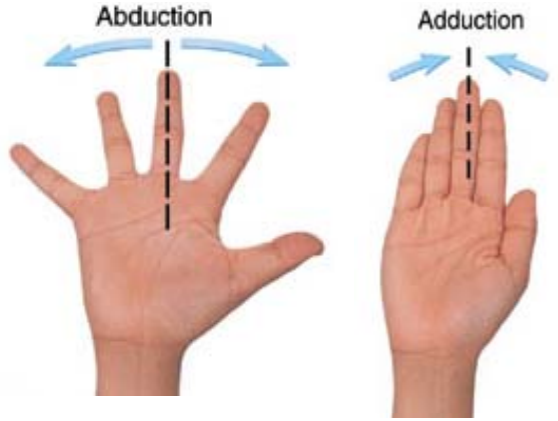
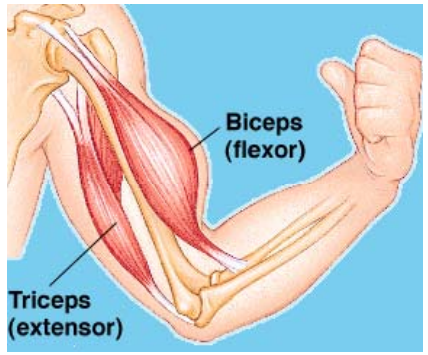
NAMING MUSCLES

(I) Muscle movement terms



•**Abductor**: carries extremity away from the median plane of body . Eg: adductor muscles of the hip is a group of muscles of the thigh.

•**Adductor:** carries extremity towards the median plane of body.Eg: adductor muscles of the hip.



•**Flexor:** contracts & bends the limb, acute angulation between 2 parts. Eg: biceps

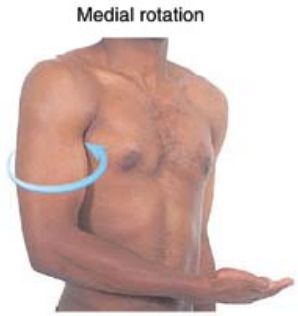
•**Extensor**: contracts & straightens the limb, obtuse angulation between 2 parts. Eg: triceps

•**Levator:** muscle that serves to raise a body part. Eg: levator scapulae, situated at the back and side of the neck.

•**Depressor:** muscle that lowers a body part.Eg: Depressor Supercilii is an eye muscle of the human body.

•**Rotator:** turns a bone on its own axis. Eg: scapular rotator muscle .

•**Supinator**: movement of the forearm & hand so that the palm faces forward or upward and the radius lies parallel to the ulna. Eg: supinator muscle of the forearm.

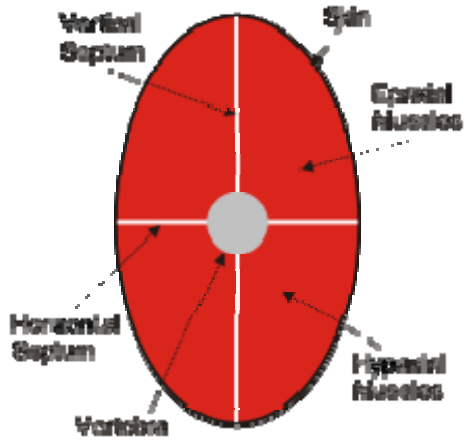


•**Pronator:** rotation of the hand and forearm so that the palm faces backwards or downwards.Eg: pronator teres in the forearm

