NEW BORN ASSESSMENT & CARE OF NEONATE

Rupinder Deol
Assistant Professor
College of Nursing
AIIMS, RISHIKESH
INTRODUCTION

• Monitoring of neonates is the keynote to their successful outcome.

• Accurate nursing observation is a vital factor in the survival and future development of newborn.

• The initial physical examination should be performed as soon as after the birth.

• All newborns should be thoroughly examined in the first 24-48 hrs of age.
INTRODUCTION

• The basic tools of assessment are the human senses of vision, hearing, touch and smell.

• Examination of newborn entails investigation into the history using different techniques namely inspection, palpation, percussion and auscultation.

• The newborn assessment database includes information gathered from the history, reviewing mother’s record, head to toe examination for physical and neurological characteristics and is used to establish nursing priorities, which guide nursing diagnosis and nursing interventions.
PURPOSE OF EXAMINATION

The overall purposes of new born examination are to:

✓ Identify the physical and neurological characteristics of new born.

✓ Identify and record evidence of common neonatal problems and congenital anomalies.

✓ Provide a basis for identification of needs and plan nursing care of new born.
SPECIFIC INSTRUCTIONS

To perform thorough skilled examination of newborn, the following specific instructions should be kept in mind:

1. Observation should be made when newborn is quiet and awake.

2. Ensure adequate light in examination room.

3. The temperature of the examination room is maintained at 28 +/- 2 degree C. Avoid draft and chills in the examination room.

4. Wash your hands till elbow for 3 minutes before and after handling the newborn.
Effective Handwashing

1. Palm to palm
2. Right palm over left dorsum and left palm over right dorsum
3. Palm to palm fingers interlaced
4. Backs of fingers to opposing palms with fingers interlocked
5. Rotational rubbing of right thumb clasped in left palm and vice versa
6. Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa
SYSTEMATIC ASSESSMENT OF NEWBORN

Neonatal assessment is done systematically from birth till discharge of neonate.

Examination of newborn soon after birth is done very quickly. Examination at birth includes assessment of certain important parameters, to evaluate the adjustment of newborn to these life processes.
On the basis of time of performing, assessment is of three types:

1. Immediate assessment of newborn
2. Transitional assessment during period of reactivity
3. Periodic assessment.
PURPOSES

The purposes of first examination at birth are:

1. To ensure the patency of orifices and spontaneous breathing.

2. To identify life threatening congenital malformations and birth injuries.

3. To classify the new born according to weight and gestational age.
Immediate response of newborn to extra uterine life can be determined by:
- Apgar score at one, five and ten minutes.
- Birth weight
- Length
- Axillary temperature
- Patency of orifices – anal patency, esophageal atresia.

A detailed examination of newborn is performed after 24 hrs of birth.
FIRST DAY

• New born can tolerate much handling after first day, as they recover from labour stress.
• Examination of newborn within first 24 hrs include information about physiological establishment and future physiological changes that the newborn might undergo.
• Therefore, a thorough assessment that identifies normal and abnormal findings, facilitates planning of care by nurses.
The purposes of first day examination are to:

1. Identify any congenital anomaly missed out at birth.

2. Assess feeding behavior.

3. Ensure passage of urine and stool.

4. Perform thorough head to toe examination.

5. Record measurements.
IMMEDIATE ASSESSMENT OF NEW BORN

• For assessment of baby immediately after birth, APGAR scoring is done.
• APGAR scoring is a quantitative method of assessing infant’s respiratory, circulatory and neurological status.
• APGAR scoring is done at 1 min & 5 minutes after birth.
• Maximum APGAR score is 10 & the score of more than 7 is considered satisfactory & indicates absence of difficulty in adjusting to extra uterine life.
• Score 4-6 : Moderate distress
• 0-3 : Severe distress
<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart Rate</td>
<td>Absent</td>
<td>&lt;100</td>
<td>&gt;100</td>
</tr>
<tr>
<td>Respiratory Effort</td>
<td>Absent</td>
<td>Irregular, slow</td>
<td>Good, strong cry</td>
</tr>
<tr>
<td>Muscle Tone</td>
<td>Limp</td>
<td>Some flexion of extremities</td>
<td>Well flexed</td>
</tr>
<tr>
<td>Reflex Irritability</td>
<td>No response</td>
<td>Grimace</td>
<td>Cry, Sneezes</td>
</tr>
<tr>
<td>Color</td>
<td>Blue, Pale</td>
<td>Body pink, extremities blue</td>
<td>Completely pink.</td>
</tr>
</tbody>
</table>
Immediate newborn assessment includes:

- APGAR scoring
- Recording of birth weight
- Umbilical cord is examined for presence of 2 umbilical arteries and 1 vein.
- Orifice counting & checking their patency.
  - Mouth is checked for cleft palate and lip.
  - Ears and nose
  - Anus is checked for imperforation or malformation.
  - Urethra is checked for hypospadias or epispadias.
  - Any visible lesions on back or front.
Examination at 24 hrs: Assess

Ask
- Breastfeeding
- Activity of the baby
- Any other problems*

Check
- Weigh the baby
- Temperature

Record

- Passage of meconium up to 24 hrs and urine up to 48 hrs of life is usually normal
ROUTINE EXAMINATION

• Detailed examination on routine basis is not required.
• But till the time, the new born remains in the hospital the new born should be observed for feeding behavior and maintenance of temperature, jaundice, seizures and any superficial infections.
• The mother should be enquired about the behaviour of the new born eg; feeding problems, passage of urine and stool, vomiting.
PURPOSE OF ROUTINE EXAMINATION

• To assess the feeding behavior.
• To detect any superficial infection.
• To assess the temperature maintenance.
• To identify any feeding problem.
ON DISCHARGE

Before the new born is sent home, a detailed examination is necessary. The purposes are:

- To identify any anomaly and birth injury which might have got missed out at earlier examination.
- To assess any other problem.
- To educate the mother about care of new born at home.
- To record baseline data for future comparison.
- To refer the newborn, if needed.
STEPS OF EXAMINING THE NEW BORN

• Place the newborn on a flat surface at a comfortable height to yourself.
• The examiner’s hands must be dry and warm, as cold hands startle the new born. Warm up your hands by drying and rubbing.
• The examiner’s nail should be short and free of nail polish.
• Handle newborn gently.
• Don’t expose the newborn unnecessarily. Redress after completion of examination.
STEPS OF EXAMINING THE NEW BORN

• Proceed systematically.
• The sequence in which the various features of the examination are assessed is a matter of personal preference.
• Generally, the nurse begins by performing examination of those areas that require newborn to be in quiet state. Eg, counting respiratory rate.
• Measure head and chest circumference and length at same time to compare the results.
• Involve parents during newborn examination, by swaddling, holding, keeping the baby clean.
STEPS OF EXAMINING THE NEW BORN

• Avoid performing a detailed assessment just before or after feeding.

• The findings should be recorded promptly, accurately and systematically.

• Collect required articles, ensure proper functioning and that they are accessible.
## ARTICLES & PURPOSES

<table>
<thead>
<tr>
<th>ARTICLE</th>
<th>PURPOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEIGHING MACHINE</td>
<td>TO MEASURE WEIGHT.</td>
</tr>
<tr>
<td>MEASURING TAPE</td>
<td>TO MEASURE HC, CC &amp; ABDOMINAL GIRTH.</td>
</tr>
<tr>
<td>INFANTOMETER</td>
<td>TO MEASURE CROWN TO HEEL LENGTH.</td>
</tr>
<tr>
<td>T.P.R. TRAY</td>
<td>TO CHECK TEMPERATURE</td>
</tr>
<tr>
<td>STETHOSCOPE</td>
<td>TO AUSCULTATE H.R.</td>
</tr>
<tr>
<td>TORCH</td>
<td>TO CHECK PUPILLARY REFLEX &amp; TO OBSERVE ORAL CAVITY.</td>
</tr>
<tr>
<td>RECORD SHEET</td>
<td>TO RECORD THE FINDINGS.</td>
</tr>
</tbody>
</table>
Assess: Listen for

Grunting, Cry, Heart sounds
Assess:
Feel for

- Any abnormal swelling: Caput, cephalhematoma
- Palpable femoral pulses
- Dislocation of hip
- Capillary refill time (CRT)
- Confirm the findings of inspection
- Palpate the abdomen
- Feel for testes in male baby
GUIDELINES FOR ASSESSMENT

• Examination of new born includes reviewing history, measurements, general appearance, vital signs & head to toe assessment for identification of physical characteristics, neurological characteristics and deviations, if any.

• Nurse review’s history from the mother’s records related to previous and present pregnancy and labour.
1. INFORMATION RELATED TO PREVIOUS PREGNANCY:

- Gravida, para, abortions, number of alive children, still born.

