PEDIATRIC ASSESSMENT

Learning Agenda

- Introduction
- Objective of assessment
- Essential pediatric nursing skills
- Strategies for preparing children
- Equipment
- Skills used in assessment
- Anthropometric measurements
- Head to foot examination
- Reflexes

Introduction

- Assessment is an important part of nursing process, because it provides the data from which the nurse can make a nursing diagnosis and plan, implementation and evaluate nursing care.

Objective

To collect information about a child and to teach the child and the parents about the child`s body and current state of health, as well as measures to ensure health in the future.

Essential Pediatric Nursing Skills

- Knowledge of Growth and Development
- Development of a Therapeutic Relationship
- Communication with children and their parents
- Understanding of family dynamics and parent-child relationships:
  Identify key family members
- Knowledge of Health Promotion & Disease Prevention

Contd…

Essential Pediatric Nursing Skills

- Patient Education and Anticipatory Guidance
- Practice of Therapeutic and A traumatic Care
- Patient and Family Advocacy
- Caring, Supportive & Culturally Sensitive Interactions
- Coordination and Collaboration
- Critical thinking

Strategies for Gaining Cooperation during Physical Assessment

- These strategies help the parent and child to develop a trusting relationship with the nurse, encourage the cooperative participation of the parents and child.
- Help the child reduce the level of anxiety and minimize stress and ensure accurate findings in the examination.

Contd…

Strategies for 0-6 months (Newborn to Infant)

Concerns of Child:

- Is not anxious around strangers and is easily comforted and distracted
- May be anxious about separation from parents.

Presence of Parents:

- Parental presence reassures the infant.
- If the infant resists the nurse during the examination, the parents can help by restraining the child, especially the head for examination.

Contd…

Strategies for 0-6 months (Newborn to Infant)

Preparation of child:

- If the room is sufficiently warm, completely undress the infant. It is wise to leave the diaper on a male infant to prevent an accident.

Position of child:

- Young infants may be placed prone or supine on the examining table.
- Infant gains security if held on parent`s lap

Contd…

Strategies for 0-6 months (Newborn to Infant)

Sequence of data collection:

- Auscultate the heart, lungs, and abdomen and record the pulse and respirations.
- Traumatic procedures such as examination of the eyes, ears, nose and mouth are done last.
- Primitive reflexes are tested when that body part is examined.

Contd…

Strategies for 0-6 months (Newborn to Infant)

Useful Distractions:

- The degree of cooperation is based on the infant`s temperament and level of fatigue and hunger and on the nurse`s ability to distract the child.
- Give a bottle containing formula or sugar water, or distract the infant with a toy or rattle when on the examining table.
- Nurses may make sounds or may coo at an infant to stimulate a response.

Contd…

Strategies for 6-12 months

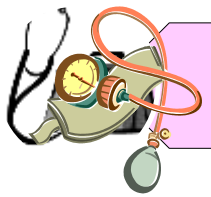
Concerns of child:

- Is probably anxious with strangers, reacts negatively when touched by an unknown person such as a nurse, and is disturbed by separation from parents.

Position of child:

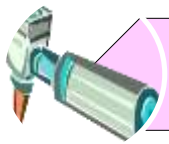
- Sitting or lying on parent`s lap or being held in parent`s arms provides security.
- If the infant is too large to lie on the parent`s lap.

Equipment



Stethoscope & Sphygmomanometer

Pen Light



Otoscope

Opthalmoscope

Knee hammer

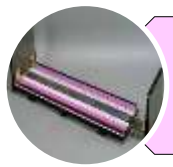
Contd…

Equipment

Snellen chart

Weighing machine

Inch tape

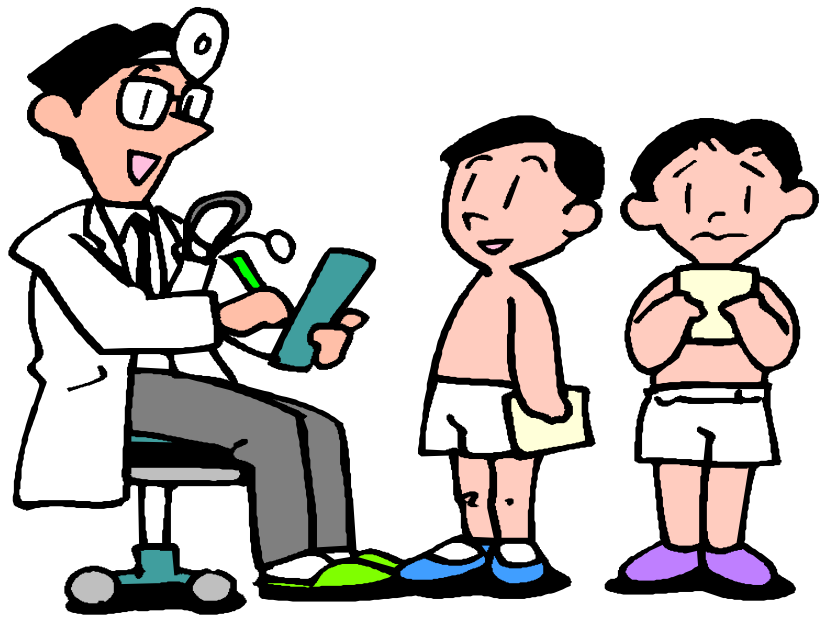


Infantometer

Height scale

Skills Used in Assessment- Inspection

- Use all your senses
- The essential First Step of the Physical Exam



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Skills Used in Assessment- Palpation

- Use of your fingers and palms to determine:
  - Temperature
  - Hydration
  - Texture
  - Shape
  - Movement
  - Areas of Tenderness
- Warm hands and short nails.
- Palpate areas of tenderness / pain last.

Contd…

Skills Used in Assessment- Palpation

- Talk with the child during palpation to help him relax
- Be observant of reactions to palpation
- Move firmly without hesitation
- For the ticklish child, place her hands over your hands and have the child do the pressing down.

Contd…

Skills Used in Assessment- Percussion

- Use of tapping to produce sounds that are characterized according to:
  - Intensity
  - Pitch
  - Duration
  - Quality

Contd…

Skills Used in Assessment- Auscultation

- Listening for body sounds
- Bell: low-pitched
  - Heart
- Diaphragm: high-pitched
  - Lung & Bowel
- Lungs:
  - Listen to all lung fields
  - Front and back

Measurements

Components of Assessment:

- Use of a measurement ruler to obtain length or height.
- Use of a scale to obtain weight.
- Use of a tape measure to obtain head, chest, and abdominal circumference.
- Use a thermometer to obtain a child`s temperature: rectal, oral, axillary.
- Use of a watch to count pulse and respirations.
- Use of a stethoscope and sphygmomanometer or another method to determine a blood pressure reading.

Anthropometric Measurements- Weight

- An average birth weight- 2.5 – 3 kgs
  - Doubles by – 5 months
  - Triples by - 1 year
  - 4 times(quadrupled) by- 2 years
  - 5 times by- 3 years

- Weight gain is rapid in boys and girls during puberty.
- Weight of children may be checked by using mechanical as well as digital weighing scales.
- If the value is less than 0.15 it indicates malnutrition.

Contd…

Anthropometric Measurements- Weight

Body Mass Index:

- BMI is an indicator of nutritional status. It is used to determine if children are overweight, obese or underweight.
- BMI – Weight in kg/ (Height in meter)^2 x 100

Contd…

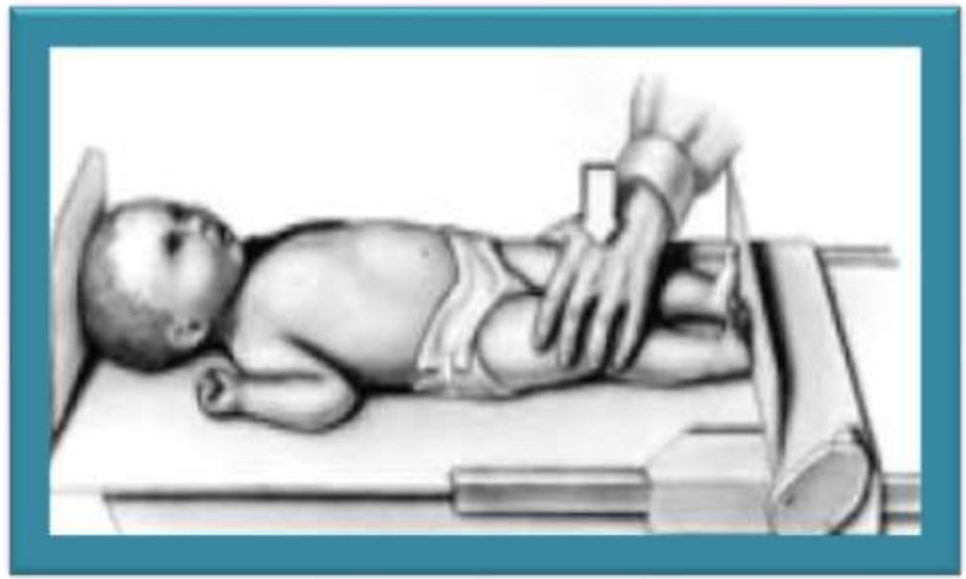
Anthropometric Measurements- Height

- Height is an indicator of skeletal growth. It is the measurement taken when the child stands upright.
  - At birth- 50 cm
  - At 3 months- 60 cm
  - At 9 months- 70 cms
  - 1 year- 75 cms
  - At 2 years- 90 cms
- Birth height doubles by 4 years (100 cm)
- Afterwards the child gains about 5 cm every year till 10 years of age.

Contd…

Anthropometric Measurements- Length

- Height measured in supine (lying) position is called length.



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Anthropometric Measurements- Head Circumference

- Head circumference is measured by placing the tape over the eyebrows or supraorbital ridges and pinna of the ears anteriorly and over the occipital prominence posteriorly, until the child is 3 years.
- Normal head circumference of newborn is 33 - 35 cms.
  - At 3 months- 40 cms
  - At 1 year- 45 cms
  - At 2 years- 48 cms
  - At 5 years- 50 cms
- If the head growth exceeds 1 cm in 2 weeks during the first 3 months, hydrocephalus may be suspected.

Contd…

Anthropometric Measurements- Chest circumference

- Measure chest circumference with tape around chest at nipple line & under tips of scapulas of back
- The chest circumference at birth is 31-33 cm.
- Head and chest circumferences are equal at 1-2 years of age and during childhood chest circumference exceeds head circumference by 5-7 cm.