•**Dorsiflexion:** bends foot upward at the ankle

•**Plantar flexion:** bends foot downward at the ankle

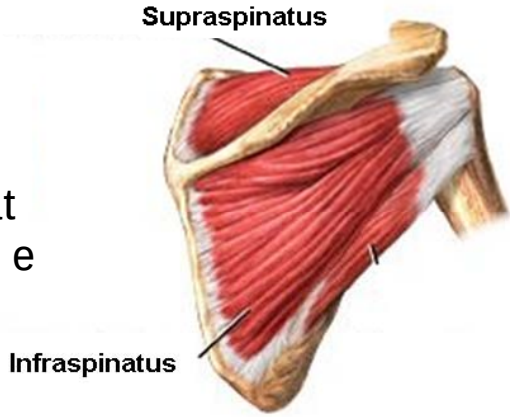
(II) Muscle location terms



- **Pectoral:** muscles that connect the front walls of the chest with the bones of the upper arm and shoulder.Eg: Pectoralis major.
- **Epaxial**: muscles which lie dorsal (posterior) to the vertebral column developing from the somite myotome. Eg: iliocostalis muscles.
- **Hypaxial** : Muscles that lie ventral (anterior) to the vertebral column developing from the somite myotome. These muscles contribute both trunk and limb skeletal muscle.
- **Intercostal:** short muscles that extend between the ribs.Eg:intercostalis
- **Infraspinatus:** a muscle that occupies the chief part of the infraspinous fossa of the scapula, rotates the arm laterally.
- **Supraspinatus:** a muscle of the back of the shoulder that arises from the supraspinous fossa of the scapula, helps to abduct the arm

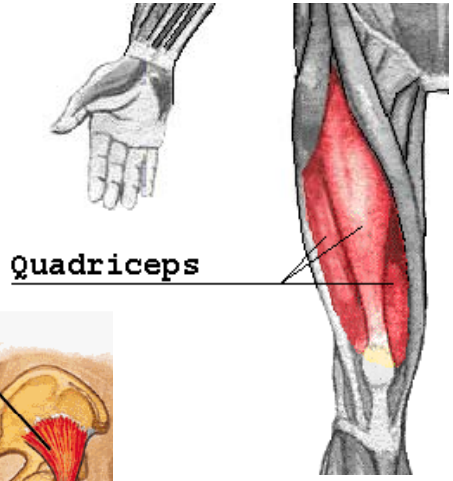
(III)Muscle fiber directional terms

- **Oblique and Rectus:** They lie within the body wall, between the spinous processes of vertebrae and the ventral midline. Oblique muscles compress underlying structures or rotate the vertebral column. Rectus muscles are important flexors of the vertebral column, acting in opposition to the erector spinae.Eg: external abdominal oblique, rectus abdominis
- **Transverse:** Transversus abdominis, so called for the direction of its fibers is the innermost of the flat muscles of the abdomen.
- **Sphincter:** circular groups of muscle fibres which upon contraction close the circle they have formed and may not be attached to bones at all. Sphincter muscles are openings between esophagus and stomach, e stomach and small intestines, walls of the anus, urethra and mouth



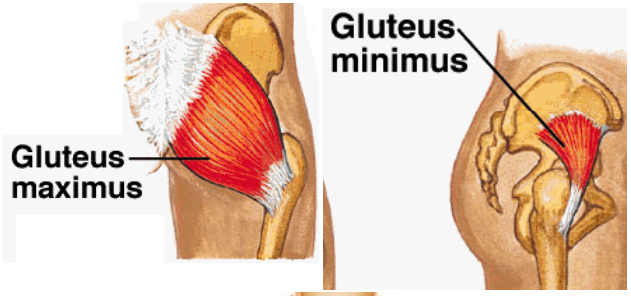
(IV) Number of muscle division terms

- **Biceps:** a muscle having two heads.Eg: biceps brachii.
- **Triceps:** a muscle with three heads.Eg: triceps brachii .
- **Quadriceps:** a muscle with four heads. Eg:quadriceps femoris



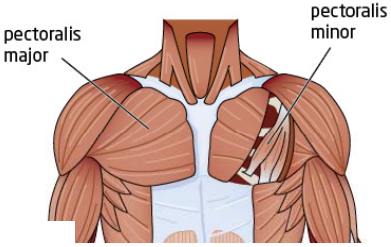
(V) Muscle size terms

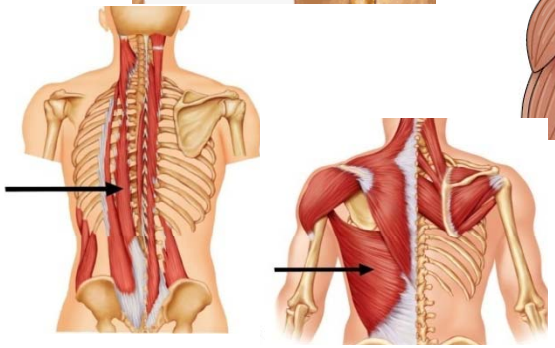
- **Minimus:** small, Eg: gluteus minimus
- **Maximus:** large, Eg:gluteus maximus



