or gastroesophageal reflux
  - Recurrent fever
  - Dysuria, urinary frequency
  - Activity level, ability to keep up with peers.

ANTHROPOMETRY IN FAILURE TO THRIVE

Weight, height or length, head circumference and mid-upper arm circumference must be measured accurately.

Recumbent length is measured in children below 2-year of age. Other anthropometric data such as upper segment to lower segment ratio, sitting height and arm span should also be recorded. The anthropometric parameter used for FTT should be weight for length or height.

Mid-parental height (MPH) is calculated by using the formula:
Boys: [father's height in cm + (mother's height in cm + 13 cm)]/2
Girls: [(father's height in cm – 13 cm) + mother's height in cm]/2

FH is the father's height and MH is the mother's height in cm. The target range is calculated as the MPH ± 8 cm, representing the two standard deviations (2SD) confidence limits.

DEGREE OF FAILURE TO THRIVE (TABLE 2.1.1)

Table 2.1.1: Degree of failure to thrive

	Mild	*Moderate*	*Severe*
Weight	75–90%	60–74%	<60%
Height	90–95%	85–89%	<85%
Weight or height ratio	81–90%	70–80%	<70%

LABORATORY EVALUATION

Laboratory studies are done in a case of FTT to investigate for the presence of possible organic disorders suggested by the history and physical examination. If an organic etiology is suggested, appropriate studies should be undertaken. If history and physical examination do not suggest an organic etiology, an extensive laboratory investigation is not indicated.

On admission complete blood count, erythrocyte sedimentation rate, urinalysis, urine culture, urea and electrolyte (including calcium and phosphorus) levels be tested. Screening for infections, such as HIV infection, tuberculosis and intestinal parasitosis should be performed.

Other laboratory tests may provide clues for an inborn error of metabolism, such as hypoglycemia (disorders of carbohydrate metabolism), abnormal liver function tests (e.g. galactosemia, mitochondrial disease, etc.), decreased bicarbonate (HCO_3) levels (hyperchloremic metabolic acidosis), metabolic acidosis particularly with high anion gap (a feature of organic acidemias), urine positive for reducing substance (e.g. galactosemia), ketonuria (glycogen storage disease) and hormonal evaluation, e.g. hypothyroidism.

MANAGEMENT OF THE CHILD WITH FAILURE TO THRIVE

Treatment of FTT is both immediate and long-term and should be directed at both the infant and the mother or family. A good treatment plan must address the following:

- The child's diet and eating pattern
- The child's developmental stimulation
- Improvement in caregiver skills
- Nursing considerations in the treatment of FTT
- Presence of any underlying disease
- Regular and effective follow up
- Consultation and referral to specialists, if needed.

Child's Diet and Eating Pattern

The mainstay of management of failure to thrive, irrespective of the cause, is nutritional intervention and feeding behavior modifications. For breast-fed infants, breastfeeding should be done not greater than 4 hours apart. The baby should be allowed to suckle for 20 minutes. Beyond this time the infant becomes tired. The behavioral modification focuses on improving feeding techniques. Large amount of juices and distractive events, such as watching television during meals should be avoided. Excessive fruit juice intake provides a low carbohydrate intake and diminishes the appetite for nutritious meals.

Successful management of FTT is followed by a catch up growth which is defined as gaining weight at a rate greater than the 50th percentile for age. For a catch up growth, children with FTT require a calorie intake which is 1.5 to 2 times the expected intake for their age.

Formula for calculation of catch-up growth requirement

$$\frac{\text{Kcal or protein (g) for weight age} \times \text{ideal body weight}}{\text{Actual weight}}$$

Some of the children with FTT have very poor appetite and are anorexic. They need calorie dense feeds. This can be done in toddlers by adding taste pleasing fats such as cheese or butter and where not feasible, palm oil to common toddler foods. In addition, vitamin and mineral supplementation is required. Zinc supplementation is also provided.

The first priority in FTT treatment is to achieve an ideal weight for age. The second goal is to attain a catch up in length that is close to that expected for the child's age. Steps in the treatment should be aimed toward both immediate and long term normal growth of the child.