Contd…

Anthropometric Measurements- Abdominal circumference

- It is measured by lacing the tape measure at the level of umbilicus at right angles to the vertebral column.
- It is not measured as a routine.
- It is measured for children who have chronic intestinal problems.

Assessment of Skin

Components of the assessment:

- Inspection and palpation of the skin
- Inspection and palpation of skin turgor

Contd…

Inspection and Palpation of the Skin

- The skin is examined for texture, moisture, temperature, color, lesions, dermatoglyphics and turgor.

Contd…

Skin lesions

Macules:

- Circumscribed, flat discolorations that cannot be felt, 1 cm or less in size.

Contd…

Skin lesions

Papules:

- Solid, circumscribed, elevated, superficial discolorations that can be felt, 1 cm or less in size; wheals, transitory papules, flat-topped, which represent dermal collections of edema fluid.

Contd…

Skin lesions

Plaques:

- Larger than 1 cm in size, like papules

Contd…

Skin lesions

Nodules:

- It is above, or below the surface of the skin, solid with depth, 1 cm or less in size.

Contd…

Skin lesions

Tumors:

- Like nodules, varying in mobility and consistency, greater than 1 cm in size.

Contd…

Skin lesions

Cysts:

- It is circumscribed, thick-walled lesions containing fluid or semisolid material, located deep in the skin and covered by normal epidermis.

Contd…

Skin lesions

Vesicles:

- Circumscribed elevations containing serous fluid, 1 cm or less in size.

Contd…

Skin lesions

Bullae:

- Greater than 1 cm, like vesicles.

Contd…

Skin lesions

Pustules:

- Circumscribed elevations containing purulent fluid, various sizes.

Contd…

Skin lesions

Petechiae:

- Bleeding into the skin, pinpoint hemorrhages 1 cm or less in size.

Contd…

Skin lesions

Purpura:

- Like petechiae, larger than 1 cm in size.

Contd…

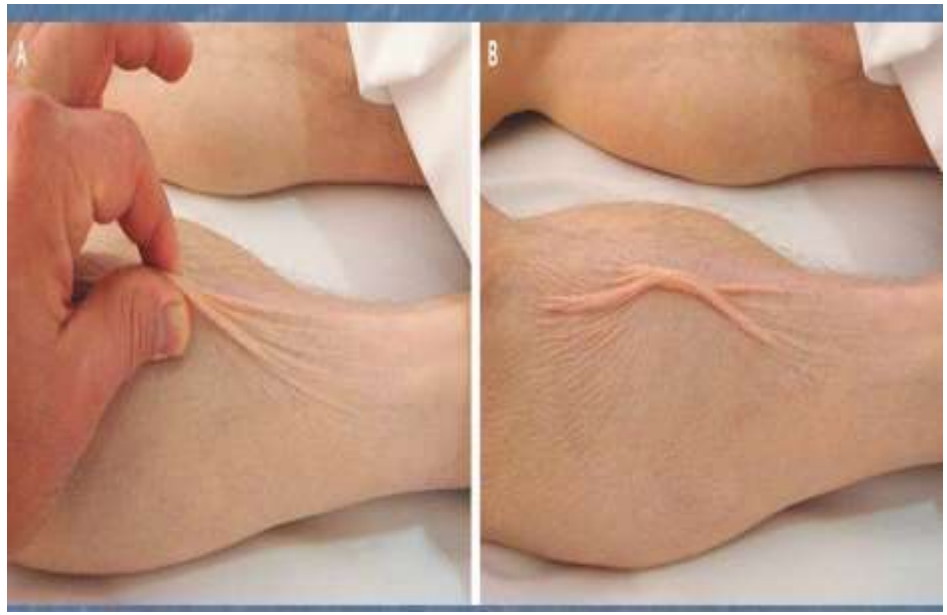
Skin lesions

Ecchymosis:

- Larger amount of bleeding into the skin, black and blue in color larger than 1 cm in size.

Inspection and Palpation of Skin Turgor

- Skin turgor refers to the sensation of fullness derived from the presence of hydrated subcutaneous tissue.
- To test elasticity of the skin, a fold of skin, usually on the abdominal wall, is grasped between thumb and forefinger; when released, normal skin promptly springs back to form the smooth, soft surface of the body.



Contd…

Inspection and Palpation of Skin Turgor

Edema:

Pitting edema:

Assessment of Hair

- Hair is examined for color, texture, elasticity, distribution, cleanliness, and infestations.
- The child who lies in one position for a prolonged period or who rolls the head repeatedly from side to side on the sheet may develop alopecia.

Contd…

Assessment of Hair

Traction alopecia:

- That can result in follicular damage may be due to tight braiding, the pulling of the hair back into a ponytail, or the use of tight curlers.

Contd…

Assessment of Hair

Hypertrichosis:

- Excessive or abnormal hair growth – is rare in children.

Contd…

Assessment of Hair

Spinabifida occulta:

- Spina Bifida Occulta is a result of a spinal underdevelopment and is associated with disrupted development of the spinal nerve roots and spinal cord. The only thing to see on the back may be a dimple, tuft of hair, or a red mark.

Assessment of Nails

- Normal nails are usually convex, transluent, smooth, and firm but flexible.

Contd…

Assessment of Nails

Cyanosis

Jaundice

Contd…

Assessment of Nails

Dark discoloration:

- Indicates hemorrhage

Contd…

Leukonychia

The **white spots** on **nail you** notice are not caused by a calcium deficiency. These**white spots** in **fingernails** are called “leukonychia” and are very common.

Assessment of Nails

Clubbing nails:

- Indicates TOF

Micronychia:

- Seen in Trisomy 13, Fetal alcohol syndrome

H E E N T

Head

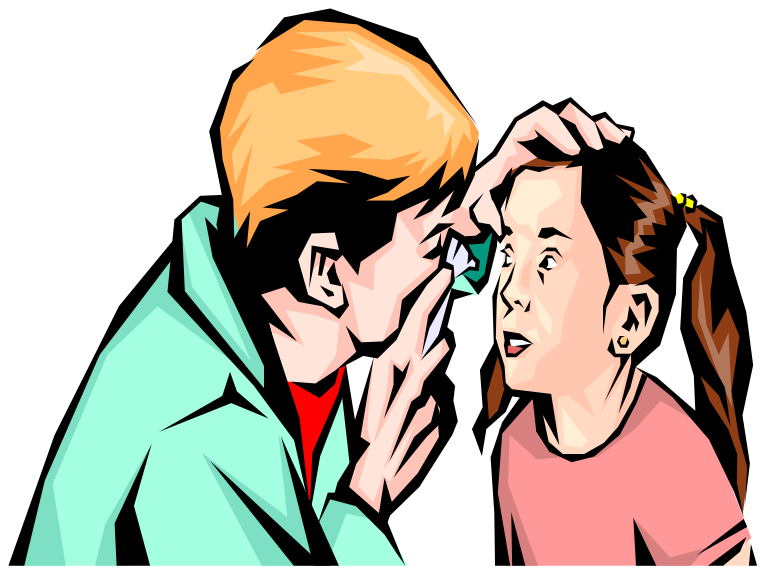
Eyes

Ears

Nose

Neck

Throat



Assessment of Head

Normal:

- Symmetry, size, and general appearance

Contd…

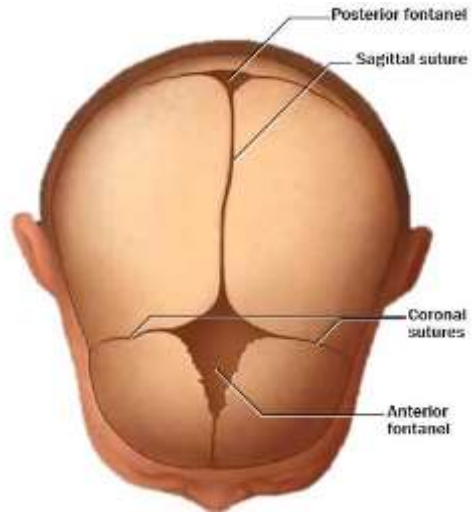
Assessment of Head

Asymmetry (Craniosynostosis):

- Premature closing of the sutures.

Contd…

Assessment of Head



Posterior fontanel: Usually closes at 2 months of age.

•Late closure of the fontanels occurs in….

