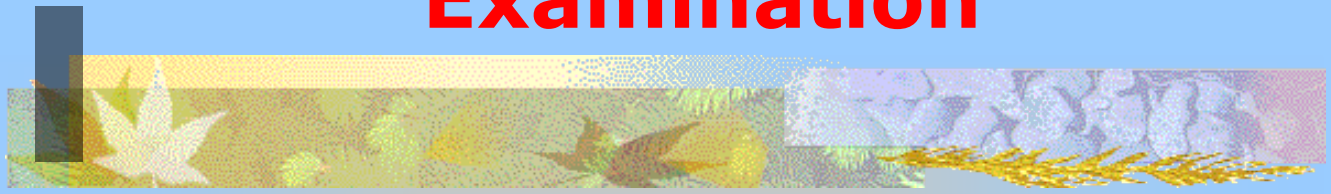
Head, Neck, Thyroid and Lymph Nodes Examination



Prepared by: Tesfa D. (B.Sc., M.Sc.)

Objective

- To examine the head, neck, face, and lymph node.
- Demonstrate the procedure for assessing the thyroid gland.
- Name and locate the lymph nodes that drain the head and neck.
- Identify the major anatomical structures on a diagram of neck.

Anatomic and Physiologic over view

Head/ Skull;

- The skull is a rigid bony box that protects the brain and special sense organs.
- It includes the bones of the cranium and the face.
- Cranial bones include (7 bone) the 2 frontal, 2 parietal, 1 occipital, and 2 temporal.

Cont..d

- Use these names to describe any of your findings in the corresponding areas.
- The seven cranial bones unite at immovable joints called the sutures (3).
- The bones are not firmly joined at birth; the sutures gradually ossify during early childhood.

Cont..d

- The 14 facial bone also articulate at suture. E.g. nasal, zygomatic, maxilla, mandible bone.
- The cranium is supported by the cervical vertebrae; C1, the “atlas”, C2, the axis and down to C7.
- The C7 vertebrae has a long spinous process that is palpable when the head is flexed. Feel this useful landmark during P/E.

Cont…d

Neck;

- The neck contains important blood vessels, such as the carotid artery and the internal jugular vein that lie beneath the sternocleidomastoid muscle.

Cont…d

- The external jugular vein runs diagonally across the stemocleidomastoid muscle.
- The major neck muscles are the sternocleidomastoid and the trapezius, which are innervated by cranial nerve XI, the spinal accessory.

Cont…d

- The stemocleidomastoid muscles arise from the sternum and the medial part of the clavicle and extend diagonally across the neck to the mastoid process behind the ear.
- It accomplishes head rotation and head flexion.