Effectiveness of therapy is monitored by gain in weight. If there is weight gain in response to adequate caloric intake, a diagnosis of psychosocial FT can be made with confidence. If FTT continues during hospitalization despite adequate dietary input, the presence of an occult organic disease is most likely and requires further investigation. Adequacy of weight gain varies with age.

Daily growth, such as weight gain in grams per day, allows for more precise comparison of growth rate to the normal.

Acceptable weight gain per day according to age:

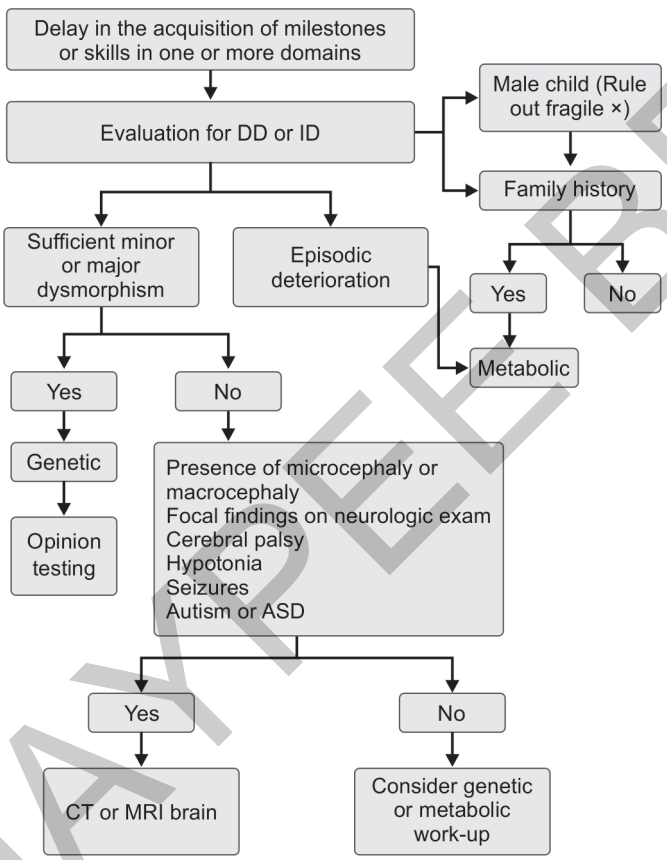
Age (months)	Weight gain (g/day)
Birth to <3	20–30
3 to <6	15–22
6 to <9	15–20
9 to <12	6–11
12 to <18	5–8
18 to 24	3–7

2.2 Developmental Delay

INTRODUCTION

Developmental delay is suspected if child exhibits a significant delay in the acquisition of milestones or skills, in one or more domains of development. The main domains of development are gross motor, fine motor, speech or language, cognitive, personal or social, or activities of daily living. A significant delay has been traditionally defined as discrepancy of 25% or more from the expected rate, or a discrepancy of 1.5–2 standard deviations from the normal. Global developmental delay is defined as a delay in two or more developmental domains **(Algorithm 2.2.1)**.

Algorithm 2.2.1 Delay in acquisition of milestones



Abbreviations: DD, developmental delay; ID, intellectual disability; ASD, autism spectrum disorders; CT, computerized tomography; MRI, magnetic resonance imaging.

Developmental deviance: In addition to delays there can also be deviance in development. Deviance occurs when the developmental milestones or skills fall outside typical acquisition sequence, e.g. spastic cerebral palsy, in which the infant rolls over early secondary to increased extensor tone.

Developmental dissociations: Dissociations arise when a child has widely differing rates of development in different developmental domains. For example, children with autism often have typical gross motor development but significantly delayed language development, therefore, language development has dissociated from gross motor development.

Developmental regression: Regression is said to occur when a child loses previously acquired skills or milestones. It is less commonly encountered than the other patterns, but it should be evaluated in detail since it is often associated with serious neurological and inherited metabolic disorders.

Developmental delay can be divided into:
- *Global developmental delay*: Delay in two or more domains (often delayed in all domains).
- *Specific developmental delay*: (E.g. motor or speech and language), delay in a single domain.