(V) Muscle size terms

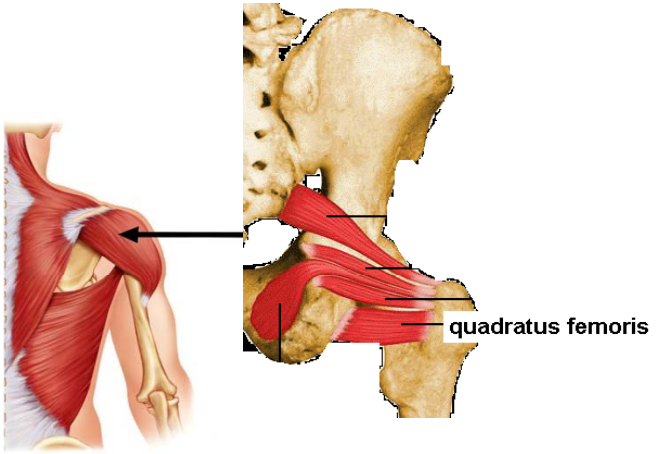
- **Major:** thicker, Eg: pectoralis major
- **Minor:** thinner, Eg: pectoralis major
- **Latissimus:**wider. Eg:latissimus dorsi
- **Longissimus:** long, narrow, Eg: Longissimus

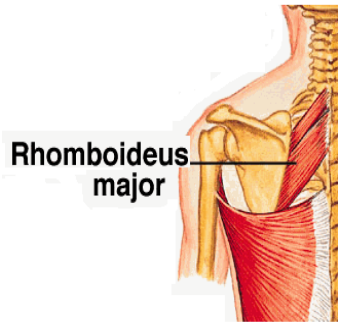




(VI) Muscle shape terms

- **Deltoid:** triangular, forming the rounded contour of shoulder.
- **Quadratus:** irregular and quadrilateral in shape. Eg: quadratus femoris
- **Rhomboideus:** rhomboid (diamond-shaped) in outline. Eg: rhomboideus major





Muscles can be classified by action

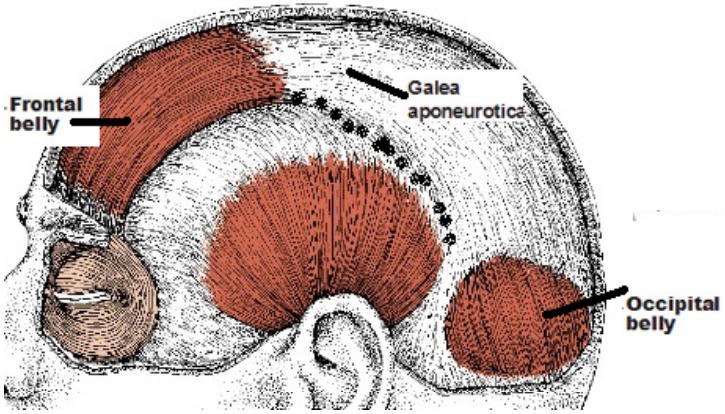
Agonist (prime mover): muscle that exerts the majority of force in a particular movement. When we bend our elbow, the biceps muscle is the agonist.

Antagonist: An antagonist muscle works in opposition to the agonist. They help to return the body part to the original position. They moderate the speed and the range of the agonist, which helps to protect the body from damage to muscles or joints. Triceps along the back of the upper arm is the antagonist to the biceps. While the biceps is the agonist & triceps is the antagonist when we bend the elbow, their roles reverse when we straighten our elbow ie triceps becomes the agonist and the biceps the antagonist.

Synergist:Most agonist muscles have other muscles that aid the motion made by the agonist. Muscles that work additively to the agonist are known as synergist muscles. In addition to adding strength to the agonist, it helps to stabilize the movement or to restrict the range of movement of the agonist.Eg: latissimus dorsi muscle is a large trunk muscle that extends, adducts, and medially rotates the arm at the shoulder joint. A much smaller muscle, teres major muscle, assists in starting such movements when the shoulder joint is at full flexion.