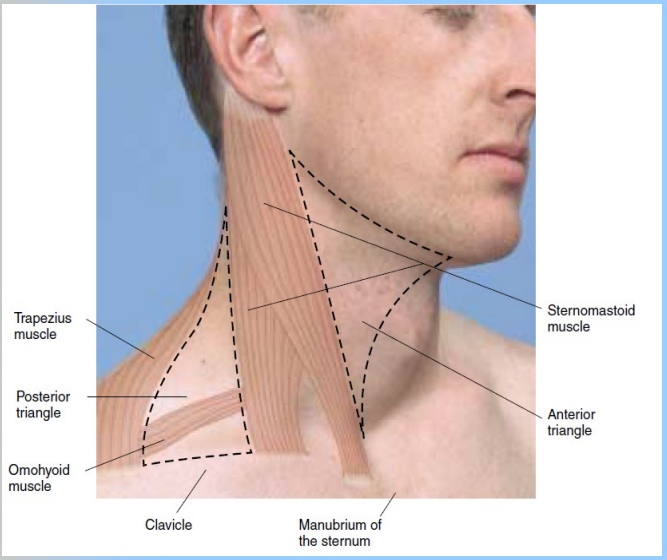
Cont…d

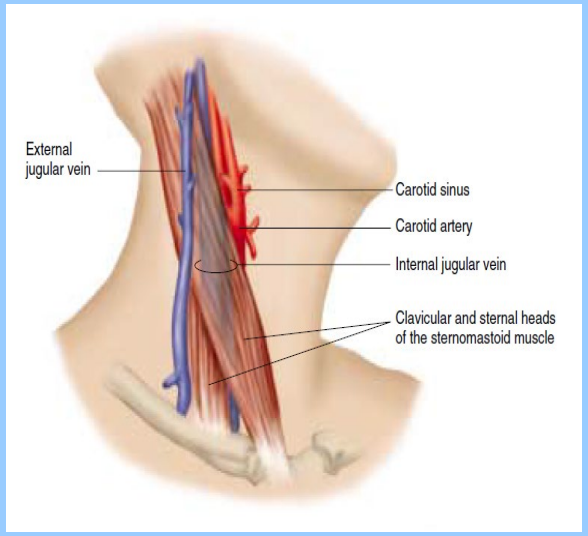
- Trapezius muscle arises from the occipital bone and the vertebrae and extends to the scapula. The trapezius muscles move the shoulders and extend and turn the head.
- The sternocleidomastoid muscle divides each side of the neck in to two triangles.

Cont…d

- In front of the sternomastoid the anterior triangle extends to the mandible above.
- Behind the sternomastoid muscle, the trapezium muscle is to the other side of the posterior triangle, and the clavicle below. These triangles are helpful guidelines when describing findings in the neck.

Cont…d


Trapezius muscle
Posterior triangle
Omohyoid muscle
Clavicle
Manubrium of the sternum
Sternomastoid muscle
Anterior triangle


External jugular vein
Carotid sinus
Carotid artery
Internal jugular vein
Clavicular and sternal heads of the sternomastoid muscle

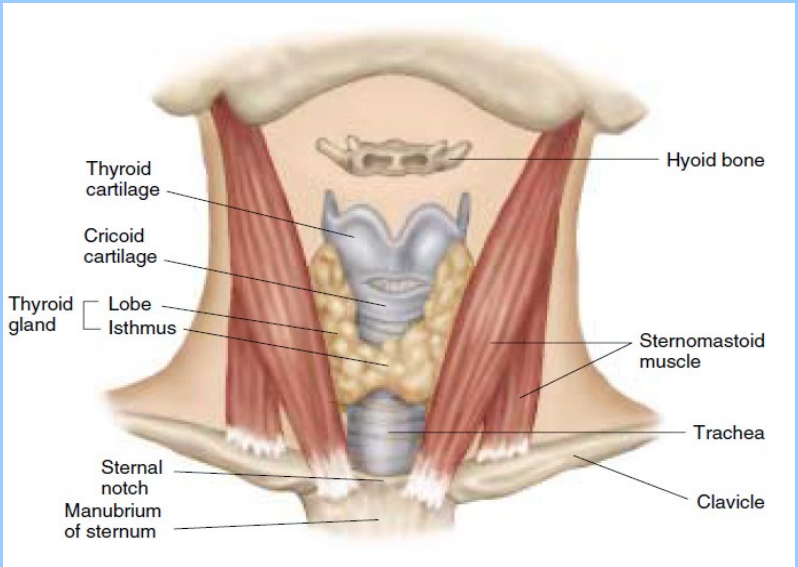
Cont…d

- Midline structures:
  - Hyoid bone,
  - Thyroid cartilage,
  - Cricoid cartilage,
  - Tracheal rings, and
  - Thyroid gland.

Cont…d

- Thyroid gland;
  - Isthmus -cross the trachea below the cricoid & connect two lobe.
  - Two lateral lobe-anterior trachea-butterfly shape.
  - Women have larger and more easily palpable glands than men.