- Nature of previous pregnancy/ies, nature of puerperium.
2. Information related to present pregnancy:
- LMP & EDD/ period of gestation.
- Parity
- Registered/ unregistered or booked/unbooked case
- Mother’s immunization – tetanus toxoid.
- Nutrition during pregnancy
- Folic acid, calcium and iron supplementation.
- Any history of illness and infections during 1\textsuperscript{st}, 2\textsuperscript{nd} and 3\textsuperscript{rd} trimester, medications taken or treatment required viz; PIH, eclampsia, anemia, fever, and diabetes.
- Blood group, Hb, urine for albumin, sugar.
3. History of Labour:

- Presentation
- Duration of labour (during 1\textsuperscript{st} stage, duration of 2\textsuperscript{nd} stage)
- ROM
- Medication during labour
- Method of delivery
<table>
<thead>
<tr>
<th>WHAT TO ASSESS?</th>
<th>TECHNIQUE FOR ASSESSMENT</th>
<th>CHARACTERISTICS OF NORMAL NEW BORN</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. SKIN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) Skin color</td>
<td>Observe color of skin especially of hands, feet and nails.</td>
<td>Pink color; peripheral cyanosis/acrocyanosis within 1st 24 hrs of birth involves the hands, feet and circumoral area (around the lips) in a normal variation.</td>
</tr>
<tr>
<td>ii) Texture</td>
<td>Examine by inspection and pinching the skin.</td>
<td>Soft, smooth, possible peeling, dryness and cracking over hands and feet.</td>
</tr>
<tr>
<td>iii) Skin turgor</td>
<td>Check by inspection and pinching.</td>
<td>Good turgor</td>
</tr>
<tr>
<td>iv) Vernix Caseosa</td>
<td>Observe for presence</td>
<td>Greasy, grey white substance with cheese like consistency</td>
</tr>
</tbody>
</table>
Color of the baby

- Normal vs. Abnormal

Teaching Aids: ENC
Erythema Toxicum
Erythema Toxicum

• Erythematous macules and firm 1-3 mm yellow or white papules or pustules
• Etiology obscure
• Pustules contain eosinophils and are sterile
• Appear in the first 3-4 days of life
  – Range: Birth to 14 days
• Benign and self limited
Erythema Toxicum
DD: Impetigo Neonatorum

- Vesicular, pustular, or bullous lesions developing as early as day of life 2-3 up to 2 weeks of life
- Lesions occur in moist or opposing surfaces of skin
- Unroofed lesions do not form crusts
- Treat with antibiotics
Impetigo Neonatorum
MONGOLIAN SPOTS

• 90% of African infants, 81% of Asian, and 9.6% of Caucasian infants
• Slate-gray to blue-black lesions
• Usually over lumbosacral area and buttocks
• Accumulation of melanocytes within the dermis
• Generally fade by age 7 years
Mongolian Spots
BENIGN PUSTULAR MELANOSIS OF THE NEWBORN
PUSTULAR MELANOSIS
GENERAL INSPECTION

• Vigorous cry is assuring
• Weak cry
  – sepsis, asphyxia, metabolic, narcotic use
• Hoarseness
  – Hypocalcemia, airway injury
• High pitch cry
  – CNS causes, kernicterus
<table>
<thead>
<tr>
<th>WHAT TO ASSESS?</th>
<th>TECHNIQUE FOR ASSESSMENT</th>
<th>CHARACTERISTICS OF NORMAL NEW BORN</th>
</tr>
</thead>
<tbody>
<tr>
<td>v) Lanugo</td>
<td>Examine on back, shoulders, forehead and cheeks.</td>
<td>Lanugo (fine hair) seen on back, shoulders, forehead and cheeks.</td>
</tr>
<tr>
<td>vi) Normal Variation Physiological Jaundice</td>
<td>Check by blanching skin over bridge of nose.</td>
<td>Yellowish discoloration of skin.</td>
</tr>
<tr>
<td>Erythema Toxycum</td>
<td>Observe back, shoulders and trunk of new born.</td>
<td>Small isolated areas of redness with a yellowish white wheal in the center commonly seen on back, shoulders and trunk.</td>
</tr>
<tr>
<td>Milia</td>
<td>Observe chin, nasal bridge and nasolabial folds.</td>
<td>Whitish pin head sized spots on around the nose or the chin may be present.</td>
</tr>
<tr>
<td>Mongolian spot</td>
<td>Observe sacral region for mongolian spot.</td>
<td>Smooth, bluish green naevus measuring 2-10 cm in diameter may be present in the sacral region.</td>
</tr>
<tr>
<td>WHAT TO ASSESS?</td>
<td>TECHNIQUE FOR ASSESSMENT</td>
<td>CHARACTERISTICS OF NORMAL NEW BORN</td>
</tr>
<tr>
<td>----------------</td>
<td>--------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td><strong>3) VITAL SIGNS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) Respiration</td>
<td>Observe by watching abdominal movement and count for 1 min.</td>
<td>Norma RR = 40-60 breaths/min</td>
</tr>
<tr>
<td>Determine rate, rhythm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii) Heart rate</td>
<td>Check by placing the stethoscope apically i.e. 5(^{th}) intercostal space in the mid clavicular line for 1 min.</td>
<td>Normal H.R =120-160 beats/min. crying increases &amp; deep sleep decreases HR.</td>
</tr>
<tr>
<td>Determine rate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii) Temperature</td>
<td>Axillary temperature is preferable and should be taken for atleast 3 mins.</td>
<td>Normal axillary temp=36.5- 37.5 (^{0}) C (95.5-99.3(^{0}) F)</td>
</tr>
<tr>
<td></td>
<td>You should also gain experience in assessing the temperature of newborn using hand.</td>
<td>Trunk feels warm, extremities are reasonably warm and pink.</td>
</tr>
</tbody>
</table>
Temperature

