Newborn Care and Resuscitation

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

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 icubasics.com/sheets/neonatal-resuscitation.html. For education and exam preparation only. Not medical advice; follow current guidelines and your institution's protocols. ICU Basics is an independent study aid not affiliated with any certifying body.