Birth and the Newborn

Prof.Dr. Norhan Zeki Shaker

Humen Growth and development

Code:

2nd Grad

4 week

Chapter Objectives

- In the end of this lecture student will be able to:
- Describe the stages of vaginal delivery.
- Differentiate the common procedures for assessing the condition of the newborn (Apgar score).
- Characteristics of Newborns.
- Describe normal Reflexes in children.
- Examine problems newborns experience before, during, and after birth.

Introduction

After around **266 days** of developing inside the womb (for a full-term pregnancy), comes the difficult process of childbirth.

After birth, newborns have to regulate their own body temperature, breathe for themselves, and take in all of their nutrition through feeding.

- **Childbirth**
- **Onset of Labor**
- Childbirth typically occurs within a week of a woman's due date, unless the woman is pregnant with more than one fetus, which usually causes her to go into labor early.
- As a pregnancy progresses into its final weeks, several physiological changes occur in response to hormones that trigger labor.

STAGES OF DELIVARY

- **The first stage:**

The first stage of labor is typically the longest.

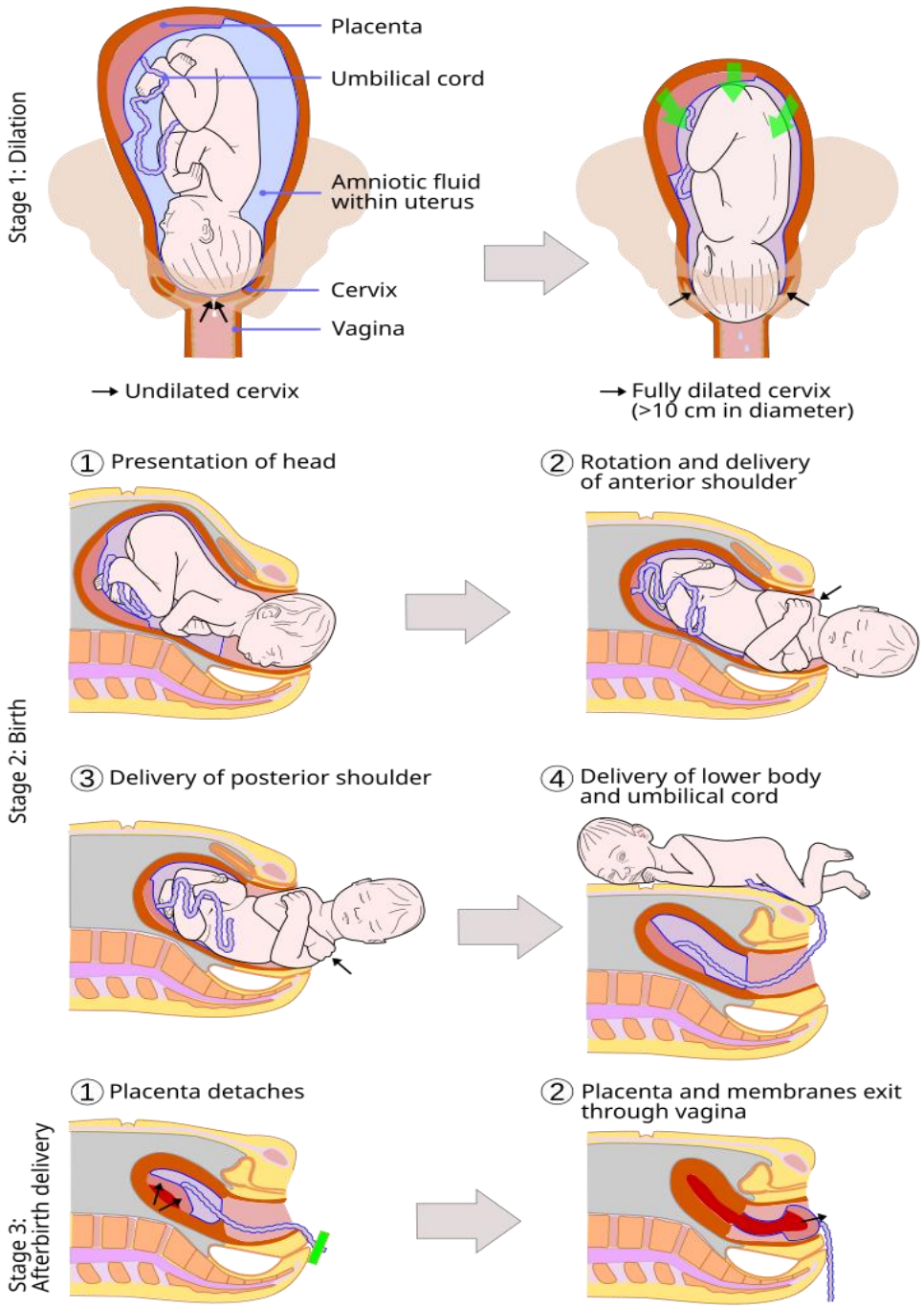
This may take around 12-16 hours for first children or about 6-9 hours for women who have previously given birth.

