N432 Focus Sheet 5 2020—Newborn, RKC Ch 17, 18, 23,24; ATI Ch 23-27 ; Newborn Assessment Power Point; breastfeeding power point; Newborn reflexes u-tube video; Alexander street video on Newborn assessment.

RKC 17 & 18; ATI Ch 23

1. **What does APGAR stand for?**

Each point is scored from 0-2.

Activity (Muscle Tone⇒ Absent (Limp), Some flexion of extremities, Strong movement/ flexion)

Pulse (Absent, Below 100, Above 100)

Grimace (Absent Cry, Weak Cry, Strong Cry)

Appearance (Blue all over, Blue extremities but pink core, All pink)

Respiration (Absent, Weak irregular breathing, Strong respirations)

2. **When are APGAR scores assigned?**

1 minute and 5 minutes after birth

3. **What is a "normal" APGAR score versus a score that requires an intervention?**

7-10 is a "normal" APGAR score.

This indicates that the baby is in good health. 10's are extremely rare, since babies will usually have some cyanosis present at birth.

A score of 4-6 may be moderately concerning. It will need to be rechecked at 5 minutes and may require some intervention.

0-3 is bad and requires immediate intervention.

4. Describe the Initial assessment of a newborn immediately after birth?

APGAR scores are assigned (breathing, heart rate, muscle tone, color), regular vitals, reflexes are checked, note appearance of lanugo, take head circumference, belly circumference, and height and weight.

5. What are the normal expected ranges for a newborn for each of the following

weight	2,500 - 4,000 g (5.5 to 8.8 lb)	
Length (crown of head to to heel of foot)	45 - 55 cm (18 to 22 in)	
Head circumference (occipital to frontal)	32 - 36.8 cm (12.6 to 14.5 in)	
Chest circumference (nipple line)	30 - 33 cm (12 to 13 in)	
Temperature	36.5-37.5 C (97.7-99.5 F)	
Pulse	110-160/min	
Respiration	30-60 breaths/min	
Blood Pressure	60-80/40-50	

6. What does the New Ballard Scale (gestational age assessment) assess? (There is a PPT in the Resources with a link to at U-tube video on the New Ballard Scale and an Alexander Street video on Newborn Assessment)

A newborn maturity rating score used to assess neuromuscular and physical maturity.

- Each individual assessment parameter displays at least six ranges of development along a continuum.

- Each range of development within an assessment is assigned a number value from -1 to 5. The totals are added to give a maturity rating in weeks gestation (e.g., a score of 35 indicates 38 weeks of gestation).

7. Define AGA, SGA, LGA, IUGR, term, preterm or premature, post term or postdate, postmature.

Appropriate for gestational age (AGA): Weight is between the 10th and 90th percentile.

Small for gestational age (SGA): Weight is less than the 10th percentile.

Large for gestational age (LGA): Weight is greater than the 90th percentile.

Intrauterine growth restriction (IUGR): Growth rate does not meet expected norms.

Term: Birth between the beginning of week 37 and prior to the end of 42 weeks of gestation.

Preterm or premature: Born prior to 37 weeks of gestation.

Post term or postdate: Born after the completion of 42 weeks of gestation.

Postmature: Born after the completion of 42 weeks of gestation with evidence of placental insufficiency

8. Review and summarize each component of the physical exam (Also see power point slides) (There is a PPT in the Resources with a link to at U-tube video on the newborn reflexes)

Posture: Lying in a curled position with arms and legs in moderate flexion. Resistant to extension of extremities.

Skin: Skin color should be initially deep red to purple, with acrocyanosis. Skin color should fade to a color congruent to the newborn genetic background. Secondary to increased bilirubin, jaundice can appear on the third day of life, but then decrease spontaneously. Skin turgor should be quick, indicating that the newborn is well hydrated. The skin should spring back immediately when pinched. Texture should be dry, soft, and smooth, showing good hydration. Cracks in hands and feet can be present.

