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PGI **(Upto Nov-2017)**
JIPMER **(Upto Nov-2017)**
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CHAPTER

4

Disorder of Growth and Development, Nutrition and Adolescent Health

GOLDEN POINTS CAUSES IN GROWTH AND DEVELOPMENT, NUTRITION AND ADOLESCENT HEALTH

Most common cause of short stature	Constitutional delay in growth
• **Growth velocity is maximum** in post-natal life during:	• 1st year of life
• 90% of **brain growth is** achieved by the age of:	• **2 years**
• Maximum growth of **lymphoid tissue** occurs:	• Between 4–8 years
• Common Drugs to **treat nocturnal enuresis**:	• **ORAL desmopressin** (not nasal), imipramine, oxybutynin
• Sequence of events at puberty in girls:	• ***Thelarche*** *– pubarche/adrenarche –peak growth velocity—Menarche. (**Remember: TPM**)*
• Sequence of events at puberty in boys:	• **Testicular enlargement** – penis enlargement – pubic hair growth – peak growth velocity – axillary hair--- facial hair
• Deficit in **weight for height (wasting)** indicates:	• **Acute malnutrition**
• Deficit in **height for age** (stunting) indicates:.	• **Chronic (long standing) malnutrition**
• Deficit in weight for age (underweight) indicates:	• Both acute and chronic malnutrition (but cannot differentiate these two).
• Best **indicator for** nutritional status of a child:	• Rate of increases of height and weight.
• Classical **triad of** Kwashiorkor:	• Marked growth retardation, psychomotor (mental) changes, edema.
• **Triad in complication of PEM**	• **Hypoglycemia, hypothermia and infection**
• Most affected antibody in PEM:	• IgA.
• Most important protective component of breast milk against infection:	• IgA.
• Breast feeding should be initiated:	• As early as possible.(Within 30 minutes of normal vaginal delivery and within 4 hours of delivery by caesarian section.)
• Main protein in human milk:	• Whey protein.
• Main protein in Cow's milk:	• Casein. (Remember: Wfor W(women—whey) • C for C (cows –casein)
• Most prominently affected in Rickets:	• Growth plate, cupping, cupping/flaring and fraying of metaphysic, widening of epiphysis
• Earliest manifestation of Rickets:	• Craniotabes
• Most common cause of genu valgum in children:	• Rickets.
• Riboflavin deficiency can cause:	• Corneal vascularization, photophobia, cataract.
• Niacin deficiency cause:	• Pellagra.
• Chromium helps in:	• Glucose metabolism by potentiating insulin.

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Growth and Development

Growth	Development
It is change in size/weight resulting from an increase in number or size of cells.	A gradual change in advancement/function from lower to higher stage
It is Quantitative	It is Qualitative
It is measured in terms of centimeters or Kgs	It is assessed in terms of acquisition of skills and ability

Maturation

- It is increase in competence and adaptability

Hormonal influence on the growth:

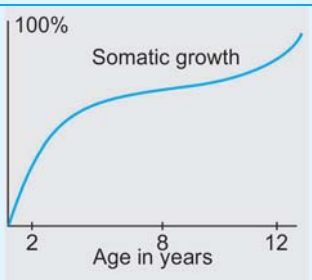
- **Human fetus secretes thyroxine from the 12th week of gestation. Thyroxine and insulin** have an important role in regulating tissue accretion and differentiation in the fetus.
- **Insulin[Q] and insulin like growth factor stimulate fetal growth, so fetal growth is maximally affected by- Insulin[Q]**
- Hormone mainly responsible for skeletal maturation of fetus is- **Thyroxine[Q]**
- **Glucocorticoids** also play an important role, primarily **towards the end of gestation** (maturation of organs such as **liver, lungs[Q] and gastrointestinal** tract)
- ***Growth Hormone—Not Essential For Fetal Growth In Utero.[Q]***

Laws of growth:

- *Growth and development of children* is a ***continuous[Q] and orderly process***
- Order of growth is **cephalocaudal[Q]** and **distal to proximal[Q]**
- *Growth pattern of* ***every individual is unique[Q]***
- *Different tissues grow at different rates- e.g.*