- ***The Second Stage:***

This stage takes about 10-40 minutes.

- ***The Third Stage:***

During this stage, the placenta or afterbirth is delivered.



The Newborn

- **Assessing the Newborn**

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APGAR SCORE

SCORE	APPEARANCE	PULSE	GRIMACE	ACTIVITY	RESPIRATION
0	 Blue all over	 No pulse	 No response to stimulation	 No movement	 No respiration
1	 Blue extremities	 <100 beats/min	 Grimace on stimulation	 Some flexion	 Weak, irregular, slow
2	 No blue colouration	 >100 beats/min	 Cry on stimulation	 Flexed limbs that resist extension	 Strong cry

≥7 NORMAL | 4-6 LOW | ≤3 CRITICAL

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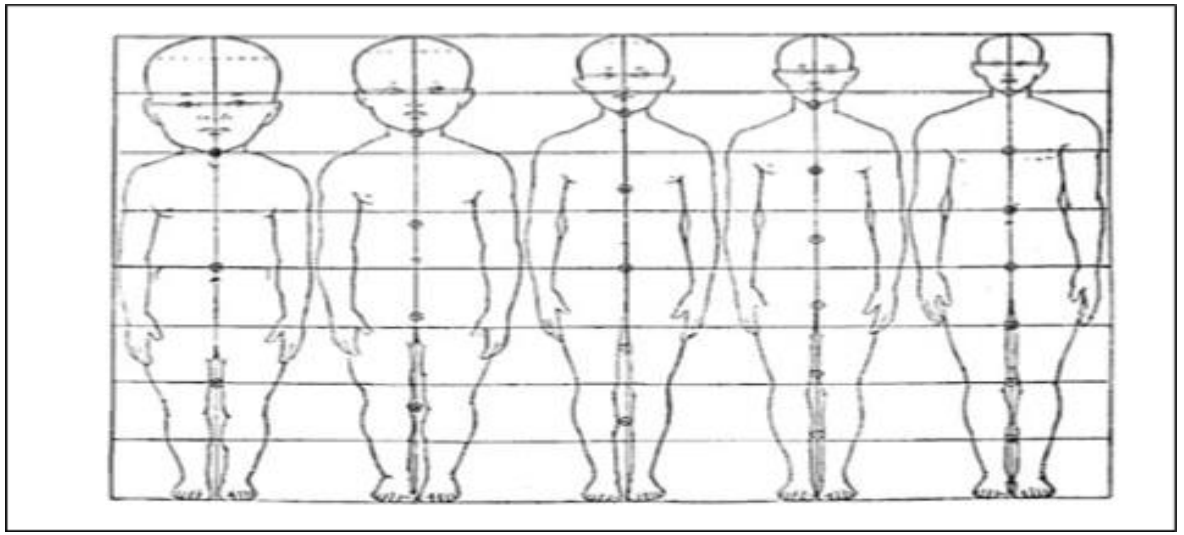
• General Appearance

- The newborn's head is disproportionately large for the body.
- The center of the baby's body is the ambilicus rather than the symphysis pubis, as in the adult.
- The body appears long and the extremities short.
- The hands are tightly clenched.



Cont: General Appearance

- The neck looks short because the chin rests on the chest.
- Newborns have a prominent abdomen, sloping shoulders, narrow hips, and a rounded chest.
- They tend to stay in a flexed position similar to the one maintained in utero and will offer resistance when the extremities are straightened.