• At birth-warmth, keep the baby in skin to skin contact with the mother
Temperature recording

• Hands and feet should be checked for warmth with the back of the hand to see if the baby is in cold stress

• Temperature measurement
  ▪ Use clean thermometer
  ▪ Hold vertically in the axilla for 3 minute
  ▪ Read and record
  ▪ Normal 36.5°C-37.5°C
<table>
<thead>
<tr>
<th>WHAT TO ASSESS?</th>
<th>TECHNIQUE FOR ASSESSMENT</th>
<th>CHARACTERISTICS OF NORMAL NEW BORN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4) MEASUREMENTS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) Head circumference</td>
<td>Place the tape measure firmly over the supra orbital ridges anteriorly and posteriorly over the occipital protuberence that gives maximum circumference. Bring the two ends of the tape in front.</td>
<td>Normal HC = 33-35.5 cm</td>
</tr>
<tr>
<td>ii) Length</td>
<td>Record weight immediately after birth &amp; daily while in hospital. Place a paper lining on the scale. Balance weighing scale beam balance. Place nude newborn on weighing scale. While weighing, place hand an inch above newborn’s body to quickly grasp the newborn, if necessary.</td>
<td>Moulding after birth may decrease the HC.</td>
</tr>
<tr>
<td>iii) Body weight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>iv) Chest circumference</td>
<td>Place &amp; position the measuring tape under the rib cage at the nipple line.</td>
<td>Between 31-35 cm or 12-13 inches (1 inch or 2-3 cm less than HC)</td>
</tr>
</tbody>
</table>
Weighing the baby

- Prepare the scale: cover the pan with a clean cloth/autoclaved paper; ensure the scale reads zero

- Preparing and weighing the baby
  - Remove all clothing
  - Wait till the baby stops moving
  - Weigh naked
  - Read and record
  - Return the baby to the mother

- Scale maintenance
  - Calibrate daily
  - Clean the scale pan between each weighing
<table>
<thead>
<tr>
<th>WHAT TO ASSESS?</th>
<th>TECHNIQUE FOR ASSESSMENT</th>
<th>CHARACTERISTICS OF NORMAL NEW BORN</th>
</tr>
</thead>
<tbody>
<tr>
<td>5) HEAD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) Fontannels</td>
<td>Palpate anterior and posterior fontanelles when newborn is quiet.</td>
<td>AF is diamond shaped, flat, soft, firm. Measures 2.4*4.0 cm PF is triangular in shape, 1.2 cm wide. Fontanel may bulge when newborn cries.</td>
</tr>
<tr>
<td>ii) Sutures</td>
<td>Palpate sutures</td>
<td>Sutures may override during vaginal delivery.</td>
</tr>
<tr>
<td>iii) Hair</td>
<td>Observe texture</td>
<td>Silky separate strands.</td>
</tr>
<tr>
<td>iv) Head lag</td>
<td>Holding at the hands lift the supine baby gently. Observe the position of the head in relation to trunk.</td>
<td>Able to maintain head in line with the body and bring head anterior to the body.</td>
</tr>
</tbody>
</table>
## WHAT TO ASSESS?