CAUSES OF GLOBAL DEVELOPMENTAL DELAY

Global developmental delay can be the presenting feature of a huge number of neurodevelopmental disorders (from learning disability to neuromuscular disorders). In about 50–70% cases, a definite cause can be identified. In the rest a cause cannot be detected.

Establishing a cause has many benefits for the child and family and improves overall quality of life:
- The family gains understanding of the condition, including prognostic information
- Lessens parental blame
- Reduces comorbidity by identifying associated conditions which can be detected and treated or prevented, e.g. vision and hearing screening
- Appropriate genetic counseling about recurrence risk for future children
- To make the parents aware of potential treatment for a few conditions.

DEVELOPMENTAL SCREENING TOOLS

Finding an ideal screening tool that is easily administered, cost-effective, demonstrates strong psychometric qualities, and culturally relevant is difficult.

There are a variety of screening tests to choose from, many of which are completed by parents and require only a short period of time to administer and score. These questionnaire screening forms are convenient, as there are no directly administered test items and scoring requires minimal training.

- *Parents' Evaluation of Developmental Status (PEDS)*: This is a parent interview form that provides an algorithm to guide a need for referral, more screening, or continued surveillance. There are open ended questions to parents, such as "Do you have any concerns about how your child understands what you say?" It takes under 10 minutes to complete and has been translated into over 10 different languages.
- *Ages and Stages Questionnaire (ASQ)*: This is a parent completed questionnaire that may be used as a general developmental screening tool, evaluating five developmental domains: communication, gross motor, fine motor, problem-solving, and personal adaptive skills, for children 4–60 months of age. It relies on specific questions to parents, such as, "Does your baby laugh?" It takes under 15 minutes to administer.
- *Denver Developmental Screening Test (DDST)*: One of the most well-known and frequently used screening tests is the Denver II, formerly the Denver Developmental Screening Test (DDST). As a screening tool, its specificity of only 43% increases the risk of false positives, which may lead to the over identification of children.
  - Several directly administered screening tests have been developed in India. One of the key common factors in these screening tests is the minimal training required, which allows for ease of administration by house-to-house child development workers.
- *Baroda Development Screening Test for Infants*: This was developed from the Bayley Scales of Infant Development and validated on Indian children up to 30 months of age. It has motor and cognitive items and provides an age equivalent and a developmental quotient. It was designed to be a test easily administered by health workers for door-to-door surveys, as well as in clinical practice.
- *Developmental Assessment Tool for Anganwadis (DATA)*: This is another screening test designed for identifying toddlers aged 1.6 years to 3 years at risk for or with developmental delays attending integrated child development services (ICDS) *Anganwadis* by *Anganwadi* workers. The DATA evaluates motor, cognitive, personal-social and language skills.
- *Trivandrum Developmental Screening Chart (TDSC 0–6 years)*: This was developed from the Bayley Scales (using Baroda Norms). It was a 17-item screening tool for children up to 24 months of age, requiring minimal training for administration. A newer version TDSC 0–6 years, extending up to 6 years has also been published. The TDSC can be done in 5 minutes and covers mental and motor developmental milestones.
- *Language Evaluation Scale Trivandrum (LEST 0–3 years)*: This is a simple language screening tool for babies below 3 years to identify delay in language development in the community or developmental clinic, so as to provide simple language stimulation by mother and other care givers.

Behavioral problems may indicate underlying developmental problems. Temper tantrums or disruptive behavior may be a manifestation of language delay. The use of behavioral, social, or emotional screening tools should also be considered as part of developmental surveillance and screening.

Autism is another specific developmental behavioral disorder that is being diagnosed more often due to increased awareness. Surveillance and screening for autism spectrum disorders (ASD) is of prime importance. The children with ASD may often present with parental concerns of delayed speech or overall delayed development. Early intervention for autism has been shown to be beneficial. Screening should be considered for the early detection of ASD at 18 and 24 months of age. A validated autism screen widely used is modified checklist for autism in toddlers (M-CHAT), a 23-item parent completed questionnaire designed to screen children between 16 to 30 months of age. It is available in a number of languages with the validation of these translations underway.