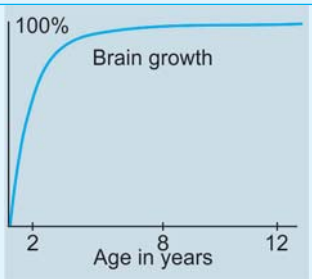
Somatic:

- Growth follows **a sigma shaped[Q]** curve.
- ***In the early postnatal period velocity of growth is high during the first few months[Q].***
- A second phase of accelerated growth is **during puberty**



Brain:

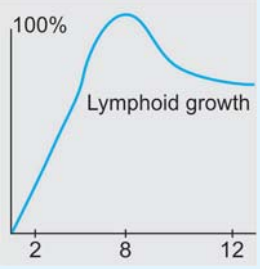
- At birth, the head size is —65 to 70 percent of the expected head size in adults,
- It **reaches 90 percent** of the adult head **size by the age of 2 years.[Q]**



Lymphoid:

- The growth—is most notable **during mid-childhood[Q]**.

Children **between 4 and 8 years[Q] of** age often have hypertrophied **tonsils and large lymph nodes**



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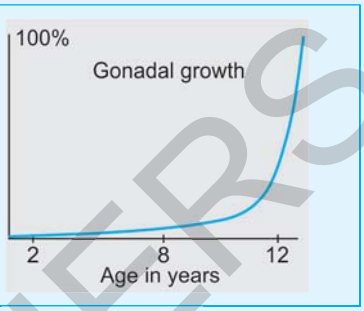
Growth and Development

Gonadal:
Gonadal growth is **dormant during childhood** and **becomes conspicuous during pubescence**[Q]



Bone Age Estimation: Conventionally read from X-ray **using Gruelich-Pyle atlas**[Q] or **Tanner-Whitehouse**[Q] **method**

Skeletal age

Radiograph used to determine skeletal age:

AGE	SITE OF choice for X-RAY
At Birth:	**Knee (Epiphysis** of distal femur and **proximal tibia present**)
3–9 months	**Shoulder**[Q]
1–13 years	**Single film of Hand and wrist**[Q]
12–14 years	**Elbow and hip**[Q]

Eruption of teeth

- Dental development includes mineralization, eruption, and exfoliation
- Initial mineralization begins as early as the **2nd trimester** (**mean age for central incisors, 14 wk**)

Types:

Primary teeth/temporary teeth/milk teeth	Secondary teeth/permanent teeth
• 20 in no.[Q] • **Central incisors (lower)**[Q] is first to develop in primary **dentition (5–8 months).** • **Second molar is last to** develop in primary dentition	• 32 in no.[Q] • **1st molar is first**[Q] **to** develop in secondary dentition (7 yrs) • **Third molar**[Q] is **last to develop** in secondary dentition.

Chronology of Human Dentition:

Eruption times of **temporary dentition (in Months)** **Mn: IMCM (I M Chief Minister)**	Eruption times of permanent dentition: (in **Year)**: Mn: "**M**ama **I**s **I**n **P**ain, **P**apa **C**an **M**ake **M**edicine":
Incisor (Lower central—**6–7 months,** Upper central–8–9 month, Upper lateral 9–10 months,lower lateral 10–12 months) 1st **M**olar: **12–15 months C**anine: 18–21 month 2nd **M**olar: **21–24 months**	1st **M**olar: **6** years 1st **I**ncisor: **7** years 2nd **I**ncisor: **8** years 1st **P**remolar: **9** years 2nd **P**remolar: **10** years **C**anine: **11** years 2nd **M**olar: **12** years 3rd **M**olar: 18–25 years

Delayed dentition:
Delayed dentition is usually considered when there is no eruption by approximately **13 months**[Q] **of age. (mean + 3 SD)**
Causes of delayed eruption:
- **Idiopathic (most common)**[Q]
- **Hypothyroidism**[Q]
- Hypoparathyroidism[Q]
- Hypopituitarism