Cont…d


Thyroid cartilage
Cricoid cartilage
Thyroid gland
Lobe
Isthmus
Sternal notch
Manubrium of sternum
Hyoid bone
Sternomastoid muscle
Trachea
Clavicle

Cont…d

Lymphatics;

The head and neck have a rich supply of lymph nodes. This includes-

1. Preauricular—in front of the ear.
2. Posterior auricular—superficial to the mastoid process.

Cont…d

3. Occipital—at the base of the skull posteriorly.
4. Tonsillar (jugulodigastric)—under/at the angle of the mandible.
5. Submandibular (submaxillary)—midway between the angle and the tip of the mandible.

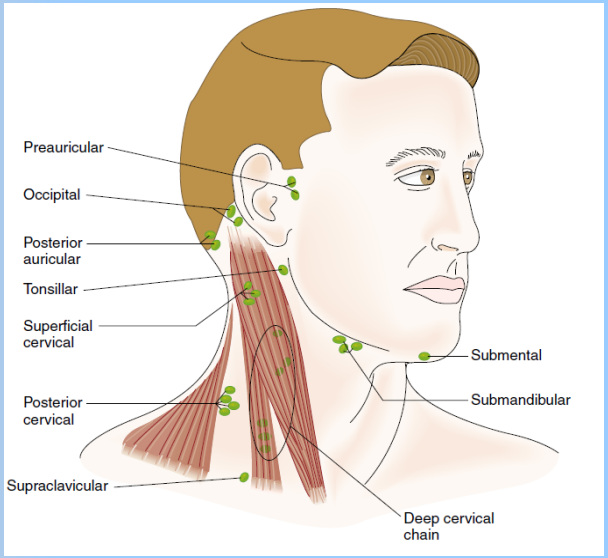
Cont…d

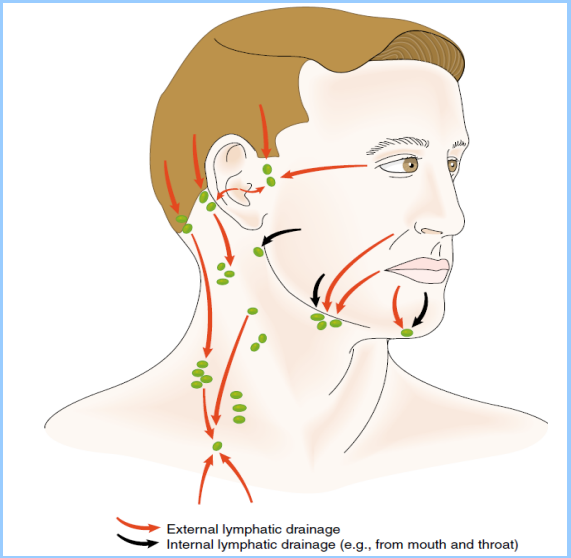
6. Submental—in the midline a few centimeters behind the tip of the mandible.
7. Superficial cervical—superficial to the sternomastoid muscle.
8. Posterior cervical—along the anterior edge of the trapezius.

Cont…d

9. Deep cervical chain—deep to the sternomastoid and often inaccessible to examination.
10. Supraclavicular—just above and behind, deep in the angle formed by the clavicle and the sternomastoid (behind clavicular insertion point).
11. Epithroculiar-in the cubital fossa (essential for diagnosis of syphilis)

Cont…d


Preauricular
Occipital
Posterior auricular
Tonsillar
Superficial cervical
Posterior cervical
Supraclavicular
Submental
Submandibular
Deep cervical chain


External lymphatic drainage
Internal lymphatic drainage (e.g., from mouth and throat)

Subjective data

- Ask about;
  - Headache
  - Head injury
  - Dizziness
  - Swollen glands (thyroid) or lumps
  - Neck pain
  - Limitation of motion (CN-XI)

Objective data

Head;

Inspect and palpate the skull:

- Note the general size and shape.
- Normocephalic is a round symmetric skull that is appropriately related to body size.
- Palpate the skull and feel symmetry and smoothness.