Rickets

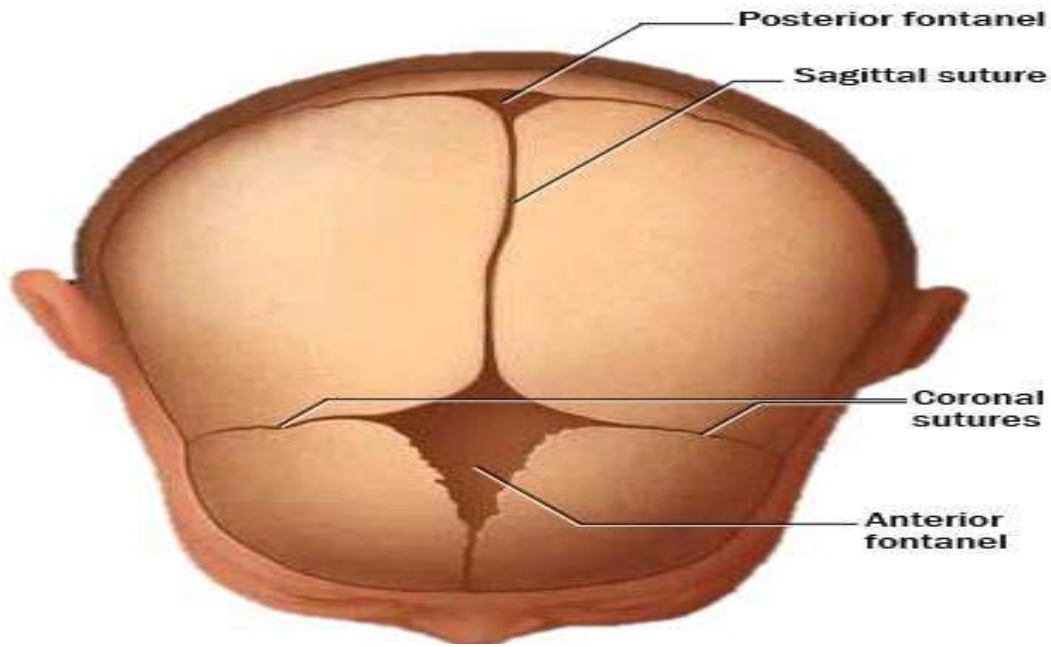
Down syndrome

Cretinism

Contd…

Assessment of Head

Anterior fontanel



Contd…

Assessment of Head

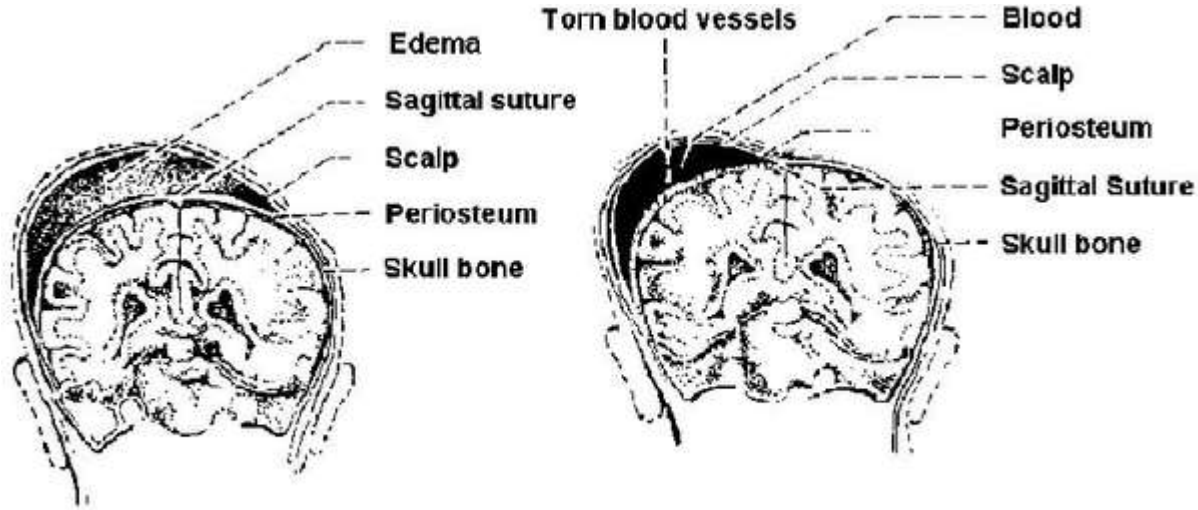
Hydrocephalus

Microcephaly

Contd…

Assessment of Head

Cephal hematoma / Caput Succedaneum



Contd…

Assessment of Head

Craniotabes:

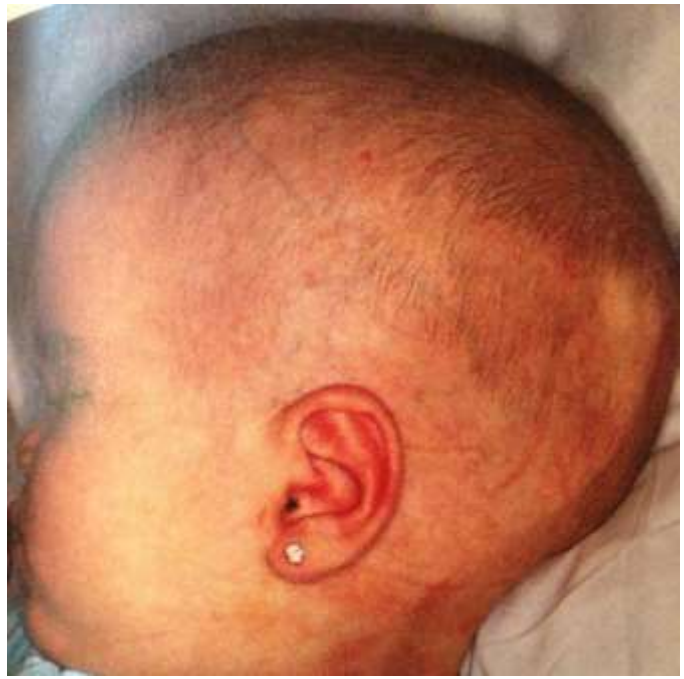
- Abnormal softening of the skull, usually of the occipital and parietal bones, caused by reduction in mineralization of the bones.
- It is normal in premature babies and in some infants up to 3 months of age.
- After that age, indicates Rickets, Osteogenesis imperfecta, Cretinism and Down's syndrome.

Contd…

Assessment of Head

Macewen sign

- Indicates a condition causing separation of the sutures.
- Percussing the skull with a finger creates a resonant sound as of a cracked pot.



Assessment of Face

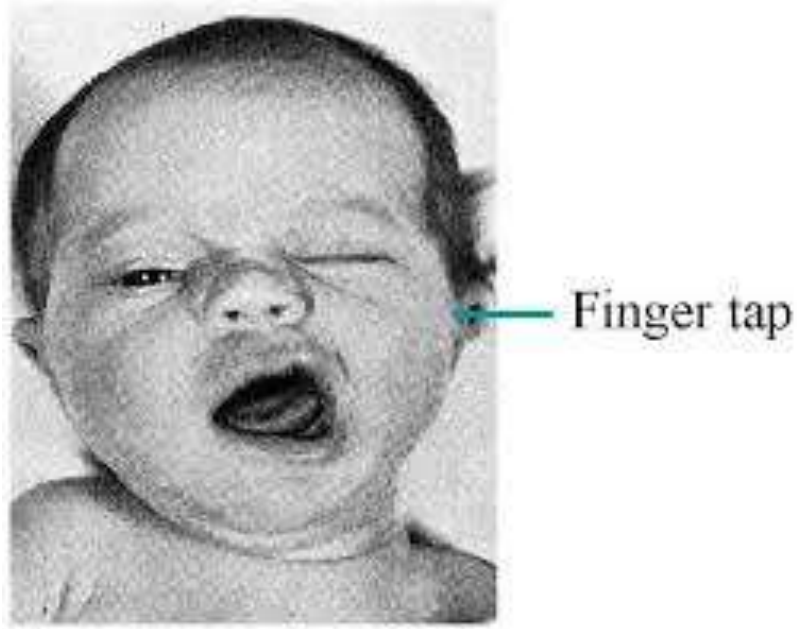
- High or low forehead
- Close-set (Hypotelorism)
- Wide-set Eyes(hypertelorism)
- Edema
- Mumps

Contd…

Assessment of Face

Chvostek sign

- Indicates tetany.
- Tapping the cheek below the zygomatic process. If the sign is positive, the side of the face grimaces.
- The sign is normally positive in the infant under 1 month of age and in the child who has tetany.



Assessment of Eyes

Components of the assessment

- Inspection for alignment and placement on the face
- Inspection of the external structures
- Examination of the interior structures
- Testing for visual acuity
- Testing for visual fields
- Testing for color vision

Contd…

Assessment of Eyes

Inspection for alignment and placement on the face

- The eyes are inspected for shape, size, color, movement and symmetry.

Contd…

Assessment of Eyes

Inspection of the external structures

- Exterior structures to be inspected including the eyelids, eye lashes, palpebral fissures, lacrimal apparatus, orbit, conjuctiva, sclera, cornea, pupils, iris, lens and ocular muscles.
- The Ophthalmoscope is used for interior examination of the eyes.

Contd…

Assessment of Eyes

Eyelids

- Normally- the upper lid reaches somewhere between the upper iris and the pupil when the eyes are open.

Contd…

Assessment of Eyes

Ptosis

Contd…

Assessment of Eyes

Staring

Sunset eyes

Contd…

Assessment of Eyes

Malpositions of the Eyelids

Ectropion

Eyelids are turned out

Entropion

Eyelids are turned in

Contd…

Assessment of Eyes

Eye lashes (position, presence or absence)