Characteristics of Newborns

Body Proportions

- The head initially makes up about 50 percent of our entire length when we are developing in the womb. At birth, the head makes up about 25 percent of our length.

Size

The average newborn weighs about 7.5 pounds (3.400gm) and is about 20 inches (50 cm) in length.

Physical growth:

- The weight of baby at birth is from 2.7 -4.7 kg
- After birth most infant lose 5% -10% of their weight due to fluid loss,

infant usually regain that weight in about 1 week.

- weight gain in the first 3 month = 20 grams /day.
- At 6 months = double birth weight.
- At 12 months = triple birth weight.

Weight and Measurements

- Approximately 70% to 75% of the newborn's body weight is water.
- During the initial newborn period (the first 3 or 4 days), there is a physiologic weight loss of 5% to 10% for term newborns due to fluid shifts.
- This weight loss may reach 15% for preterm newborns.
- Large babies tend to lose more weight.
- If weight loss is greater than 10%,

clinical reassessment is necessary.

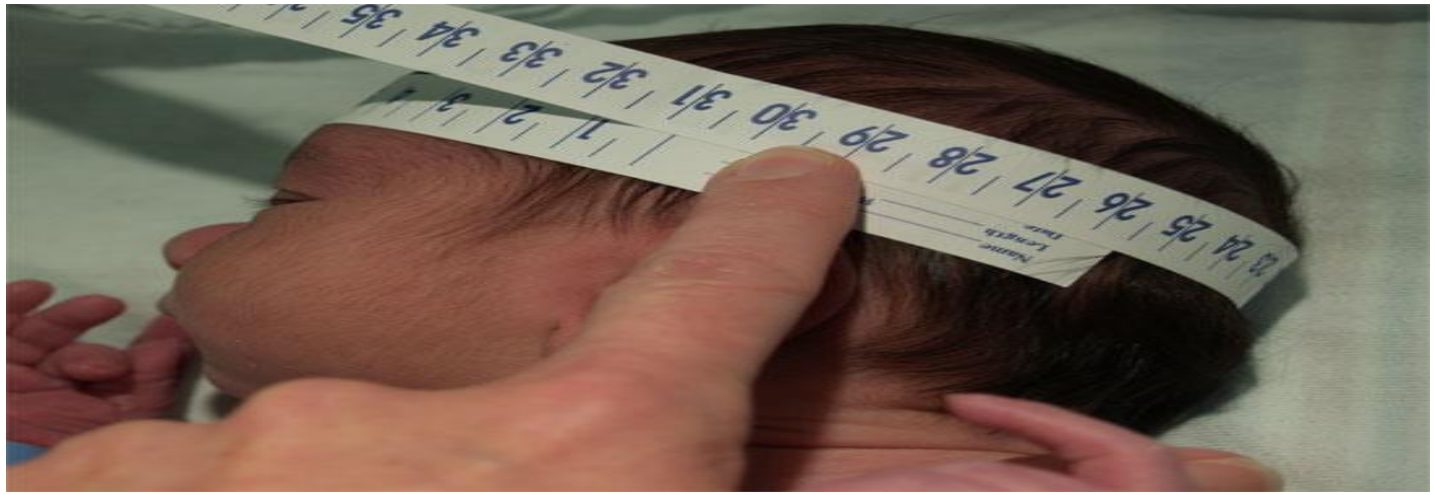
length

- To measure length, the nurse should place newborns flat on their backs with legs
  extended as much as possible .

- The average length is 50 cm (20 in), with the range being 48 to 52 cm (18 to 22 in).
- The newborn will grow approximately 1 inch a
  month for the next 6 months.
- This is the period of most rapid growth.

Head circumference

- At birth, the newborn's head is one third the size of an adult's head.
- The circumference of the newborn's head is 32 to 37 cm (12.5 to 14.5 in).



Chest Circumference

The average circumference of the chest at birth is 32 cm (12.5 in) and ranges from 30 to 35 cm.

