Normal Newborn
Introduction:

1. Definition of neonatal period:

A period from birth to 4 weeks postnatal.

After the initial observation for neonatal condition requiring immediate intervention, the baby is sent to the normal newborn nursery or maternity floor for the purpose of follow up and stabilization.
The role of the neonatal nurse & physician inside the normal newborn nursery or maternity floor:
Admission Care:
The role of the nurse is:
- To carry out good interpersonal communication.
- To take complete history about the mother and neonate.
- To be sure that the neonate has identification band.
- To perform complete physical assessment (General appearance, V.S, G.M, Gestational age assessment).
- Prevention of hemorrhage (administer vit K if not given in the delivery room).
- Documentation.
Assessment:

The initial assessment: **APGAR scoring system**

Purpose:

is to assess the newborn’s immediate adjustment to extrauterine life
Transitional assessment (Periods of reactivity):

I) First period of reactivity:

Stage 1: during the first 30 min. through which the baby is characterized as Physiologically unstable (↑), very alert, cries vigorously, may suck a fist greedily, & appears very interested in the environment.
Stage 2: it lasts for about 2-4 hours, through this period; all V.S & mucus production are decreased. The newborn is in state of sleep and relative calm.
II) Second period of reactivity: it lasts for about 2-5 hours, through which the newborn is alert and responsive, heart & respiratory rate, gastric & respiratory secretions are increased & passage of meconium commonly occurs.

Following this stage is a period of stabilization through which the baby becomes physiologically stable & a vacillating pattern of sleep and activity.
passage of meconium
Assessment of Gestational age: (High-risk neonate)
Systematic Physical examination:
- Growth measurements
- Vital Signs
- General appearance:
  - Posture:
    Flexion of head & extremities, taking them toward chest & abdomen
Head Circumference
Posture
Skin:

General description:

At birth; color: bright red, texture: soft and has good elasticity.

Edema is seen around eye, face, and scrotum or labia.

Cyanosis of hands & feet (acrocyanosis)
General description of the skin
Acrocyanosis
1. Vernix Caseosa: Soft yellowish cream layer that may thickly cover the skin of the newborn, or it may be found only in the body creases and between the labia. The debate of wash it off or to keep it.
Vernix Caseosa
2. Lanugo hair:

- **Distribution**

- The more premature baby is, the heavier the presence of lanugo is.

- It disappears during the **first weeks of life**
Lanugo hair
3. Mongolian spots:

Black coloration on the lower back, buttocks, anterior trunk, & around the wrist or ankle. They are not bruise marks or a sign of mental retardation, they usually disappear during preschool years without any treatment.
Mongolian spots
Mongolian spots
Mongolian spots
4. Desquamation:

- Peeling of the skin over the areas of bony prominence that occurs within 2-4 weeks of life because of pressure and erosion of sheets.
Desquamation
5. Physiological Jaundice:

6. Milia:

- Small white or yellow pinpoint spots.
- Common on the nose, forehead, & chin of the newborn infants due to accumulations of secretions from the sweat & sebaceous glands that have not yet drain normally.

They will disappear within 1-2 weeks, they should not expressed.
Physiological Jaundice
Physiological Jaundice
Milia
7. Head:

The Anterior fontanel: is diamond in shape, located at the junction of 2 parietal & frontal bones. It is 2-3 cm in width & 3-4 cm in length. It closes between 12-18 months of age.

The posterior fontanel: is triangular in shape, located between the parietal & occipital bones. It closes by the 2nd month of age.
Fontanels should be flat, soft, & firm. It bulge when the baby cries or if there is increased in ICP.

Two conditions may appear in the head:

Caput succedaneum & cephalhemtoma
Caput succedaneum

• An edematous swelling on the presenting portion of the scalp of an infant during birth, caused by the pressure of the presenting part against the dilating cervix. The effusion overlies the periosteum with poorly defined margins.

• Caput succedaneum extends across the midline and over suture lines. Caput succedaneum does not usually cause complications and usually resolves over the first few days. Management consists of observation only.
Caput succedaneum
Caput succedaneum
Caput succedaneum
Cephalhematoma:

Cephalhematoma is a subperiosteal collection of blood secondary to rupture of blood vessels between the skull and the periosteum, in which bleeding is limited by suture lines (never cross the suture lines).
Cephalhematoma
Cephalhematoma
8. Eyes:

- Usually edematous eye lids
- Gray in color. True color is not determined until the age of 3-6 months.
- Pupil: React to light
- Absence of tears
- Blinking reflex is present in response to touch
- Can not follow an object (Rudimentary fixation on objects).
Normal Eye
Eyelid Edema
Dysconjugate Eye Movements
Subconjunctival Hemorrhage
Congenital Glaucoma
Congenital Cataracts
9. **Ears:**

**Position:**

**Startle Reflex:**

*Pinna flexible, cartilage present.*
Normal Ears
Ear Tag
10. **Nose:**

**Nasal Patency (stethoscope).**

**Nasal discharge – thin white mucous**
Normal Nose
Dislocated Nasal Septum
11. Mouth & Throat:
- Intact, high arched palate.
- Sucking reflex – strong and coordinated
- Rooting reflex
- Gag reflex
- Minimal salivation
12. Neck:
Short, thick, usually surrounded by skin folds.
Neck
System assessment of the neonates:

1. Gastrointestinal System:

Mouth should be examined for abnormalities such as cleft lip and/or cleft palate. Epstein pearls are brittle, white, shine spots near the center of the hard palate. They mark the fusion of the 2 hollows of the palate. If any; it will disappear in time.
Cleft Palate
Cleft Lip
Cheeks: Have a chubby appearance due to development of fatty sucking pads that help to create negative pressure inside the mouth which facilitates sucking.
Epstein Pearls & cheeks
Normal Tongue  Ankyloglossia
Ankyloglossia
Gum: May appear with a quite irregular edge.

Sometimes the back of gums contain whitish deciduous teeth that are semi-formed, but not erupted.
Irregular edges with Natal Teeth
Natal Tooth
13. Abdomen:
Abdomen

- Cylindrical in Shape
Normal Umbilical Cord

- Bluish white at birth with 2 arteries & one vein.
Meconium Stained Umbilical Cord
14. Circulatory system:

Heart:

Apex- lies between 4\textsuperscript{th} & 5\textsuperscript{th} intercostal space, lateral to left sternal border.
15. Respiratory system:

- Slight substernal retraction evident during inspiration
15. Respiratory system Cont.:

- Xiphhesternal process evident
15. Respiratory system Cont. :

Respiratory is chiefly abdominal

Cough reflex is **absent** at birth, present by **1-2 days** postnatal.

Possible signs of RDS are:

- Cyanosis other than hands & feet.
- Flaring of nostrils.
- Expiratory grunt-heard with or without stethoscope.
16. **Urinary System:**

Normally, the newborn has urine in the bladder and voids at birth or some hours later.
Female genitalia
Female genitalia Cont.

- Labia & Clitoris are usually edematous.
- Urethral meatus is located behind the clitoris.
- Vernix caseosa is present between labia
Normal Male genitalia

- Urethral opening is at tip of glans penis.
- Testes are palpable in each scrotum.
- Scrotum is usually pigmented, pendulous & covered with rugae.
17. Endocrine system:

Swollen breasts:

Appears on 3rd day in both sex, & lasts for 2-3 weeks and gradually disappears without treatment.

N.B: The breasts should not be expressed as this may result in infection or tissue damage.
Maternal hormonal withdrawal

- Female genitalia, normal with vaginal discharge
Infantile menstruation
18. The Central Nervous system:

Reflexes:

Successful use of reflex mechanism is a strong evidence of normal functioning CNS.
Reflexes

- Moro Reflex
Extremities

• Nail beds pink
Extremities Cont.

• **Meconium Stained fingernails**
Extremities

- Creases on anterior two thirds of sole.
Common feet abnormalities

- Club Feet
Immediate Care of the Newborn:
Immediate Care of the Newborn:

1. Clear airway.

2. Established respiration.

3. Maintenance of body temperature.

4. Protection from Hge.

5. Identification.
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<th>1</th>
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<tr>
<td>Heart beats</td>
<td>&gt; 100 b/min Strong</td>
<td>&lt; 100 b/min Or weak beats</td>
<td>No heart beats</td>
</tr>
<tr>
<td>Cry &amp; breathing</td>
<td>Strong crying</td>
<td>weak crying / irregular breathing</td>
<td>No cry / breathing</td>
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<tr>
<td>Color</td>
<td>Pink body &amp; face</td>
<td>Pink body &amp; blue extremities</td>
<td>Pale or blue body</td>
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<tr>
<td>Movement &amp; tone</td>
<td>Active</td>
<td>Some movements</td>
<td>Flaccid</td>
</tr>
<tr>
<td>Grimace</td>
<td>Try to keep cath. away</td>
<td>Grimace of face</td>
<td>No response</td>
</tr>
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</table>
The Four modalities by which the infant lost his/ her body temperature:

1- *Evaporation*: Heat loss that resulted from expenditure of internal thermal energy to convert liquid on an exposed surface to gases, e.g.: amniotic fluid, sweat.

**Prevention:** Carefully dry the infant after delivery or after bathing.
2- **Conduction:**  
Heat loss occurred from direct contact between body surface and cooler solid object.  
**Prevention:**  
Warm all objects before the infant comes into contact with them.
3- Convection: Heat loss is resulted from exposure of an infant to direct source of air draft.

Prevention:
· Keep infant out of drafts
· Close one end of heat shield in incubator to reduce velocity of air.
4- Radiation:

It occurred from body surface to relatively distant objects that are cooler than skin temperature.
*) General management:

1- Infant should be warmed quickly by wrapping in a warm towel.
2- Uses extra clothes or blankets to keep the baby warm.
3- If the infant is in incubator, increase the incubator’s temperature.
4- Use hot water bottle (its temperature 50 °C).
5- Food given or even intravenous solution should be warm.
6- Avoid exposure to direct source of air drafts.
7- Check body temperature frequently.
8- Give antibiotic if infection is present.
Thank you