Excessive Blinking

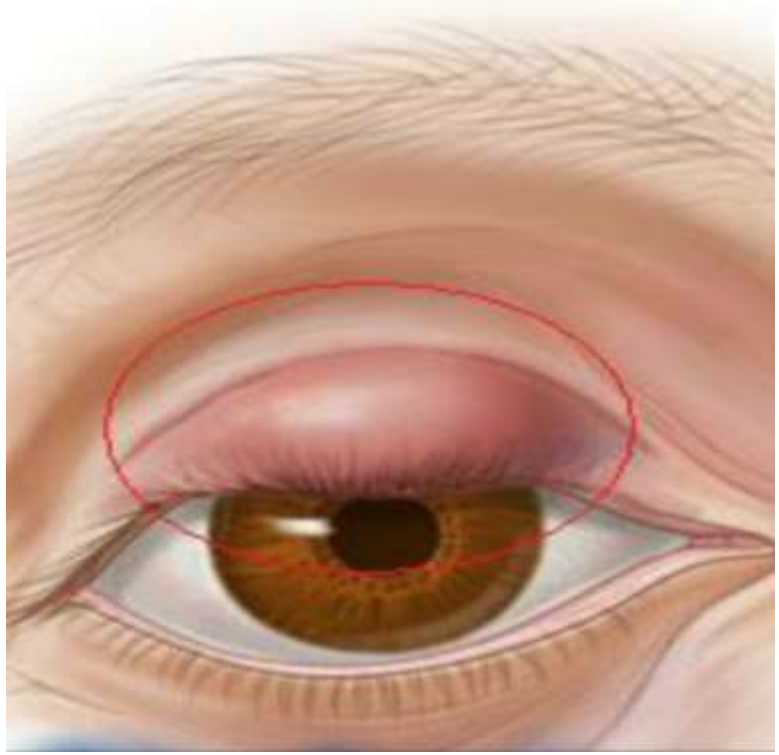
Marginal Blepharitis

Contd…

Assessment of Eyes

Stye/Hordeolum

Chalazions

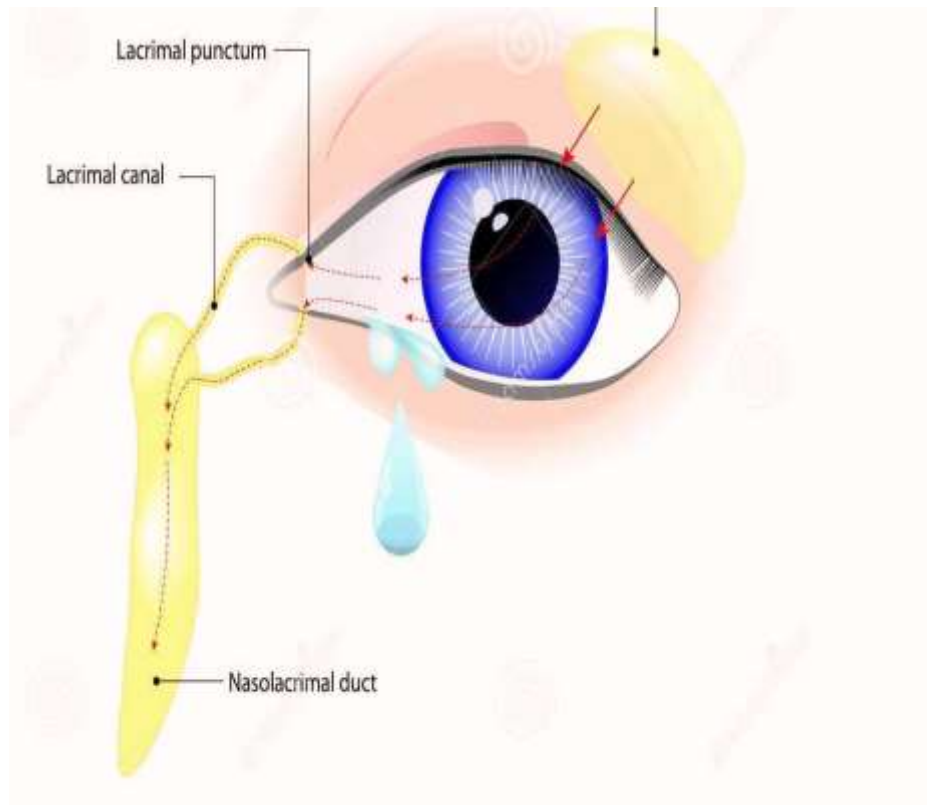


Contd…

Assessment of Eyes

Lacrimal apparatus:

- Inspected for position, patency and the possibility of infection.
- Infants under 3 months of age usually do not have sufficient lacrimal fluid to produce tears.



Contd…

Assessment of Eyes

Dacryocystitis

Epiphora/ Excessive tearing

Contd…

Assessment of Eyes

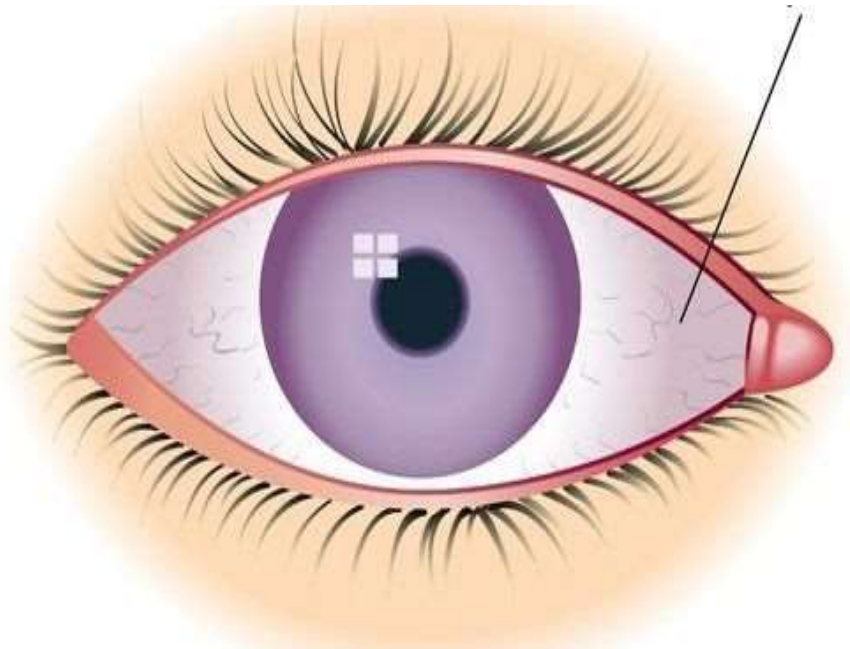
Conjunctiva

Palpebral conjunctiva:

Normally glossy and pink.

Bulbar conjunctiva:

Normally white color



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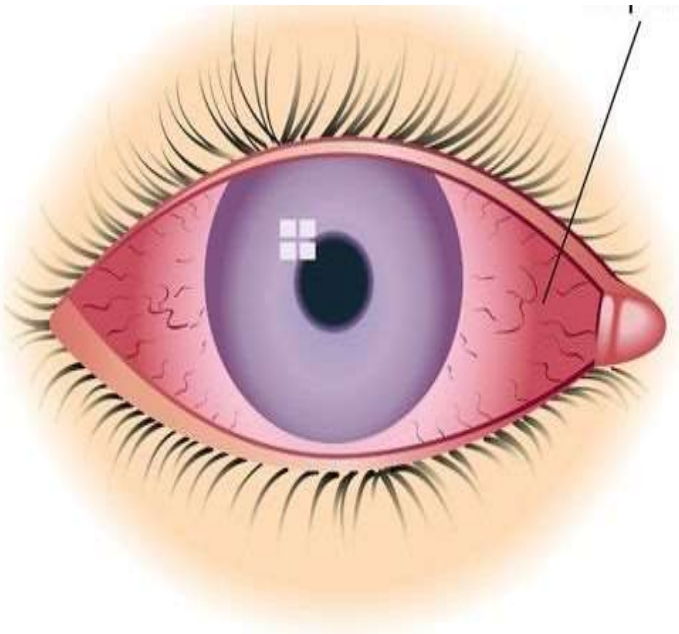
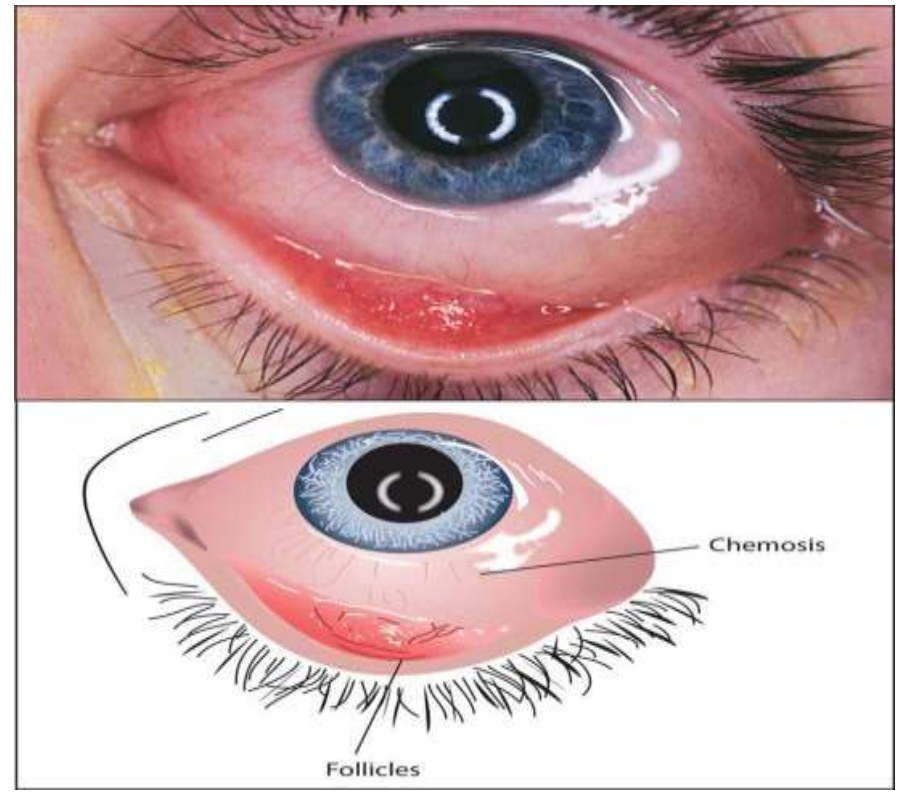
Assessment of Eyes

Conjunctivitis



Chemosis (Edema)



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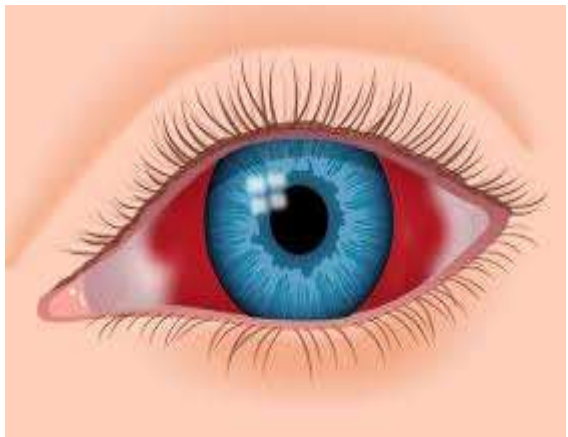
Assessment of Eyes

Sclera: Normally clear

- Inspect for discoloration:

Jaundice

Hemorrhage



Glaucoma

Contd…

Assessment of Eyes

Pupils:

- Inspected for shape, size, movement and the ability to accommodate and react to light.
- When the source of light is pointed toward the eyes, the pupils normally constrict, when it is removed the pupils dilate.

Contd…

Assessment of Eyes

PEERLA

Pupils

Equal

Round

React To Light and

Accommodation

Contd…

Assessment of Eyes

Iris:

- Size, colour and regularity.
- In newborn infants the color of the iris is usually blue.
- Pink colour Iris is seen in Albinism condition.
- Brushfield spots, a light speckling of the Iris – Down's Syndrome and Mental Retardation.

Contd…

Assessment of Eyes

Lens:

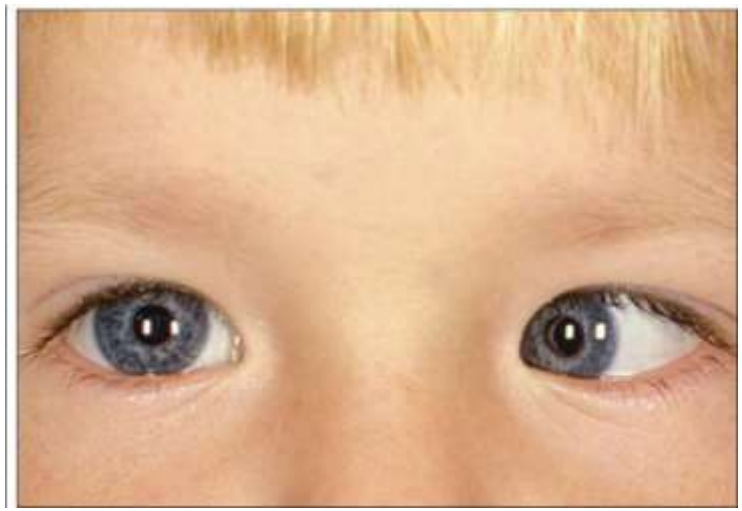
- Gray color or white spots in the lens- cataracts.
- A dislocated or subluxated lens - trauma, Marfan syndrome , Marchesani syndrome or Homocystinuria.