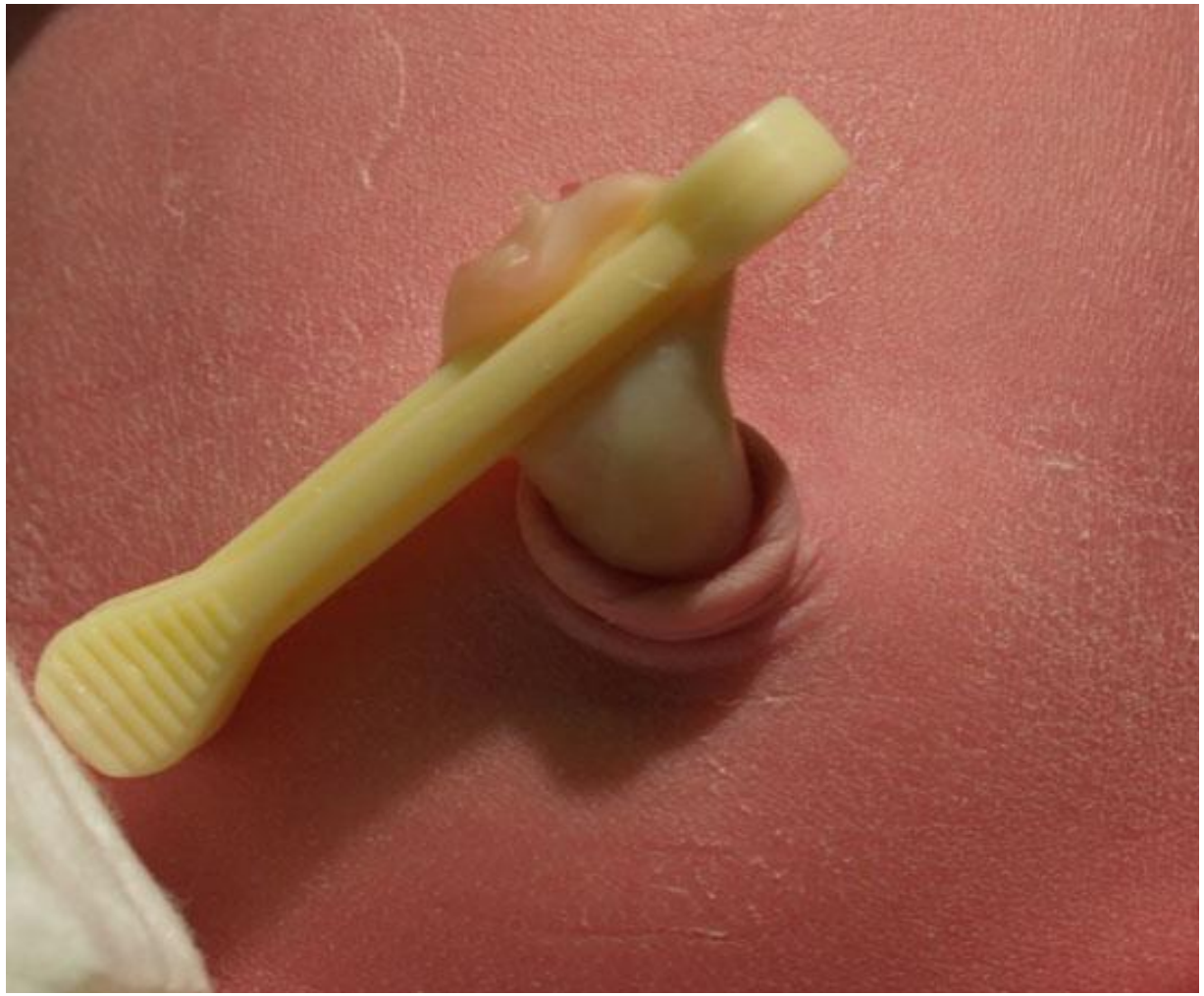
The circumference of the newborn's head is approximately 2 cm greater than the circumference of the newborn's chest at birth and will remain in this proportion for the next few months.

Abdomen

- Cylindrical in Shape

Normal Umbilical Cord

- Bluish white at birth with 2 arteries & one vein.



Temperature

- In uterus, the temperature of the fetus is about the same as or slightly higher than the expectant mother's.
- Skin temperature markedly decreases within 10 minutes after exposure to room air.
- The temperature should stabilize within 8 to 12 hours.
- Temperature should be monitored at least every 30 minutes until the newborn's status has remained stable for 2 hours.
- Axillary temperature ranges from: 36.5C to 37.OC (97.7F to 98.6F).
- Normal rectal temperature is 36.6C to 37.2C (97.8F to 99F).