INVESTIGATION OF GLOBAL DEVELOPMENTAL DELAY

Thorough history and examination form a part of the evaluation. The diagnosis may occasionally be immediately obvious from history and examination.

The evidence base for investigation of developmental delay is poor and published work is mainly consensus opinion. There is no one agreed protocol for the investigation of global developmental delay and there is much variation in practice.

The approach to performing investigations is influenced by:

- Identifying treatable conditions
- Identifying prevalent serious conditions, (e.g. creatine kinase for Duchenne muscular dystrophy)
- Economic considerations (inexpensive, easy to perform tests for less common disorders, e.g. Fragile X)
- Practicalities of performing the investigations on young children.

First-line Tests

- Karyotyping
- Fragile X
- Creatine kinase

- Thyroid function
- Full blood count
- Ferritin
- Vision and hearing assessments.

Second-line Tests

- *Metabolic tests*: Metabolic evaluation is done when there is:
  - Family history
  - Consanguinity
  - Regression of milestones
  - Organomegaly
  - Coarse features
  - Seizures
  - Abnormal head size
  - Episodic decompensation
  - Congenital ataxia
  - Sensory impairment including glue ear.

Blood Investigations

- Lactate (+/- CSF Lactate): Paired cerebrospinal fluid (CSF) and plasma lactate are to investigate mitochondrial disorders where there are features of growth delay, multisystem involvement, visual and hearing impairments, and abnormal MRI brain
- Ammonia
- Amino acids
- Lead
- *Very long chain fatty acids (VLCFA):* For peroxisomal disorders, (e.g. adrenoleukodystrophy)
- Acylcarnitines
- Biotinidase
- Homocysteine
- *Transferrins:* For congenital disorders of glycosylation (CDG) e.g. type 1a
- White cell (WC) enzymes and oligosaccharides are tests for lysosomal storage disorders, (e.g. GM1 gangliosidosis)
- 7-Dehydrocholesterol: For Smith-Lemli-Opitz syndrome.

Urine Investigations

- Organic acids
- Glycosaminoglycans (GAGs) for mucopolysaccharidosis (MPS) (e.g. MPS type III Sanfilippo)
- Oligosaccharides

Indications for Neuroimaging (CT/MRI)

- Abnormal head size
- Seizures
- Neurological signs
- Cranial nerve abnormalities
- Cerebral palsy
- Neurocutaneous signs
- Dysmorphic facies
- Arthrogryposis
- Severe visual impairment
- Optic atrophy
- Nystagmus

Electroencephalography Tests (Consider 24-Hour EEG)

- Seizures
- Speech regression.

Consider second-line genetic evaluation if the first-line test is negative and there are:

- Dysmorphism
- Abnormal growth
- Sensory impairment
- Unusual behaviors
- Family history.

Test for:

- Microarrays DNA study
- Myotonic dystrophy
- Angelman's syndrome
- Prader-Willi syndrome
- *Methyl CpG binding protein 2 (MECP2):* Gene for Rett's.

GENETIC EVALUATION IN A CASE OF GLOBAL DEVELOPMENTAL DELAY

Chromosome analysis yields the highest number of abnormalities when investigating global developmental delay, even where there are no clinical features of a genetic problem. In children with global developmental delay, an abnormality may be found on standard chromosome analysis in 3–4% of cases whereas 7% of children with an autism spectrum disorder have an abnormal chromosome analysis.

Fragile X syndrome is the most common genetic cause of intellectual disability, and, therefore, warrants attention in the laboratory work-up of developmental delay. Fragile X is phenotypically characterized by intellectual disability, with physical characteristics such as a long jaw, high forehead, long ears, hyper extensible joints, and in males enlarged testes. Males are more frequently affected than females, and females may show fewer clinical symptoms. Fragile X is the commonest cause of inherited learning disability, but remains a rare disorder. Dysmorphism in Fragile X is difficult to recognize clinically in younger children and girls.