Contd…

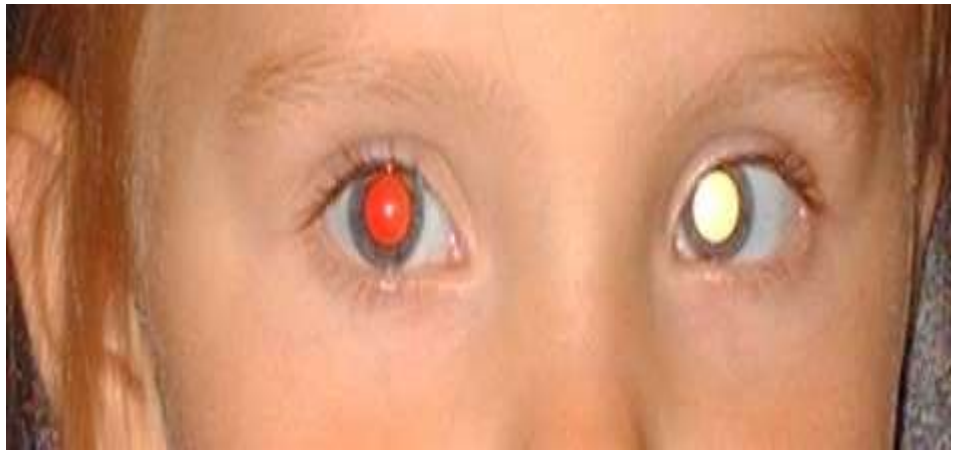
Assessment of Eyes

Ocular muscle:

Strabismus



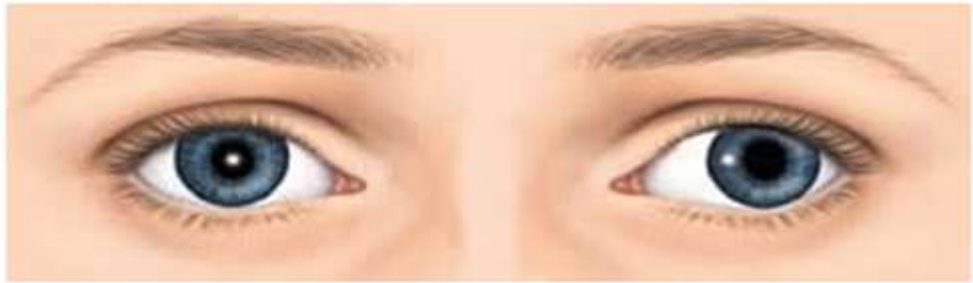
Hirschberg test



Contd…

Assessment of Eyes

Exotropia (abnormal eye is turned out)



Left exotropia

Esotropia (abnormal eye is turned in)

Left esotropia

Contd…

Assessment of Eyes

- **Hypertropia** (abnormal eye higher than the normal one) or **Hypotropia** (abnormal eye is lower than the normal one)

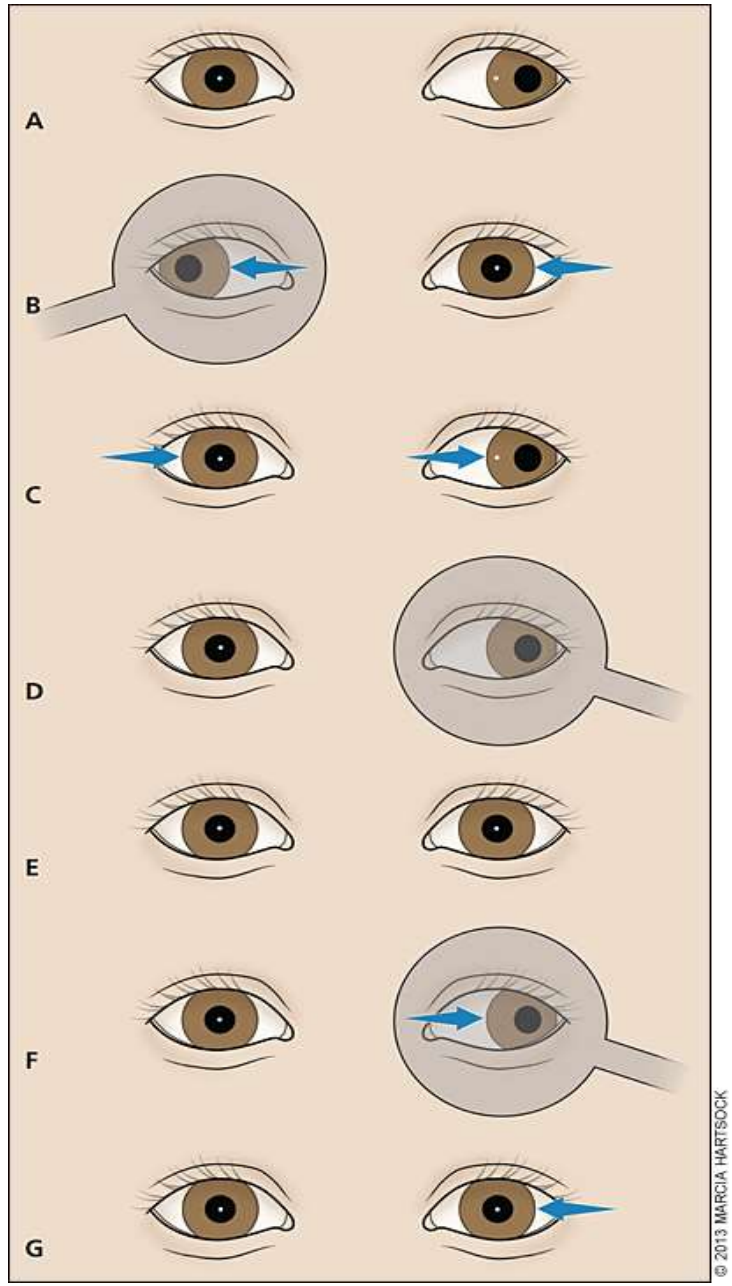
Left hypertopia

Contd…

Assessment of Eyes

Cross cover test:

- Eye movement capability, image formation and perception, foveal fixation in each eye, attention, and cooperation are all necessities for cover testing.
- There are 3 types of cover tests:
  - ❑ the cover-uncover test,
  - ❑ the alternate cover test, and
  - ❑ the simultaneous prism and cover test.

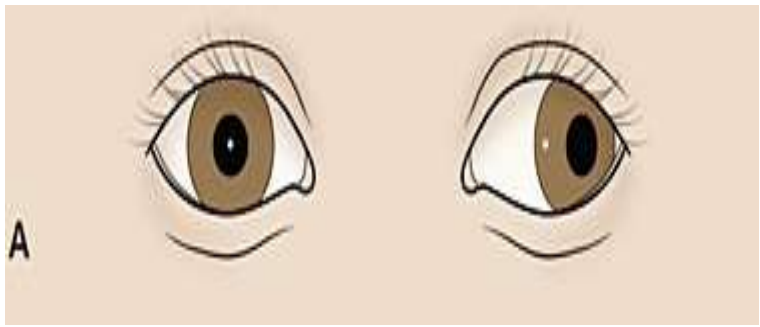


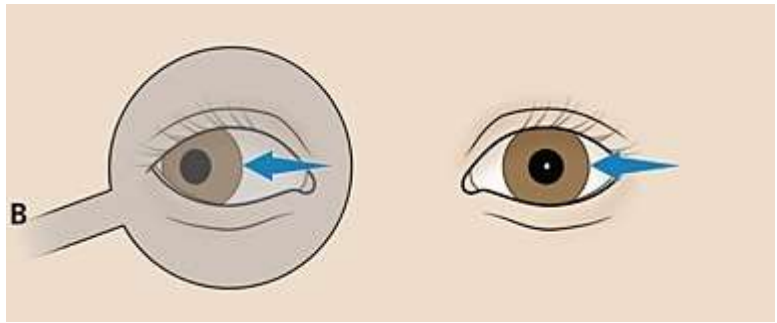
Contd…

Assessment of Eyes

(A) On simple observation, one eye (the tested eye, which is the patient's left eye in this illustration) appears to deviate.

(B) The uncovered (tested) eye is observed for movement into alignment as the other eye is covered (in this illustration, an exotropia is exposed).

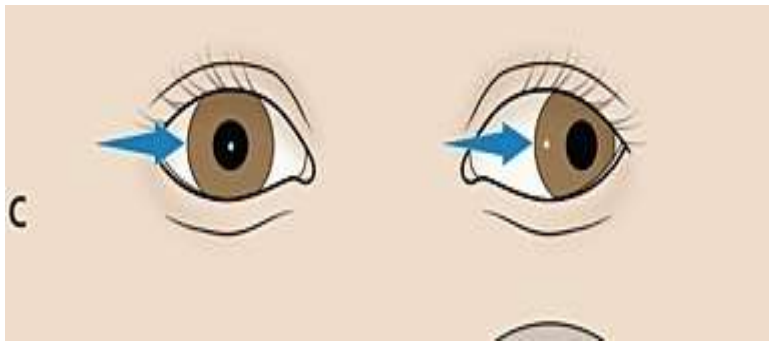




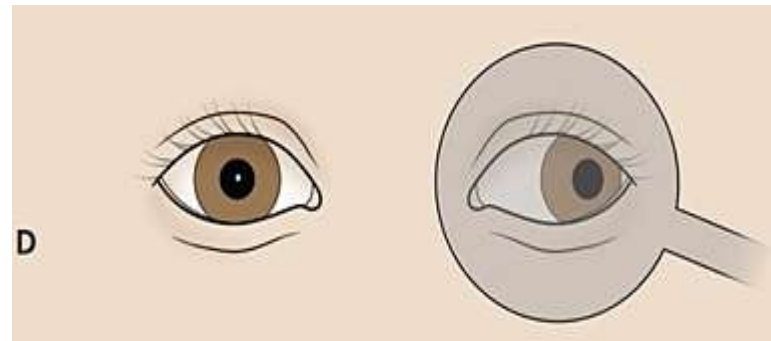
Contd…

Assessment of Eyes

(C) When the opposite eye is uncovered, the tested eye is observed to return to its original location.