Skin Characteristics

- newborns have a pink tinge to their skin .
- The ruddy (flushed ,rosy) color results from increased red blood cell concentrations in the blood vessels and from limited subcutaneous fat deposits.
- Skin pigmentation is slight in the newborn period, so color changes may be seen even in darker skinned babies.

Skin Characteristics

- A newborn who is cyanotic at rest and pink only with crying may have choanal arresia (congenital blockage of the passageway between the nose and pharynx).
- If crying increases the cyanosis, heart or lung problems may be suspected.
- Very pale newborns may be anemic or have hypovolemia (low blood pressure) and are evaluated for these problems.

Skin Characteristics

Vernix caseosa:

A white cheesy substance that covers and protects the skin of the fetus and is still all over the skin of a baby at birth. it is composed of sebum (the oil of the skin) and cells that have sloughed off the fetus' skin.

Skin Characteristics

Lanugo.

Newborns have a fine, downy body hair called lanugo.

It may be particularly noticeable on the back, shoulders, forehead, ears and face of premature infants.

- Lanugo disappears within a few weeks.
  - Likewise, not all infants are born with lush heads of hair.

Skin Characteristics

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 gradually fade during the first or second year of life.

They may be mistaken for bruises and should be documented in the newborn's chart.

Skin Characteristics

Mongolian spots

Mongolian spots

Mongolian spots

- **Skin Characteristics**
- **Milia,** which are exposed sebaceous glands, appear as raised white spots on the face, especially across the nose.
- No treatment is necessary, because they will clear up spontaneously within the first month.

- **Birthmarks**
- The nurse should note any bruises, abrasions, or birth-marks seen on the newborn's admission to the nursery.

• Problems of the Newborn

Anoxia

- Anoxia is a temporary lack of oxygen to the brain.
- Difficulty during delivery may lead to anoxia which can result in brain damage or in severe cases, death.
- Babies who suffer both low birth weight and anoxia are more likely to suffer learning disabilities later in life as well.

Low Birth Weight

- A child is considered low birth weight if he or she weighs less than 2500 grams.
- A low birth weight baby has difficulty maintaining adequate body temperature because it lacks the fat that would otherwise provide insulation.
- Such a baby is also at more risk for infection.
- Very low birth weight babies 900 gm have an increased risk of developing cerebral palsy.

Preterm

- A newborn might also have a low birth weight if it is born at less than 37 weeks gestation, which qualifies it as a preterm baby.
- Vaginal infections can lead to premature birth because such infection causes the mother to release anti-inflammatory chemicals which, in turn, can trigger contractions.
- Smoking and the use of other can lead to preterm birth.

Postmature

- When babies are not born by 42 weeks gestation, or two weeks after their due date, they are considered overdue or postmature.

Stillborn

- When a fetus (unborn baby) dies while still inside the mother (after 20-24 weeks gestation) or dies during delivery (childbirth).
- Possible causes include: nicotine, alcohol, or drugs taken by the mother during pregnancy, physical trauma, radiation poisoning, Rh disease, and umbilical cord problem

- ***Touch and Pain***
- Immediately after birth, a newborn is sensitive to touch and temperature, and is also highly sensitive to pain, responding with crying and cardiovascular responses .
- Newborns who are circumcised, which is the surgical removal of the foreskin of the penis, without anesthesia experience pain as demonstrated by increased blood pressure, increased heart rate, decreased oxygen in the blood, and a surge of stress hormones

•**Cognitive development:** Cognition is the ability to think, learn, and remember. Newborn's brain is developing rapidly.

•**Emotional and social development:**

– Newborns quickly learn to communicate. They seek interaction with mother or caregiver and express how they feel with sounds and facial expressions.

-Language development: Newborn is listening to and absorbing the basic and different sounds of language. This process forms the foundation for speech.

Sensory and motor skills development:

Newborns have all five senses.

- Newborns quickly learn to recognize mother or caregiver face.
- The sound of mother or caregiver voice.
- Newborns able to recognize mother or caregiver smell.
- The newborn's sense of touch is especially developed, particularly around the mouth.

