Newborn & Neonatal Assessment and Resuscitation

Aliases: newborn assessment, newborn treatment, newborn resuscitation, neonatal resuscitation.

Purpose: Infants less than 30 days old are considered neonates. This protocol is intended for assessment of newly born infants, and/or the resuscitation of newly born infants less than 30 days old.

ASSESSMENT OF 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. Immediate Assessment & Procedures
   A. **Respiratory (R of APGAR)**
      i. Assess rate and effort (strong, weak, or absent; regular or irregular)
      ii. Absent
         a. If the baby does not breathe spontaneously, stimulate by gently rubbing its back or slapping the soles of its feet.
      iii. Respiratory distress (grunting, nasal flaring, retractions, gasping, apnea **OR** no return of spontaneous breathing after stimulation.
         a. position airway (sniffing position) and clear airway as needed
         b. If thick meconium or secretions present suction mouth then nose
         c. Initiate ventilation with appropriately sized equipment and 21% oxygen (room air)
   B. **Heart rate/pulse (P of APGAR)**(fast, slow, or absent), auscultation of chest is the preferred method
      i. If heart rate >100 beats per minute
         a. Monitor for central cyanosis, provide blow-by oxygen as needed
         b. 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
      ii. If heart rate < 100 beats per minute
         a. Initiate bag-valve-mask ventilation with room air at 40-60 breaths per minute
         b. Primary indicator of improvement is increased heart rate
         c. Only use minimum necessary volume to achieve chest rise
         d. If no improvement after 90 seconds, provide ventilations with supplemental oxygen (100%) until heart rate normalizes (100 or above)
      iii. If heart rate < 60 beats per minute

a. Ensure effective ventilations with supplementary **oxyge**n and adequate chest rise
b. If no improvements after 30 seconds, initiate chest compressions
   1) Two-thumb-encircling-hands technique is preferred
c. Coordinate chest compressions with positive pressure ventilation (3:1 ratio, 90 compressions and 30 breaths per minute)
d. Per MCA selection, consider intubation per **Airway Management-Procedure Protocol**

C. **Color/Appearance (first A of APGAR)** (central cyanosis, peripheral cyanosis, pallor, normal)
   a. Administer blow-by oxygen for a few minutes until baby's core color is pink.

D. **Grimace (G of APGAR)**

E. **Muscle tone/activity (second A of APGAR)**(poor or strong)

3. APGAR score for witnessed deliveries, based on above assessment should be noted at one minute and five minutes after delivery.
   i. A – appearance (color)
   ii. P – pulse (heart rate)
   iii. G – grimace (reflex irritability to slap on sole of foot)
   iv. A – activity (muscle tone)
   v. R – respiration (respiratory effort)
   vi. Each parameter gets a score of 0 to 2.

APGAR SCORING

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

4. Prevent heat lost
   A. Maintain warm environment
   B. Keep infant dry and covered with dry blankets
   C. Keep infant's head covered with infant cap
   D. Swaddle infant to mother skin to skin if infant is stable until transport
5. For patient transport, refer to **Safe Transportation of Children in Ambulances-Treatment Protocol**.