Microarray analysis based on comparative genomic hybridization (array CGH) is a more recent method of identifying submicroscopic chromosomal abnormalities where the copy numbers of preselected segments of DNA of the patient is compared with control DNA, allowing detection of deletions and duplications. Limitations of the microarray include the inability to detect balance derangements such as translocations and inversions or single nucleotide changes. Subtelomeric rearrangements are karyotypically invisible and are traditionally looked for where the karyotype is normal

but a genetic abnormality is still suspected. Specific tests for submicroscopic microdeletions (e.g. for William's or velo-cardio-facial syndrome) can be requested when clinical index of suspicion is high.

The new advances in microarray technology offer up to 15% more diagnoses than conventional karyotyping for global developmental delay. They are likely to be adopted widely in the future.

NEUROIMAGING STUDIES

Cranial MRI in young children (≤5–6 years) requires sedation or general anesthesia. It is a second-line investigation. Neuroimaging performed in the first 2 years of life before cerebral myelination has been completed should be repeated after an interval of about a year. The proportion of neuroimaging abnormalities found in children with delayed development varies widely between studies (9–80%).

Computerized tomography (CT) scanning is used only where cerebral calcification is suspected (e.g. perinatal infection) or to look for an abnormality of skull-bones.

METABOLIC TESTS

Individual Inborn Errors of Metabolism (IEM) are a rare cause of global developmental delay (approximately 1%). But, they can present with non-specific developmental delay and some are amenable to treatment. Metabolic investigations should be targeted and selective. There is no such thing as a "metabolic screen".

Biotinidase deficiency uncommonly presents with global developmental delay without other features, but early diagnosis and treatment improves outcome. This can be considered as a first-line investigation.

BIOCHEMISTRY

Creatinine Kinase

Boys with Duchenne muscular dystrophy can present with delay in more than one domain of development (e.g. language and motor delay); therefore, creatinine kinase (CK) should be measured as a first-line investigation in boys with global developmental delay. CK measurement should be considered in girls with severe global (and especially motor) developmental delay.

Renal, Bone

Electrolytes and urea are first-line investigations. Along with this, calcium measurement can assist in the diagnosis of velo-cardio-facial syndrome, Williams syndrome and pseudohypoparathyroidism.

Thyroid Function Tests

Thyroid function tests (TFT) are easy to perform and should be done as a first-line investigation for developmental delay. Thyroid stimulating hormone (TSH) is measured as part of universal neonatal screening. In addition, many chromosomal abnormalities are associated with an increased and ongoing risk of hypothyroidism (e.g. Turner's, velo-cardio-facial syndromes). TFT should be repeated periodically in those at risk as the clinical diagnosis of hypothyroidism is more difficult in children with developmental delay.

Lead

Chronic lead toxicity has long lasting developmental effects (developmental delay, behavioral change and poor coordination) and is potentially treatable by chelation. Despite evidence that children with developmental problems have higher blood levels of lead than the general child population, interpretation of blood lead levels remains controversial.

Full Blood Count

A full blood count and ferritin identifies iron deficiency which can cause global developmental delay and is easily treatable.

Neurophysiology

Electroencephalography (EEG) should not be performed routinely, but reserved for those with seizures, or speech regression (looking for Landau-Kleffner) associated with global developmental delay.

Other Investigations

All children with global developmental delay should have visual and audiology assessments early on. An ophthalmology opinion should be sought if there are concerns about visual function, abnormal appearance of the eyes or when looking for clues to the underlying diagnosis.

A "Torch" screen for congenital infection is performed in children with intrauterine growth retardation (IUGR), microcephaly, or sensory impairments.

Radiographs are performed primarily for suspected skeletal dysplasia, or lead toxicity. Subtle skeletal dysplasia can be difficult to diagnose on radiographs performed when most of the skeleton is not yet ossified and may need to be repeated at a later date.