- **Motor skills develop:** as baby's muscles and nerves work together. Movements are mostly controlled by reflexes.

Automatic Reflexes of Newborns

1.Blink Reflex

2.Rooting Reflex

3.Sucking Reflex

4.Swallowing Reflex

5.Palmar Grasp Reflex

6.Step (Walk) Reflex

7.Plantar Grasp Reflex

8.Tonic Neck Reflex

9.Moro Reflex

10.Babinski Reflex

Reflexes

- **The rooting reflex?**
- Brushing an infant's cheek will cause the baby to turn in that direction.

Blinking eyes reflex:

Tested by the touch of eyelashes by cotton or other object.

The child experiencing more frequent eyes blinking.

Yeaning reflex:

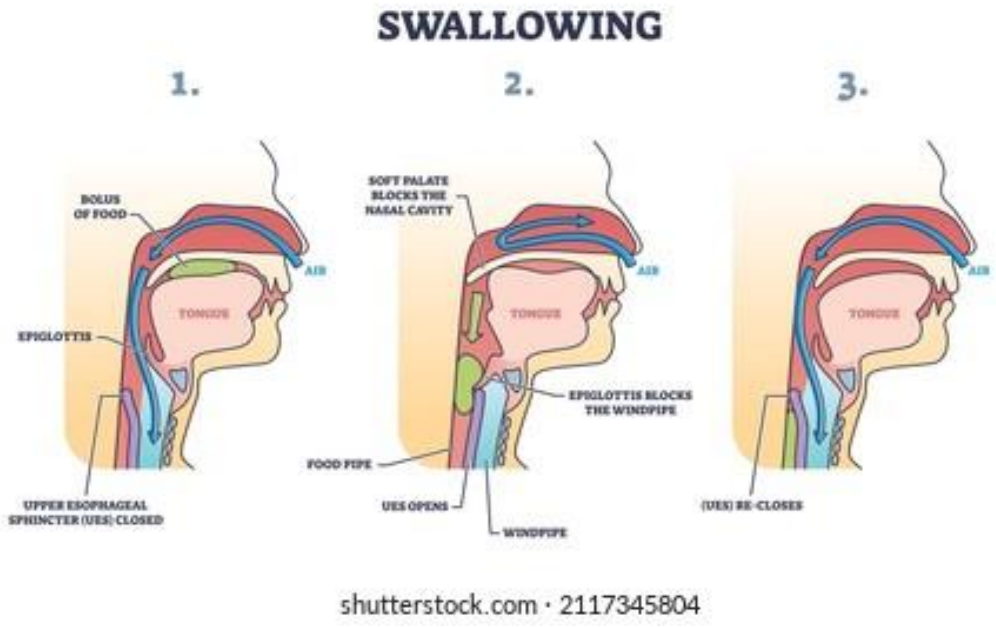
Occur due to deficiency of oxygen in the cells

The sucking reflex

- Sucking response when roof of mouth is touched

Swalloing reflex

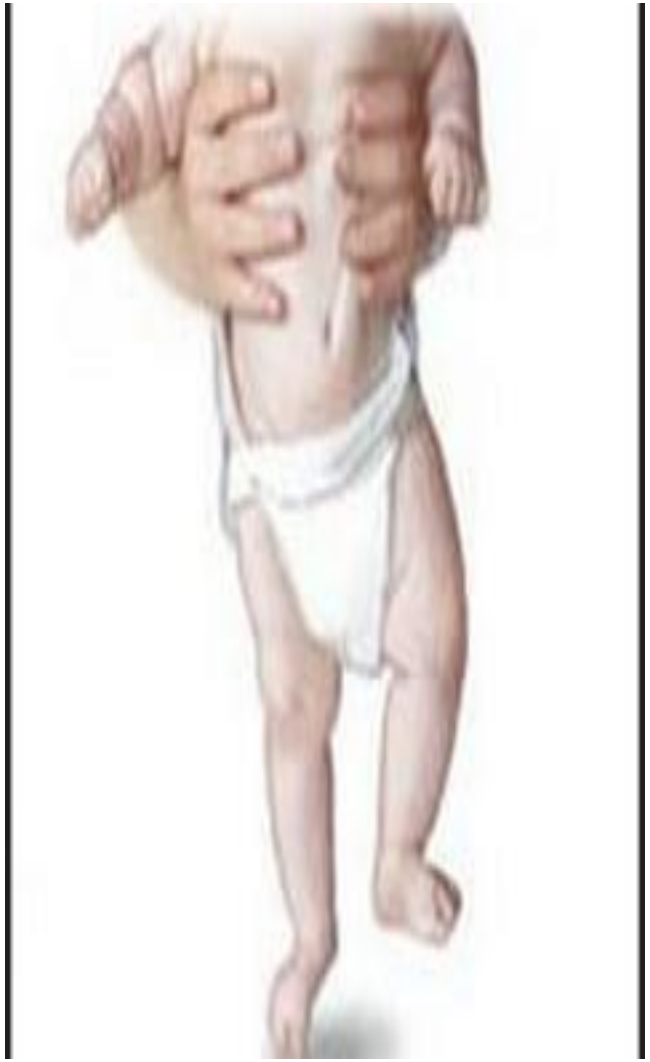
- The swallowing reflex produces sequential activation of the tongue, pharyngeal and laryngeal muscles to propel the food bolus from the oral cavity to the esophagus without aspiration of food into the airways .