### TECHNIQUE FOR ASSESSMENT

### CHARACTERISTICS OF NORMAL NEWBORN

<table>
<thead>
<tr>
<th>vi) NORMAL VARIATION MOULDING</th>
<th>Observe for appearance, shape of head.</th>
<th>May have elongated appearance in vaginal birth newborns.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bruising, abrasion</td>
<td>Inspect head for bruising, abrasion or swelling.</td>
<td>No bruising or abrasions</td>
</tr>
<tr>
<td>Caput succedaneum</td>
<td>Observe for subcutaneous edema (soft tissue swelling) and locate the extent.</td>
<td>Localised edema on the newborn scalp crossing the suture lines may present at birth.</td>
</tr>
<tr>
<td>Cephal hematoma</td>
<td>Observe for swelling on the scalp.</td>
<td>A localised effusion (serum blood) firmer to touch than edematous area, feels like a water filled balloon usually appears on 2nd or 3rd day after birth. Does not cross suture line.</td>
</tr>
</tbody>
</table>
CEPHALHEMATOMA
CAPUT SUCCADANEUM
NEWBORN SCALP HEMATOMATA
Caput succedaneum vs. cephalohematoma

- Normal vs. Abnormal

Teaching Aids: ENC
Infant skull

Side view:
- Coronal suture
- Lamboidal suture
- Sphenoidal fontanelle
- Squamosal suture
- Maxilla
- Mastoid fontanelle
- Mandible

Top view:
- Frontal bone
- Anterior fontanelle
- Parietal bone
- Sagittal suture
- Posterior fontanelle
- Occipital bone
CRANIOSYNOSTOSIS

- Definition: premature closure of one or more cranial suture.
- Growth of the skull occurs parallel to the suture(s) involved
- Early correction optimizes cosmetic appearance
- Can be part of syndromes: Crouzon's, Apert's syndrome
CRANIOSYNOSTOSIS

• Types:
  – Sagittal synostosis results in scaphocephaly
  – coronal synostosis results in brachycephaly
  – coronal, sagittal, and lambdoid synostosis results in acrocephaly
  – single suture on one side of head can result in plagiocephaly
<table>
<thead>
<tr>
<th>WHAT TO ASSESS?</th>
<th>TECHNIQUE FOR ASSESSMENT</th>
<th>CHARACTERISTICS OF NORMAL NEW BORN</th>
</tr>
</thead>
<tbody>
<tr>
<td>EYES</td>
<td>Observe eyes, color of sclera &amp; iris, discharge etc.</td>
<td>Eyes usually closed, lids usually edematous. Sclera-white to bluish white. Iris- dark gray &amp; brown. No discharge, eyes clean &amp; healthy.</td>
</tr>
<tr>
<td>Glabellar Tap</td>
<td>Tap sharply at galbella &amp; look for closure of eyes.</td>
<td>Brisk closure of eyes.</td>
</tr>
<tr>
<td>EARS</td>
<td>Draw a horizontal line from outer canthus of eye.</td>
<td>Top of pinna of ear is in a horizontal plane to the outer canthus.</td>
</tr>
<tr>
<td>i) Location</td>
<td>Assess ear firmness by palpation.</td>
<td>Pinna firm, cartilage felt along with edge.</td>
</tr>
<tr>
<td>ii) Ear cartilage</td>
<td>Check ear recoil by folding pinna forward and releasing it.</td>
<td>Instant recoil.</td>
</tr>
<tr>
<td>iii) Ear recoil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WHAT TO ASSESS?</td>
<td>TECHNIQUE FOR ASSESSMENT</td>
<td>CHARACTERISTICS OF NORMAL NEW BORN</td>
</tr>
<tr>
<td>----------------</td>
<td>--------------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>8) <strong>NOSE</strong></td>
<td>Observe patency of nasal passage.</td>
<td>Nasal passage is patent.</td>
</tr>
<tr>
<td>Nasal passage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9) <strong>ORAL CAVITY</strong></td>
<td>Observe oral cavity (lips, gums, teeth, palate, tongue) by stimulating newborn to cry.</td>
<td>Clean oral cavity. Intact high arched palate. Uvula in midline. No precocious teeth. No epstein pearls &amp; no oral thrush.</td>
</tr>
<tr>
<td>ii) Rooting reflex</td>
<td>Touch/ stroke the cheek along the side of mouth.</td>
<td>Touching/stroking the cheek along the side of the mouth stimulates the newborn to turn head towards the side.</td>
</tr>
<tr>
<td>iii) Sucking reflex</td>
<td>Observe while mother is breast feeding the newborn.</td>
<td>Sucking &amp; swallowing reflex is well developed &amp; coordinated.</td>
</tr>
<tr>
<td>iv) Extrusion reflex</td>
<td>Touch or depress tongue of newborn.</td>
<td>When tongue is touched or depressed, newborn responds by forcing it outwards.</td>
</tr>
<tr>
<td>WHAT TO ASSESS?</td>
<td>TECHNIQUE FOR ASSESSMENT</td>
<td>CHARACTERISTICS OF NORMAL NEW BORN</td>
</tr>
<tr>
<td>----------------</td>
<td>--------------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td><strong>10) NECK</strong></td>
<td>Inspect &amp; palpate lymph nodes in neck &amp; also check for range of motion.</td>
<td>Neck is short, symmetrical, no glands palpable, full ROM.</td>
</tr>
<tr>
<td>Tonic Neck Reflex</td>
<td>Place the newborn in supine position, turn the head to one side.</td>
<td>The arm &amp; leg on the side to which head is turned extend while the opposite arm and leg flex. (a symmetric response).</td>
</tr>
</tbody>
</table>