Milia: (small raised pearly or white spots on the nose, chin, and forehead) can be present. These spots disappear spontaneously without treatment.
Telangiectatic nevi: are flat pink or red marks that easily blanch and are found on the back of the neck, nose, upper eyelids, and middle of the forehead. They usually fade by the second year of life.
Nevus flammeus: is a capillary angioma below the surface of the skin that is purple or red, varies in size and shape, is commonly seen on the face, and does not blanch or disappear.
Erythema toxicum: is a pink rash that appears suddenly anywhere on the body of a term newborn during the first 3 weeks. This is frequently referred to as newborn rash. No treatment is required.
Head:
Caput succedaneum: localized swelling of soft tissues
Cephalohematoma: collection of blood between the periosteum and skull of bone

Eyes:

- asses symmetry in size and shape
- Each eye from inner to outer canthus and the space between
- Lacrimal glands are immature with minimal tear
- Jerky movement

Ears:

- Inspect for skin tags
- Cartilage should be firm well formed lack of this is prematurity

Nose:

- Nose is midline, flat, and broad with lack of bridge
- Mucus is present not drainage
- Sneeze to clear nasal passage
- Obligate nose breathers

Mouth:

- Assess palate closure and strength of sucking
- Lip Movement symmetrical
- Saliva should be scant excessive indicates tracheoesophageal fistula
- Epstein pearls small whitish yellow cyst found on gums and junction of soft and hard palates
- Tongue moves freely symmetrical in shape and not protrude

Neck:

- Short thick skin folds surround
- Neck should move freely side to side
- Absence head control can indicate prematurity/ down syndrome

Chest:

- chest should be barrel-shaped
- Clavicles intact
- Retractions should be absent
- Nipples prominent well formed & symmetrical
- Breast nodules can be 3to 10 mm

Abdomen:

- umbilical cord odorless exhibits no intestinal structures
- Abdomen should be round dome shaped nondistended
- Bowel sounds should be present within few minutes of birth

Anogenital”

- Anus should be present patent and not cover by membrane
- Rugae on mal scrotum
- Testes be present in scrotum
- Vaginal blood tinged discharge can occur in female newborns(expected)

Extremities:

- Asses full range of motion

- Soles should be well lined over ⅔ of feet
- Should flex
- Assess bowed legs and flat feet

Spine: should be straight, flat, midline, and easily flexed.
Reflexes:
Sucking & rooting reflex: finding expected: elicit by stroking the cheek or edge of mouth, usually disappears after 3-4 months but may last a year
Palmar grasp: grabbing anything you put in their palm, this is normal, lessens by 3-4 months
Plantar grasp: toes should curl in when rubbing, lessens after 8 months
Moro reflex: Also called the "Startle reflex". It is when the baby makes a "C" with their arms outstretched over their chest when startled.
Tonic neck reflex (fencer position): When a child's head is turned to one side, the same arm will outstretch in that direction.
Babinski reflex: The toes fan outward when the sole of the foot is stroked.
Stepping: When an infant's feet are placed onto a table or counter, they will make a "stepping" motion.
Senses:
Vision: should focus on objects 8-12 inches away, can see objects up to 2.5 feet away, eyes are sensitive to light
Hearing: Hearing is similar to that of an adult once the amniotic fluid drains from the ears. Newborns exhibit selective listening to familiar voices and rhythms of intrauterine life. The newborn turns toward the general direction of a sound.
Touch: Newborns should respond to tactile messages of pain and touch. The mouth, hands and soles of the feet are the areas most sensitive to touch in the newborn.
Taste: Newborns can taste and prefer sweet to salty, sour, or bitter.
Smell: Newborns have a highly developed sense of smell, prefers sweet smells, and can recognize the mother's smell.
Habitation: This is a protective mechanism whereby the newborn becomes accustomed to environmental stimuli. Response to a constant or repetitive stimulus is decreased. This allows the newborn to select stimuli that promotes continued learning, avoiding overload.

9. How is a newborns blood type determined?

Blood can be taken from the umbilical cord by a needle in the vein or drained after birth. They only test when mom is O-.

10. What are the normal Expected laboratory values for a newborn?

HGB	14 to 24 g/dL
Platelets	150,000 to 300,000/mm^3
HCt	44% to 64%
Glucose	40 to 60 mg/dL
RBC count	4.8 x 10^6 to 7.1 x 10^6
Bilirubin 24 hr 48 hr	 2 to 6 mg/dL 6 to 7 mg/dL

3-5 days	4 to 6 mg/dL
Leukocytes	9,000 to 30,000/mm^3

11. What are the 3 primary complications noted with newborns? What are the nursing interventions for each of these complications?