- What is the palmar grasp?
- will grasp object when palm is touched.

The Stepping reflex

- hold infant upright and allow one foot to touch tables surface



- **Plantar Grasp**
- toes will curl downward when sole of foot is touched.

- Disappears at 9-12 months

Tonic neck Reflex

- when baby head is turned to one side the arm on that side stretched out and the opposite arms bends at the elbow

- **Asymmetric tonic neck reflex**

- Most evident between 2-3 months of age

- ***Clinical significance***
- The reflex fades rapidly and is not normally seen after 6 months of age.
- Persistence is the most frequently observed abnormality of the infantile reflexes in infants with neurological lesions
- Greatly disrupts development

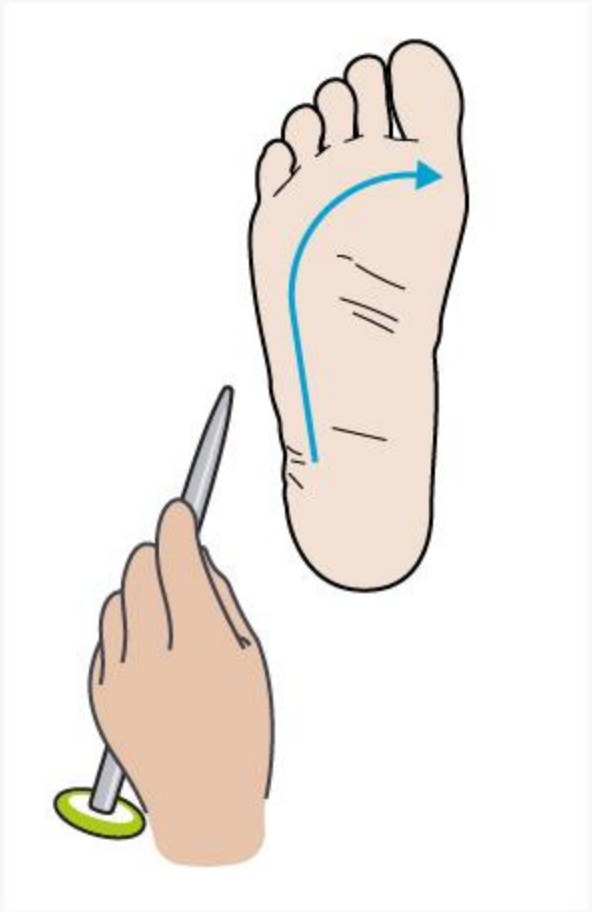
- **Moro Reflex(STRATALE)**
- the startle reflex where the nurse holds the baby and lets it "drop" in her hands and the baby's legs and arms move up in a startle motion/crying

- **Withdrawal reflex**
  - Protective reflex
  - Stimulus : a pinprick or a sharp painful stimulus to sole of foot
  - Response : flexion & withdrawal of stimulated leg
  - Present at birth, persists throughout life
  - ***Clinical significance*** – Absence of this is seen in neurologically impaired infants.

