

Neonatal Assessment and Resuscitation

Aliases: newborn treatment, newborn resuscitation

This protocol should be followed for all newly born infants.

1. History

- a. Date and time of birth
- b. Onset of symptoms
- c. Prenatal history (prenatal care, substance abuse, multiple gestation, maternal illness)
- d. Birth history (maternal fever, meconium, prolapsed or nuchal cord, bleeding)
- e. Estimated gestational age (may be based on last menstrual period)

2. Exam


- a. Respiratory rate and effort (strong, weak, or absent; regular or irregular)
- b. Signs of respiratory distress (grunting, nasal flaring, retractions, gasping, apnea)
- c. Heart rate (fast, slow, or absent), auscultation of chest is the preferred method
- d. Muscle tone (poor or strong)
- e. Color/Appearance (central cyanosis, peripheral cyanosis, pallor, normal)
- f. APGAR score

Sign	0	1	2
Appearance – skin color	Bluish or paleness	Pink or ruddy; hands or feet are blue	Pink or ruddy; entire body
Pulse – heart rate	Absent	Below 100	Over 100
Grimace – reflex irritability to foot slap	No response	Crying; some motion	Crying; vigorous
Activity – muscle tone	Limp	Some flexion of extremities	Active; good motion in extremities
Respiratory effort	Absent	Slow and Irregular	Normal; crying

- g. Estimated gestational age (term, late preterm, premature)
- h. Pulse oximetry should be considered if prolonged resuscitative efforts or if supplemental oxygen is administered (goal 85-95% at 10 minutes)

3. Procedure

- a. Clamp cord in two places and cut cord between clamps
 - i. Should be two to three minutes post delivery
 - ii. One clamp 8” from the infant’s abdominal wall and second 2” further
- b. Warm, dry, and stimulate
 - i. Wrap infant in dry towel or blanket to keep infant warm, keep head covered if possible
 - ii. If strong cry, regular respiratory effort, good tone, and term gestation, infant should be placed skin-to-skin with mother and covered with dry linen

- c. If weak cry, signs of respiratory distress, poor tone, or preterm gestation then position airway (sniffing position) and clear airway as needed
 - i. If thick meconium or secretions present **and** signs of respiratory distress, then suction mouth then nose
- d. If heart rate >100 beats per minute
 - i. Monitor for central cyanosis, provide blow-by oxygen as needed
 - ii. Monitor for signs of respiratory distress. If apneic or significant distress:
 - 1. Initiate bag-valve-mask ventilation with room air at 40-60 breaths per minute
 -  2. If unable to ventilate, consider intubation per **Emergency Airway Procedure**
- e. If heart rate < 100 beats per minute
 - i. Initiate bag-valve-mask ventilation with room air at 40-60 breaths per minute
 - 1. Primary indicator of improvement is increased heart rate
 - 2. Only use minimum necessary volume to achieve chest rise
 - ii. If no improvement after 90 seconds, provide ventilations with supplemental oxygen (100%) until heart rate normalizes (100 or above)
 - 1. If unable to ventilate, consider intubation per **Emergency Airway Procedure**
- f. If heart rate < 60 beats per minute
 - i. Ensure effective ventilations with supplementary oxygen and adequate chest rise
 - ii. If no improvements after 30 seconds, initiate chest compressions
 - 1. Two-thumb-encircling-hands technique is preferred
 - iii. Coordinate chest compressions with positive pressure ventilation (3:1 ratio, 90 compressions and 30 breaths per minute)
 - 1. Per MCA selection, consider intubation per **Emergency Airway Procedure**
- 4. Maintain warm environment
 - a. Dry off infant and discard wet linen
 - b. Swaddle infant to mother skin to skin if infant is stable
 - c. Use extreme caution if chemical heat packs are used
- 5. For patient transport, refer to **Safe Transportation of Children in Ambulances Protocol**.