Hypoglycemia, Jaundice, and maintaining patent airway.

Hypoglycemia - check blood glucose according to protocol.

Maintaining a patent airway - suction baby's mouth with a bulb syringe.

Jaundice - Babies undergo phototherapy

RKC Ch 18; ATI Ch 24

1. Summarize the physical assessment of a newborn.

The RAPP assessment (respiratory activity, perfusion, and position) provides a method to swiftly evaluate the newborn’s condition so that decisions can be made regarding newborn stability.

During the initial assessment a nurse should look for: • Nasal flaring • Chest retractions • Grunting on exhalation • Labored breathing • Abnormal breath sounds: rhonchi, crackles (rales), wheezing, and stridor • Abnormal respiratory rates (tachypnea, more than 60 breaths/min; bradypnea, less than 25 breaths/min) • Flaccid body posture • Generalized cyanosis • Pallor • Apneic episodes • Abnormal heart rates (tachycardia, more than 160 bpm; bradycardia, less than 100 bpm) • Abnormal newborn size: small or large for gestational age

2. When and how is the Neonatal screening (sometimes called metabolic screening) done?

A few drops of blood are taken from the infant's heel and this is done shortly before discharge.

What is the importance of this test?

This test is used to detect PKU, hypothyroidism, galactosemia, and sickle cell disease

Describe the collection sample procedure.

A few drops of blood are taken from the baby's heel.

3. What are the signs of respiratory distress in the newborn?

Nasal flaring, cyanosis, chest or abdominal retractions,

Nasal flaring, retractions, grunting, gasping, and labored breathing

4. Summarize the interventions for stabilization and resuscitation of airway.

Routine suctioning with a bulb syringe to clear out excess mucus from the mouth and nasal passages, if unsuccessful use mechanical suction. If the airway is still uncleared, provide emergency procedures.

5. Apply the nursing process to thermoregulation components and list appropriate nursing interventions

Conduction: provided by using a preheated warmer, a warm stethoscope/instruments during assessment, and skin to skin with parents with a warm blanket.

Convection: prevent air circulation or cold air directing towards baby, swaddle baby in a blanket and keeping the head covered.

Evaporation: drying infant immediately after delivery, avoiding a bath until temperature of the infant is 36.5C. When bathing, only expose one body part at a time to maintain body heat.

Radiation: keep the infant away from windows or air conditioning.

6. What would you teach parents regarding:

Bathing – begin when temperature is 36.5C, bathing should be postponed until thermoregulation stabilizes. First bath should be around the 24-hour mark to help with thermoregulation of the newborn.

Diaper changes – diaper changes should be done when the baby has pooped or peed. Most diapers have a line that will change colors when the diaper is soiled. For female newborns make sure to wipe front to back to prevent infections.

Feeding – follow immediately after birth. Breastfeeding is initiated as soon as possible, formula feeding begins 2-4 hours after birth.

Newborn Sleep – newborns sleep 16=19 hours a day. Avoid bumper pads, loose linens, or toys in the bassinet. Parents should sleep close to the infant but in separate spaces. Educate measures to prevent SIDS.

Elimination – newborns should void once within 24 hours of birth and 6-8 times a day after day 4. Meconium should be passed within 24 hours of birth, and 3-4 times a day depending on how the infant is being fed. Keep the perineal area clean and dry.

Infection control – infants are at risk for infection due to having immature immune systems within the first few months of life. Provide individual supplies for the infant.

Umbilical cord care – umbilical cord stay in place for 24-48 hours, clean the cord with water during the first newborn bath, and assess the stump and base of the cord with each diaper change. Fold diaper down, below the umbilical stump. Submerging an infant during a bath should not occur until the stump has fallen off. The cord usually falls off within 10-14 days.