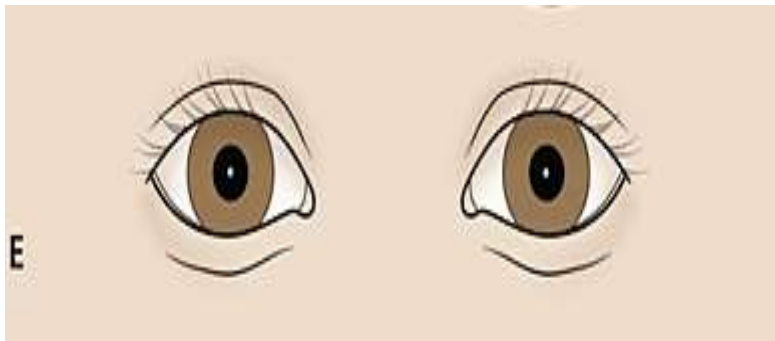
(D) When the test eye is the normal eye (which is the patient's right eye in this illustration), it does not move when the opposite eye is covered or uncovered.



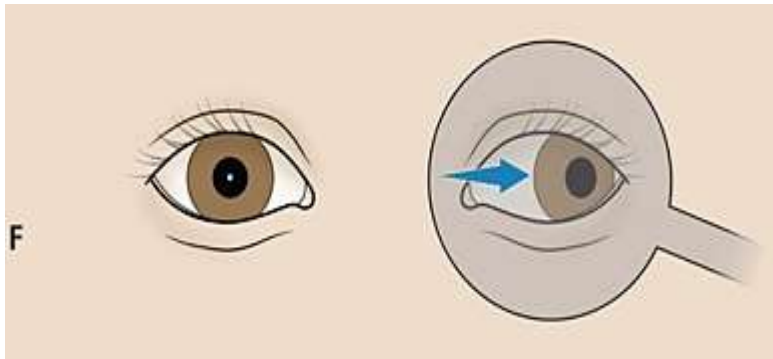
Contd…

Assessment of Eyes

(E) The tested eye (which is the patient's left eye in this illustration) is covered. On simple observation, before it is covered, the eye appears to be in alignment.



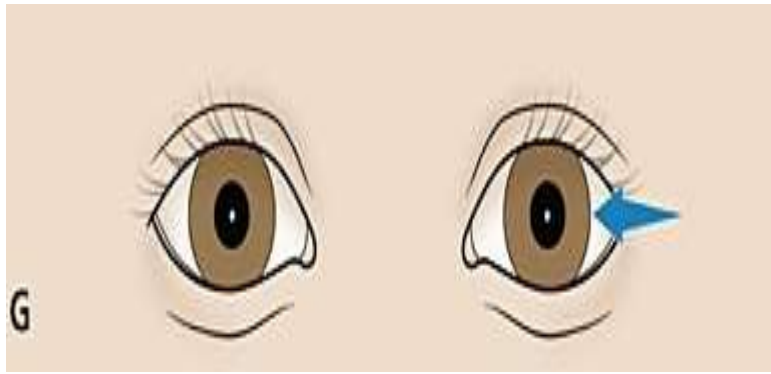
(F) The tested eye is covered for a few seconds.



Contd…

Assessment of Eyes

(G) As the cover is rapidly removed, the tested eye is observed for movement back into alignment (in this illustration, an exophoria is exposed).



Contd…

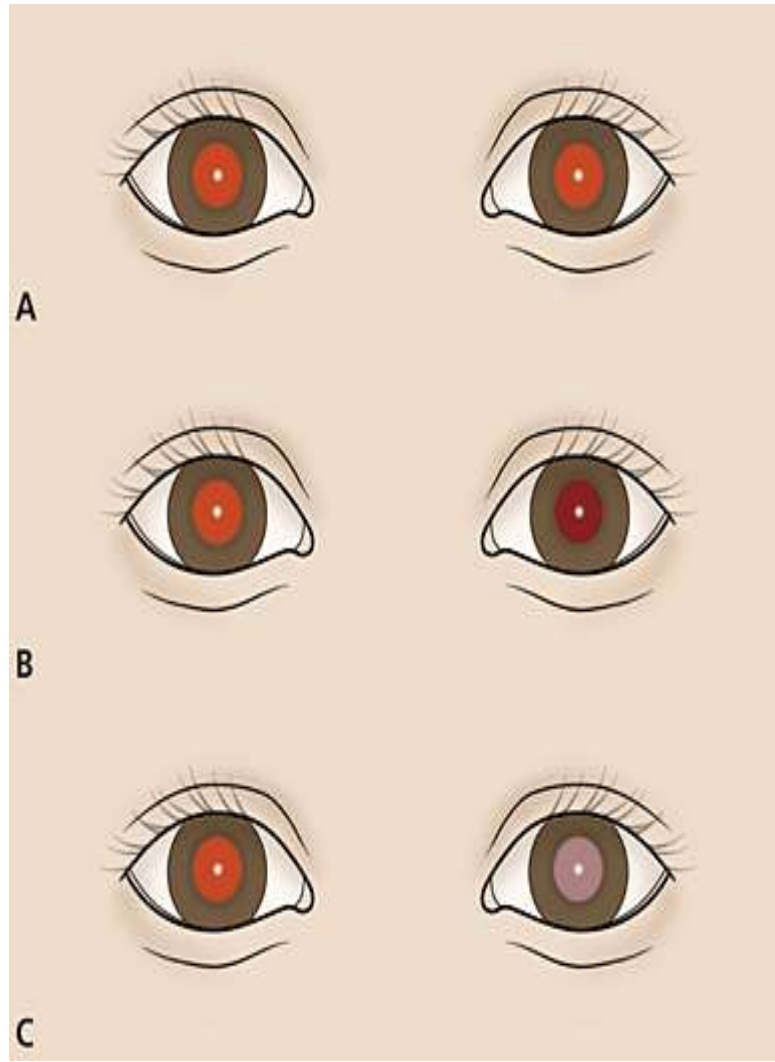
Assessment of Eyes

Red reflex:

(A) Normal, symmetric red reflex.

(B) Normal red reflex in the patient's right eye, and abnormal, diminished red reflex in the patient's left eye, which is most commonly caused by refractive error.

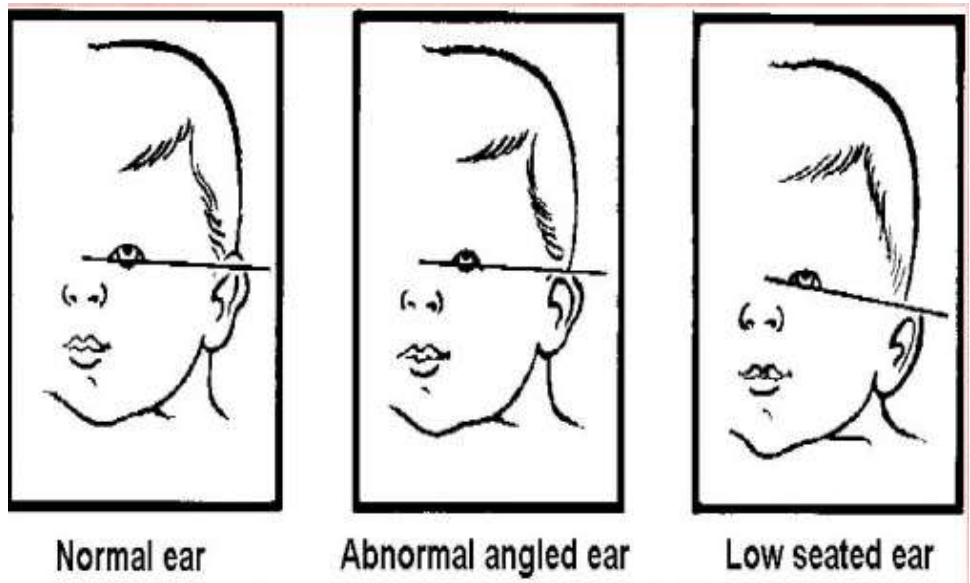
(C) Normal red reflex in the patient's right eye and no reflex in the patient's left eye, which occurs when the reflection is blocked by an opacity such as a cataract.



Assessment of Ears

Alignment of ears:

- Normal alignment
- Twisted or pseudo-low set alignment: the top of the pinna should meet or just cross an imaginary line drawn from the lateral aspect of the eye.
- True low set eyes



Contd…

Assessment of Ears

Inspection - Palpation of Exterior Structures:

- The exterior structures of the ear are examined for abnormalities in shape and for nodules, cysts or any type of lesions.

Contd…

Assessment of Ears

Examination of Internal Landmarks:

- Position: Side lying position / sitting in mother`s lap
- By using Otoscope
- Tympanic membrane (pearly gray color) – Otitis media, perforations, scarring

Contd…

Assessment of Ears

Testing of Hearing Acuity:

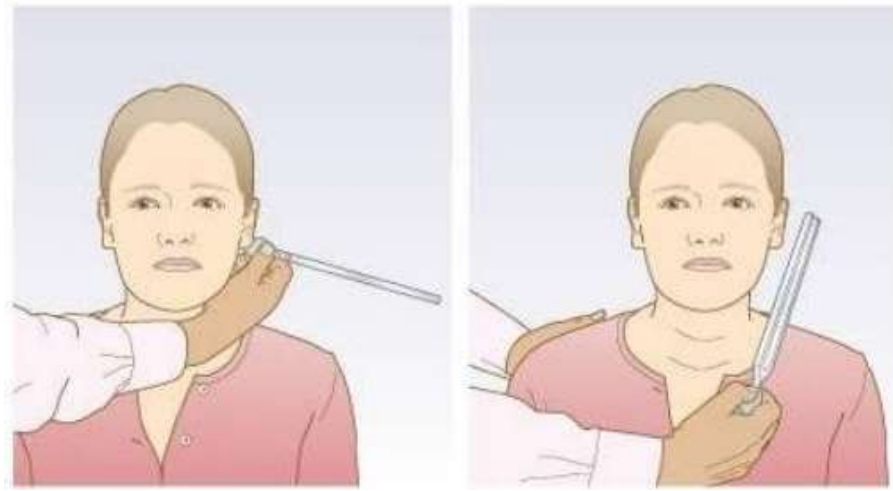
- In newborns, can be determined by startle reflex
- Other indications of a response to loud sounds include grimacing.

Contd…

Assessment of Ears

Sound conduction

- **Rinne test:**



- **Weber test:**

Contd…

Assessment of Ears

Schwabach test:

- The degree of the child`s bone conduction is compared with that of the nurse.
- The stem of the fork contact`s the child`s mastoid bone.

