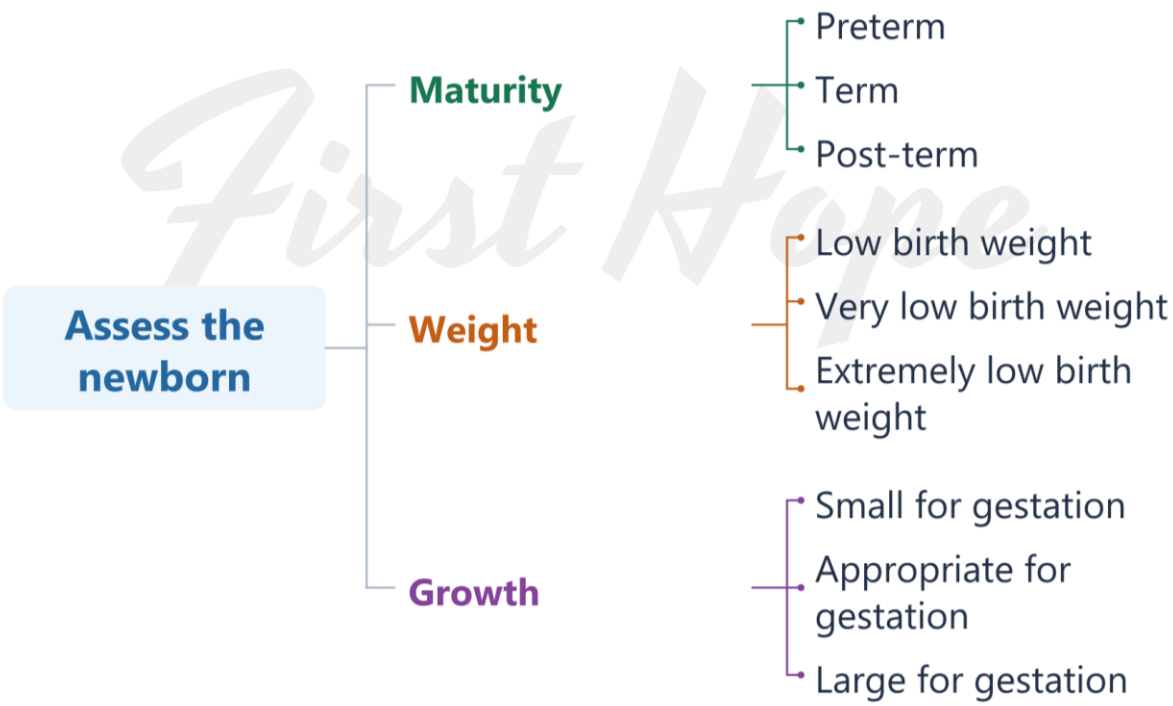
Obstetrics & Gynaecology - Topic 18 - Care of the newborn

Assessment of the Newborn

Transition from Fetal to Newborn Life

- The first effective breaths expand the lungs and reduce pulmonary vascular resistance, allowing much more blood to reach the lungs.
- Placental separation removes the low-resistance placental circulation, and pressure changes begin the functional closure of fetal circulatory shunts.
- A baby who fails to breathe cannot complete this transition properly, so effective ventilation is the main life-saving intervention at birth.
- Before delivery, identify prematurity, maternal illness, meconium, fetal compromise and other risks, while remembering that unexpected resuscitation can follow an apparently normal pregnancy.

Assess Maturity and Growth



Gestational Age

Dating and Term Categories

- Use reliable menstrual dates and early ultrasound information first, and compare these with the newborn examination.
- Preterm birth occurs before 37 completed weeks, term birth is from 37 weeks to 41 weeks and 6 days, and post-term birth begins at 42 weeks.

Postnatal Maturity Assessment and Its Limits

- When dates are uncertain, a structured maturity assessment such as the New Ballard score combines physical and neuromuscular signs.

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- Physical signs include skin texture, lanugo, plantar creases, breast tissue, ear cartilage and genital development.
- Neuromuscular signs include resting posture, wrist flexibility, arm recoil, popliteal angle, scarf sign and heel-to-ear movement.
- Illness, neurological injury and medicines can affect tone, so the score has limitations and should not override reliable early dating without explanation.

i. Physical Maturity Signs

- A more mature infant generally has firmer ear cartilage, more plantar creases and more developed breast tissue.
- Genital maturity is assessed from testicular descent and scrotal folds in boys, or the relative prominence of the labia in girls.

ii. Neuromuscular Maturity Signs

- Greater flexor tone and resistance to passive extension usually accompany advancing maturity.
- Interpret all maturity signs together rather than assigning gestational age from one feature.

Birth Weight and Proportions

- Measure birth weight accurately, then plot weight, length and head circumference on an appropriate gestational-age chart.
- Low birth weight is below 2,500 g, very low birth weight is below 1,500 g and extremely low birth weight is below 1,000 g.
- Weight below the 10th centile is classified as small for gestational age, while weight above the 90th centile is large for gestational age.
- A small baby may be premature, growth restricted or constitutionally small, and these possibilities require different assessments.

Initial Examination

- Check breathing, heart rate, tone, temperature, colour and activity before undertaking a detailed head-to-toe examination.
- Inspect the head, palate, spine, limbs and abdomen, and check pulses, heart sounds, hip stability and visible congenital abnormalities with appropriate skill.
- Confirm the passage of urine and meconium, and evaluate delayed passage or abdominal distension rather than assuming normal variation.
- Record identification, birth time, gestational age, weight, maternal risks and the care already given.

