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2024

ONE Touch Pediatrics

For NEET/UPSC/NEXT/FMGE/INI-CET

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2nd Edition

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Anand Bhatia

ONE Touch Pediatrics

For NEET/NEXT/FMGE/INI-CET

Second Edition

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Preface

Hello friends!

First of all, I would like to extend my heartfelt thanks to all of you for reading my book and showering your blessings. I still remember, when I was doing MBBS, I faced huge difficulty in covering my syllabus. I had no idea how to study in a proper way and how to crack exams. That day, I promised myself that one day I will change the whole thought process of teaching and will introduce a different way of learning.

So, here is the result of my day and night efforts. I am introducing to you this book which covers all the theories and clinical topics for your UG and PG exams. There is one precious message I would like to convey to all of you: "Never stop believing in your dreams, they were given to you for a reason. Just find the purpose of your existence in this life and once you find it, spend your whole life cherishing it; because once you follow your passion, life becomes beautiful."

Who Can Use This Book?

Anyone who is preparing for UG and PG exams.

How Should I Read This Book?

- If you are a final year student then develop the habit of finishing one chapter in a day. By the end of the day, call one of your close friends and just teach him/her whatever you read. (You will never forget that topic in your life). There are 17 chapters in this book, which means your first reading must be finished in 17 days.
- If you are appearing for PG entrance exam—you must finish this book in 5 days.
- Time for first reading: 4 days
- Time for second reading: 3 days
- Time for third reading: 2 days
- Try to focus on the images, tables and last segment of the book which covers recent MCQs.

Always Remember:

"10 किताबों को एक बार नहीं, एक किताब को 10 बार पढ़ो।"

"Instead of reading 10 books one time, Read one book 10 times."

"Life is a one-time offer—use it well."

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Anand Bhatia

From Publisher's Desk

Dear Students,

Let us begin with a power-packed and inspiring quote:

> Arise, awake, and stop not until the goal is achieved.
>
> **—Swami Vivekananda**

Healthcare is undoubtedly one of the most noble and sacred professions. We are truly fortunate to be a part of this field, which stands as a beacon of selfless service to humanity. Healthcare professionals work tirelessly, transcending boundaries of caste, creed, religion, community, nationality, and preferences. Their service is a testament to the divine nature of this profession.

We extend our deepest gratitude to all healthcare professionals for their unwavering commitment, particularly during the pandemic. When the world retreated behind closed doors, these brave individuals stood on the frontlines, leaving no stone unturned in saving the lives of people.

At CBS Publishers, we take great pride in supporting the healthcare community by offering resources that empower future professionals. Ten years ago, we laid the foundation in the PGMEE segment with titles such as the **Conceptual Review Series, SARP Series, AIIMS MedEasy, NIMHANS, PGI Chandigarh, My PGMEE Notes, ROAMS, PRIMES, FMGE Solutions** and many more.

What makes our PGMEE books stand out is the updated, simple, clear, and easy-to-understand language, making study sessions feel less like a challenge and more like an enjoyable learning experience. A team of our esteemed medical educators brings their expertise to create these comprehensive yet compact books, ensuring that all the critical topics are covered.

A special feature of our books is the use of illustrations that simplify complex concepts, making them easier to grasp. We also include previous years' questions, complete with detailed explanations, which are invaluable for exam preparation. Image-Based Questions (IBQs) further enhance the learning experience. The combination of concise theory and multiple-choice questions makes these books the ultimate tool to ease exam-related worries.

FMGE Solutions is one of our best-selling titles, meticulously designed to meet the specific needs of FMG aspirants. This comprehensive guide is an all-in-one resource for FMGE preparation, offering in-depth coverage of essential topics, detailed explanations, and a wide array of questions that reflect the latest exam patterns. Its reputation as a bestseller speaks to its effectiveness and reliability as a trusted resource for future medical professionals.

One Touch Series, is tailored specifically for aspirants of NEET PG, NExT, FMGE, and INI-CET. Conceptualized with a focus on last-minute revision, the **One Touch Series** covers a complete range of preclinical, paraclinical, and clinical subjects. These concise, expertly curated books are designed to help students efficiently review key concepts, ensuring they are well-prepared and confident as they approach their exams.

This year, we have introduced a new addition to the CBS Exam Book Series: **Ten into Ten** (Part A and B). According to the market research, at present no book is available for practice and this new addition to our exam book series will fill this gap for sure. Although there are multiple apps from where students can

attempt test series online, not a single updated book is available in the market for offline practice, and this book now in your hand, will fill this vacuum. The motto of this book is Practice: Practice: Practice as this book offers a decent amount of MCQs which will meet the evolving needs of students. **Ten into Ten** is a comprehensive question bank covering 19 medical subjects. It offers over 10,000 meticulously curated questions across 10 key subjects, crafted by 10 renowned medical scholars.

Following this, we will soon release the next part, **Nine into Nine**, further expanding our collection of practice materials for the PGME Examination, with the latest and most effective study approaches.

At CBS, we are committed to revolutionize the medical education and your support and encouragement can make our task easier. So, keep extending your support by sending your feedback to us. We will be highly pleased to serve you and make you victorious in your career. You can share your feedback at feedback@cbspd.com

Wishing you all the best in your endeavors.

Mr Bhupesh Aarora
(Sr. Vice President – Publishing & Marketing)
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Contents

THEORY

1 Growth and Development

"If the world was blind, how many people you would have impressed."

IMPORTANT FACTS

- **Neonate:** 0–28 days of life
- **Early neonate:** 0–7 days
- **Late neonate:** 7–28 days*

Image 1: Early neonate

- **Infant:** 29 days till 1 year
- **Toddler:** 1–3 years
- **Preschool:** 3–6 years
- **School:** 6–12 years
- **Adolescent period:**
  - Early: 10–13 years*
  - Middle: 14–16 years
  - Late: 17–19 years
  - Normal head circumference (HC) at birth: 33–35 cm
  - **Rate of increment:**
    - 0–3 months: 2 cm/month
    - 3–6 months: 1 cm/month
    - 6–12 months: 0.5 cm/month

Remember

Greek Meaning of Pediatrics

- Pedia = child
- iatrics = healer

Periods of Growth

- Ovum: 0–2 weeks
- Embryo: 3–8 weeks
- Fetus: 9 weeks—birth

- Normal weight of a newborn: 2.5–4 kg
- Average Indian baby weight: 3 kg
- Weight doubles by 5 months and triples by 1 year

RATE OF INCREMENT OF WEIGHT

1. 0–2 months: 20–40 g/day
2. 3–12 months: 400 g every month till 1 year
3. 2 kg/year for next 7 years
4. After 7 years—3 kg/year

Remember*

Weight of a 1-year-old is 10 kg

As the age increases, weight increases in even number, that means weight of a 2-year-old will be 12 kg

3-year-old: 14 kg **4-year-old:** 16 kg

5-year-old: 18 kg **6-year-old:** 20 kg

Weech's Formula for calculating expected weight

1. 3–12 months = $\frac{9 + x}{2}$ $x \Rightarrow$ age in months
2. 1–6 years = $2x + 8$ $x \Rightarrow$ age in years
3. 7–12 years = $\frac{7x - 5}{2}$ $x \Rightarrow$ age in years

Note: *Repeated question
**Multiple times repeated question

HEIGHT

High-Yield Points

- Length of a newborn: 48–50 cm (19–21 inches)
- Length doubles by 4 years and triples by 12 years
- Length of a 4-year-old will be 100 cm and 12-year-old will be 150 cm
- After 4 years, child gains 6 cm/year height every year till 12 years
- Length of a 1-year-old is 75 cm (means from birth till 1 year there is an increment of 25 cm)
- Expected height formula: Age (in years) multiply by 6 + 77
- <2 years we take the length of baby
- >2 years we take the height

Legal age definitions	
Definition of child	<18 years
Minimum age of marriage	Boy <21 years, Girl <18 years
Responsibility of crime	12 years
Juvenile criminal	12–18 years
Compulsory free education	6–14 years

- **Infantometer:** To measure the length of 0–2 years
- **Stadiometer:** To measure the height of >2 years
- Standing height is about 0.7 cm less than the recumbent length

Images 2A and B: **A.** Infantometer; **B.** Stadiometer

SKIN FOLD THICKNESS

Harpenden Caliper

- To know the caloric reserve of the body
- Measured to the nearest of 1 cm
- Normal value
  - 1–6 years is >10 mm
  - If it is <6 mm—malnutrition