Assessment of Nose

- **Position:** Child can sit on the parent`s lap / lie on a table with restraint.
- Shape of the nose, Flaring of the nostrils.
- **Flat nose -** Cleft Palate, Trisomy and Congenital Syphilis.

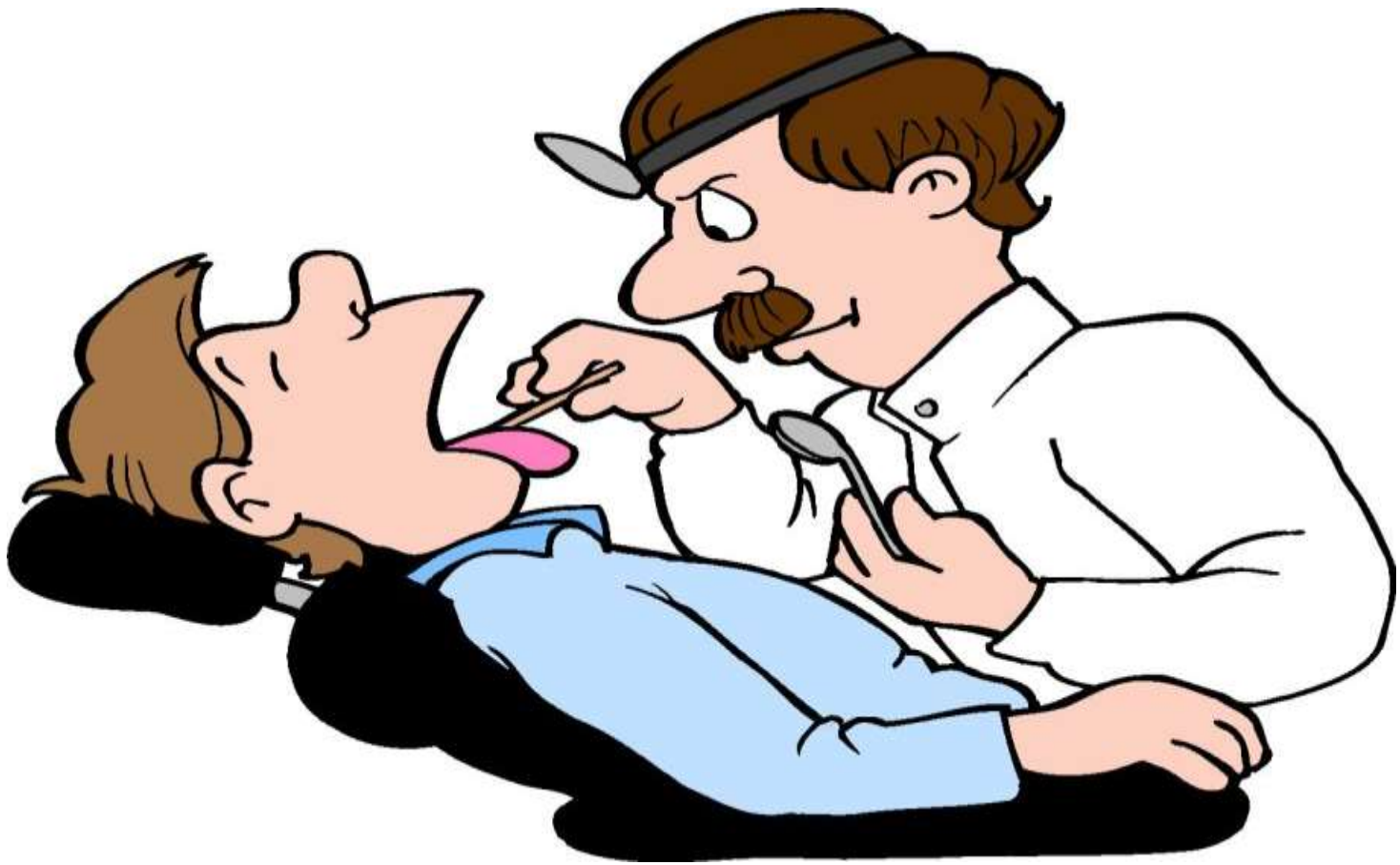
Assessment of Sinuses

Check for sinuses:

- Ethmoid and maxillary sinuses - at birth.
- Sphenoid sinuses - fully developed after puberty.
- Frontal sinus - develops at about 7 years of age.

Assessment of Mouth and Throat

Position



Assessment of Mouth and Throat

Gag reflex:

- The pharyngeal reflex or gag reflex (also known as a laryngeal spasm) is a reflex contraction of the back of the throat, evoked by touching the roof of the mouth, the back of the tongue, the area around the tonsils, the uvula, and the back of the throat.

Assessment of Chest and Lungs

Components of the assessment

- Inspection of the skin
- Examination of the breast
- Inspection and palpation of the thorax
- Palpation, percussion and auscultation

Contd…

Assessment of Chest and Lungs

Inspection of the skin:

- Carefully examined for color and spacing and for the presence of secretions, fissures or other abnormalities.

Contd…

Assessment of Chest and Lungs

Examination of breast:

- Breast examination may be done as necessary on the prepubertal child.
- Children whose puberty is precocious or delayed or boys with gynecomastia.
- The breasts of girls are examined after the menstrual period so that premenustral tenderness and engorgement will not be misleading.

Contd…

Assessment of Chest and Lungs

Inspection and palpation of the thorax:

Inspection: shape

- During infancy, chest is almost round.
- As the child grows the chest increases symmetrically in the transverse direction.

Check for abnormal shape of the chest

- **Pigeon chest-** a projection forward of the sternum with its adjacent cartilages - rickets.
- **Funnel chest-** an undue depression of the sternum that is most obvious on inspiration and may be normal or due to rickets.

Contd…

Pigeon chest

Funnel chest

Assessment of Chest and Lungs

Inspection and palpation of the thorax:

- **Barrel chest-** ribs form almost perfect circles owing to chronic lung problems- asthma.
- **Cardiac enlargement-** bulging of chest.
- **Harrison`s groove-** a horizontal depression along the lower border of the chest corresponding to the costal insertion of the diaphragm.
- Identify the thoracic spine include scoliosis, kyphosis.

Contd…

Assessment of Chest and Lungs

Palpation of Chest:

- The ribs are palpated to determine either absence or areas of tenderness.
- The chest is palpated for the presence of tumors, cysts or other growths.
- The clavicular and axillary areas are assessed for enlargement of lymph nodes.
- Check for respiratory rate, rhythm, depth and quality of respiration.

Contd…

Assessment of Chest and Lungs

Types of Respirations

Respiration	Description
Eupnea	Normal, quite, effortless respirations.
Tachypnea	Rapid rate
Bradypnea	Slow rate
Apnea	Temporary cessation of respirations
Asphyxia	Prolonged interference with aeration of blood
Hyperpnea	Increased rate & or depth of respirations, grasping in nature

Contd…

Assessment of Chest and Lungs

Types of Respirations

Respiration	Description
Dyspnea	Painful respiration
Alkalotic Respirations	Slow, shallow respirations
Cheyne-stokes Respiration	Respirations increase in force and frequency certain time and then decrease until they cease.
Biot Respirations	Irregular periods of apnea.

Contd…

Assessment of Chest and Lungs

Percussion of Chest

Chest sounds:

Sound	Location
Resonance	All lobes of lung not near other organs
Liver dullness	Downward from the fourth/ fifth interspace on the right side in the midclavicular line
Flat	End of the lung and over the liver
Cardiac dullness	Left boarder of the sternum from the second to the fifth interspace and to the midclavicular
Tympany	Left side below the fifth or sixth interspace

Contd…

Assessment of Chest and Lungs

Percussion of Chest

Abnormal chest sounds:

Type of sound	Condition
Dullness in unexpected areas	Pleural effusion, Emphyema, Atelectasis, Intrathoracic mass, Diaphragmatic Hernia
Hyperresonance	Pneumonia, Pneumothorax, Asthma

Assessment of Heart

Inspection and palpation:

- The heart is examined for its size and shape and evaluate heart sounds.

Percussion of the heart:

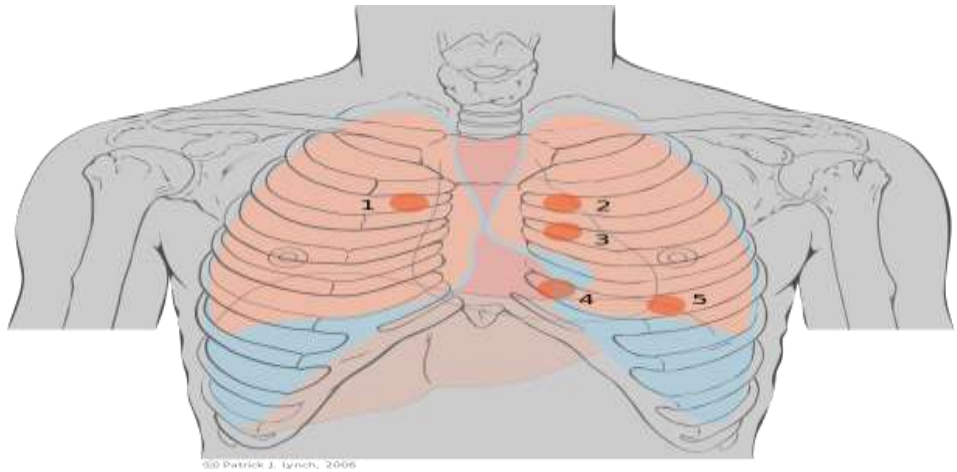
- To determine any displacement or enlargement.
- Percussion in infants is difficult because of the barrel shape of the thorax and the thick layers of subcutaneous fat on the chest wall.

Contd…

Assessment of Heart

Auscultation:

- In auscultation, while the child sits up and lies down, the nurse moves the stethoscope around the four traditional areas of the heart (aortic, tricuspid, pulmonary and mitral).
- Heart sounds are evaluated for rate, intensity, rhythm, quality and normality.



Assessment of Abdomen

Components of the assessment:

- Inspection of the abdomen
- Auscultation, percussion and palpation of the abdomen
- Examination of the abdomen for hernia
- Examination of the anal area

Contd…

Assessment of Abdomen

Inspection:

- The abdomen is inspected for skin abnormalities, contour, symmetry, size, muscle tone, surface movements, and masses that might be swelling the abdominal wall.
- Any deviation from normal in the abdominal skin is recorded- scars from injury, striae, distention, obvious masses, rashes and other lesions.