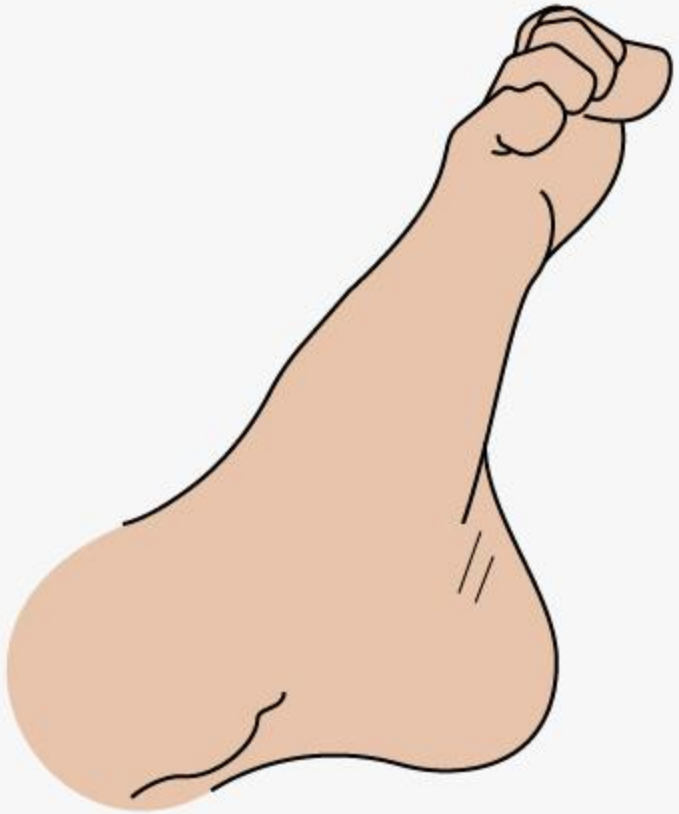
Babinski's reflex

- Stimulus consists of a firm painful stroke along the lateral border of the sole from heel to toe
- Response consists of movement (flexion or extension) of the big toe and sometimes movement (fanning) of the other toes
- Present at birth, disappears at approx 9-10 months
- Presence of reflex later may indicate disease

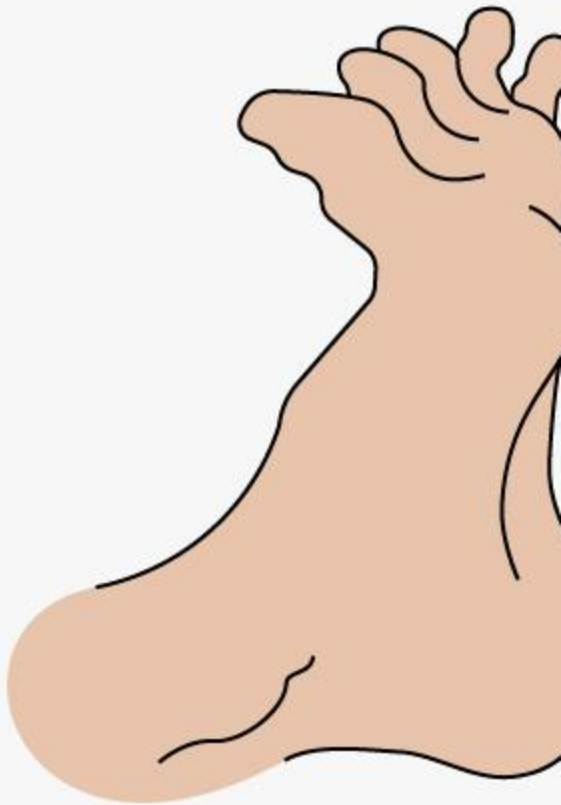
The Babinski Reflex



test



negative



positive

- **Doll's eye reflex (Oculocephalic reflex)**
  - Passive turning of the head of the newborn leaves the eye *"behind"*
  - A distinct time lag occurs before the eyes move to a new position in keeping with the head position
  - Disappears at within a week or two of birth
  - Failure of this reflex to appear indicates a cerebral lesion

- **Cry reflex**

  - Non conditioned reflex which accounts for its lack of its individual character
  - Sporadic in nature
  - Starts as early as 21-29 weeks of IU life

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Thanks