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2.3 The New Trivandrum Development Screening Chart

TRIVANDRUM DEVELOPMENTAL SCREENING CHART (FIGS 2.3.1, 2.3.2 AND TABLE 2.3.1)

This is a simple developmental screening test for babies below 6 years that can be used in large scale community developmental screening programs by *Anganwadi* workers and other health workers. The left end of each horizontal dark line represents the age at which 3% of children passed the item and the right end represents the age at which 97% of the children passed the item. A vertical line is drawn or a pencil is kept vertically, at the level of the chronological age of the child being tested. If the child fails to achieve any item that falls short on the left side of the vertical line, the child is considered to have a developmental delay. Any obvious abnormality or asymmetry is also considered abnormal.

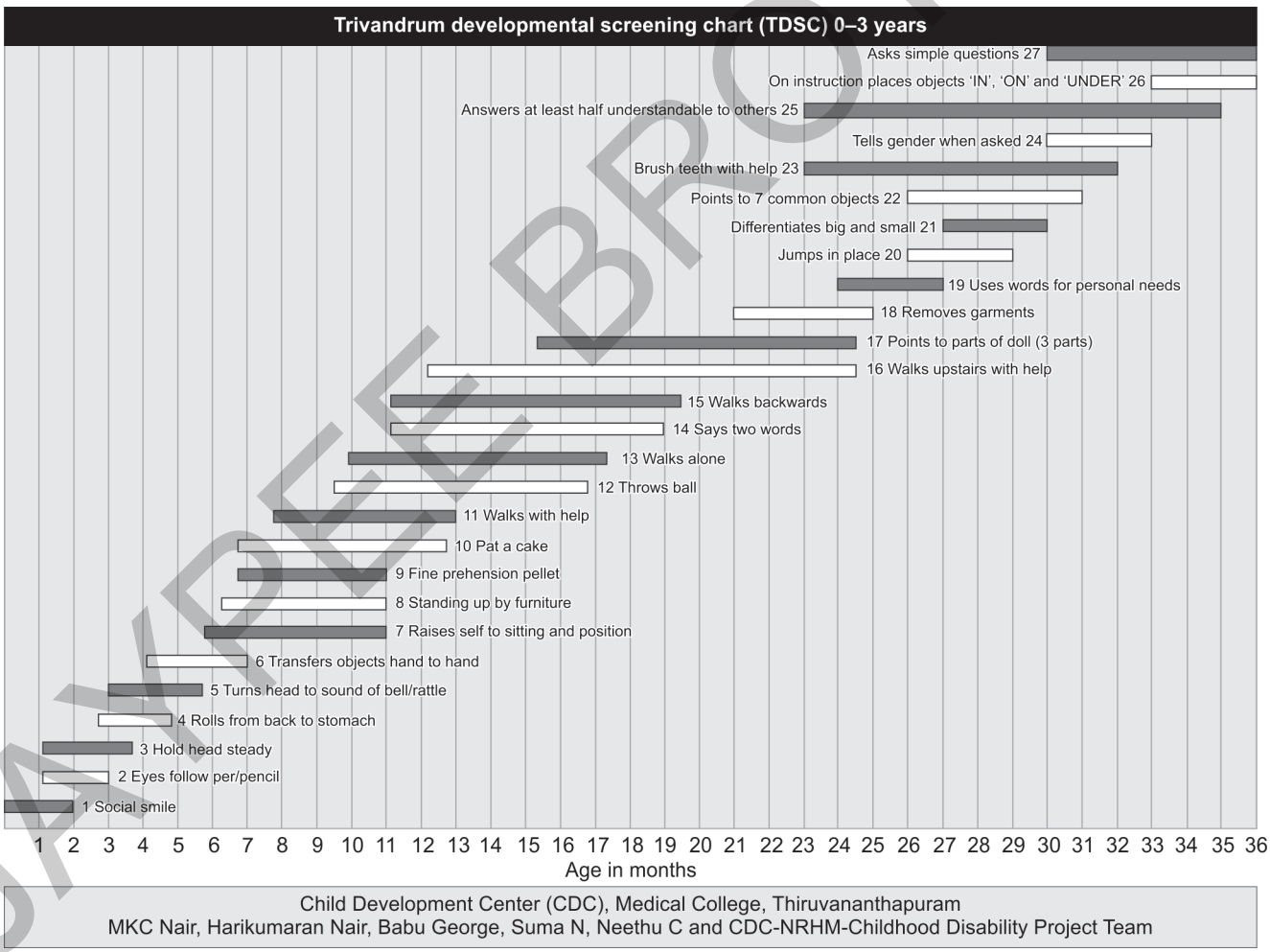

Figure 2.3.1 Trivandrum developmental screening chart (0–3 years)