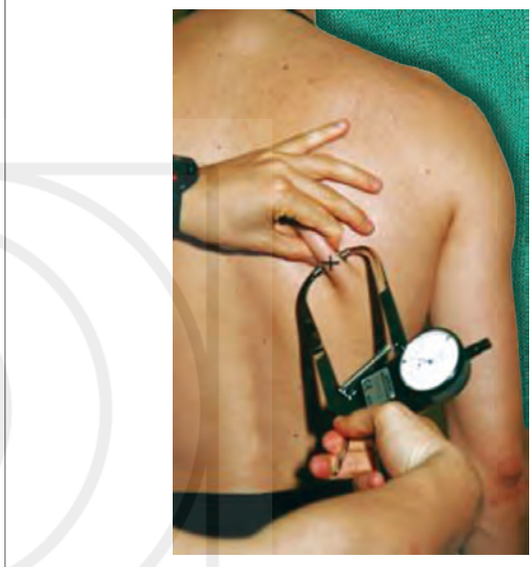
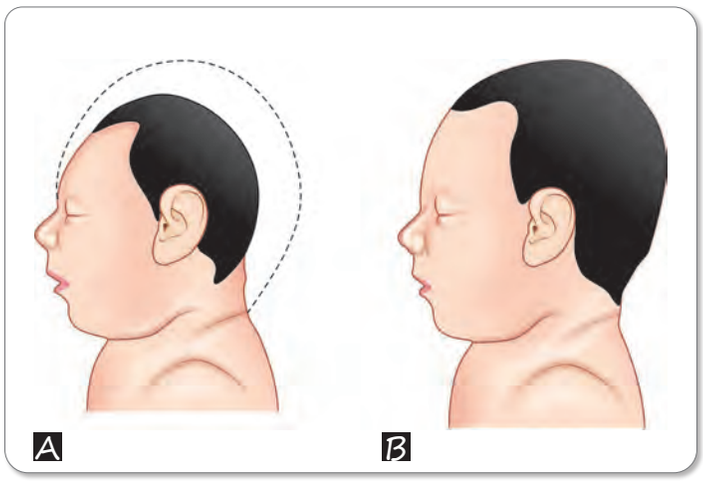


Image 3: Harpenden caliper**

MICROCEPHALY AND MACROCEPHALY

- **Microcephaly:** Head circumference <–3 SD (standard deviation)
- **Macrocephaly:** HC >2 SD for the age and sex



Images 4A and B: **A.** Microcephaly; **B.** Macrocephaly

Causes of Microcephaly

Mnemonic

There were two babies Rubin and Smith

- **Rubin:** Rubinstein-Taybi syndrome
- **Smith:** Smith-Lemli-Opitz syndrome

Their **Families** were **Crying** because they want to **Eat Corn** at **Pattaya** beach

- **F:** Familial
- **C:** Cri du chat syndrome
- **E:** Edward syndrome
- **Corn:** Cornelia de Lange syndrome
- **Pattaya:** Patau syndrome

Practice Question

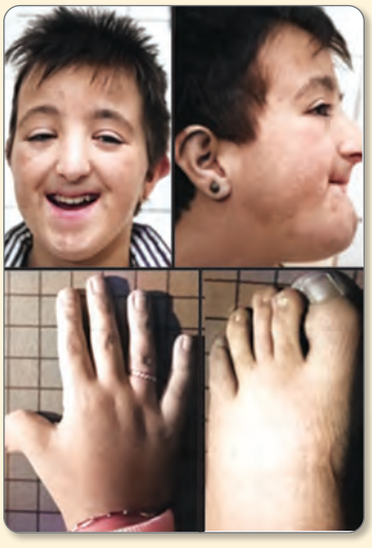
Q. What is the common feature about these syndromes—Galactosemia, Weaver syndrome, Sotos syndrome and Morquio syndrome?

a. They are causes of Microcephaly
b. They are causes of Macrocephaly
c. They are causes of Anemia
d. They are Nutritional disorders

Ans. b. They are causes of Macrocephaly

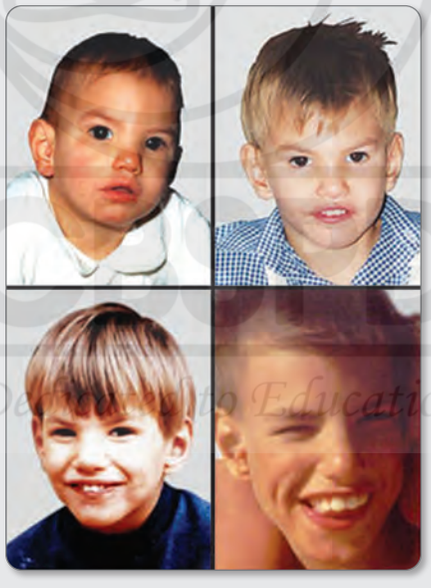
Rubinstein-Taybi syndrome

- **GREAT**—Great toe deviated
- **MR**—Mental retardation
- **MICRO**—Microcephaly
- **THUMBS**—Thumbs are broad
- **ASD**—Atrial septal defect



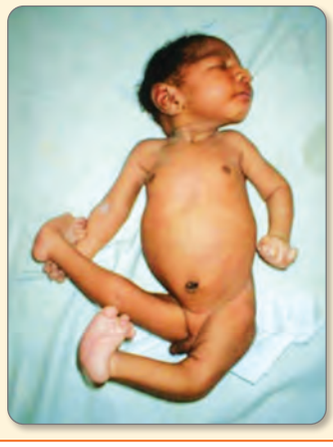
Cri du chat syndrome

- 5p deletion
- Microcephaly
- High pitch cry resembling a cat



Edward syndrome

Trisomy 18
R: Rocker bottom feet
O: Overlapping digits
C: Cardiac defect
K: Kidney defect
Y: Microcephaly
M: Mental retardation



UPPER SEGMENT: LOWER SEGMENT RATIO

- **Upper segment:** Vertex to pubic symphysis
- **Lower segment:** Pubic symphysis to heel
- **Normal ratio at birth:** 1.7:1
- **3 years:** 1.3:1
- **7–10 years:** 1:1
- **Adult:** 0.9:1

High-Yield Points

- Growth of a child is cephal to caudal and distal to proximal
- That means during fetal life, head grows before the neck
- Distal parts of the body such as hands increase in size before the upper arms

DRUGS CONTRAINDICATED IN PREGNANCY

Maternal intake	Defect in the baby
Thalidomide	Phocomelia
Antimalarial	Deafness
Alcohol	Fetal alcohol syndrome/limb abnormalities
Carbamazepine	Spina bifida
Carbimazole	Scalp defects, choanal atresia, esophageal atresia
Cocaine	Microcephaly, LBW, IUGR
Danazol	Virilization
Lithium	Ebstein anomaly, macrosomia
Misoprostol	Moebius syndrome—cranial neuropathies
Phenytoin	Fetal hydantoin syndrome, neuroblastoma, bleeding (Vitamin K deficiency)
Quinine	Abortion, thrombocytopenia, deafness
Statins	VACTERL anomalies
Tetracyclines	Teeth pigmentation, cataract
Vitamin D	Supravalvular aortic stenosis, hypercalcemia
Warfarin	Fetal bleeding, hypoplastic nasal structures
Erythromycin	Congenital hypertrophic pyloric stenosis

POTTER SYNDROME

- If the mother is a case of polyhydramnios, we should rule out trachea esophageal fistula (TEF) in the baby
- If the mother is a case of oligohydramnios, we should rule out renal agenesis in the baby

Renal agenesis and oligohydramnios are associated with Potter syndrome

- **P**: Pulmonary hypoplasia
- **O**: Oligohydramnios
- **T**: Twisted skin (wrinkled skin)
- **T**: Twisted face (potter face)
- **E**: Extremities defect
- **R**: Renal agenesis

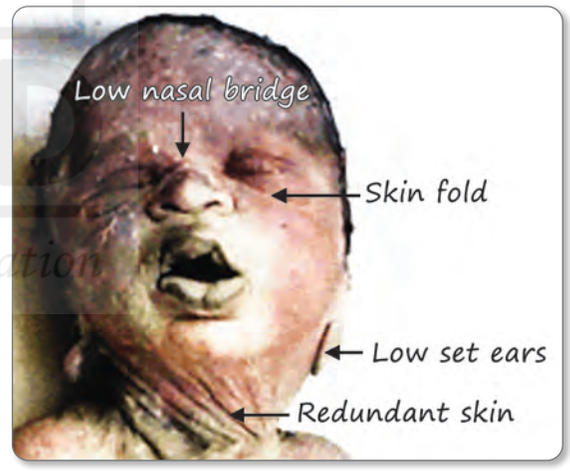
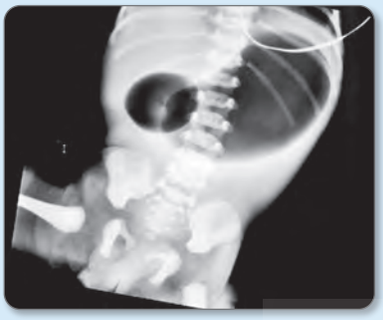