Contd…

Assessment of Abdomen

Abdomen shapes:

- Scaphoid abdomen
- Flabby abdomen
- Protruding abdomen
- Abdominal distention

Contd…

Assessment of Abdomen

Auscultation:

- The abdomen is auscultated to determine the presence or absence of peristaltic waves.
- Auscultation is done before percussion and palpation to prevent changing the bowel sounds by stimulating peristalsis.

Percussion:

- Percussed lightly at the first to determine areas of dullness, tympany and the presence of a fluid wave.

Contd…

Assessment of Abdomen

Palpation:

- Palpating degree of distention and the depth of palpation, pulsating aorta.

Deep Palpation:

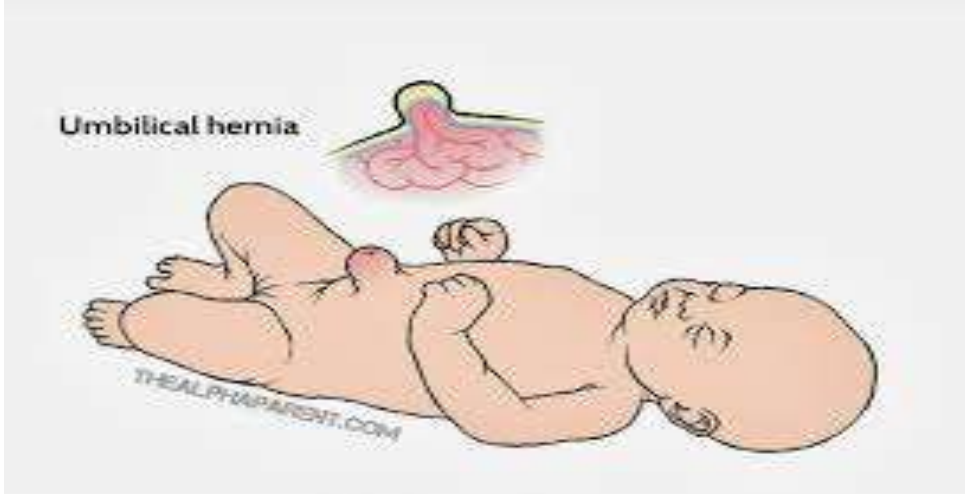
- Necessary to feel abdominal organs, large blood vessels, and masses (Wilm's tumor).

Contd…

Assessment of Abdomen

Examination of the abdomen for hernia:

- Inspection and palpation for hernia in the inguinal and femoral areas are done.
- The internal inguinal is not palpable, but the external ring is palpable just lateral to the pubis and in boys can be felt through the scrotum.
- Omphalocele.



Contd…

Assessment of Abdomen

Examination of the anal area:

Inspection:

- Any signs of inflammation, redness, scratch marks, rashes or anal abnormalities.
- Diaper rash, anal fissures, hemorrhoids.

Palpation:

- Determines the presence of fistula, sinuses , strictures and abscesses.

Assessment of Genitalia

- Inspection and palpation of the genitalia
- Examination of the male genitalia

Contd…

Assessment of Genitalia

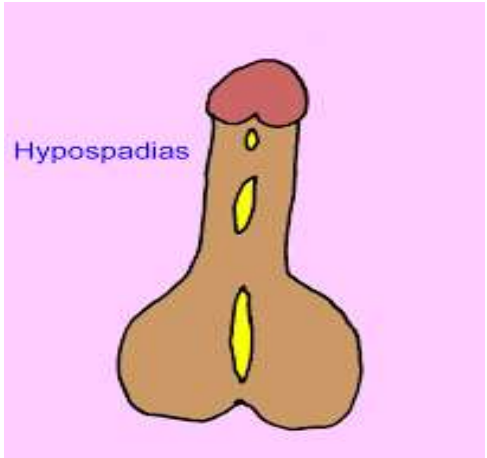
Position:

Contd…

Assessment of Genitalia

Examination of the Male genitals:

- **Scrotum:** Edema, color and masses.
- **Testes:** Descended or undescended testes
- **Prostate Gland:** The prostate gland and other reproductive organs enlarge during adolescence owing to the effect of the effect of androgens.
- **Penis:** Phimosis. In older children and adolescents- the glans penis is examined for venereal warts.
- **Urethra:** Hypospadiasis, Epispadiasis



Assessment of Musculoskeletal System

Test for tibial torsion:

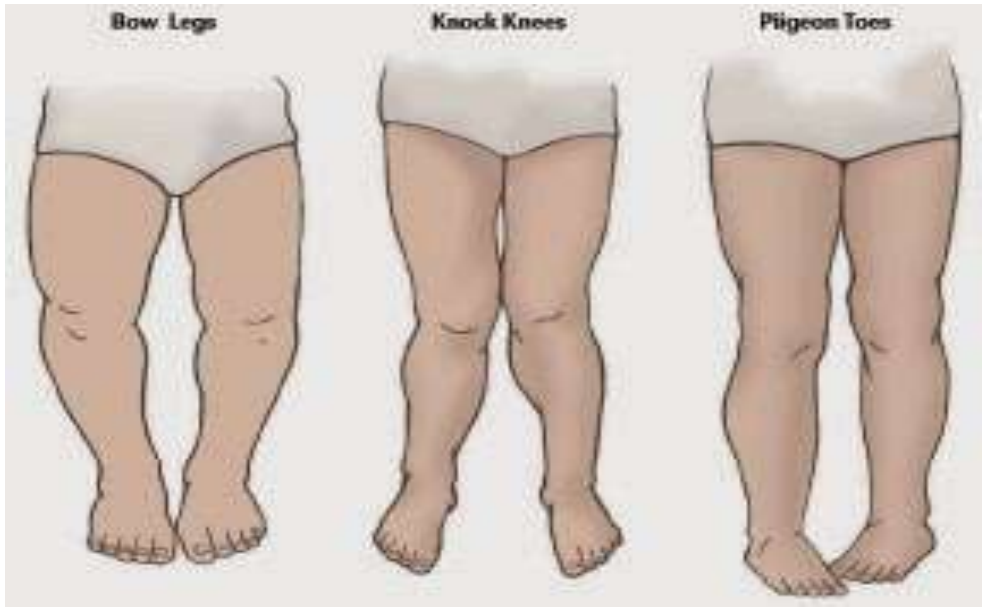
- The child lies supine with the hips and knees flexed and the front and back of the feet flat on the table and in line with the knees.

Contd…

Assessment of Musculoskeletal System

Gait problems in children includes:

- Metatarsus Varus (Pigeon-toe)
- Metatarsus Valgus (Duck Walk)
- Pes Valgus (Flat Foot)



Neurological Examination

- Testing of the cranial nerves is difficult in a child under 2 years of age.
- Test for cranial nerves functioning in a child above 2 years.

Contd…

Reflexes

- Biceps deep tendon reflex
- Triceps deep tendon reflex
- Brachioradialis deep tendon reflex
- Patellar deep tendon reflex
- Achilles deep tendon reflex

Newborn Reflexes

- Rooting reflex
- Sucking reflex
- Swallowing
- Gagging reflex
- Blinking reflex
- Doll`s eye reflex
- Palmar grasp reflex
- Plantar Grasp reflex
- Dancing reflex
- Babinski reflex
- Tonic clonic reflex
- Moro reflex

Contd…

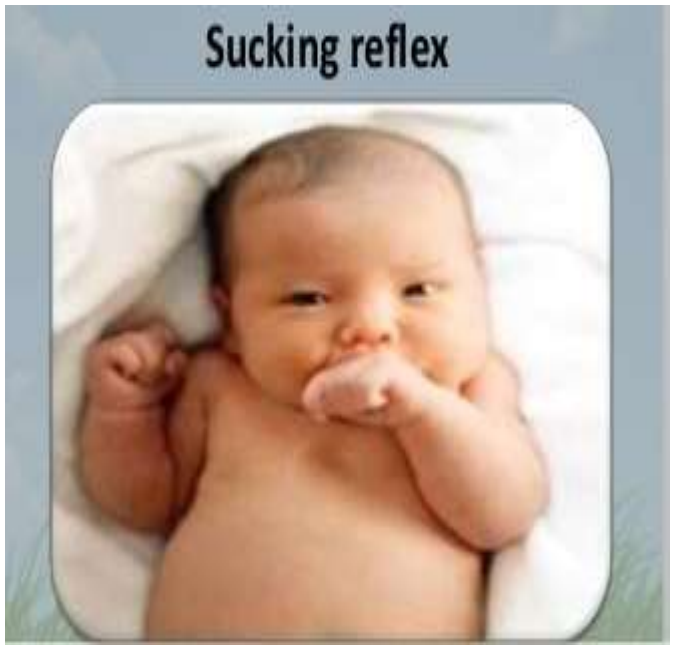
Newborn Reflexes

Rooting reflex

Contd…

Newborn Reflexes

Sucking reflex



Swallowing reflex

Contd…

Newborn Reflexes

Blinking reflex

Doll`s eye reflex

Contd…

Newborn Reflexes

Palmar grasp reflex

Plantar Grasp reflex

Contd…

Newborn Reflexes

Dancing reflex

Moro reflex

Contd…

Newborn Reflexes

Babinski reflex

Tonic Clonic reflex

References

- Dorothy R. Marlow, *Text Book of Pediatric Nursing*, Elsevier; Noida, 2001.
- Parul Datta, *Text Book of Pediatric Nursing*, Jaypee, New Delhi, 2nd edition, 2009.
- O.j Sobhana, *A Text Book of Paediatrics*, Florence publishers, Hyderabad, 2015.

Match the following

a. Eupnea	( )	i . Slow rate
b. Tachypnea	( )	ii. Normal respirations
c. Bradypnea	( )	iii. Respirations increase in force and frequency certain time
d. Apnea	( )	iv. Rapid rate
e. Cheyne-stokes respiration	( )	v.Temporary cessation of respirations

Key

a. ii

b. iv

c. i

d. v

e. iii

MCQs

1. Anterior fontanel is closed by ( )

   A. 10-11months B. 12-18months C. 19-20months

2. Shape of the posterior fontanel ( )

   A. triangular B. Square C. Diamond

3. Posterior fontanel is closed by ( )

   A. 2^{nd} month B. 1^{st} month C. 3^{rd} month

4. Normal shape of chest during infancy ( )

   A. Round B. Pigeon C. Flat chest

Key

1. B
2. A
3. A
4. A