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Eruption of teeth
• Rickets[Q] • Trisomy 21 (Down syndrome)[Q] • Familial • Congenital syphilis • Cleidocranial dysostosis
Advanced dentition—**Hyperthyroidism, Precocious puberty**[Q]
Causes of **early exfoliation** include **histiocytosis X**[Q]**, cyclic neutropenia, leukemia**, trauma, and idiopathic factors.
Most common location of supernumerary teeth is—**Between incisor**[Q]

Assessment of physical growth	Image
A. Weight: • The measurement of weight is the most reliable criterion of assessment of health and nutritional status of children. • During first few days after birth the new born loses extracellular fluid equivalent to about 10% of the body weight[Q]. • Most full term infants regain their birth weight by **the age of 10 days.** • Infants **usually double his birth** weight by the age of 5 months[Q] • Birth weight **trebles at 1 year and four times at 2 year of age**[Q] • Formulas for approximate average weight of normal infants and children At birth average weight is 3.25 kg	 **Electronic Baby and Toddler Scale**
B. Length or Height: **Length measured by Infantometer**[Q] (< 2 Yr of Age)	
Length or Height: Height measured by **Stadiometer** (> 2 Yr of Age)	

3 months – 12 months	X+9/2	X = age in month
1 year – 6 years	2X+8	X = age in year
7 – 12 years	7X – 5/2	X = age in year

Increase in length of the child with age

Age	Growth in length (cm/mo)
0–3 mo.	3.5
3–6 mo.	2.0
6–9 mo.	1.5
9–12 mo.	1.2
1–3 yr	1.0
4–6 yr	3 cm/yr

- Up to 2 years of age recumbent length is measured with the help of **an infantometer** while in older children standing height is recorded
- At birth = 50 cm

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Assessment of physical growth	Image
• 1 year = 75 cm • 2 year = 90 cm • **4½ yrs = 100 cm**[Q] • After that till 12 year = 6X + 77 [X = Age in year][Q] • **If length or height of the child is below the 3rd percentile, child is considered to be short stature.**	
C. Head circumference i. The maximum circumference of the head from the occipital protuberance to the forehead is recorded. ii. **Head circumference** — **Growth velocity** • Birth 3 months = 2 cm/month • 3 months – 6 months = 1 cm/month • 7–12 months = 0.5 cm/month • 1–3 years = 0.25 cm/month • 3–6 years = 1 cm/year • During first year there is 12 cm increase in head circumference, while between 1–5 years age only 5 cm gain occurs in head size. • If head circumference grows more than 1 cm/2 wks during the first 3 months, suspect hydrocephalus **Mnemonic: Head circumference with age • Remember 3, 9, and multiples of 5:** **Newborn–35 cm** **3 mos–40 cm** **9 mos–45 cm** **3 yrs–50 cm** **9 yrs–55 cm**	
Microcephaly • It is defined as head **circumference below 3 SD**[Q] of the mean fore age. (Note: Macrocephaly—head **circumference above 2 SD**[Q] of the mean fore age) • It may be primarily due to impaired growth of the brain or secondary due to premature fusion of sutures. **Causes** • Familial microcephaly (most common) • Syndrome a. Down Syndrome[Q] b. Edward Syndrome[Q] c. Cridu Chat Syndrome d. Cornelia de lange • Radiation • Congenital infection • Drugs • Malnutrition • Meningitis • Metabolic • Hypoxic ischemic encephalopathy	
4. Relationship of head size with chest circumference i. The chest circumference is measured at the level of nipples[Q] **ii. At birth HC is larger by up to 3 cm**[Q] **as compared to chest circumference. The circumference of head and chest are almost equal by the age of 1 year.** iii. But thereafter chest grows more rapidly as compared to the brain iv. HC> CC — Preterm > 3 cm — SGA[Q] Hydrocephalus[Q] v. In malnourished children, chest size may be significantly smaller than the head circumference because growth of brain is less affected by under nutrition.	