Image 5: Potter syndrome

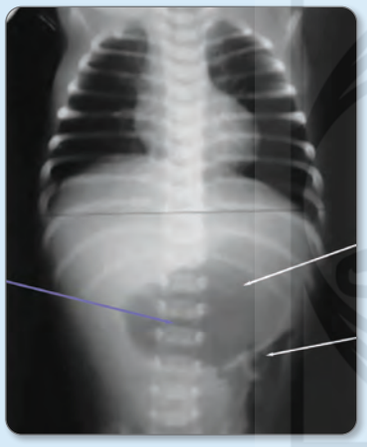
Turner syndrome	Noonan syndrome	Fetal alcohol syndrome
Karyotype 45 XO	Karyotype normal	Microcephaly
Infertile due to streak ovaries	Fertile but delayed puberty	Short palpebral fissure
Only females	Males or females	Smooth philtrum
Intelligence normal	Intellectual disability present	Thin upper lip
	Heart: Pulmonary stenosis	

High-Yield Points

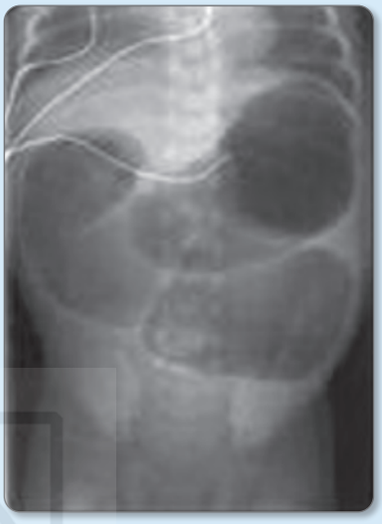
- **Most common GIT abnormality in Down syndrome is:** Duodenal atresia (X-ray: Double bubble sign)



- **Single bubble sign is seen in:** Pyloric stenosis



- **Triple bubble sign:** Jejunal atresia



Most common congenital.
Heart disease in Down syndrome is Endocardial cushion defect.

For the antenatal screening of down syndrome in 1st trimester:

1. Nuchal thickness >3 mm
2. β-hCG and pregnancy-associated plasma protein A (PAPP-A)

2nd trimester:

Triple scan AFP, unconjugated estriol, β-hCG

Quadruple scan: All 3 + inhibin A

Practice Question

Q. Pulmonary stenosis is most commonly seen in:

a. Alagille syndrome
b. Noonan syndrome
c. Down syndrome
d. a and b

Ans. d. a and b

IMP PYQs

Q. Which is the syndrome where IQ will not be affected?

Ans. Turner syndrome

	AFP	Estriol	hCG	Inhibin A	Levels
Down	Low	Low	High	High	High
Turner	Low	Low	Very high	Very high	High
Edward	Unchanged	Low	Very low	Unchanged	HE is low
Patau	Increased	Normal	Normal	Normal	AFPatau is high

Mnemonic

Clinical Features of Treacher Collins Syndrome

Gandhi ji's three monkeys

- "Bura mat dekho/don't see bad"—coloboma of eyes
- "Bura mat suno/don't hear bad"—deafness
- "Bura mat bolo/don't speak bad"—hypoplasia of cheeks, micrognathia
- Autosomal dominant
- Tcof1 gene mutation
- Intelligence is not affected*

Causes: Macrocephaly: Mnemonic: "ARO Saves My Health"

- A: Anemia (chronic)
- R: Rickets
- O: Osteogenesis imperfecta
- S: Subdural hematoma, Syndromes like—Galactosemia, Weaver syndrome, Sotos syndrome, Morquio syndrome
- M: Megalencephaly
- H: Hydranencephaly
- H: Hydrocephalus

X-RAY WRIST

		Hamate	Capitate	Trapezoid	Trapezium	
Medial						Lateral
		Pisiform	Triquetral	Lunate	Scaphoid	

- 1st carpal bone to appear: Capitate comes by 2 months
- 2nd carpal bone to appear: Hamate comes by 3 months
- 3rd—triquetral comes by 3 years
- 4th lunate comes by 4 years
- 5th scaphoid comes by 5 years
- Last carpal bone to appear: Pisiform

Practice Question

Q. X-ray is compared using:

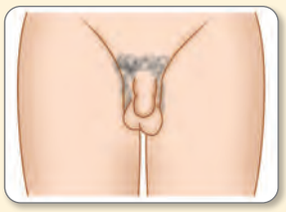
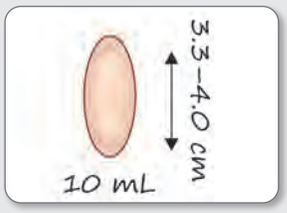
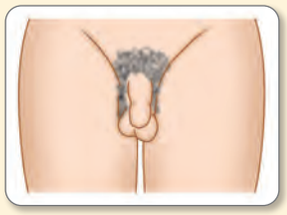
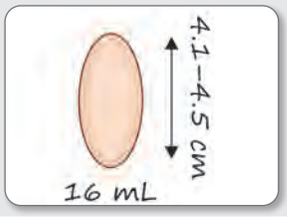
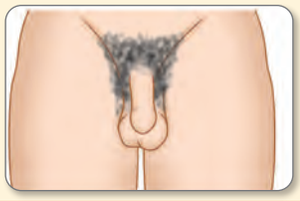
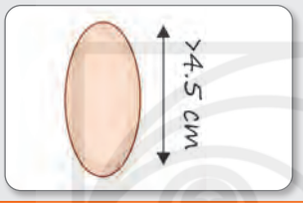
a. Greulich and Pyle atlas Tanner
b. Whitehouse method
c. Both
d. None

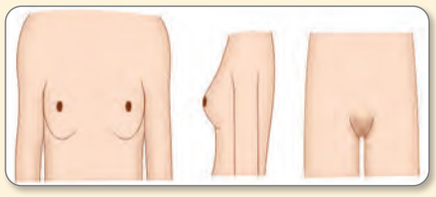
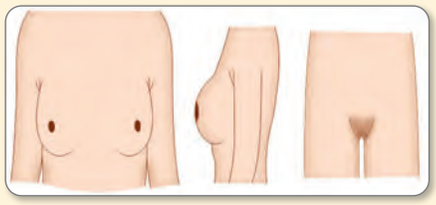
Ans. c. Both

Mnemonic

3—3 means 3-year-old will have 3 carpal bones
4—4 means 4-year-old will have 4 carpal bones
5—5 means 5-year-old will have 5 carpal bones

Age	X-ray for bone age estimation	X-ray is compared
Newborn	Knee joint	Greulich and Pyle atlas and Tanner-Whitehouse methods
3-9 months	Shoulder joint	
1-13 years	Wrist joint	
12-14 years	Elbow/hip	

Stage	Volume and size of testis	Characteristic features
3. 		Increase in length of penile shaft, hair begins to curl and darken
4. 		• Increase in girth of penis and glans • Darkening of scrotum • Coarse abundant and curly hair
5. 		Adult type • Adult size scrotting • Adult type penis • Hair spreading to medial side of thigh

CMR stage	Features
Grade 1.	Prepubertal, no terminal hair
2. 	Breast bud, sparse straight hair along the labia
3.  	Generalized breast development (extending beyond the areola), hair begins to curl
4. 	Nipple and areola form a second mound over the breast with increase in amount of hair over the entire mons.
5. 	Mature adult type Nipple projects and areola recedes with adult type pubic hair in triangle spreading over to medial part of thigh.

IMP PYQs

Q. Identify the given instrument and also write its function.

Ans. Orchidometer.

The instrument is used for testis volume/hypogonadism.

Practice Question

Q. CMR staging with features of Breast bud, sparse straight hair along the labia is:

a. 1
b. 2
c. 3
d. 4
e. 5

Ans. b. 2

PERLMAN SYNDROME

Features

- Fetal overgrowth disorder present @ birth
- Fetal gigantism
- Renal hamartomas
- It does not cause IUGR.

Image 31: Perlman syndrome

APPROACH TO HEPATITIS B POSITIVE MOTHER

Hepatitis B immunoglobulin (within 48–72 hours) + hepatitis B vaccine on alternate thigh to the baby.

Identify The Image

Identify the finding in the image.

- **Acrocyanosis:** ACRO = periphery and cyanosis
  = bluish discoloration
- One of the conditions in a newborn which looks abnormal, but is normal

Acrocyanosis

APPROACH TO HIV+ MOTHER

- ART sufficient (>4 weeks): Nevirapine 10 mg once daily for 6 weeks.
- ART insufficient: (<4 weeks)
  - High-risk of transmission then nevirapine + zidovudine for 12 weeks.
  - Low-risk of transmission: Only nevirapine for 12 weeks.

