

Pediatrics

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Learn Easily

(4 Questions)

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APGAR Scoring

- **Definition:** The Apgar Score is taken at **1 minute** and again at **5 minutes** after birth.

- **The Apgar Score Table**

Indicator	0 Points	1 Points	2 Points
A ppearance (Skin Color)	Blue (cyanotic) or Pale (white) all over	Pink body, blue extremities (Acrocyanosis)	Pink body
P ulse	Absent (No pulse)	< 100 bpm	> 100 bpm
G rimace (Reflex Irritability)	Floppy (No response)	Minimal response when stimulated	Prompt response (Sneezing, crying, or pulling away)
A ctivity (Muscle Tone)	No movement (Flaccid)	Flexed arms and legs	Active motion
R espiration	Absent (No breathing)	Weak or slow; Irregular	Vigorous (Strong cry)

- **Scoring Results & Interpretation**

- 10 Marks: Excellent
- 7 – 10 Marks: Normal
- 4 – 6 Marks: Bad (Moderate birth Asphyxia) — *Treatment: Regular Observation*
- 0 – 3 Marks: Bad (Severe birth Asphyxia) — *Treatment: Treat in NICU*

Healthy Birth Signs

- **Signs of a Healthy Birth**

- Newborn Birth Weight: 2.5 – 3.0 kg (or 6 pounds) Average Birth Weight: 2.8 kg
- Average Birth Height: 50 cm Length of Umbilical cord: 50 cm
- Head circumference: 35 cm Chest circumference: 32 cm
 - *Note: Both Head & Chest circumference become equal (45 cm) at 1 year.*
- Pulse Rate at birth: 140/minute Respiratory Rate: 28/minute
- Average Blood Pressure: 60/40 mm of Hg
- Blood volume: 80 ml/kg body weight (approx. 200 ml at birth)
- HbF (Foetal Hemoglobin): 18 – 20 gm/ 100 ml of blood
- Body Temperature: 36.5 to 37.5°C Rectal Temperature: 37.2°C
- Newborns are very thermolabile
- Weight of Brain at Birth: 350 – 400 gm (Doubles in 1 year to 800 gm). Adult: 1400 gm.
- Weight of Liver at Birth: 120 gm (4% of body weight)
- Thymus gland: Very large in infants.
- Number of fontanelles at Birth: 6
- Low birth weight: Defined as birth weight less than 2.5 kg.
- Pre-term baby: Born before the end of 37 weeks gestation (less than 259 days).
- Newborn: Generally used to describe babies less than 28 days old.
- Gender differences: Male children are heavier & longer than females.
- Head-to-Body Ratio: 1:4 in newborns (1:7 in adults).
- Milk quantity for Newborn: 150 ml / kg body weight / day.
- New born passes - Urine - within 48 hrs.
- Stool - within 24 hrs.
- Posterior fontanelle closed at - 4 months
- Anterior fontanelle closed at - 9-18 months

National Immunization Schedule (NIS)

Vaccine	When to give	Dose	Route	Site
For Pregnant Women				
TT-1	Early in pregnancy	0.5 ml	Intra-muscular	Upper Arm
TT-2	4 weeks after TT-1	0.5 ml	Intra-muscular	Upper Arm
TT-Booster	If 2 TT doses received in last 3 yrs	0.5 ml	Intra-muscular	Upper Arm
For Infants				
BCG	At birth (up to 1 year)	0.1ml (0.05ml <1mo)	Intra-dermal	Left Upper Arm
Hepatitis B	At birth (within 24 hours)	0.5 ml	Intra-muscular	Mid-thigh (Antero-lateral)
OPV-0	At birth (within 15 days)	2 drops	Oral	Oral
OPV 1, 2 & 3	6, 10 & 14 weeks	2 drops	Oral	Oral
Pentavalent	6, 10 & 14 weeks	0.5 ml	Intra-muscular	Mid-thigh (Antero-lateral)
Rotavirus	6, 10 & 14 weeks	5 drops	Oral	Oral
IPV	Two fractional doses (6 & 14 wks)	0.1 ml	Intra-dermal	Right upper arm
Measles/MR 1st	9 – 12 months	0.5 ml	Sub-cutaneous	Right upper arm
JE-1**	9 – 12 months	0.5 ml	Sub-cutaneous	Left upper arm
Vitamin A	9 months (with Measles)	1 ml (1 lakh IU)	Oral	Oral
For Children				
DPT booster-1	16-24 months	0.5 ml	Intra-muscular	Mid-thigh (Antero-lateral)
Measles/MR 2nd	16-24 months	0.5 ml	Sub-cutaneous	Right upper arm
OPV Booster	16-24 months	2 drops	Oral	Oral
JE-2	16-24 months	0.5 ml	Sub-cutaneous	Left upper arm
Vitamin A	16-18 months (then every 6 mo)	2 ml (2 lakh IU)	Oral	Oral
DPT Booster-2	5-6 years	0.5 ml	Intra-muscular	Upper Arm
TT	10 years & 16 years	0.5 ml	Intra-muscular	Upper Arm