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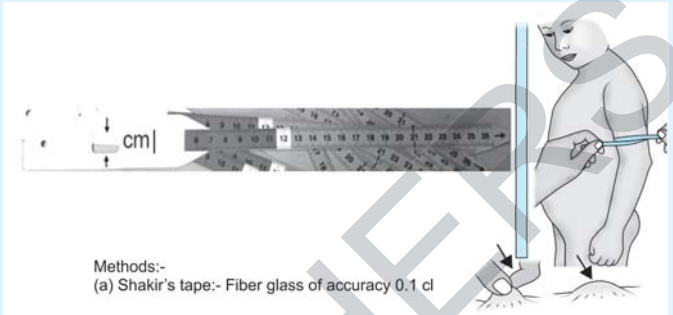
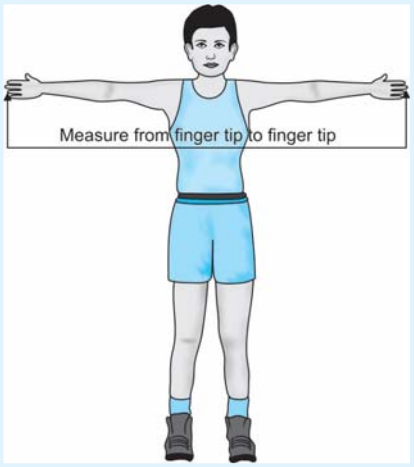
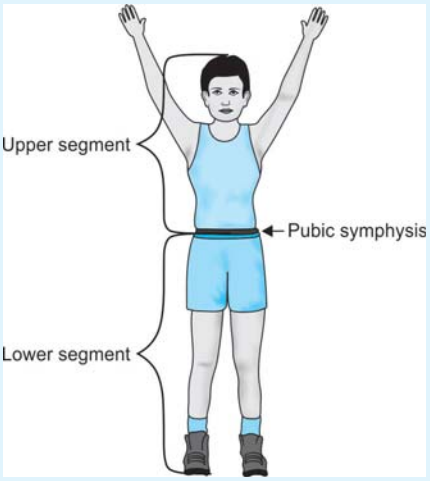
Assessment of physical growth	Image
5. Mid arm circumference: • **During 1-5 year of age, the mid upper arm circumference remain reasonably constant between 15 and 17 cm among healthy children because fat of early infancy is gradually replaced by muscles.** • MAC is measured with a fiber glass tape at the midpoint between **acromion and olecranon.** • **Shakir Tape:** Is a fiber glass tape with three color codes that paramedical workers can assess nutritional status without having to remember the normal limits of mid arm circumference. • **Bangle Test:** It can be used for quick assessment of arm circumference. A fiber glass ring of internal diameter of 4 cm is slipped up the arm. If it passes above the elbow it suggest that upper arm is less than 12.5 cm and child is malnourished	 **Red** | **<11.5 cm** | **Wasted** | **Severe PEM** Yellow | 11.5-12.5 cm | Borderline | Mild-moderate Green | >12.5 cm | Normal | Normal
6. Arm span • It is the distance between the tips of middle finger of both arms out stretched at right angle to the body. The arm span is measured across the back of the child. • < 5 year AS is 1 to 2 cm smaller than body weight • 10–12 year AS = Height[Q] • >12 year AS> ht (2 cm) Abnormally large span is seen in: a. Klinefelter syndrome b. **Marfan's syndrome**[Q] c. Arachnodactyly	
7. Proportional trunk and limb growth • The upper segment (vertex to upper edge of symphysis pubis) to lower segment (limb length, i.e. symphysis to heels) ratio at birth is 1.7 to 1.0 • At birth 1.7:1.0[Q] • 3 year 1.3:1.0 • 10 year 1.0:1.0[Q] • US > 1: **Achondroplasia**[Q]**,** Cretinism, short limbed dwarfism bowed leg. LS • US < 1: **Spinal deformities (Potts spin, rickets), Mucopolysaccharidosis**[Q]**. LS**	