APPROACH TO TB+ MOTHER

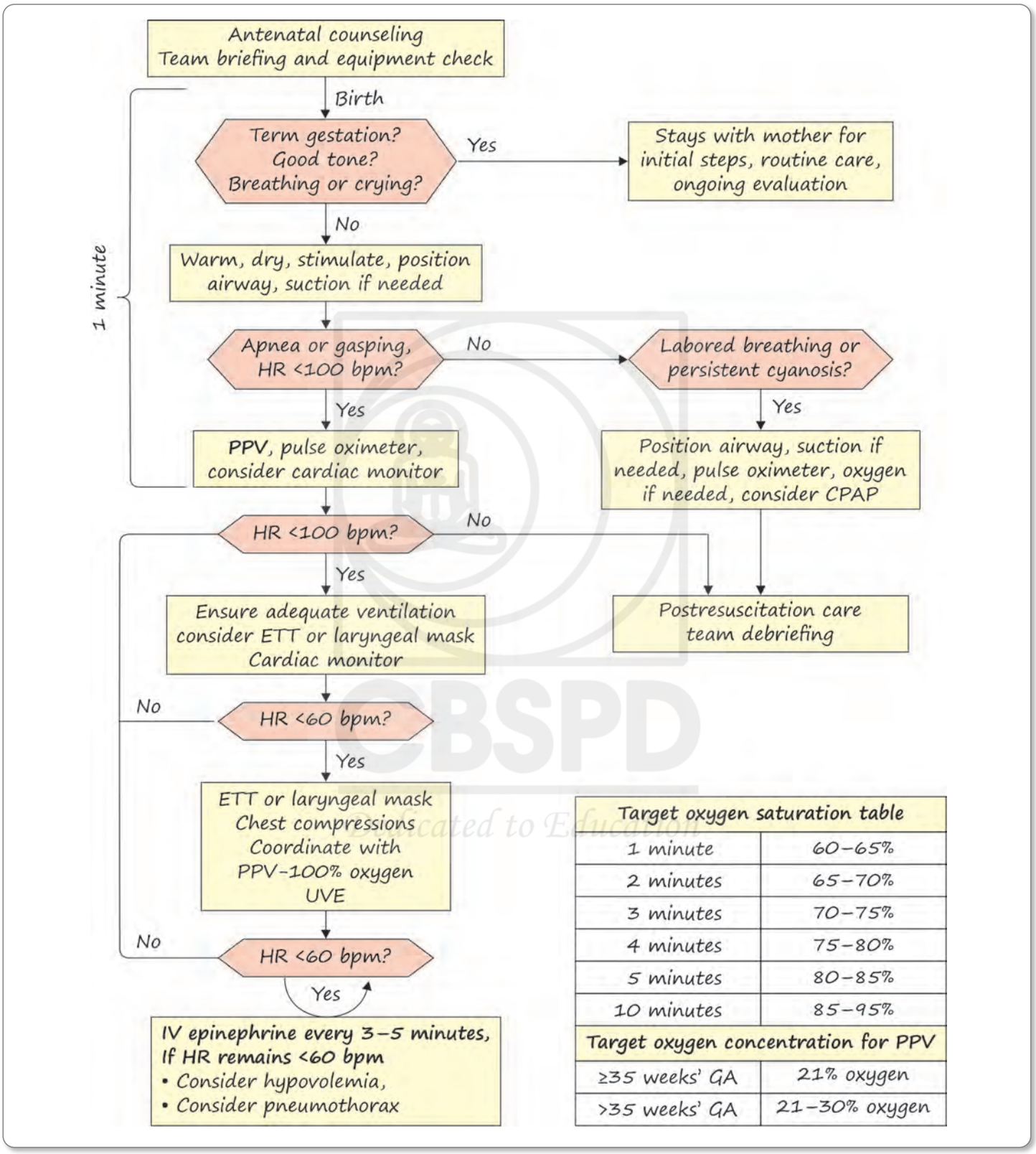
Isoniazid to the baby 10 mg/kg/day for 6 months.

TYPES OF IUGR

Symmetrical IUGR	Asymmetrical IUGR
• Insult to the mother in 1st or early 2nd trimester • **Causes:** Chromosomal defect, genetic defects and torch infections • HC/WT/length equally affected Then, multiply by 100 • Ponderal index (PI) >2 • PI >2.5 is seen in term babies • Poor prognosis	• Insult in late 2nd or 3rd trimester • **Cause:** Maternal anemia, not gaining weight, hypertension, uteroplacental insufficiency • Head circumference is normal; rest of body appears small (due to "Brain-sparing" effect) • Ponderal index <2 • Good prognosis **Formula:** Ponderal index = $\frac{\text{Weight in grams}}{(\text{Length in cm})^3} \times 100$

NEONATAL RESUSCITATION (LATEST UPDATE)

"Do smart work."



Target oxygen saturation table	
1 minute	60–65%
2 minutes	65–70%
3 minutes	70–75%
4 minutes	75–80%
5 minutes	80–85%
10 minutes	85–95%
Target oxygen concentration for PPV	
≥35 weeks' GA	21% oxygen
>35 weeks' GA	21–30% oxygen

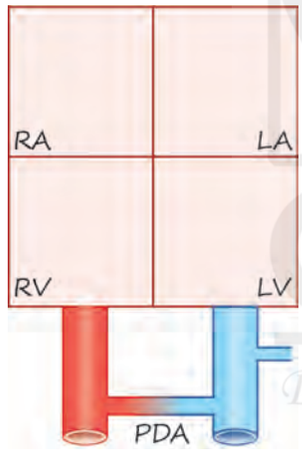
Image 56: The resuscitation algorithm

Abbreviations: CPAP, continuous positive airway pressure; ETT, endotracheal tube; PPV, positive pressure ventilation; SpO_2, saturation of oxygen

(Adapted with permission from American Academy of Pediatrics 2020)

- SVR: Systemic vascular resistance decreases
- Flow of ductus arteriosus: Right to left
- IVC blood is more saturated than SVC blood
- Lungs are never working in fetal circulation
- The placenta is the principal site of gas exchange, excretion and acquisition of nutrients
- Factors causing closure of ductus arteriosus: Oxygen, bradykinin, cutting of placenta
- If a patient has single artery-single vein, we should rule out: Renal agenesis.

	Functional closure	Anatomical closure
Ductus venosus	After removal of placenta/ umbilical cord clamp	7 days
Foramen ovale**	During breastfeeding	Months – years
Ductus arteriosus	10–15 hours	10–21 days



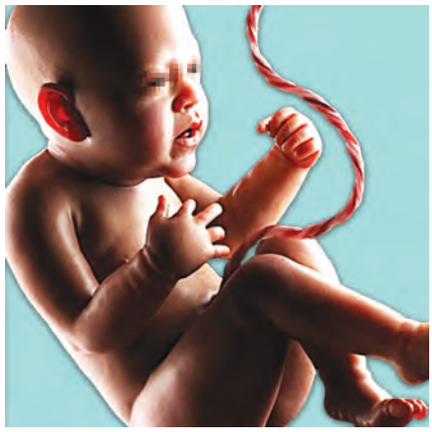


Image 101: PDA

Structure	Remnant
Ductus arteriosus	Ligamentum arteriosum
Umbilical artery	Medial umbilical ligament
Umbilical vein	Ligamentum teres (hepatis)
Ductus venosus	Ligamentum venosum

PATENT DUCTUS ARTERIOSUS

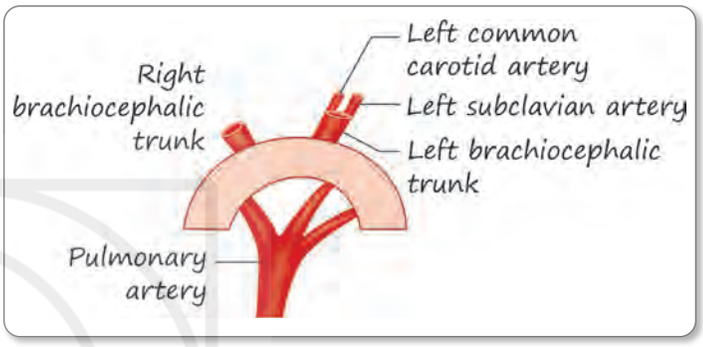


Image 102: Diagramatic presentation of PDA

Present with pulmonary artery and descending aorta

Remember

- More common in females and high altitudes
- One syndrome associated with PDA is congenital rubella syndrome findings:
  - Loud M1
  - Shunt murmur: Machinery murmur
  - S2: Paradoxical split of S2
  - S3: Large shunt

High-Yield Points

- ASD S2—wide fixed split S2
- VSD S2—wide variable split of S2
- PDA S2—paradoxical split in large PDA

Clinical Features

- Hyperdynamic circulation
- Bounding pulses
- Easily palpable dorsalis pedis artery
- Wide pulse pressure >25 mm Hg
- Hyperactive precordium (visible pulsation is >2 rib spaces)
- Ejection systolic murmur
- Persistent tachycardia

Practice Questions

Q. What is the use of Hypoxia test?

a. To test reduced oxygen levels in a pre-term infant
b. To differentiate hypoxia and dysnoae
c. To confirm cyanosis
d. To rule out the cause of cyanosis
e. To assess SpO_2 in a newborn

Ans. d. To rule out the cause of cyanosis.