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Routine Care of a Well Baby

Warmth, Feeding and Prevention

Thermal Care, Cord Clamping and Early Feeding

- Keep a well newborn in supervised skin-to-skin contact, dry promptly, remove wet cloths and cover the body and head while keeping the airway visible.
- Maintain the temperature between 36.5 and 37.5 degrees Celsius, and avoid both cold stress and excessive heating.
- Delay cord clamping for at least 60 seconds when the baby does not require immediate resuscitation and the clinical circumstances allow it.
- Support breastfeeding within the first hour, and avoid prelacteal feeds or unnecessary separation of the mother and baby.

Cord Hygiene, Vitamin K and Preventive Care

- Maintain clean, dry cord care and hand hygiene, and do not apply unprescribed substances to the stump.
- Give vitamin K according to the Indian newborn protocol: 1 mg intramuscularly for birth weight of 1,000 g or more, and 0.5 mg for birth weight below 1,000 g.
- Check the preparation concentration before measuring the dose, and give it in the anterolateral thigh using the correct technique.
- Arrange birth vaccines, screening, feeding assessment and follow-up according to the national and local newborn programme.

Kangaroo Mother Care

- Kangaroo mother care combines prolonged skin-to-skin contact with breast-milk feeding support and close follow-up for preterm or low-birth-weight babies.
- Start it as early as feasible with trained support, while ensuring that shock, inability to breathe independently after resuscitation or a need for mechanical ventilation receives appropriate intensive care.
- Position the baby upright against the caregiver with the head turned to one side, the neck gently extended and the nose and mouth visible.
- Secure the baby safely with a wrap and monitor breathing, temperature, colour and feeding; a training model cannot demonstrate all real-life safety checks.

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A training model illustrates supported kangaroo positioning; actual care requires an uncovered airway, clinical monitoring and trained caregiver support

Birth Asphyxia and Encephalopathy

What the Terms Mean

Asphyxia and Encephalopathy Definitions

- Birth asphyxia describes impaired gas exchange around birth that can produce hypoxaemia, carbon dioxide retention and metabolic acidosis.
- Hypoxic-ischaemic encephalopathy is brain dysfunction caused by inadequate oxygen delivery and perfusion, and it is only one possible cause of neonatal encephalopathy.

Possible Events and Diagnostic Caution

- Placental abruption, cord prolapse, uterine rupture, prolonged severe fetal compromise and maternal circulatory collapse can interrupt oxygen delivery.

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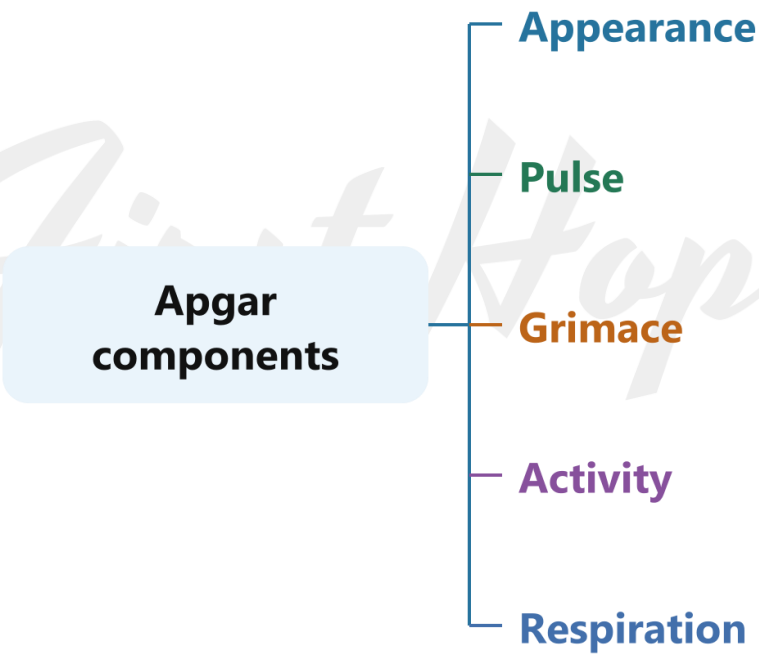
- A non-breathing baby requires immediate support, but the later diagnosis of the cause requires more evidence than the need for resuscitation alone.

Diagnosis and Assessment of Severity

Combine the Evidence

- Review the pregnancy, labour events, fetal monitoring, resuscitation record, cord or early blood gas results and the baby's subsequent examination.
- Persistent depressed consciousness, abnormal tone, poor reflexes, seizures or disturbed breathing suggests encephalopathy and requires urgent neonatal assessment.
- Assess for kidney, liver, cardiac and coagulation abnormalities because significant hypoxia may cause multi-organ injury.
- Consider infection, hypoglycaemia, intracranial haemorrhage, congenital abnormalities, metabolic disease and medicine effects as alternative or additional causes.

Interpret the Apgar Score Correctly



Components and Scoring

- The Apgar score describes appearance, pulse, grimace, activity and respiration at defined times, usually one and five minutes after birth.
- Each component receives zero, one or two points, giving a total score from zero to ten.

Component	0 points	1 point	2 points
Appearance	Pale or blue throughout.	Pink trunk with blue extremities.	Pink throughout.
Pulse	Absent.	Below 100 per minute.	At least 100 per minute.

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