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GROWTH STANDARDS

National Center for Health Statistics (NCHS) developed growth **charts**	Based on data obtained from US children (**1977**)
Revised Growth charts provided by CDC	**Obtained from US children who were formula fed (YR-2000)**[Q]
The WHO CHART: Now used 'conducted the **'Multicentre Growth Reference Study' (MGRS)**[Q]	A community-based, multi-country project conducted **in Brazil, India, Norway, Ghana, Oman and the United States** (Mnemonic—**BINGOS)**[Q] **(yr-2006)**[Q]

WHO chart summarize data on:

Up to 5 years	After 5 years
Provide percentile curves for: • **Weight,** • **Length or height**[Q]**,** • **Weight for height and** • **Head circumference** for girls and boys	• Weight (5–10 years), • Height (5–19 years) and • **Body mass index (5–19** years)[Q]**,** for girls and boys

Note:
- It is important to note that 68.3% observations lie ± 1SD from mean
- Also, 95.4% observation lie ± 2SD from mean
- **1SD above mean—84th percentile and 1SD below mean is—16th percentile**
- **2SD above mean—97th percentile and 2SD below mean is—3rd percentile**

Developmental Milestone

Principles of milestone development
- It is considered to be a **continuous process**, starting from conception to maturity
- **Sequence** of development is the **same** in all children, however, the rate of development varies
- Certain primitive reflexes anticipate corresponding voluntary movement and have to be lost before voluntary movement develops
- Development always follows a **cephalocaudal**[Q] direction
- Development of a child depends on **maturation and myelination**[Q] of the nervous system

Theories of development:

Psychoanalytical theory of development	Freud and Erikson[Q]
Cognitive theory of development	Jean Piaget
Behavioral theory of development	Skinner

- The ***Denver Development Screening Test (DDST)***[Q] assesses the child's development in four separate segments.
  1. Gross motor functions
  2. Fine motor and adaptive functions
  3. Personal social functions
  4. Language functions

A. Motor

The examiner suspends the infant in a prone position by supporting the abdomen of the baby on his palm. The extension of neck and flexion of the extremities is observed

Gross motor functions:

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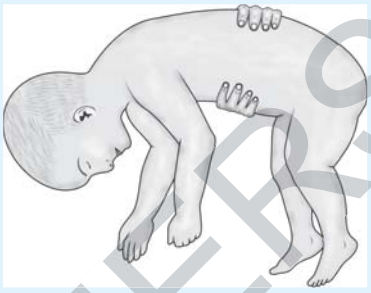
Age	Gross motor	Image
New born	**Head hangs**[Q] completely and back is rounded	
1 month	Head momentarily lifted up, elbow flexed	
2 months	Head maintained in the same plane as rest of the body	
3 months	• Head raises above the plane of rest of the body • **Neck holding**[Q]	
6 months	**Roll over**[Q] (Prone to supine—5 month, Supine to prone 6 month) (p comes first than s)	
6 months	Sits **in tripod fashion**[Q] (sitting with own support).	
8 months	Sitting without support	

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Age	Gross motor	Image
9 months	Stands holding on (**with support**)	
	crAwling (move forward with abdomen touching the surface)	
	Cruising around furniture	
	Pivoting (Can turn around on their tummy while reaching for toys, called pivoting in prone)	
11 months Remember: A comes first than E. So crwling comes first than crEeping.	crEeping (Abdomen up from the surface)	
12 months	Walks with support; stands without support	
15 months	Walks alone; **creeps upstairs**, Kneeling	

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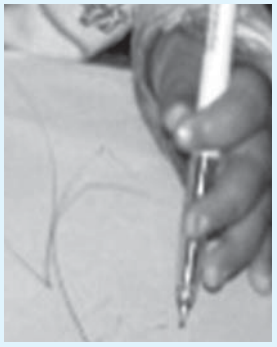
Age	Gross motor	Image
18 months	Runs but unsteady; explores drawers, Jumps	
2 year	**Run well**[Q], **can kick a ball**[Q], Walks up and downstairs (2 feet/step);	
3 years (Remember: Tri for tri)	**Rides tricycle**[Q]**;** alternate feet **going upstairs**	
4 years	**Hops**[Q],Comes **down stair** with one foot on each step, Throws ball overhead	 Hopping
5 years	Skip[Q]	

Fine motor and adaptive functions:

3.5 months	**Grasp a rattle**[Q]	
3–5 months	**Hand regard**[Q] (the Child observes his own hands very intently)	
4 months	Bidextrous grasp approach to a dangling ring (reaching out for objects with both hands)	
6 months	Unidextrous reach (reaching out for objects with one hand); Transfers objects. **Mouthing a**n object	 **Ulnar palmar grasp**

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QUESTIONS

GROWTH

1. Fetal growth is maximally affected by: *(Recent Question 2016)*
(a) Growth hormone (b) Cortisol
(c) Thyroxine (d) Insulin

2. Hormone mainly responsible for skeletal maturation of fetus: *(Recent Question 2016)*
(a) Testosterone
(b) Thyroxine
(c) Estrogen
(d) Testosterone ratio estrogen

3. 90% of brain growth is achieved by the: *(Recent Question 2016)*
(a) 2nd year (b) 3rd year
(c) 5th year (d) 10th year

4. Postnatally when is the growth velocity maximum? *(Recent Question 2016)*
(a) In the first year of life
(b) In the second year of life
(c) In the seventh year of life
(d) In adolescence

5. The maximum age for growth of lymphoid tissue: *(Recent Question 2015)*
(a) 2–3 years (b) 4–8 years
(c) 7–11 years (d) 11–14 years

6. The prime principles of growth and development include all *except*: *(Recent Question 2015)*
(a) Growth is a continuous process
(b) It follows the same pattern in all human beings
(c) Growth and development go hand in hand
(d) Development occurs in a Caudocephalad fashion

BONE AGE ESTIMATION

7. In normal neonates, ossification centers are usually radiographically visible at birth in which of the following sites? *(Recent Question 2014)*
(a) Patella (b) Lunate (carpal)
(c) Proximal tibia (d) Head of the femur

8. X-ray of choice for age detection in 6 months old child is: *(Recent Question 2014)*
(a) Skull (b) Hand
(c) Knee (d) Shoulder

9. Which of the following X-ray should be advised for age determination between 1–13 years of age?
(a) Shoulder (b) Wrist
(c) Elbow (d) Iliac bones

10. At the end of 1 year of age, the number of carpal bones seen in the skiagram of the hand is:
(a) Nil (b) 1
(c) 2 (d) 3

11. The first epiphyseal center appears in: *(Recent Question 2015)*
(a) OsCalcis (b) Clavicle
(c) Femur (d) Cuboid

ERUPTION OF TEETH

12. Which of the following statements is false? *(Recent Question 2014)*
(a) Infants normally get their first tooth at round 6 months of age
(b) Premature eruption of the incisors can result in poor feeding
(c) Acetaminophen is a good choice for treatment of teething discomfort
(d) Teeth present at birth should always be pulled

13. Most common location of supernumerary teeth is:
(a) Between canine (b) Between incisor
(c) Between premolar (d) Between molar

14. Which of the following best describes the correct sequence for eruption of permanent teeth? *(Recent Question 2014)*
(a) Central incisors, first premolars, canines, second molars
(b) First molars, central incisors, canines, first premolars
(c) Central incisors, lateral incisors, canines, first molars
(d) First molars, lateral incisors, canines, first premolars

15. At what age do first permanent teeth appear? *(Recent Question 2014)*
(a) 5 years (b) 6 years
(c) 7 years (d) 8 years

16. First permanent teeth to appear: *(Recent Question 2014)*
(a) Molar (b) Premolar
(c) Incisor (d) Canine

17. Total no. of milk teeth in human beings is: *(Recent Question 2014)*
(a) 20 (b) 28
(c) 32 (d) 24

18. Delayed dentition is seen in: *(Recent Question 2014)*
(a) Down's syndrome
(b) Congenital hypothyroidism
(c) Rickets
(d) All of the above

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19. Which of the following is true about eruption of teeth?
(a) Premolar appear in primary dentition *(PGI Dec 05)*
(b) 1st molar appear first in secondary dentition
(c) 3rd molar is last to develop
(d) Hypothyroidism delays dentition
(e) Canines is last to appear in primary dentition