Q. Full form of CCAM:

a. Congenital Cardiac Anomaly Management
b. Cardiac Conditions Assessment and Management
c. Congenital Cystic Abnormalities and Malformation
d. Congenital Cystic Adenomatoid Malformation

Ans. d. Congenital Cystic Adenomatoid Malformation

Q. Pulmonary stenosis is most commonly seen in:

a. Alagille syndrome
b. Noonan syndrome
c. Down syndrome
d. a and b
e. a and c

Ans. d. a and b

Q. Which anatomical structure closes during breastfeeding?

a. Ductus arteriosus
b. Foramen ovale
c. Ductus venosus
d. All of these

Ans. b. Foramen ovale

Quick Revision

- Tetralogy of Fallot (Boot-shaped) components: Right Ventricular Hypertrophy, Ventricular Septal Defect, Overriding of aorta and Progressive pulmonary stenosis.
- MC Congenital heart disease associated with Lutembacher's syndrome is Ostium secundum type of ASD.
- Alagille syndrome—Butterfly-shaped Vertebra.
- Functional closure of ductus arteriosus is 10-15 hours and Anatomical closure is 10-21 days.
- Most common type of Atrial Septal Defect is Ostium secundum.
- Most common congenital heart disease in cardiology is ventricular septal defect.
- Most common congenital heart disease is transposition of Great Arteries.
- Box-shaped heart is seen on Chest X-ray of Ebstein anomaly.
- Figure of 3 appearance is seen in X-ray of Coarctation of Aorta.
- Duct independent congenital heart disease is truncus arteriosus.

IMP PYQs

Q. You are the Doctor in the internal ward at Rajagiri Hospital and you meet Mr Bharath. He responds to strong pain and withdraws his hand, incomprehensible word. His GCS is:

A. 6 B. 7 C. 8 D. 9

Ans. C. 8

TORCH PROFILE

T : Toxoplasmosis
O : Others
R : Rubella
C : CMV (most common)
H : Herpes

- Which is the most common among all?—CMV
- Which one causes recurrent abortions?—Syphilis
- Which is the most severe form of intrauterine infection?—Rubella
- Which is dangerous in first trimester?—Rubella
- Trimester-wise severity of infection:
  - First trimester: Rubella
  - Second trimester: Parvovirus
  - Third trimester: Syphilis, CMV, toxoplasmosis

Congenital Toxoplasmosis

- Triad
  1. Hydrocephalus
  2. Intracranial calcification (diffuse)
  3. Chorioretinitis* Most common
- Confirmatory test: +ve toxoplasma IgM in serum.
- Maternal RX with spiramycin during pregnancy reduces the risk of transmission significantly.

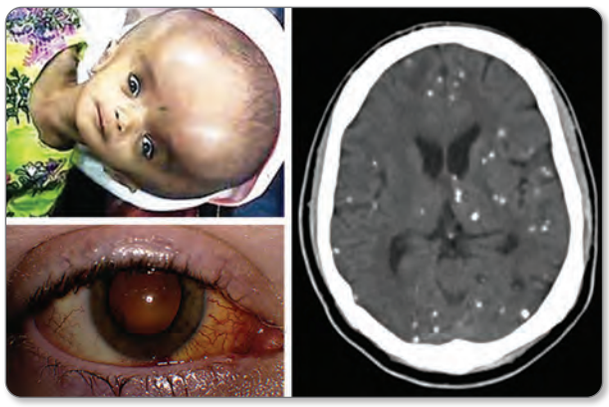


Image 139: Congenital toxoplasmosis

IMP PYQs

Q. Which of the following agents is likely to cause cerebral calcification and hydrocephalus in a newborn whose mother has history of taking spiramycin but was not compliant with therapy?

A. Rubella B. Toxoplasmosis
C. CMV D. Herpes

Ans. B. Toxoplasmosis

Congenital Syphilis

- **Early feature:** Syphilitic rhinitis (bloody rhinorrhea)
- **Late features:** Hutchinson's triad*
  1. Hutchinson teeth
  2. Interstitial keratitis
  3. 8th nerve deafness (sensorineural hearing loss)

Other Features

- Mulberry molars: Multiple rounded rudimentary enamel cusps on the permanent first.
- Clutton's joint, painless joint, swelling-knee

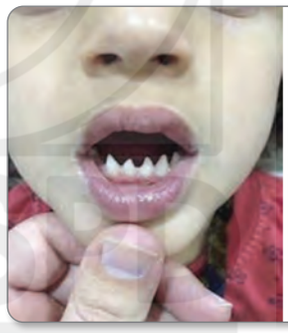


Image 140: Hutchinson teeth

Image 141: Mulberry molars

- Higoumenakis Sign: Thickening of the medial portion of the clavicle
- Diagnosis: IgM-FTA-ABS* NEET

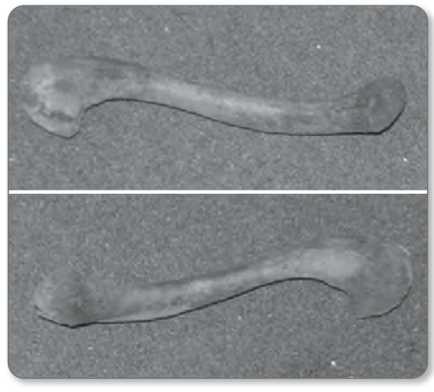


Image 142: Higoumenakis sign

STATUS EPILEPTICUS—APPROACH

Definition: Status epilepticus is defined as continuous or recurrent seizure which lasts for >5 minutes without regaining consciousness.

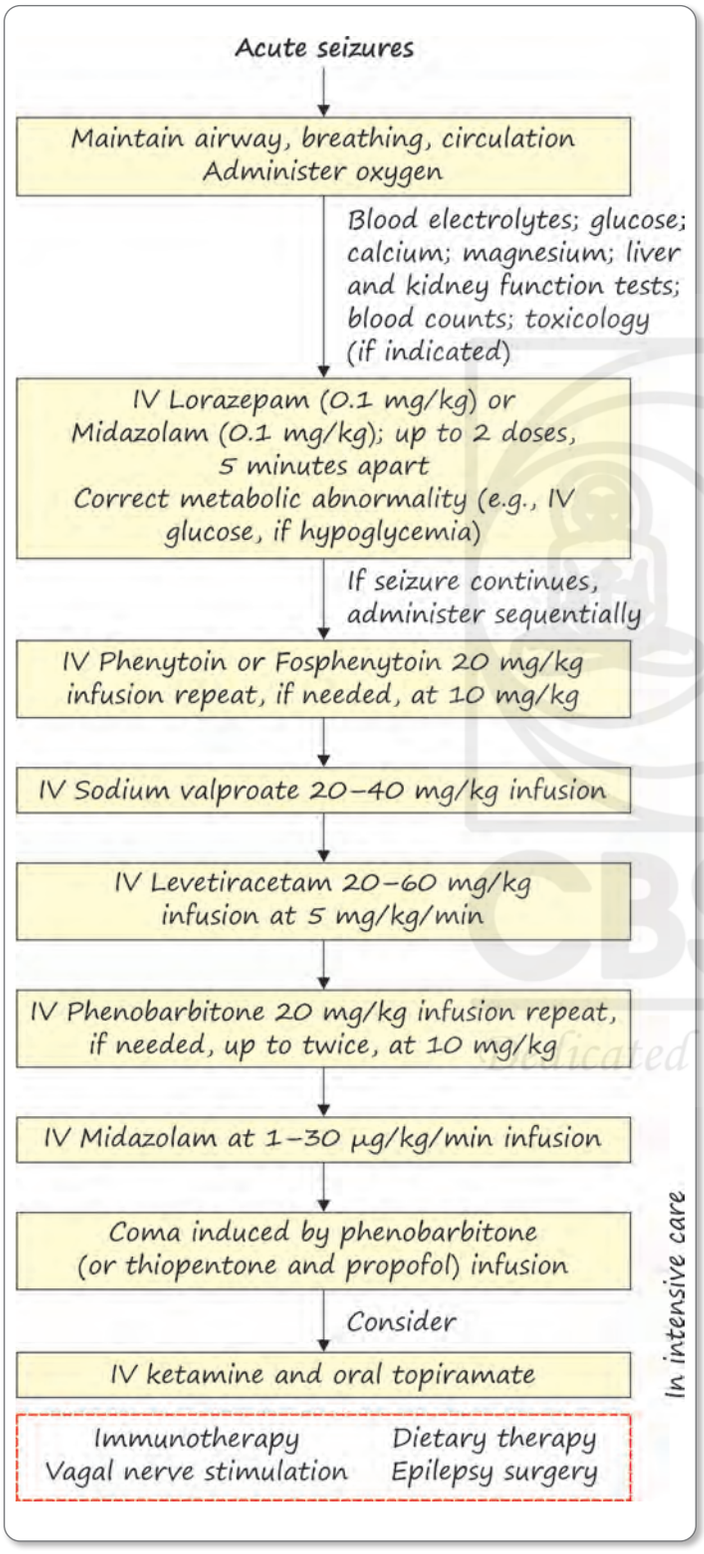
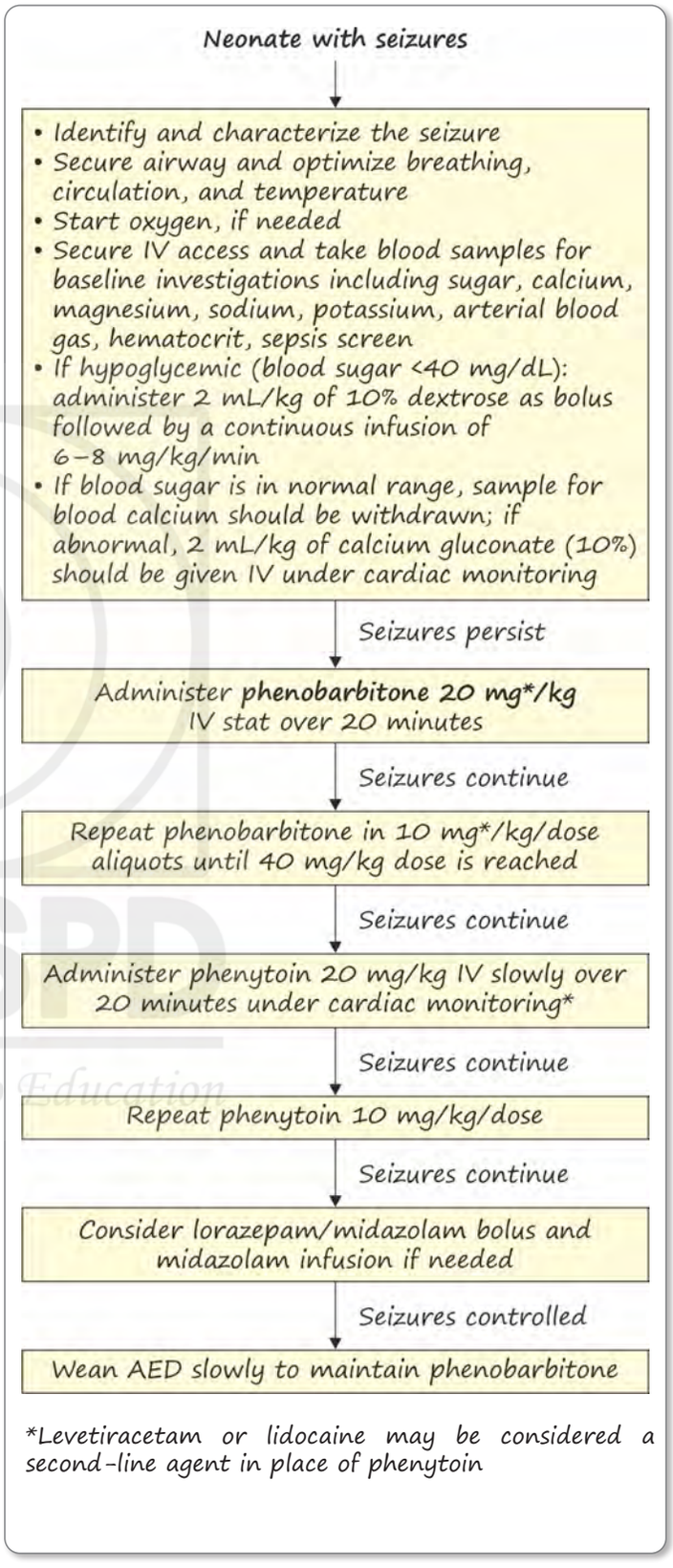