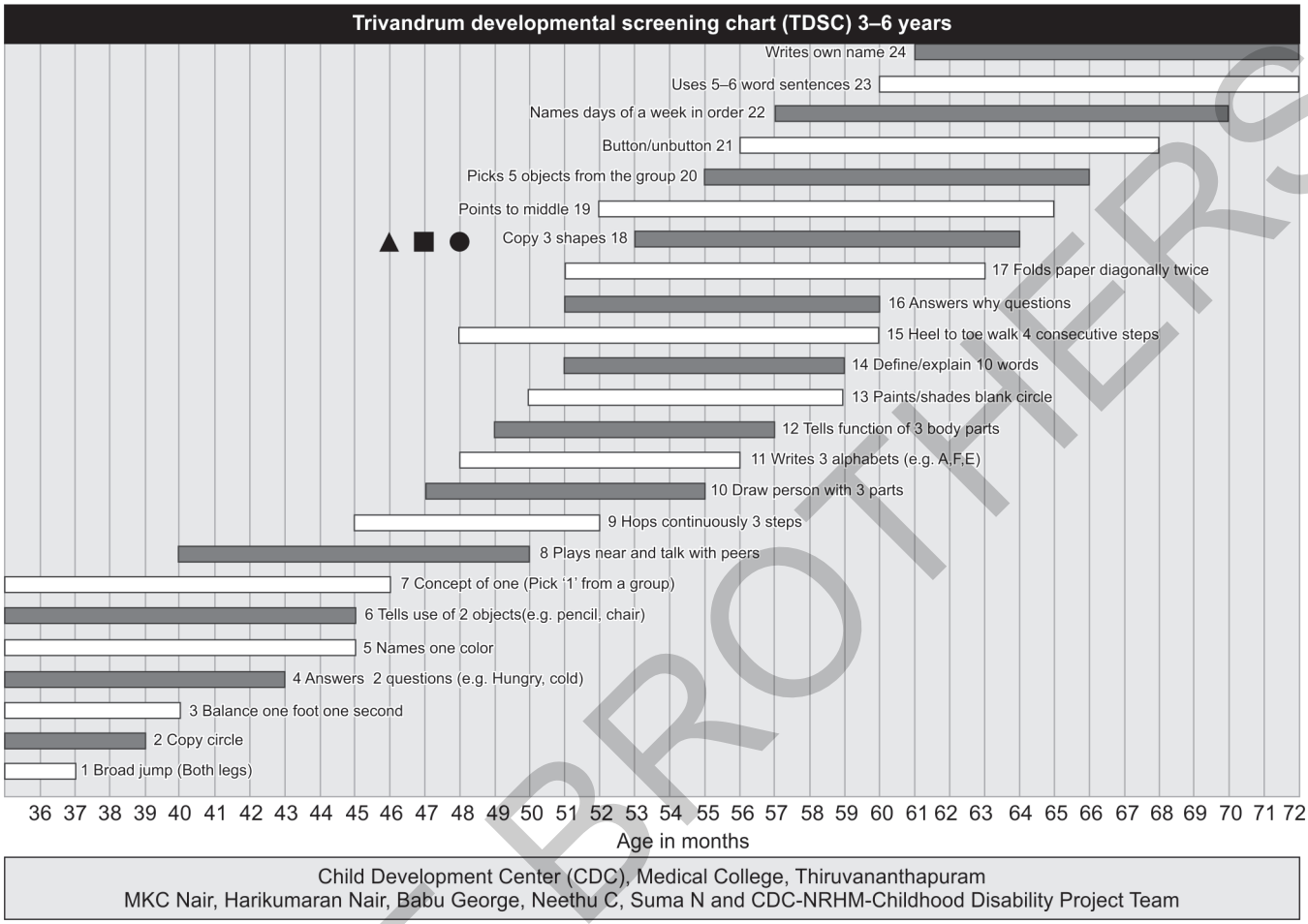

Figure 2.3.2 Trivandrum developmental screening chart (3–6 years)