20. Delayed dentition is usually considered when there is no eruption by approximately: *(Recent Question 2016)*
(a) 9 months of age (b) 10 months of age
(c) 13 months of age (d) 15 months of age

21. True about dentition: *(PGI June 04)*
(a) Hypothyroidism causes delayed dentition
(b) Premolar is not seen in primary dentition
(c) 3rd molar is the last to appear in secondary dentition
(d) Canine is the first in primary dentition
(e) Incisor is the first in secondary dentition

22. Which of the following are the first incisors to erupt in an infant? *(Recent Question 2014)*
(a) Lower central (b) Lower lateral
(c) Upper central (d) Upper lateral

23. By_____ years all milk teeth are erupted.
(a) 1.5 (b) 2
(c) 2.5 (d) 3

24. How many teeth are present in 3 year child? *(Recent Question 2014)*
(a) 8 teeth (b) 12 teeth
(c) 18 teeth (d) 20 teeth

ASSESSMENT OF GROWTH

25. Birth weight doubles by: *(Recent Question 2014)*
(a) 3 months (b) 5 months
(c) 9 months (d) 12 months

26. Birth length doubles by what age? *(Recent Question 2014)*
(a) 1 year (b) 2 years
(c) 3 years (d) 4 years

27. Infant body weight is tripled by age of: *(Recent Question 2016)*
(a) 5 months (b) 12 months
(c) 2 years (d) 18 months

28. Gain of weight in a preschool normal child is: *(Recent Question 2014)*
(a) 2–2.5 kg per year (b) 3–3.5 kg per year
(c) 4–4.5 kg per year (d) 5–5.5 kg per year

29. In a healthy child, the head and chest circumference equal each other around the age of: *(Recent Question 2015)*
(a) 3–6 months (b) 6–9 months
(c) 9–12 months (d) 12–15 months

30. Height of children in 2–10 years of age is increased by: *(Recent Question 2015)*
(a) 2 cm/year (b) 4 cm/year
(c) 6 cm/year (d) 10 cm/year

31. True about head circumference measurement:
(a) Measured in supraorbital ridge *(PGI Dec 04)*
(b) Measured hydrocephalus/microcephaly
(c) Serial measurement is useful
(d) Helps in measurement of neurological development
(e) Pediatric intelligence

32. Anthropometric assessment, which does not show much change in 1–4 years? *(Recent Question 2016)*
(a) Mid arm circumference
(b) Skin fold thickness
(c) Chest circumference: Head circumference ratio
(d) Height

33. Cause of Failure to thrive include (s): *(PGI Nov 10)*
(a) Malabsorption
(b) Child abuse
(c) GERD
(d) Chromosomal disorders

34. Meaning of baby has 15th percentile of head circumference is: *(Recent Question 2014)*
(a) 15% children will have HC more than that
(b) The child is having 15 % of normal HC
(c) 15% of children will have HC less than that
(d) None

DEVELOPMENTAL MILESTONE

35. Dysfrequency of speech in children develops in: *(KOL–PG 2015)*
(a) 8–10 years (b) 6–8 years
(c) 4–6 years (d) 2–4 years

36. Hand regard disappears by: *(Recent Question 2016)*
(a) 20 weeks (b) 12 weeks
(c) 24 weeks (d) 28 weeks

37. Handedness usually established by: *(Recent Question 2016)*
(a) 12 months (b) 18 months
(c) 24 months (d) 36 months

38. Neat pincer grasp appears at _____ months. *(Recent Question 2014)*
(a) 6 (b) 9
(c) 12 (d) 15

39. A child enjoys peek-a-boo at _____ months. *(Recent Question 2014)*
(a) 6 (b) 9
(c) 12 (d) 15

40. What about development is not true?
(a) Pincer grasp at 3 months *(AIIMS May 95)*
(b) Sitting at 6 months
(c) Social smile at 3 months
(d) 2 year old can use plurals