Image 163: Sequential drug therapy in the management of status epilepticus

SEIZURE IN A NEWBORN—APPROACH



*Levetiracetam or lidocaine may be considered a second-line agent in place of phenytoin

Image 164: Acute management of neonatal seizures

FEEDING IN SEVERE ACUTE MALNUTRITION (SAM)

WHO recommended starter diet in SAM	F-75 diet	F-100 diet
Calories	75	100
Protein	0.9 g	2.9 g
Lactose	1.3 g	4.2 g

IMP PYQs

Q. What is failure to respond in SAM?

Ans.

- Failure to regain appetite by day 4
- Failure to start to lose edema by day 4
- Edema still present by day 10

IMP PYQs

Q. When to discharge SAM baby?

Ans.

- 15% weight gain from the date of admission.
- >5 g/kg/day weight gain for 3 consecutive days.
- Mother is confident enough to take care of the baby.
- All the micronutrients are given for 14 days.
- Child is free from infection.
- Antibiotic course has been finished.
- Child appetite has returned.
- Immunization is complete.

Practice Questions

Q. Shakir tape:

a. Used by health worker
b. Less than 11.5 cm—Severe Malnutrition
c. More than 12.5 cm—Normal
d. All of these

Ans. d. All of these

Q. Theory of Adaptation and Dysadaptation is seen respectively in:

a. Marasmus and Kwashiorkor
b. Kwashiorkor and Marasmus
c. Only Marasmus
d. Only Kwashiorkor

Ans. a. Marasmus and Kwashiorkor

Quick Revision

- WHO defines severe acute malnutrition (SAM) as:
  - Weight-for-height <-3 SD (standard deviation).
  - Mid-upper arm circumference (MUAC) <11.5 cm—edema.
- Chronic malnutrition/stunting: Decrease height for age <-2 SD.
- Parameter changes in acute on chronic malnutrition is weight-for-age.
- Kwashiorkor: Fatty liver (kwashiorkor baby is fatty therefore we will see fatty liver).
- Hypoglycemia cut off: <54 mg/dL.
- Triad of kwashiorkor: Mental changes, edema, apathy.
- Triad of complication of SAM: Hypoglycemia, hypothermia, infection.
- Flaky paint dermatosis is also known as crazy pavement dermatosis.
- Hyperpigmented patches which may peel easily: Kwashiorkor.
- Flag sign: Alternate band of shiny and dull areas in a hair follicle—Kwashiorkor.

14 Musculoskeletal System

"Thousands of candles can be lighted from a single candle, be the candle."

OSTEOGENESIS IMPERFECTA (OI)

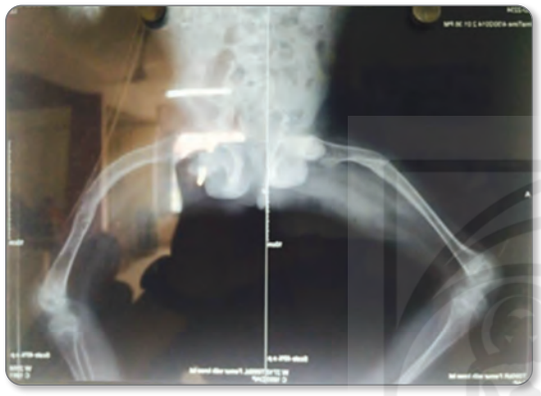


Image 251: Multiple fractures

Osteogenesis imperfecta (OI) is also known as brittle bone disease.

Triad:

1. History of blue sclera
2. Recurrent fractures
3. Early deafness

Classification

Sillence Classification

- Defect is in the collagen.

Clinical Features

- Hyperextensible joints

Image 252: Hyperextensible joints

- Easy bruisability

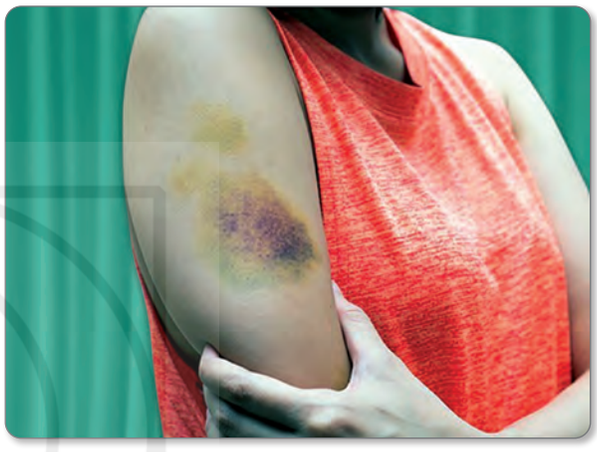


Image 253: Easy bruisability

- Joint laxity
- Short stature
- **Type of OI which is lethal in prenatal period:** Type 2
- Baby will be stillborn/die in first year.
- Intrauterine fracture/crumpled appearance
- Popcorn appearance of metaphysis