Cont…d

- Normal:- No tenderness to palpation.
- Abnormal:- Deformities include microcephaly (abnormally small head); macrocephally (abnormally large head) ex. Hydrocephaly; acromegaly; Paget's disease.
- Note lumps, depressions or abnormal protrusions.

Cont…d

- Palpate the temporomandibular joint as the person opens the mouth, and note normally smooth movement with no limitation or tenderness.
- Abnormal:– Crepitation, limited range of motion, or tenderness.

Cont…d

Inspect the face

- Note the facial expression and its appropriateness to behavior.
- Facial structure should be symmetric.
- Note symmetry of eyebrows and sides of mouth.

Cont…d

- Note any abnormal facial structures (exophthalmoses, changes in skin color or pigmentation) or any abnormal swelling.
- Also note any involuntary movements (tics) in the facial muscles. Normally there is none.

Cont…d

- Abnormal:- Tense, rigid muscles-anxiety or pain, flat affect-depression, excessive smiling-euphoria may be inappropriate. Marked symmetry with brain lesion such as CVA or damage to CN VII (Bell's palsy).
- Note grinding of the jaws or excessive blinking.

Cont…d

- Neck;
  - Symmetry:
    - Head position-erect, still, centered middle.
    - Accessory muscle-symmetric.
    - Abnormal: head tilt-muscle spasm, head and neck rigid-arthritis.

Cont…d

- ROM;
  - Note any limitation of movement during active motion.
  - Ask the person to touch the chin to the chest turn head to right and left, extend the head backward.

Cont…d

- Movement: Normal - Smooth, controlled movement-Flexion (45^0), Extension (55^0), Lateral abduction (40^0), Rotation (70^0).
- Abnormal- Rigid (cervical arthritis), jerky movement, pain on movement.

Cont…d

- Muscle strength
  - Test muscle strength and status of cranial nerve XI by trying to resist the person's movements' with your hands as the person shrugs the shoulders and turns the head to each side.

Cont…d

- As the person moves the head, note enlargement of the salivary glands and lymph glands. Normally there is no enlargement.
- Note a swollen parotid gland when the head is extended: look for swell (AIDS) in below the angle of the jaw.

Cont…d

- Note thyroid gland enlargement. Normally there is no enlargement.
- Also note any obvious pulsations. The carotid artery runs medial to the sternomastoid muscle and creates localized pulsations just below the angle of the jaw. Normally there are no other pulsations while the person is in sitting position.

Cont…d

- Lymph node;
  - Technique:-gentile circular motion with pads of fingers, over the underlying tissues, relax patient, neck flexed forward and, if needed, slightly toward the side being examined.

Cont…d

- You can usually examine both sides at once.
- It is usually most efficient to palpate with both hands to compare the two sides.
- How ever, submental LN-one hand. The other hand position the person’s head.

Cont…d

- Use gentle pressure (strong pressure-push into neck muscle).
- Beginning with preauricular lymph nodes in front of the ear, palpate the 9 groups of lymph nodes in a routine order.

Cont…d

- For the deep cervical chain, move the person’s head toward the side being examined to relax the muscles.
- Search for the supraclavicular node by having the person hunch the shoulders and elbows forward.

