UNIVERSITY OF CALGARY
CUMMING SCHOOL OF MEDICINE

NEONATAL PHYSICAL EXAM

Developed by Dr. Lea Restivo

General observations:

- □ Assess the general appearance of the baby. Can use Pediatric Assessment Triangle:
  - Appearance: What position have they adopted while laying unstimulated? Are they lying in a frogged-leg position - does their tone appear to be low? What their tone?
  - Breathing: Are there any signs of respiratory distress such as increased work of breathing, tachypnea
  - Color: Mottling, pallor or cyanosis

Vital Signs

- □ Heart rate, respiratory rate, temperature, oxygen saturation, blood pressure
- □ Weight and length of the neonate

Head

- □ Head circumference
  - Measure just above the eyebrows to the most prominent part of the occiput and back again.
- □ Sutures
  - There are 4 sutures, they allow for the skull to temporarily mold to fit through the birthing canal
    - Coronal suture
    - Lambdoid Suture
    - Metopic Suture
    - Sagittal suture
- □ Shape of the head for any asymmetry
  - Plagiocephaly is observed with
- □ Assess for any areas of bleeding from birth trauma. There are 3 types to know about.
  - Cephalohematoma
    - Does not cross suture lines
    - Bleeding below the periosteum
    - Typically due to forceps or vacuum
    - They are at increased risk of jaundice
  - Caput Succedaneum
    - Scalp edema that crosses the suture lines
    - The fluid accumulates above the periosteum
    - Typically resolves in 48 hours
  - Subgaleal hemorrhage
    - More extensive swelling that crosses suture lines
    - This can lead to significant blood loss due to the large potential space

- ☐ Fontanelles – the fontanelles are made of the suture lines which have not yet fused
    - Posterior fontanelle closes around 6-8 weeks
    - Anterior fontanelle
        - Assess the size of it
        - Assess if it is sunken or bulging

Eyes

- ☐ Assess the overall shape, colour, conjunctiva of the eye
- ☐ Assess the space between the eyes
    - Hypertelorism – increased space between the eyes
    - Hypotelorism – decreased space between the eyes
- ☐ Palpebral fissures
    - Assess if they are up or down-slanting palpebral fissures
- ☐ Red reflex – performed using an ophthalmoscope
    - Can turn the lights off or put your hands over the eyes to help baby to open them
    - Make sure you see a flash of red in both eyes at once
        - If you see white in one or both, this can represent a cataract or retinoblastoma and you need an urgent referral to an opthalmologist

Ears

- ☐ Assess the size and shape of ears
- ☐ Assess their location
    - The corner of the eye should line up with the top of the ear (helix)
        - If not, they are considered low set
- ☐ Assess for any preauricular skin tags or ear pits

Mouth

- ☐ Palate
    - You want to assess their hard and soft palate both by feeling with your finger and directly observing. You may need to use a wooden spatula for this.
- ☐ Ankyloglossia/tongue tie
    - Occurs when there is a short frenulum that attaches the tongue to the floor of the mouth. It limits the motility of the tongue and may require a frenotomy.

Neck

- ☐ Assess for full range of motion
    - Rule out torticollis
- ☐ Look for any webbing of the neck or excess nuchal folds

Heart

- ☐ Observe for any obvious active precordium
- ☐ Auscultate in the 4 heart areas for any murmurs or extra heart sounds
    - The 4 areas are:

        - Right upper sternal border
        - Left upper sternal border
        - Left lower sternal border
        - Between the 5th and 6th intercostal space along the midclavicular line
    - A normal HR is 120-160BPM
    - Murmurs
        - Note the location, timing (diastolic, systolic, continuous), intensity (from grade 1 to 6), contour (holo-, crescendo, decrescendo), pitch (high or low), quality (mechanical, harsh, soft, blowing) and radiation of any murmurs
        - Key features to remember that are always pathological in neonates are:
            - Holosystolic, harsh, or continuous murmurs
            - Intensity grade 3 or above
            - Diastolic murmurs
- □ All newborns should have a pulse oximetry prior to discharge home

Respiratory

- □ The normal respiratory rate of a newborn is 40-60 breaths per minute
- □ They can have periodic breathing which means that they breath fast and then slow. But you always want to make sure you aren't seeing pauses in their breathing for more than 15seconds as this would be an apneic event.
- □ Assess for any nasal flaring, grunting, retractions, cyanosis, or tachypnea
- □ Assess if there is a pectus excavatum or pectus carinatum
- □ Auscultate the anterior and posterior lung fields

Abdomen

- □ While examining the abdomen, it is helpful to hold the legs with the hips and knees flexed. This prevents them from engaging their abdominal muscles and relaxes the abdomen.
- □ Examine the shape of the abdomen and for any defects
- □ Examine the umbilical cord for any signs of bleeding or infection and around the skin of the umbilicus
    - Assess for an umbilical hernia
- □ Auscultate for bowel sounds in all 4 quadrants
- □ Palpate for any masses.
- □ Palpate the liver (1 to 2 cm below the costal margin)
- □ Palpate for the spleen
- □ Palpate the kidneys

Groin

- □ Assess the femoral pulses
    - Midway between the iliac crest and pubic symphysis on the inguinal ligament
- □ Examine the genitalia

- Female
  - You can have vaginal discharge or bleeding from maternal hormones
- Male
  - Assess for descended testes bilaterally
  - Assess the penis for hypospadias
    - If the foreskin does not fully cover the glans
    - This is when the urethral opening is ventrally displaced

□ Anus
- Assess that it is patent

□ Hips – need to assess for hip dysplasia especially if they were breech
- Barlow
  - Adduct the thigh by bringing the leg inwards and push posterior to try and dislocate
- Ortolani
  - Flex the knee to 90 degrees then abduct outwards
- You are feeling for a clunk or a dislocation

Extremities

□ Make sure they have 5 fingers and toes

□ Assess the palms
- Look at the lines – single transverse palmar crease can indicate down's syndrome

Back

□ Slate grey nevi (make a document of it)

□ Assess the spine for any deformities

□ Look for the sacral area
- Make sure that if they have a sacral dimple, if they do, make sure you can see the base
- Make sure the dimple is 2.5cm away from the anal verge

Neurologic examination

□ Tone
- Pull the baby towards you.
  - Does the body feel hypotonic?
  - Does the head come up to a sitting position
- Place in vertical position and examine for any slip through
- Place in horizontal position

□ Motor function
- Make sure face looks symmetric
- Make sure moving all limbs

□ Primitive reflexes
- Make sure they are symmetric
- Moro reflexes

        - Hold the hands and pull so that the head is off the bed. Then drop into your hand.
        - Make sure that the arms extend and then flex inwards
    - Rooting reflex
    - Suck
    - Palmar reflex
    - Plantar reflex
    - Babinski
        - Dorsiflexion is normal

Skin

- □ Examine for jaundice and birthmarks