Table 2.3.1: Test items used in trivandrum developmental screening chart (0–6 years)

Items	*Lower limit*	*Upper limit*
• Social smile	1 day	2 months
• Eyes follow pen or pencil	1 month 3 days	3 months
• Holds head steady	1 month 3 days	3 months 24 days
• Rolls from back to stomach	2 months 21 days	4 months 24 days
• Turns head to sound of bell or rattle	3 months	5 months 24 days
• Transfer objects hand to hand	4 months 3 days	7 months
• Raises self to sitting position	5 months 24 days	11 months
• Standing up by furniture	6 months 9 days	11 months
• Fine prehension pellet	6 months 24 days	11 months
• Pat a cake	6 months 24 days	12 months 21 days
• Walks with help	7 months 24 days	13 months
• Throws ball	9 months 15 days	16 months 24 days
• Walks alone	9 months 27 days	17 months 12 days
• Says two words	11 months 6 days	19 months
• Walk backward	11 months 6 days	19 months 15 days
• Walk upstairs with help	12 months 6 days	24 months 15 days

Contd...

Contd...

• Points to parts of doll (3 parts)	15 months 9 days	24 months 15 days
• Remove garments	21 months	25 months
• Uses words for personal needs	24 months	27 months
• Jumps in place	26 months	29 months
• Differentiate big and small	27 months	30 months
• Points to seven common objects	26 months	31 months
• Brush teeth with help	23 months	32 months
• Tells gender when asked	30 months	33 months
• Answers at least half understandable to others	23 months	35 months
• On instruction place objects "in", "on" and "under"	33 months	36 months
• Asks simple questions	30 months	36 months
• Broad jump (both legs together)	35 months	37 months
• Copy circle	35 months	39 months
• Balance one foot one second	35 months	40 months
• Answers two questions (e.g. hungry, cold)	35 months	43 months
• Name one color	35 months	45 months
• Tells use of two objects (e.g. pencil, chair)	35 months	45 months
• Concept of one (pick one from a group)	35 months	46 months
• Plays near and talk with peers	45 months	50 months
• Hops continuously three steps	45 months	52 months
• Draw person with three parts	47 months	55 months
• Writes three alphabets (e.g. A, F, E)	48 months	56 months
• Tells function of three body parts	49 months	57 months
• Paints or shades blank circle	50 months	59 months
• Define or explain 10 words	51 months	59 months
• Heel to toe walk four consecutive steps	48 months	60 months
• Answers why questions	51 months	60 months
• Folds paper diagonally twice	51 months	63 months
• Copy three shapes	53 months	64 months
• Points to middle	52 months	65 months
• Picks five objects from the group	55 months	66 months
• Button or unbutton	56 months	68 months
• Names days of a week in order	57 months	70 months
• Uses 5–6 words sentences fluently	60 months	72 months
• Writes own name	61 months	72 months

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IAP Management Algorithms for Common Pediatric Illnesses

What is special about this book?

- First of its kind publication by Indian Academy of Pediatrics (IAP) to present day-to-day protocols for management of common pediatric illnesses in an algorithm format
- Over 40 authors/contributors have contributed the algorithms in 26 chapters with a total of over 100 common pediatric topics
- This book is designed to serve as a "Desktop" reference volume for pediatric practitioners, faculty members, postgraduate and undergraduate medical students to equip them with the latest developments in the management of common pediatric illnesses
- A formidable team of 13 expert editors reviewed the algorithms contributed by the respective authors over a period of 6 months
- In all counts, this treatise will serve as a "friend in need" reference book for those who refer to it
- The algorithms for selected common conditions will enable the busy practitioner to make quick decision regarding 'step-by-step' approach with latest guidelines
- Instead of storing in the book shelf, this book will serve as a practitioners companion as well as 'Desktop' reference volume useful for day-to-day practice.

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