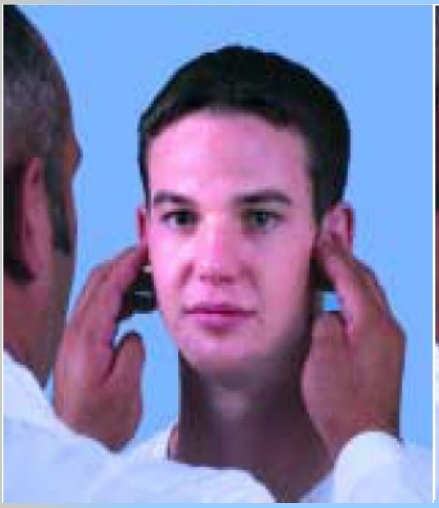
Cont…d

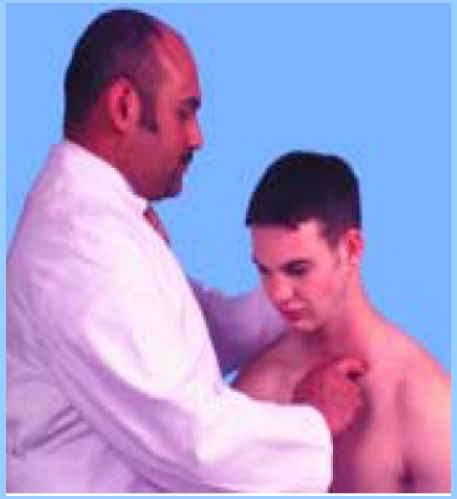
- If any nodes are palpable note their location, size, shapes, delimitation (discrete or matted together), consistency, mobility and tenderness.
- Certain nodes often are palpable in healthy persons. Normal nodes feel movable, small, discrete, soft and non- tender.

Cont…d

- Abnormal:-
  - Hard
  - Large
  - Firm
  - Fixed
  - Matted
  - Verbalizes pain on palpation

Cont…d





Cont…d

- Abnormal:- Lymphadenopathy- enlargement of the lymph nodes due to infection, allergy or neoplasm.
- The following criteria are common clues, but are not definitive in all circumstance:

Cont…d

- Thorax or abdominal (liver) neoplasm-enlarged, single, non tender supraclavicular LN (Virchow's).
- Cancerous LN-hard, unilateral, fixed, and non tender.

Cont…d

- Chronic inflammation (TB)-tender, clamped.
- Acute infection-bilateral, enlarged, warm, tender, and firm, but freely movable.
- AIDS-enlarged, firm, non tender, and mobile occipital LN.

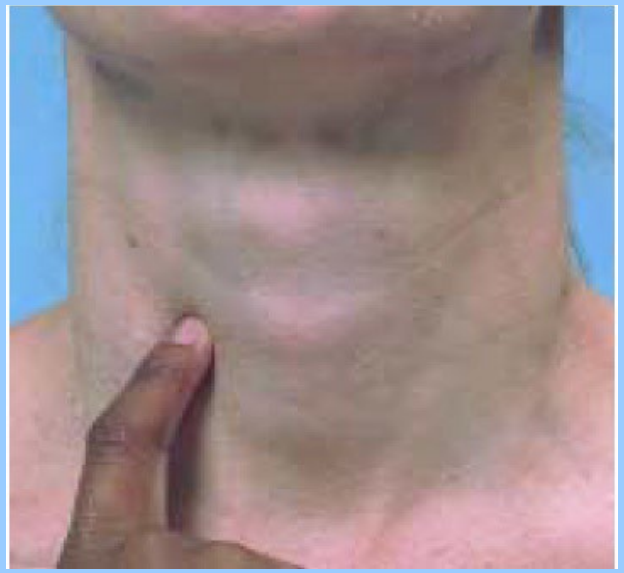
Cont…d

- Trachea;
  - Inspect for any deviation. Normally it is in midline position.
  - Place your index finger on the trachea in the sternal notch and slip it off to each side. or

Cont…d

- Place your finger along one side of the trachea and note the space between it and the sternomastoid. Compare it with the other side. The spaces should be symmetric.

Cont…d



Cont…d

- Condition of tracheal shift:
  - Pushed to unaffected side- tumor, pneumothorax, unilateral thyroid lobe enlargement, aortic aneurism.
  - Pulled toward affected side- atelectiasis, pleural adhesion, fibrosis.

Cont…d

Thyroid gland;

Techniques:

- The thyroid gland is difficult to palpate.
- Supply the person with a glass of water and first inspect the neck as the person takes a sip and swallows.