| **11) CHEST**   | Observe size, shape of chest, retractions. | Breast tissue >10 mm diameter. Areola raised. |
| Breast Nodule   | Hold the breast tissue between thumb & finger. | May have gynaecomastia, may have milky white discharge (white milk) |
|                | Observe for breast engorgement & discharge. Round, symmetrical, slightly smaller than head. Retraction may be present immediately after birth. |
CHEST

- Distress signs (Grunting, Tachypnea, Nasal flaring, asymmetric chest rise, supra-sternal, intercostal, sub costal retraction).
- Deformities (Pectus excavatum, carinatum)
- Auscultate
  - Air entry, symmetry
  - Early crepitation sound is transmitted upper sound
  - Late inspiratory crepitation
SUPERNUMERARY NIPPLES

• Found in males and females
• Pink or brown papules along the milk line, most commonly on the chest or abdomen
• May contain breast tissue and in women carry the same relative neoplasia risks
• Not considered a marker for other anomalies
SUPERNUMERARY NIPPLES
GENITALIA

• Penile size
• Hypospadias, epispadias
• Testes
  – 2% crypoorchid
• Female:
  – Prominent clitoris and minora
  – Vaginal skin tag
  – Vaginal discharge /blood
  – Labial fusion
• Anus : Patency and location
INGUINAL HERNIAS
HIP AND EXTREMITIES

• Erb’s palsy: extended arm and internal rotation with limited movement
• Humerous fracture
• Digital abnormality
  – Syndactaly, brachdactaly, polydactaly
• Single palmar crease
• Hip dislocation
  – Female, breach
SUBLUXATION OF THE HIP
SUBLUXATION OF THE HIP
LUMBAR HAIR TUFT & HAEMANGIOMA
<table>
<thead>
<tr>
<th>WHAT TO ASSESS?</th>
<th>TECHNIQUE FOR ASSESSMENT</th>
<th>CHARACTERISTICS OF NORMAL NEW BORN</th>
</tr>
</thead>
<tbody>
<tr>
<td>12) ABDOMEN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) Bowel Sound</td>
<td>Auscultate bowel sound.</td>
<td>Bowel sounds are present.</td>
</tr>
<tr>
<td>ii) Umbilical Cord</td>
<td>Observe &amp; count number of blood vessels, observe for any discharge or bleeding.</td>
<td>Initially umbilical cord is white &amp; gelatinous, later it dries &amp; shrivels. Two arteries &amp; one vein (clean, no discharge or bleeding)</td>
</tr>
<tr>
<td>13) GENITALIA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) Female</td>
<td>Observe development of Labia majora, urethral meatus &amp; vaginal opening &amp; any discharge.</td>
<td>Labia majora well developed. Labia majora completely covers the labia minora. Urethral meatus is located above the vaginal opening. Whitish mucoid or bloody discharge (Pseudomenstruation may be present)</td>
</tr>
</tbody>
</table>
The umbilicus: Which one is normal?

- Normal vs. Abnormal
### Umbilicus

**The NORMAL umbilicus is:**
- Bluish-white in colour on day 1.
- It then begins to dry and shrink and
- It falls off after 7 to 10 days
- No discharge

### LOCAL UMBILICAL INFECTION
- RED umbilicus or
- RED skin around the umbilicus

### POSSIBLE SERIOUS INFECTION
- Umbilicus draining pus  or
- Umbilical redness, swelling extending to skin
ABDOMEN

• Inspection
  – Scaphoid
  – Distention
  – Abdominal wall defect (gastroschisis)