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41. A female child has recently learned to eat with spoon without spilling, to dress and undress herself with supervision and to understand that she is a girl. These skills are first mastered between the ages of: *(AIIMS Nov 05, DPG 09)*
(a) 2 and 3 years (b) 3 and 4 years
(c) 4 and 5 years (d) 5 and 6 years

42. A boy can grasp a rattle and recently he become able to transfer objects, hand to hand. He can do: *(PGI Dec 08)*
(a) Babble (b) Say mama or dada
(c) Sit without support (d) Stand with support
(e) Able to walk

43. A child climbs with alternate steps, builds a towers-9 cubes, tells 'I' but not his name and can not say his age and sex, the probable age is: *(AIIMS May 01)*
(a) 36 months (b) 24 months
(c) 30 months (d) 48 months

44. A child can transfer objects from one hand to other, and is babbling, will be able to: *(Recent Question 2016)*
(a) Casting
(b) Walk with support
(c) Make a tower of two cubes
(d) Say mama and Dada

45. Which of the following cannot be done by 3 years old child? *(Recent Year 2015)*
(a) Draw a triangle (b) Draw a circle
(c) Can arrange 9 cubes (d) Can go up and down

46. A 3-year-old child can do all, *except*: *(Recent Question 2016)*
(a) Eat with a spoon
(b) Climb stairs running
(c) Walk properly
(d) Vocabulary of 20–100 words

47. A child draws Triangle at what age? *(AIIMS Nov 05, DPG 09)*
(a) 3 years (b) 4 years
(c) 5 years (d) 7 years

48. A 18-month baby can do: *(Recent Question 2014)*
(a) Hide and seek game (b) Write alphabet
(c) Say short sentence (d) Walk short distance

49. Which of the following milestone is developed in child between 6 to 9 months of age? *(PGI May 2015)*
(a) Can point something with index finger
(b) Swaps object from one palm to another
(c) Can hold object with thumb and index finger
(d) Can voluntary drop object
(e) Can extend arm

50. Scribbling spontaneously with pencil occurs earliest by: *(Recent Question 2016)*
(a) 1 year (b) 15 months
(c) 18 months (d) 24 months

51. At what age child can eat food without spilling, identify her gender, say her full name, can dress self with supervision? *(AIIMS Nov 2012)*
(a) 2 yrs (b) 3 yrs
(c) 4 yrs (d) 5 yrs

52. Which of the following is considered a developmental delay? *(AIIMS May 2013)*
(a) Pincer grasp not developed by 9 months
(b) Moving up and downstairs by 2½ years
(c) Not able to sit at 9 months
(d) Two word syllable at 1½ years

53. A 6 year-old child with IQ of 50. Which of the following can the child do? *(AIIMS May 07, Nov 06, AI 07)*
(a) Identify colors (b) Copy a triangle
(c) Ride a bicycle (d) Read a sentence

54. A child has a vocabulary of 4–6 words. However the main mode of communication and social interaction continues to be non-verbal. What is the most likely developmental age of the child? *(AI 12)*
(a) 12 months (b) 15 months
(c) 18 months (d) 24 months

55. A four-year-old child cannot do which of the following? *(APPG 2014)*
(a) Count 10 pennies
(b) Hop on one foot
(c) Copy a bridge
(d) Identify the longer of two lines

56. Beyond what age, absence of social smile is regarded as abnormal? *(Recent Question 2014)*
(a) 12 weeks (b) 14 weeks
(c) 16 weeks (d) 18 weeks

57. Red flag sign in child development if not attained: *(Recent Question 2014)*
(a) Vocalization at 2 months
(b) Walking at 12 months
(c) Single word at 12 months
(d) Social smile at 3 months

58. Which one among the following milestones should arouse concern of the parents regarding development of their child? *(Recent Question 2015)*
(a) Absence of teeth at 10 months
(b) Lack of toilet training at 2½ years
(c) Absence of a responsive smile at 12 weeks
(d) Stammering at 3 years

59. Which of the following signs would mandate early referral to a child neurologist? *(Recent Question 2016)*
(a) Mouthing at 6 months age
(b) Fisting of hands at 5 months age
(c) Drooling of saliva at 9 months age
(d) Casting objects at 1 year age

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