- Examples of Types of Vaccines**

- Live 'attenuated':** BCG, OPV (Sabin), MMR, Yellow fever, Typhoid, Varicella.
- Killed 'inactivated':** Pertussis, IPV (Salk), JE (Japanese encephalitis), Rabies, Hepatitis A, Typhus, Cholera.
- Toxoids:** Diphtheria toxoid (DT), Tetanus toxoid (TT).
- Cellular fractions:** Meningococcal, Pneumococcal, Hemophilus influenza B (Hib).

- Key Clinical Facts**

- Frozen Vaccines:** BCG, Polio, Measles & Yellow fever.
- Non-Frozen Vaccines:** DPT, TT & Typhoid.
- Schick test:** Used for Diphtheria (intradermal injection).
- Poliomyelitis:** OPV (Sabin - Live) vs. IPV (Salk - Killed).
- Measles:** Schwartz vaccine is used; Koplik spots are a diagnostic sign.

- **Contraindication of Vaccine**

Condition	Vaccines contraindicated
Pregnancy	All live vaccine, except yellow fever vaccine
Symptomatic HIV	All live vaccine, except BCG vaccine
Fever	Typhoid Vaccine
ARTI / Diarrhoea	None
In combination	Yellow fever Vaccine + Cholera Vaccine
Preterm premature infant (Birth weight < 2 kg)	Hepatitis B
Age < 1 Year	Meningococcal Vaccine, Pneumococcal Vaccine, Yellow Fever Vaccine
Age < 2 Year	Meningococcal Vaccine, Pneumococcal Vaccine, Typhoid Vaccine

- **Sample vaccine** - for rabies
- **Schwartz vaccine** - for measles
- **Most effective vaccine** – Yellow fever vaccine.
- **Decreasing order of sensitivity to heat to vaccine** - OPV, measles, BCG, DPT.

Pediatric Age Group Classification

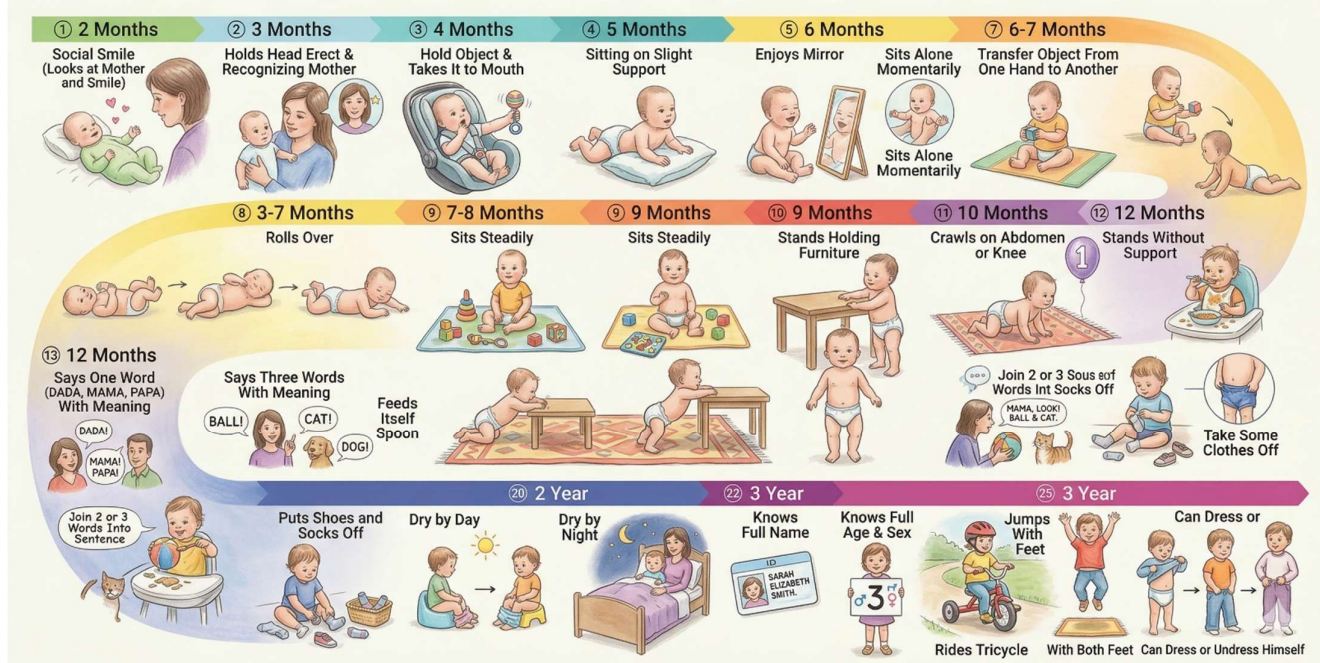
Category	Sub-category	Age Range
1. Prenatal Period	1. Fertilized Ovum	0 – 14 days of gestation
	2. Embryo	14 days – 12/14 weeks
	3. Foetus	12 weeks until birth
2. Perinatal Period		28th week of pregnancy to 7 days after birth
3. Natal Period	Neonate (Newborn)	0 – 28 days
	1. Early Neonate	0 – 7 days
	2. Late Neonate	8 – 28 days
	3. Post neonatal	29 days – 365 days (1 month – 1 year)
	4. Infant	Birth – 365 days (1st year of life)
	5. Toddler	1 year – 3 years
6. Preschool child		3 years – 6 years
7. School going	Girl	6 – 10 years
	Boy	6 – 12 years
8. Puberty	Girls (onset)	10 – 12 years
	Boys (onset)	12 – 14 years
9. Adolescence	(WHO definition)	10 – 19 years
	Early adolescence	10 – 13 years
	Mid adolescence	14 – 16 years
	Late adolescence	17 – 19 years