• Palpation; baby sucking and use warm hands
  – Kidneys are normally palpable
  – Liver 2-3 cm
  – Spleen palpable
  – Umbilical vessels
    • 2 artery, one vein
  – Hernias; umbilical and inguinal
<table>
<thead>
<tr>
<th>WHAT TO ASSESS?</th>
<th>TECHNIQUE FOR ASSESSMENT</th>
<th>CHARACTERISTICS OF NORMAL NEW BORN</th>
</tr>
</thead>
<tbody>
<tr>
<td>ii) Male</td>
<td>Observe the scrotal rugae and palpate testes in the scrotum.</td>
<td>Testes descended in scrotum. Scrotum pendulous and deeply pigmented. Urethra opening located at tip of glans.</td>
</tr>
<tr>
<td></td>
<td>Observe location of urethral opening.</td>
<td></td>
</tr>
<tr>
<td>14) BACK</td>
<td>Observe spinal curve while newborn is in prone position.</td>
<td>Spinal curve round.</td>
</tr>
</tbody>
</table>
The neurologic assessment is based on 4 four fundamental observations:

1. Muscle tone
2. Joint mobility
3. Reflexes
4. Body movements
1. Muscle tone: This is assessed by three parameters: a) Posture; b) Passive tone c) Active tone.

2. Joint mobility: In preterm babies, the joints are relatively stiff so the degree of flexion at ankle and wrist is limited. In term babies, joints are more flexible and relaxed.

3. Certain reflexes: The presence of certain reflexes such as moro's reflex, pupillary reflex, blinking, grasp, rooting and sucking reflex help in establishing neurological health of neonate. These reflexes disappear after maturity of nervous system.