7. Medications to know:

Medication	Indications (why is this needed for THIS patient?)	Nursing Implications (what are you watching for?)	Dose
Erythromycin	Mandatory antibiotic to prevent ophthalmia neonatorum	Redness, swelling, drainage, and temporary blurred vision	A single dose / 1-2cm ribbon of ointment per eye
Vitamin K (Aquamephyton)	Prevents hemorrhagic disorders	Make sure this is given in a separate thigh from hep B injection	0.5-1mg IM injection into vastus lateralis
Hepatitis B	Protection against hepatitis B	Make sure this is given in a separate thigh from vitamin K injection; know if parent is infected - schedule will change slightly for infant	Newborn recommended schedule: birth, 1 month, and 6 months; schedule for baby will change if parents are infected; single injection dose

8. Why is it important to monitor newborns for cold stress?

Cold stress can lead to hypoxia, acidosis, and hypoglycemia.

What signs and symptoms are noted with this?

Skin pallor with mottling and cyanotic trunk, tachypnea

What treatment is used?

Warm the infant slowly over 2-4 hours, correct hypoxia with oxygen administration, correct hypoglycemia and acidosis with feeding.

9. Why is it important to monitor newborns for hypoglycemia?

It is important to monitor newborns for hypoglycemia so that the newborn doesn't get sick. Blood glucose provides energy to the body so it's important to keep blood glucose levels stable so the newborn is stable.

What are the signs and symptoms?

Jitteriness, twitching; a weak, abnormal cry; irregular respiratory effort; cyanosis; lethargy; eye rolling; seizures; blood glucose less than 40mg/dL from heel stick

What is the treatment?

Have parent breastfeed or provide infant with donor milk or formula to elevate blood glucose levels.

ATI Ch 25 ;Breastfeeding PowerPoint

1. Describe the key nutritional needs of the newborn.

Adequate caloric intake is essential for providing energy for growth, digestion, metabolic needs, and activity of an infant.

Carbohydrates should make up 40-50% of the newborns total caloric intake

15% of calories come from fat (triglycerides)

A newborn should have 9g of protein for adequate growth and development from birth to 6 months

Breast milk contains vitamins that are adequate for newborn nutrition

Solids should not be introduced until 6 months of age

If the infant has only been breastfed, iron supplements can be introduced at 4 months of age until they are able to consume iron-containing foods.

If the infant is formula fed, should receive iron-fortified formula until 12 months of age

2. According to the American Academy of Pediatrics, how often should newborns breastfeed?

Exclusively recommended for the first 6 months of life; newborns should be breastfed every 2-3 hours, occurring 8-12 times in a 24-hour period.

What infant specific benefits have been found with breastfeeding?

Infants should receive 400 IU of vitamin D daily from breast milk; reduces the risk of infection by providing IgA antibodies, lysozymes, leukocytes, macrophages, and lactoferrin that prevents infection; promotes rapid brain growth due to large amounts of lactose; provides protein and nitrogen for neurologic cell building and improves the infant's ability to regulate calcium and phosphorus levels; contains electrolytes and minerals, easy for newborn to digest, reduces incidence of SIDS, allergies, and childhood obesity; promotes maternal-infant bonding and attachment

3. List 4 interventions to promote successful breastfeeding.

1. Make sure mother and newborn have skin to skin as soon as possible. This promotes mother baby bonding and helps with the milk development process
2. Have the mother breastfeed every 2 hours even if the newborn doesn't show signs of being hungry. This will help with mother's milk supply.
3. Teach the different breastfeeding positions so the mother can find the one that's most comfortable and that will help with newborn latching on properly.
4. Newborns should have the whole nipple and some areola in mouth for proper latch and will help promote successful breastfeeding.

4. Breastmilk can be stored in each of the following for how long?

8 hr at room temperature

8 days refrigerated in sterile bottles

6 months in frozen sterile containers in the freezer compartment of a refrigerator

12 months in a deep freezer

5. How often should bottle-fed babies be feeding?

Every 3-4 hours during the day and at least every 4 hours at night until the infant is feeding well and gaining weight adequately, then a feed-on-demand schedule can be followed.

6. What should be assessed when determining proper nutrition for the newborn?

Maturity level, Hx of labor and delivery, birth trauma, congenital defects, Physical stability, state of alertness, Presence of bowel sounds.