Cont…d

- The thyroid cartilage, the cricoids cartilage and the thyroid glands all move up with swallowing and then fall to their resting positions.
- Abnormal- Look for diffuse enlargement or a nodular lump.

Cont…d

- To palpate move behind the person. Ask the person to sit up very straight and then bend the head slightly forward and to the right.
- This will relax the neck muscles. Use the fingers of your left hand to push the trachea slightly to the right.

Cont…d

- Then curve your right fingers between the trachea and the sternomastoid muscle, and ask the person to take a sip of water.
- The thyroid moves up under your fingers with the trachea and larynx as the person swallows.

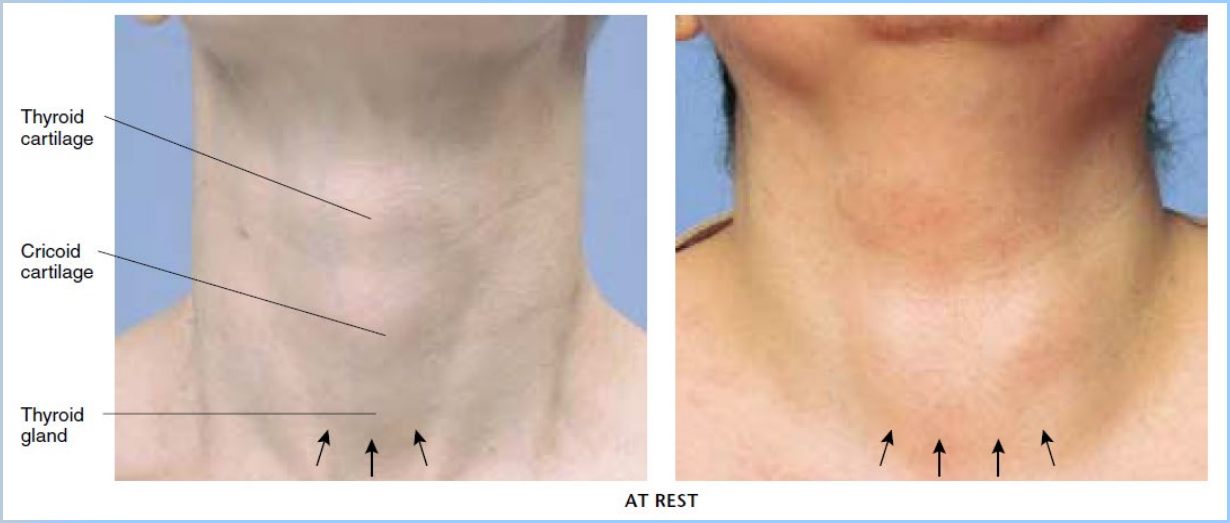
Cont…d

- Reverse the procedure for the left side. (One hand displaces and the other hand palpates).
- Usually you cannot palpate the normal adult thyroid. If the person has along thin neck you sometimes will feel the isthmus over the tracheal rings.

