

Normal Neonate

At birth

Aspirate to open airway

Apgar score	0	1	2
Heart Rate	absent	below 100	above 100
Respiratory	absent	weak cry	strong cry
Muscle tone	limp	some flexion of extremities	Active motion
Reflex Irritability	no response	grimace	cry
Color	Cyanotic Pale	body pink extremities cyanotic	completely pink

Done at 1 & 5 minutes postpartum. 5 minute score is most accurate

Scoring: 0 – 4 = infant in serious condition; needs resuscitation

5 – 7 = infant will need to be in NICU

7 – 10 = infant should do well

Maintain body temperature

Prophylactic erythromycin to prevent Ophthalmia neonatorum

Characteristics of the newborn

Changes from fetal circulation

Closure of foramen ovale, becomes fossa ovale

Closure of ducts arteriosus, becomes ligamentum arteriosum

Heart Rate 120-160 soft heart murmur maybe present for first month

Clotting mechanism poor- administer vitamin K into vast us laterals

Immature liver may result in physiological jaundice

Respiratory irregular, abdominal, 30-50 per minutes

Temperature 97.8 or 98 - easily affected by environment

Stool –meconium black/green changes to lighter yellow brown @ 3 days

Integumentary system all disappear with time:

Lanugo-fine hair over entire body

Milia-small white pinpoint spot (pimples) over nose

Mongolian spots- blue/black spots on back, buttocks and sacral region

Cardiac sphincter of stomach not well developed causing regurgitation

Test of the newborn

PKU Phenylketonuria done in 24 hrs. After the first feeding if the infant has an absence of enzyme, which converts pheylalanine into tyrosine, will need to be on a special diet free of foods containing the amino acid phenylalanine to prevent mental retardation.

Also called maple syrup disease because of the scent of the urine.

Gestational age

Preterm- less than 37 weeks' gestation

Term- 38-42 weeks' gestation

Post-term- after 42 weeks' gestation

Post-mature- after 42 weeks' gestation subjected to affects of placental insufficiency

Birth weight

Appropriate for gestational age AGA - between 10th and 19th percentile for age
Large for gestational age LGA - above the 19th percentile for age
Small for gestational age SGA - below 10th percentile for age
Low birth weight LBW weight - below 2500grams or less at birth

Diet

Needs to ingest simple proteins, carbohydrates, fats, vitamins and minerals

Fluids 2-3oz of fluid per pound of body weight per day

Calories 50-60 calories per pound of body weight per day

Protein 2.0-2.2 grams per pound of body weight per day

Bottle-feeding

On demand or @ every 4hours

Commercial or special formulas

No unmodified cows milk until after one year

Breast-feeding

On demand

Provides greater immunity to infant

Psychological state of mother influence success

Contraindicated-

Mother: Active TB, HIV+ some cancers, cardiac disease or on certain drugs

Infant: some cases of cleft lip or palate

Reflexes

Rooting – stroke cheek by corner of mouth → infant turns head toward stimulus; disappears around week 6

Sucking – touch neonate’s lips → suck; begins to decrease around 6 months

Swallowing – same as in adult

Extrusion – anything placed on anterior of tongue; disappears about 4 months

Tonic neck; “fencing” attitude as arm & leg on side to which head turns extend while opposite arm & leg contract; disappears 2nd – 3rd month

Palmar grasp – touch palm → grab strongly enough to lift baby; disappears around 6 weeks to 3 months

Step-in-place – hold vertically with feet on hard surface → step; disappears by 3 months

Moro – symmetric bilateral abduction & extension of arms with thumb & forefinger forming”; elicited by startling; disappears by end of 4th – 5th month

Babinski’s – toes flare when foot stroked from heel to great toe along lateral edge of foot; changes to adult flexing response around 3 months

Physiologic Status of Neonate

Cardiovascular

Shunts close: foramen ovale, ductus arteriosus

Murmur not uncommon & usually insignificant

No gut flora to make vitamin K, so give prophylactic dose on day 1

Respiratory

Obligate nose breathers

Urinary

Cannot concentrate urine for 1st 3 months

Initial urine may have brick-red spots R/T uric acid crystals

May not void for 1st 12 – 24 hours, then 6 – 10x/day

GI

Epstein's pearls = small white raised areas on palate

Immature cardiac sphincter → reflux food when burped

Meconium = 1st stool – passed 1st 12 – 24 hours; green- black and tarry

Number vary from 1 per feeding to 1-2 a day

Integument

Physiologic jaundice normal – appears after 24 hours

Harlequin sign – R/T immature circulation; red on dependent side of body & pale on upper side;
fades as soon as change position

Mongolian spots – gray patches on sacrum or buttocks that disappear by school age; found in Asian, Southern European, or African races

Vernix caseosa – white cream-cheesy substance to lubricate skin

Lanugo – only on shoulders, back, upper arms, forehead, & ears if mature infant; more if premature; none if post-mature

Milia – immature sebaceous glands that are plugged form little bumps across cheeks or bridge of nose; disappear by 2 – 4 weeks

Thermoregulation

Can't shiver

Brown fat for nonshivering thermogenesis

Cold stress increases oxygen & glucose consumption → metabolic acidosis & respiratory distress

Immune System

Cannot localize infections

Passively acquired immunity

 IgG transplacentally

 IgA via colostrums & breast milk

Develops active immunity during 1st 3 months

Sleep Cycle

Sleep about 17 hr/day

Hunger Cycle

Breast-fed: nurse q 2-3 hours

Formula-fed: q3-4 hours