4. Body movements: The neonate if not sleeping, is active and alert. The baby moves extremities actively.
**WHAT TO ASSESS?** | **TECHNIQUE FOR ASSESSMENT** | **CHARACTERISTICS OF NORMAL NEW BORN**
---|---|---
15) **EXTREMITIES** | | |
i) No. of fingers & toes. | Count the fingers of toes, hands & types. | 10 fingers of hands & toes each. 
ii) Sole creases | Observe for sole creases after stretching the skin. | Deep creases over anterior 1/3rd to ½ of sole. 
iii) Resistance to passive movement/ scarf sign. | Move elbow across the chest. | Newborn offer resistance to passive movement. Elbow does not cross the mid line of chest. 
iv) Joint mobility | Check for joint mobility by observing degree of flexion at ankle joint. | Joints are flexible i.e. makes 0° angle between foot & leg. 
v) Grasp reflex | Place a finger across the palm at the base of the fingers. | |
<table>
<thead>
<tr>
<th>WHAT TO ASSESS?</th>
<th>TECHNIQUE FOR ASSESSMENT</th>
<th>CHARACTERISTICS OF NORMAL NEW BORN</th>
</tr>
</thead>
<tbody>
<tr>
<td>vi) Moro’s Reflex</td>
<td>Elicit by sudden change in equilibrium.</td>
<td>Sudden extension &amp; abduction of extremities &amp; fanning of fingers followed by flexion &amp; adduction of extremities.</td>
</tr>
<tr>
<td>vi) Babinski’s reflex</td>
<td>Stroke plantar surface of newborn’s foot.</td>
<td>The toes flare open.</td>
</tr>
<tr>
<td>vii) Step or dance reflex</td>
<td>Hold newborn in upright position so that sole of foot touches examination table.</td>
<td>New born make stepping movement.</td>
</tr>
<tr>
<td>REFLEXES OF EYE</td>
<td>EXPECTED BEHAVIORAL RESPONSE</td>
<td>AGE OF APPEARANCE</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-------------------------------------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>1. BLINKING</td>
<td>Infant blinks at sudden appearance of bright light or approach of any object towards light.</td>
<td>Birth</td>
</tr>
<tr>
<td>2. PUPILLARY REACTION</td>
<td>Pupil constricts when bright light falls on it.</td>
<td>Birth</td>
</tr>
<tr>
<td>3. DOLL’S EYE</td>
<td>As head is moved to right or left, eyes lag behind &amp; do not immediately adjust to new position.</td>
<td>Birth</td>
</tr>
<tr>
<td>REFLEXES OF NOSE</td>
<td>EXPECTED BEHAVIORAL RESPONSE</td>
<td>AGE OF APPEARANCE</td>
</tr>
<tr>
<td>------------------</td>
<td>------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>4. SNEEZE</td>
<td>Spontaneous response of nasal passage to any irritant.</td>
<td>Birth</td>
</tr>
<tr>
<td>5. GLABELLAR</td>
<td>Tapping briskly on bridge of nose (Gabella) causes eyes to close tightly.</td>
<td>Birth</td>
</tr>
<tr>
<td>Reflexes of Mouth</td>
<td>Expected Behavioral Response</td>
<td>Age of Appearance</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>6. Rooting</td>
<td>The infant turns his head towards any object that touches his cheek and actively seeks the nipple and begins to suck.</td>
<td>Birth</td>
</tr>
<tr>
<td>7. Sucking</td>
<td>Baby begins to suck in response to stimulation of circumoral area.</td>
<td>Birth</td>
</tr>
<tr>
<td>8. Gag</td>
<td>Stimulation of posterior pharynx by food or suction causes infant to gag.</td>
<td>Birth</td>
</tr>
<tr>
<td>9. Extrusion</td>
<td>When tongue is touched or depressed, infant responds by forcing it outward.</td>
<td>Birth</td>
</tr>
<tr>
<td>REFLEXES OF EXTREMITIES</td>
<td>EXPECTED BEHAVIORAL RESPONSE</td>
<td>AGE OF APPEARANCE</td>
</tr>
<tr>
<td>-------------------------</td>
<td>------------------------------------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>11. GRASP</td>
<td>Touching palms of hands or soles of foot near base of digits causes flexion of hands (Palmar grasp) and soles (Plantar grasp)</td>
<td>Birth</td>
</tr>
<tr>
<td>12. BABINSKI</td>
<td>Stroking outer sole of foot upward from heel across ball of foot causes toes to hyperextend.</td>
<td>Birth</td>
</tr>
<tr>
<td>MASS REFLEXES</td>
<td>EXPECTED BEHAVIORAL RESPONSE</td>
<td>AGE OF APPEARANCE</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>13. MORO’S</td>
<td>When loud voice is made or there is sudden change in equilibrium, it causes sudden extension and abduction of extremities and fanning of fingers.</td>
<td>Birth</td>
</tr>
<tr>
<td>14. Perez</td>
<td>When infant is prone on a firm surface, thumb is pressed along the spine from sacrum to neck, infant responds by crying, flexing extremities and elevating pelvis and head and lordosis of spine.</td>
<td>Birth</td>
</tr>
<tr>
<td>15. Tonic neck</td>
<td>When infant’s head is turned to one side, arm and leg extend on that side and opposite arm and leg flex.</td>
<td>2nd month</td>
</tr>
<tr>
<td>MASS REFLEXES</td>
<td>EXPECTED BEHAVIORAL RESPONSE</td>
<td>AGE OF APPEARANCE</td>
</tr>
<tr>
<td>----------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>16. Galant reflex</td>
<td>Stroking infant back alongside spine causes hip to move towards stimulated side.</td>
<td>At birth</td>
</tr>
<tr>
<td>17. Dance or stepping</td>
<td>If infant is held such that side of foot touches a hard surface, there is reciprocal flexion and extension of legs.</td>
<td>At birth</td>
</tr>
<tr>
<td>18. Crawl</td>
<td>When placed on abdomen, infant makes crawling movements.</td>
<td>Birth</td>
</tr>
</tbody>
</table>
It is NORMAL for a baby

- To pass urine six or more times a day after day 2
- To pass six to eight watery stools (small volume) in 24 hrs
- Female baby may have some vaginal bleeding for a few days during the first week after birth. It is not a sign of a problem.
- loses weight and regains by 7-10 days
OBSERVATIONS OF DEVIATIONS FROM NORMAL

While examining the new born, it is important to observe for deviations.

i) CONGENITAL MALFORMATIONS

Hydrocephalous, microcephaly, cleft lip & palate, TEF, imperforate anus, hypospadias, epispadias, polydactyly, syndactyly.

ii) NEONATAL INFECTION, LETHARGY, POOR WEIGHT GAIN.

Restlessness, lowered temperature, visible lesions, discharge from eyes & umbilical cord, weak reflexes, refusal of feed, intolerance, hypotonia.
Danger signs

- Not feeding well
- Less active than before
- Fast breathing (>60/min)
- Moderate or severe chest in-drawing
- Grunting
- Convulsions

- Floppy or stiff
- Temperature >37.5°C or <35.5°C
- Umbilicus draining pus or umbilical redness extending to skin.
- >10 skin pustules
- Bleeding from umbil. Stump
Conclusion

• All newborn babies must be examined at
  – Birth
  – 24 hrs
  – Before discharge and
  – Follow-up

• A systematic approach consisting of ‘Ask, Check, Look, Listen, Feel’ should be followed at each assessment
Thank You!