7. What cues are exhibited by a newborn to show feeding readiness?

Hand to mouth movements, sucking motions, and rooting reflex

8. What techniques can you teach parents in order to wake a sleepy baby to feed?

Unwrap the newborn, change the newborn's diaper, hold the newborn upright, and turn them from side to side, talk to the newborn, massage the newborn's back, and rub the hands and feet, apply a cool cloth to the newborn's face.

9. What techniques can you teach parents comforting a fussy baby?

Swaddle the newborn, hold the newborn close, move, and rock them gently, reduce the newborn's environmental stimuli, and place the newborn skin-to-skin.

9. What is failure to thrive?

Slow weight gain. A newborn usually falls below the 5th percentile on the growth chart.

ATI Ch 26

Since the majority of OB is about education/teaching, you are responsible for all information in this chapter, as you will use it clinically and during theory/exam.

1. **Write up 5 things you would include in the discharge teaching for the newborn.**
   Bathing, umbilical cord care, circumcision, car seat safety, environmental safety, newborn behaviors, feeding elimination, and clinical findings of illness to report to provider.

RKC Ch 23 & 24; ATI Ch 27

1. Describe what the neonate going through substance withdraw would look like.

Neonates going through substance withdraw may have complications such as hypoglycemia, respiratory distress syndrome (RDS)/asphyxia/macrosomic aspiration, preterm newborn, small for gestational age (SGA), newborn infection/sepsis (sepsis neonatorum), birth trauma or injury, hyperbilirubinemia, and congenital anomalies.

2. How can infants be tested for maternal drug use and what nursing care should be implemented for infants who are withdrawing?

Blood tests can differentiate between neonatal drug withdrawal such as CBC, Blood glucose, Thyroid-stimulating hormone, thyroxine, triiodothyronine, drug screen of urine, and hair analysis.

Nursing care includes: ongoing assessment of newborn using neonatal abstinence scoring system assessment, elicit and assess the newborn's reflexes, monitor newborn's ability to feed and digest (offer small frequent feedings), Swaddle the newborn with egs flexed, offer non-nutritive sucking, monitor newborn's fluids and electrolytes with skin turgor, mucous membranes fontanels, daily weights, and I&O, and reduce environmental stimuli.

3. What medications are often used to help with withdrawal symptoms?

Opioid: Morphine sulfate

Anticonvulsant: Phenobarbital

4. Hypoglycemia in the newborn is defined as:

Blood glucose <30 mg/dL

5. What does a hypoglycemic infant look like?

Physical findings are poor feeding, jitteriness/tremors, hypothermia, weak cry, lethargy, flaccid muscle tone, seizures/coma, irregular respirations, cyanosis, apnea.

How would they be treated?

Nursing care: Obtain blood by heel stick for glucose monitoring, Initiate IV dextrose for symptomatic newborn, monitor levels per facility protocol, Monitor IV if neonate is unable to feed orally, maintain skin-to-skin contact for hypothermia

6. RDS is a result of surfactant deficiency in the lungs causing poor gas exchange and ventilatory failure. What is surfactant?

Surfactant is a phospholipid that assists in alveoli expansion. Surfactant keeps alveoli from collapsing and allows gas exchange to occur.

What complications arise from RDS?

Pneumothorax, Pneumomediastinum, Retinopathy of prematurity, Bronchopulmonary dysplasia, Infection, Intraventricular hemorrhage.

7. What risk factors are included in the assessment for RDS?

Preterm gestation, Perinatal asphyxia, Maternal diabetes mellitus, Premature rupture of membranes, Maternal use of barbiturates, or narcotics close to birth, Maternal hypotension, Cesarean birth without labor, Hydrops fetalis, Maternal bleeding during the third trimester, Hypovolemia, Genetics: white males.

8. What does an RDS infant look like?

Expect findings: Tachypnea, nasal flaring, Expiratory grunting, Retractions, Labored breathing with prolonged expiration, fine crackles on auscultation, Cyanosis, Unresponsiveness, flaccidity, and apnea with decreased breath sounds

9. Describe the order of interventions during the immediate period after the infant is born. presentation and care of the newborn.