- **Youth:** 15 – 24 years age group (UN definition)
- **Reproductive age group:** 15 – 44 years or 15 – 49 years.

Child Development Milestones

Feature	Age
(1.) Social Smile (looks at mother and smile)	2 months
(2.) Holds Head erect & Recognizing mother	3 months
(3.) Hold Object & takes it to mouth	4 months
(4.) Sitting on Slight Support	5 months
(5.) Enjoys mirror	6 months
(6.) Sits alone momentarily	6 months
(7.) Transfer object from one hand to another	6-7 months
(8.) Rolls Over	3-7 months
(9.) Sits steadily	7-8 months
(10.) Stands holding furniture (Tricycle)	9 months
(11.) Crawls on abdomen or Knee	10 months
(12.) Stands Without Support	12 months
(13.) Says One word (DADA, MAMA, PAPA) with meaning	12 months (1st Birthday)
(14.) Says Three words with meaning	13 months
(15.) Feeds itself with Spoon	13 months
(16.) Join 2 or 3 words into Sentence	15-18 months
(17.) Take Shoes and Socks off	15-18 months
(18.) Take some clothes off	15-18 months
(19.) Puts Shoes and Socks off	2 Year
(20.) Dry by day	2 Year
(21.) Dry by Night	2 Year
(22.) Knows Full Name	3 Year
(23.) Knows Full Age & Sex	3 Year
(24.) Rides Tricycle	3 Year
(25.) Jumps with both feet	3 Year
(26.) Can dress or undress himself	3 Year
(27.) Bladder Control	Diurnal: 12-16 months / Nocturnal: 2 ½ - 3 year

CHILDREN'S DEVELOPMENTAL MILESTONES: A GUIDE TO KEY ACHIEVEMENTS



Neonatal Reflexes

Main Reflexes	Appear	Disappear
1. Stepping Reflex (Walking/Dancing reflex)	At birth	6 Weeks
2. Placing Reflex (Lifting foot to step on object)	At birth	6 Weeks
3. Moro Reflex (Response to loss of support; spreading/pulling arms)	At birth	3-4 months
4. Rooting Reflex (Turning head toward touch on mouth corner)	At birth	4 months
5. Suckling reflex (Rooting helps baby get ready to suck)	At birth	4 – 7 months
6. Palmar Grasp reflex (Grasping object placed in palm)	At birth	6 months
7. Tonic neck reflex (Fencing position when head is turned)	2 months	6 months
8. Pincers grasp reflex (Holding items between thumb and finger)	10 months	—
9. Landau reflex (Prone position: head rises and back arches)	3 months	12 months
10. Plantar reflex (Babinski sign) (Big toe moves up, others fan out)	At birth	12 - 24 months
11. Neck righting (Body aligns with head when turned)	4-6 months	24 months
12. Parachute reflex (Extending arms to break a fall)	8 months	Never disappears

- **Babinski Sign:** Normal in infants; disappears between 12-24 months.
- **Landau Reflex:** Absence can signify neurological disorders like Cerebral Palsy.
- **Parachute Reflex:** Unique because it persists throughout life once it appears.

NEONATAL REFLEXES: ESSENTIAL NEWBORN RESPONSES