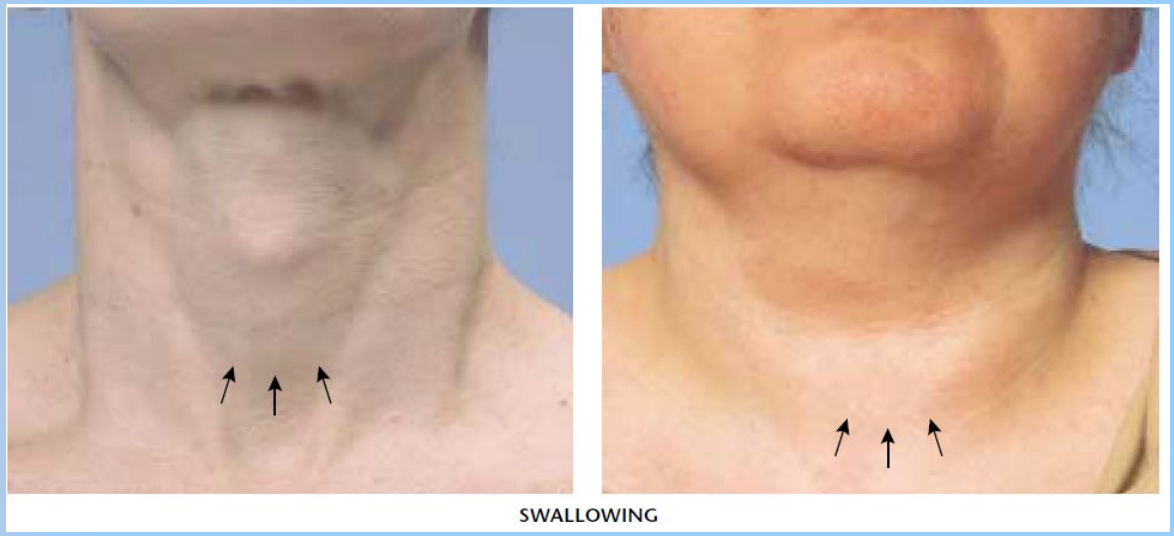
Cont…d

- The lateral lobes usually are not palpable check them for enlargement, consistency, symmetry and the presence of nodules.
- Abnormal:– enlarged lobes that are easily palpable before swallowing or is tender to palpation, or the presence of nodules or lumps.

Cont…d


Thyroid cartilage
Cricoid cartilage
Thyroid gland
AT REST

Cont…d



SWALLOWING

Cont…d

Cont…d

- Anterior approach:
  - Alternate method of palpating the thyroid gland.
  - Stand facing the person.
  - Ask him/her to tip the head forward and to the right.

Cont…d

- Use your right hand to displace the trachea slightly to the persons right.
- Hook your left thumb and fingers around the sternomastoid muscle.
- Feel for lobe enlargement as the person swallows.

Cont…d

- Position;
  - Normal – midline
  - Abnormal - deviate from the midline.
- Characteristics, landmarks:
  - Normal- smooth, firm, non tender.

Cont…d

- Abnormal - enlarged lobes (diffused or nodular lump, palpable before swallowing), irregular consistency, tender on palpation.

Cont…d

Auscultation of TG;

- If the thyroid gland is enlarged, auscultate it for the presence of a bruit.
- This is a soft, pulsatile, whooshing, blowing sound heard best with the bell of the stethoscope.
- Bruit is not present normally.

Cont…d

- Abnormal:– present with accelerated blood flow, indicating hyperplasia of the thyroid Ex. Hyperthyroidism.

Summary Checklist

- Inspect and palpate the skull: General size and contour. Note any deformities, lumps and tenderness. Palpate temporal artery, temporomandibular joint.
- Inspect the face: facial expression. Symmetry of movements (cranial nerve VII). Any involuntary movements, edema and lesions.

Cont…d

- Inspect and palpate the neck: active range of motion. Enlargement of the salivary glands, lymph node, thyroid gland. Position of the trachea.
- Auscultate the thyroid (if enlarged) for bruit.

Sample Recording

Subjective data

- Denies any unusually frequent or severe headache. No history of head injury, dizziness or syncope, no neck pain limitation of motion, lumps or swelling.

Cont…d

Objective data

- Head- Norm cephalic, no lumps, no lesion, no tenderness.
- Face – symmetric, no weakness, no involuntary movements.
- Neck – full ROM, No pain, symmetric no lymphadenopathy or masses, trachea midline, thyroid no palpable. No bruits.

Nursing Diagnosis

- Impaired swallowing related to neuromuscular impairment as evidenced by weight loss.
- Body image disturbance related to loss of body parts/function as manifested by hiding or over exposing body parts.

Thank you for your attention!!!