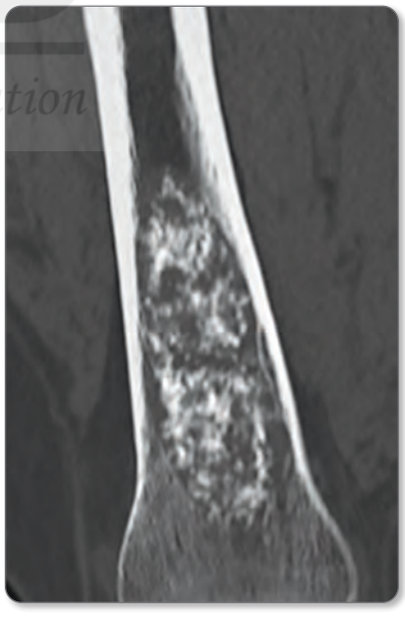
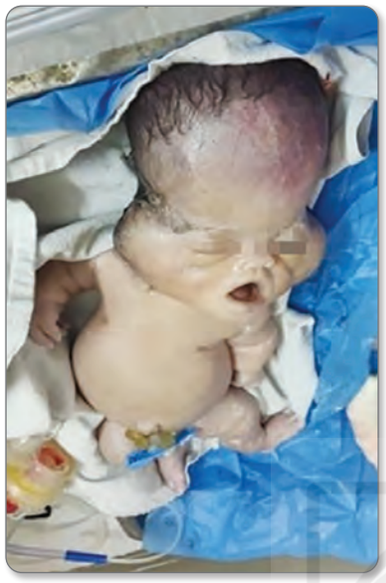


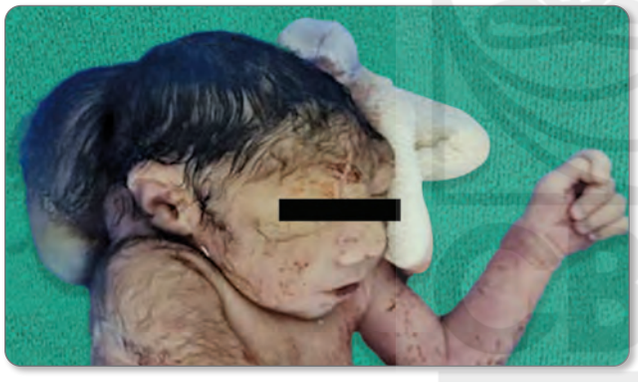
Image 254: Popcorn appearance of metaphysis

7. Pfeiffer syndrome

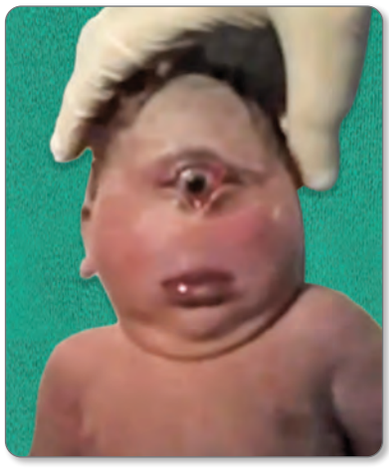


- Cloverleaf shape skull
- FGFR1 Gene mutation

8. Encephalocele with anencephaly

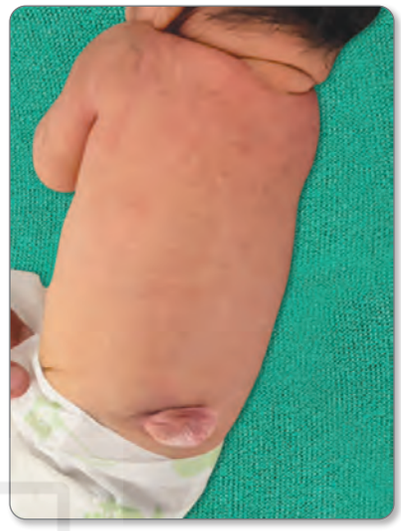


9. Holoprosencephaly

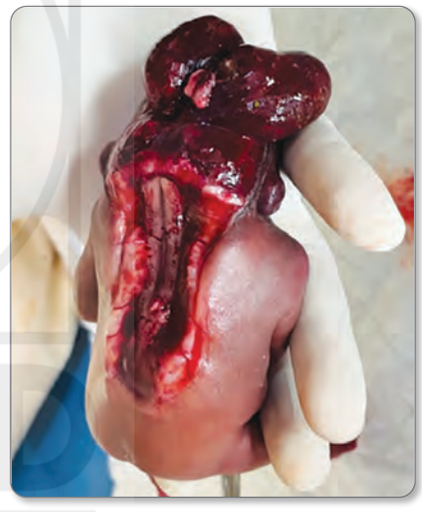


It is not a neural tube defect, it is a forebrain anomaly

10. Meningomyelocele

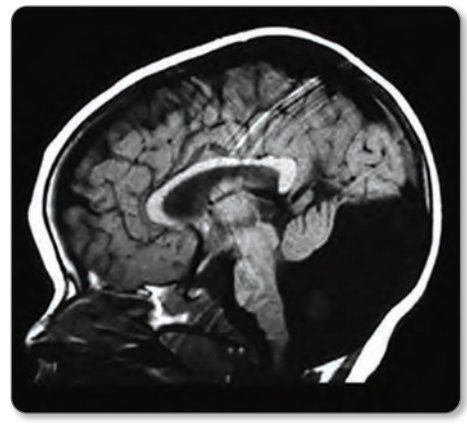


11. Craniorachischisis (NTD with worst prognosis)



Worst prognosis

12. Dandy-Walker Malformation

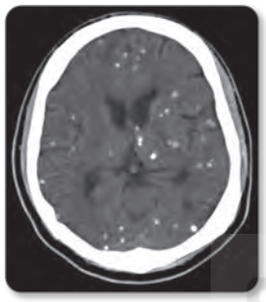


Dandy walker malformation: Cerebellar hypoplasia with hydrocephalus

NEET PG 2024 (Memory-Based)

"No one is you and that is your power."

1. A 3-month-old baby is brought with intracranial diffuse calcifications, chorioretinitis and hydrocephalus. What is the most likely diagnosis?



a. Toxoplasmosis
b. CMV
c. Zika virus
d. Rubella

Ans. a. Toxoplasmosis

Explanation: Diffuse intracranial calcifications are seen in toxoplasmosis and periventricular calcifications are seen in cytomegalovirus.

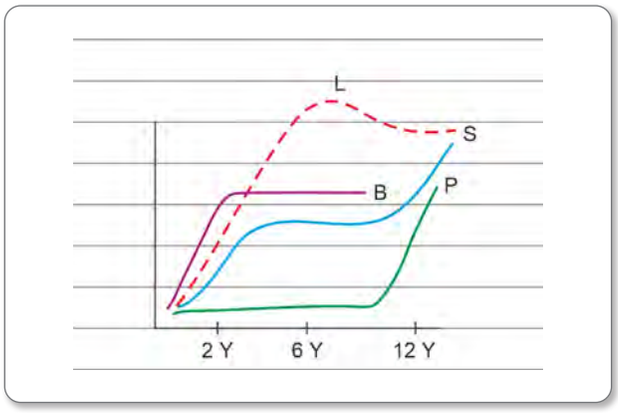
2. At what pressure, pop valve is released in bag and mask ventilation?

a. 30–40 cm of H_2O
b. 40–50 cm of H_2O
c. 50–60 cm of H_2O
d. 60–70 cm of H_2O

Ans. a. 30–40 cm of H_2O

Explanation: The absolute indication of bag and mask ventilation is heart rate <100 bpm.

3. Maximum lymphoid growth is seen at what age?

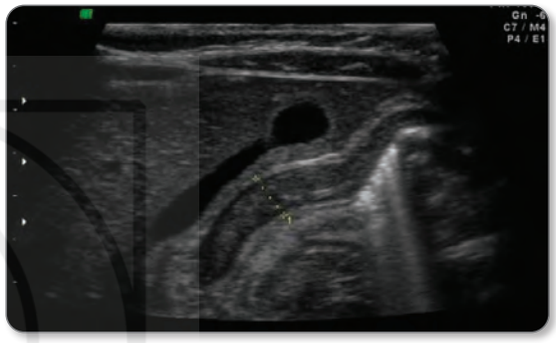


a. 2 years
b. 6 years
c. 10 years
d. 14 years

Ans. b. 6 years

Explanation: Maximum brain growth occurs by 2 years. Maximum somatic and puberty growth occurs by 12 years.

4. A 1-month-old baby with olive shape mass and recurrent vomiting. USG was done which is shown in the image. What is your diagnosis?

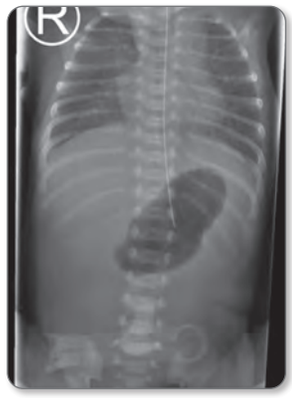


a. CHPS
b. Intussusception
c. Meckel's diverticulum
d. None of the above

Ans. a. CHPS

Explanation: Single bubble sign is seen in CHPS. The name of the surgery is Ramstedt pyloromyotomy.

