# Newborn Care and Resuscitation

Apgar, NRP 9th edition steps, SpO2 targets and newborn vital signs for exam review

**Medic Basics**
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## BIRTH AND INITIAL STEPS

1. At birth: start the cord plan
2. Term, good tone, breathing or crying? All yes: skin-to-skin, routine care
3. Any no: warm, dry, position the airway, stimulate; clear the airway only if obstructed
4. Apnea, gasping or HR below 100: ventilate within the first minute
5. HR 100 or more but labored breathing or persistent cyanosis: pulse oximetry, O2 if needed, consider CPAP (best evidence in preterm)

| CORD OPTION | 2025 GUIDANCE |
|---|---|
| **Defer clamping 60 s or more** | Most babies not needing immediate resuscitation |
| **Intact cord milking** | May be reasonable if nonvigorous at 35 to 42 wk |
| **No cord milking** | Under 28 wk (IVH risk) |

**EXAM TIP** Suction is not routine, even with meconium: a nonvigorous baby gets ventilation, not tracheal suctioning.

**SAFETY** Keep 36.5 to 37.5 °C; both cold and overheating harm. Preterm: plastic wrap, radiant warmer, room 23 °C or warmer.

Bowel outside the abdomen (gastroschisis): never push it back, and keep the baby warm. Cover at once with a sterile, moist, nonadherent dressing, then plastic wrap; fluid losses run high (Merck).

## VENTILATION AND MR SOPA

A rising HR shows ventilation works. Each 30-s delay in starting it raised death or prolonged stay by about 16%.

| SETTING | NRP 9TH / 2025 |
|---|---|
| **Rate** | 30 to 60 breaths/min |
| **Starting PIP** | 25 cm H2O (range 20 to 30 by gestation) |
| **Initial O2, 35 wk or more** | 21% (room air) |
| **Initial O2, 32 to 34 wk** | 21% to 30% |
| **Initial O2, under 32 wk** | 30% or more |
| **Interface** | Face mask; laryngeal mask at 34 wk or more |

HR not rising after 15 to 30 s and no chest movement: corrective steps, in any helpful order.

| LETTER | CORRECTIVE STEP |
|---|---|
| **M** | Mask: reseal; try a 2-hand hold |
| **R** | Reposition head to sniffing |
| **S** | Suction mouth, then nose |
| **O** | Open the mouth |
| **P** | Pressure: increase gradually |
| **A** | Alternative airway: ETT or laryngeal mask |

**EXAM TIP** Older items may say PPV and key NRP 8th: 40 to 60/min, a 1-min SpO2 target, PIP 20 to 25, clamping at 30 to 60 s. Courses switched by June 1, 2026.

## COMPRESSIONS, EPINEPHRINE AND VOLUME

- HR below 60 after 30 s of ventilation that moves the chest: compressions
- Ventilate via ETT; laryngeal mask if intubation fails (34 wk or more)
- 3:1 ratio: 90 compressions + 30 breaths/min
- 2-thumb encircling hands, lower third of sternum, one-third chest depth
- 100% O2; wean to SpO2 targets once HR recovers
- HR below 60 after 60 s of compressions: epinephrine every 3 to 5 min
- UVC preferred; IO if UVC not possible (common in EMS)

| DRUG, ROUTE | TYPICAL DOSE | EXAM POINT |
|---|---|---|
| **Epinephrine IV/IO** | 0.01 to 0.03 mg/kg (NRP start: 0.02) | Then 3 mL NS flush |
| **Epinephrine via ETT** | 0.05 to 0.1 mg/kg (NRP: 0.1) | Only until access; then IV/IO at once |
| **NS or O- negative blood** | 10 to 20 mL/kg over 5 to 10 min; repeat if needed | Suspected blood loss; HR below 60 despite epi |

**SAFETY** Exam-study doses; follow your institution's or agency's protocols. Newborn epinephrine is 0.1 mg/mL (IV/IO 0.1 to 0.3 mL/kg; ETT 0.5 to 1 mL/kg), never 1 mg/mL.




ECG gives the fastest, most accurate newborn HR (strip near 50/min).

Still below 60: think hypovolemia or pneumothorax. No HR by about 20 min despite all steps: team and family may discuss redirecting care. Check glucose after advanced resuscitation.

## PREDUCTAL SPO2 TARGETS

| MINUTE OF LIFE | TARGET SPO2 |
|---|---|
| **2 min** | 65% to 70% |
| **3 min** | 70% to 75% |
| **4 min** | 75% to 80% |
| **5 min** | 80% to 85% |
| **10 min** | 85% to 95% |

Probe on the right hand or wrist. No 1-min target in NRP 9th. Excess oxygen also harms.

## APGAR SCORE

| SIGN | 0 | 1 | 2 |
|---|---|---|---|
| **Appearance (color)** | Blue or pale | Pink body, blue hands and feet | Pink all over |
| **Pulse** | Absent | Below 100 | 100 or more |
| **Grimace (reflex)** | None | Grimace | Cry, cough or sneeze |
| **Activity (tone)** | Limp | Some flexion | Active motion |
| **Respiration** | Absent | Slow, irregular | Good, crying |

- Score at 1 and 5 min
- At 5 min: 7 to 10 reassuring; 4 to 6 moderately abnormal; 0 to 3 low
- Below 7 at 5 min: rescore every 5 min up to 20 min

**EXAM TIP** Never wait for the Apgar to start resuscitation. Acrocyanosis scores 1 and is normal early.

## NORMAL NEWBORN VITAL SIGNS

| SIGN | NORMAL |
|---|---|
| **Heart rate** | 100 to 160/min (ranges vary by text) |
| **Respirations** | 30 to 60/min; periodic breathing is normal |
| **Apnea** | Pause over 20 s, or shorter with bradycardia or cyanosis |
| **Temperature** | 36.5 to 37.5 °C (97.7 to 99.5 °F) |
| **Color** | Acrocyanosis expected early; central cyanosis is not |

**Sources** (13) are listed with links at medicbasics.com/sheets/neonatal-resuscitation.html. For education and exam preparation only. Not medical advice; follow current guidelines and your institution's protocols. Medic Basics is an independent study aid not affiliated with any certifying body.