Nursing car: Suction mouth trachea and nose as needed, maintain thermoregulation, provide mouth and skin care, correct respiratory acidosis with ventilatory support, correct metabolic acidosis by administering sodium bicarbonate, maintain adequate oxygenation, prevent lactic acidosis, and avoid the toxic effects of oxygen, monitor pulse oximetry, provide parenteral nutrition as prescribed, monitor laboratory results, I&O, and weight to evaluate hydration status, decrease stimuli

10. SGA vs LGA, compare and contrast.

	SGA	LGA
Risk factors:	Congenital or chromosomal anomalies Maternal infections, disease, or malnutrition Gestational hypertension and/or diabetes Maternal smoking, drug, or alcohol use	Newborns who are postmature Maternal diabetes Mellitus during pregnancy Genetic factors Maternal obesity Multiparity

	Multiple gestations Placental factors Fetal congenital infections	
Findings	Weight below 10th percentile Normal skull, but reduced body dimensions Hair is sparse on scalp Wide skull sutures from inadequate bone growth Dry loose skin Decreased subcutaneous fat Decreased muscle mass, particularly over the cheeks and buttocks Thin, dry, yellow and dull umbilical cord rather than gray glistening and moist Drawn abdomen rather than well-rounded Respiratory distress and hypoxia Wide-eyed and alert, which is attributed to prolonged fetal hypoxia Hypotonia Evidence of meconium aspiration Hypoglycemia acrocyanosis	Weight above 90th percentile Large head Plump and full faced from increased subcutaneous fat Manifestations of hypoxia including tachypnea, retractions, cyanosis, nasal flaring, and grunting Birth trauma Sluggishness, hypotonic muscles, and hypoactivity Tremors from hypocalcemia Hypoglycemia Respiratory distress from immature lungs or meconium aspiration
Care considerations	Support respiratory efforts, and suctions the newborn as necessary Provide neutral thermal	Prep client for possible vacuum-assisted or cesarean birth Prepare to place the client

	environment for the newborn to prevent cold stress Initiate early feedings Administer parenteral nutrition Conserve the newborns energy level Prevent skin breakdown Protect the newborn from infection Provide support to the newborns parents and extended family	in McRoberts position Prep to apply suprapubic pressure to aid in the delivery of the anterior shoulder (located inferior to symphysis pubis) Assess the newborn for birth trauma For newborns: Obtain early and frequent heel sticks Initiate early feedings or IV therapy to maintain glucose levels within the expected reference range Provide thermoregulation with isolette. Identify and treat any birth injuries

11. Discuss the variations between physiologic and pathologic jaundice.

Physiologic: benign resulting from normal newborn physiology of increased bilirubin production due to shortened lifespan and breakdown of fetal TBCs and liver immaturity.

Pathologic: Result of underlying disease. Pathologic jaundice appears before 24hr of age or is persistent after day 14.

What tests are done to determine the severity of the jaundice (high bilirubin level)?

Lab tests: serum bilirubin level

Assess blood type of mother and child

Review Hgb and Hct

A direct Coombs test

How are elevated bilirubin levels in newborns treated?

Phototherapy (as per protocol with safety procedures in place)

Monitor vital signs

12. What assessments and nursing interventions are done for an infant who is under a bilirubin ultraviolet light or on a bilirubin blanket?

Observe bronze discoloration, maculopapular skin rash, development of pressure areas, dehydration, elevated temperature. Mask eyes, keep undressed, avoid applying lotions or ointments, reposition every 2 hr, check the lamp energy, turn off phototherapy lights before drawing blood for testing.

13. Congenital anomalies: Describe patent ductus arteriosus, Tetralogy of Fallot, and Down Syndrome.

Patent ductus arteriosus - a non cyanotic heart defect in which the ductus arteriosus connecting the pulmonary artery and the aorta fails to close after birth.

Tetralogy of Fallot - Cyanotic heart defect characterized by a ventricular septal defect, the aorta positioned over the ventricular septal defect, stenosis of the pulmonary valve, and hypertrophy of the right ventricle

Down Syndrome - Trisomy 21, which is the most common trisomy abnormality with 47 chromosomes in each cell