5. A 1-month-old baby came with complaints of projectile vomiting with olive shape mass. X-ray abdomen was done. What is the diagnosis?



a. Pyloric stenosis
b. Intestinal obstruction

NEET PG 2023–2021 (Memory-Based)

16. A newborn presented with chest retractions, dyspnea, and lethargy. The pediatrician diagnosed the baby with respiratory distress syndrome. This occurs due to the deficiency of:

a. Dipalmitoyl inositol
b. Lecithin
c. Sphingomyelin
d. Dipalmitoylphosphatidylethanolamine

Ans. b. Lecithin

17. A 10-year-old child weighing 30 kg presents with a history of loose stools for 2 days. On examination, there is severe dehydration. Laboratory investigations are as follows. What is the initial management as per ISPAD guidelines?

RBS	550 mg/dL
pH	7.01
Na^+	158 mEq/L
Urine glucose	3+

a. Manage ABC, NS 20 mL/kg and start insulin after 1 hour
b. Manage ABC, NS 20 mL/kg along with insulin 0.1 IU/kg/hr
c. Manage ABC, NS 10 mL/kg along with insulin 0.1 IU/kg/hr
d. Manage ABC, NS 10 mL/kg and start insulin after 1 hour

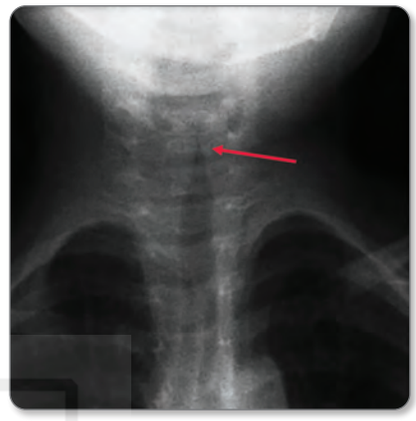
Ans. a. Manage ABC, NS 20 mL/kg and start insulin after 1 hour

18. Which of the following is the best sign to indicate adequate growth in an infant with a birth weight of 2.8 kg?

a. Increase in length of 25 cm in the first year
b. Weight gain of 300 g/month till 1 year
c. Anterior fontanel closure by 6 months of age
d. Weight under 75th percentile and height under 25th percentile

Ans. a. Increase in length of 25 cm in the first year

19. A child is brought to the hospital with respiratory distress and biphasic stridor. The radiograph is shown below. What is the diagnosis?



a. Acute epiglottitis
b. Acute laryngotracheobronchitis
c. Foreign body aspiration
d. Laryngomalacia

Ans. b. Acute laryngotracheobronchitis

20. A 3-month-old baby comes with complaints of deafness, cataract, and patent ductus arteriosus. Which of the following is the most likely diagnosis?

a. Congenital herpes simplex virus infection
b. Congenital toxoplasmosis
c. Congenital cytomegalovirus infection
d. Congenital rubella syndrome

Ans. d. Congenital rubella syndrome

21. Chloride level in sweat is used in the diagnosis of which disease?

a. Phenylketonuria
b. Cystic fibrosis
c. Gaucher's disease
d. Osteogenesis imperfecta

Ans. b. Cystic fibrosis

22. A 3-month-old baby presents with jaundice and clay-colored stools. Lab investigation reveals that the baby has conjugated hyperbilirubinemia. The liver biopsy shows periductal proliferation. What is the most likely diagnosis?

a. Crigler-Najjar syndrome
b. Rotor syndrome

c. Both parents are carriers of balanced translocation
d. Either parent is a carrier of translocation between two chromosomes 21

Ans. c. Both parents are carriers of balanced translocation

285. Consider the following pairs:

Urine color	Possible causative agent in a child with suspected poisoning
1. Pink	Cephalosporin
2. Brown	Chloroquine
3. Greenish blue	Phenazopyridine
4. Red-orange	Amitriptyline

How many of the pairs given above correctly matched?

a. Only one pair
b. Only two pairs
c. Only three pairs
d. All four pairs

Ans. a. Only one pair

286. If a baby does not begin breathing in response to tactile stimulation, then the baby assumed to be in:

a. Primary apnea
b. Secondary apnea
c. Tertiary apnea
d. Cardiorespiratory arrest

Ans. a. Primary apnea

UPSC CMS 2022 (PAPER 1)

287. An 18-year-old boy got frostbite of left feet after working in a snowy field for 5–6 hours. He complained of pain, numbness and limited moment of his tones. The skin appeared white and waxy. Which one of the following is contradicted as initial treatment?

a. Rewarming by immersion of feet in water bath at 40°–44°C
b. Massage
c. Cleaning of injured area with soap
d. Use of analgesia and sterile dressing

Ans. b. Massage

288. Which of the following are correct in respect of jaundice?

1. Patients complain of darkening of urine before they notice jaundice
2. Jaundice is usually detectable with a serum bilirubin level of over 18 mg/dL
3. In Gilbert syndrome, jaundice is more noticeable after fasting

Select the correct answer using the code given below:

a. 1 and 2 only
b. 2 and 3 only
c. 1 and 3 only
d. 1, 2 and 3

Ans. c. 1 and 3 only

289. Which of the following are correct in respect of Myasthenia gravis?

1. Symptoms worsen toward the end of the day
2. There may be difficulty in chewing and swallowing
3. Acetylcholine receptors in the pre-junctional membrane are involved
4. Penicillamine may precipitate similar illness

Select the correct answer using the code given as follows:

a. 1, 2 and 3 b. 1, 2 and 4
c. 1 and 3 only d. 2 and 4 only

Ans. b. 1, 2 and 4

290. Which of the following statements are correct regarding short stature?

1. Linear bone growth rates are pituitary dependent
2. Normal bone age in a child with short stature suggests hormonal disorder
3. Final height in boys can be estimated by adding 6.5 cm to midparental height
4. Replacement therapy with recombinant GH restores growth velocity in GH-deficient children

Select the correct answer using the code given as follows:

a. 1 and 2 only b. 1, 2 and 4
c. 1, 3 and 4 d. 3 and 4 only

Ans. c. 1, 3 and 4

ONE Touch Pediatrics

For NEET/UPSC/NEXT/FMGE/INI-CET

Theory—A concise form of text covered in just 200 pages and most important points to remember are given for the last-minute revision. Text of entire book is presented in the form of Tables, Boxes, Flowcharts, and Illustrations for easy recalling.

High-Yield Points

- Length of a newborn: 48–50 cm (19–21 inches)
- Length doubles by 4 years and triples by 12 years
- Length of a 4-year-old will be 100 cm and 12-year-old will be 150 cm
- After 4 years, child gains 6 cm/year height every year till 12 years
- Length of a 1-year-old is 75 cm (means from birth till 1 year there is an increment of 25 cm)
- Expected height formula: Age (in years) multiply by 6 + 77

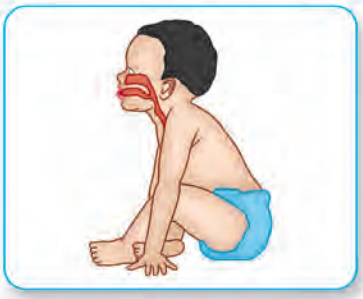
High-Yield Tables and Boxes—Frequently asked topics and clinical correlations are tabulated for ease of learning and more visual impact for long-term memory.

Mnemonic

Tracheoesophageal fistula is associated with VACTERL anomaly:

- V : Vertebral
- A : Anorectal
- C : Cardiac
- T : Tracheal
- E : Esophageal
- R : Renal
- L : Limb abnormalities

Mnemonic—Text is supplemented with easy to recall Mnemonic boxes for quick recall of the concepts.



Clinical Images and Illustrations—Clinical Images and other Illustrations have been supplemented with the text for better and easy understanding of the concepts.

IMP PYQs

Q. Calculate the heart rate of the patient.

Ans. 75 beats/min. 1500/no. of small square b/w rr interval.

Previous Years Questions/Topics—Important Topics/Qs have been highlighted in-between the text for a quick glance over the important topics from exam point of view. Questions have been asked from the respective topic in previous year examination.

Last 5 Years Exams Questions—Last 5 years' exam question papers up to Nov 2024 (INI-CET Nov 2024 and NEET PG 2024) are provided to develop an idea about the trend of questions and also to know about the recently asked topics.

About the Author

Anand Bhatia *MBBS MD (Pediatrics)* is one of the youngest Pediatricians who has made his presence felt in the entire nation in a short span of time. He has done his MBBS from Dr B R Ambedkar Medical College, Bangalore, Karnataka. He pursued his MD Pediatrics from Teerthanker Mahaveer University, Moradabad, Uttar Pradesh. He has a considerable teaching experience of 7 years and is currently working as Assistant Professor in NDMC Medical College, Hindu Rao Hospital, New Delhi. Pediatrics has always been a loving and caring branch and Dr Anand has justified it by his exemplary services to this branch of medicine.

He has changed the way of teaching by introducing real case scenario or clinical teaching and video-based learning which is a new trend in the medical education. The only genuine intention of creating this book is to give an authentic knowledge of learning in the field of Pediatrics. Give Your Best and Destiny will Do the Rest is the motto of the author.

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