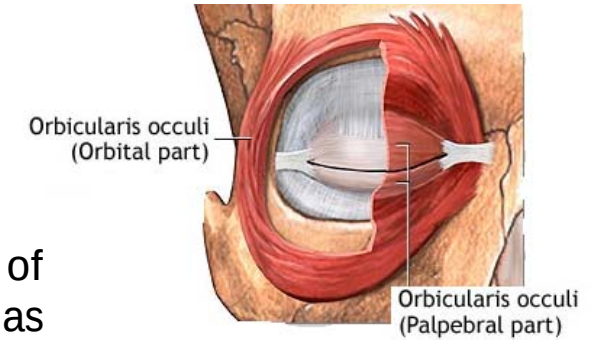
Fixator: They prevent the bone from moving in an unwanted direction. Eg: during bending of elbow, biceps does the major work. Biceps connects to the scapula at its origin and on the radius at its insertion. Fixator muscles attached to scapula prevent it from moving when the biceps contracts, ensuring that the energy of the biceps concentrates on moving the radius, not the shoulder blade.

MUSCLES OF THE SCALP



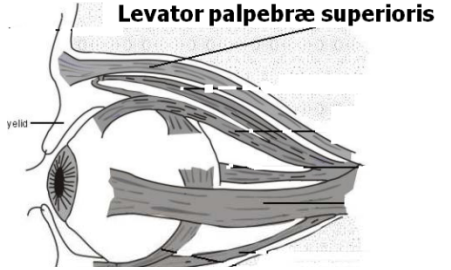
Occipitofrontalis (epicranius):covers parts of skull, from occipital bone to eyebrow. Consists of 2 parts- Occipitalis & Frontalis (occipital & frontal belly), connected by an intervening galea aponeurotica (epicranial aponeurosis).

- **Frontalis:** (i) raise eyebrows & the skin over the root of the nose, (ii) draw the scalp forward, throwing skin of forehead into transverse wrinkles. **Occipitalis:** draw the scalp backward. By bringing alternately into action the Frontales and Occipitales the entire scalp may be moved forward and backward.
- Facial expression muscles: Expression of surprise, fright.

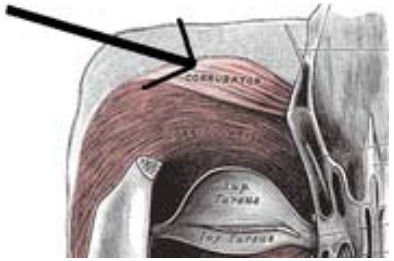


MUSCLES OF THE EYELID

Orbicularis oculi (Orbicularis palpebrarum) : sphincter muscle of the eyelids. Palpebral portion acts involuntarily, closing lids gently, as in sleep or in blinking; the orbital portion is subject to the will.upper fibers of orbital portion blend with the Frontalis and Corrugator. It closes eyelids and also aids in passage and drainage of tears.



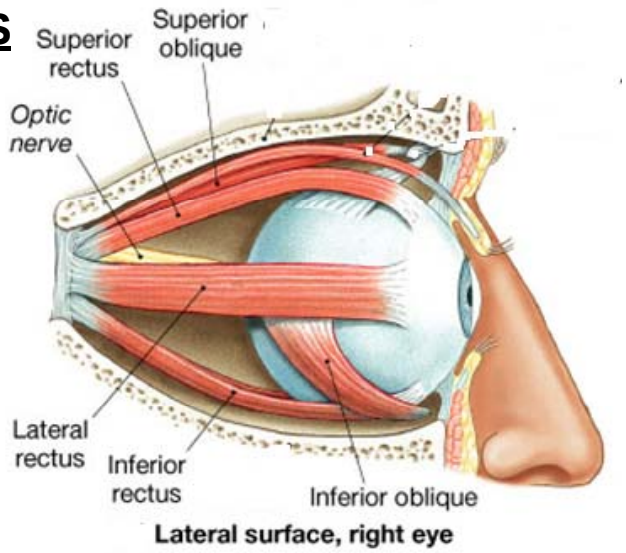
Levator palpebræ superioris: Muscle in the orbit that elevates and retracts the superior (upper) eyelid.Direct antagonist of orbicularis oculi



Corrugator(Corrugator supercilii): Small, narrow, pyramidal muscle, placed at the medial end of the eyebrow. It draws the eyebrow downward and medialward, producing the vertical wrinkles of forehead.It is “Frowning” muscle,principal muscle in the expression of suffering.

EXTRINSIC EYE (OCULOMOTOR/ EXTRA-OCULAR) MUSCLES

- Busiest muscles, constantly moving the eye in order to follow a target for a sharp distinct vision.
- 6 extraocular muscles in each eye-rotates eye vertically, horizontally and antero-posterior-Inferior & superior rectus muscles, Lateral & medial rectus muscles, Inferior & superior oblique muscles



Lateral surface, right eye

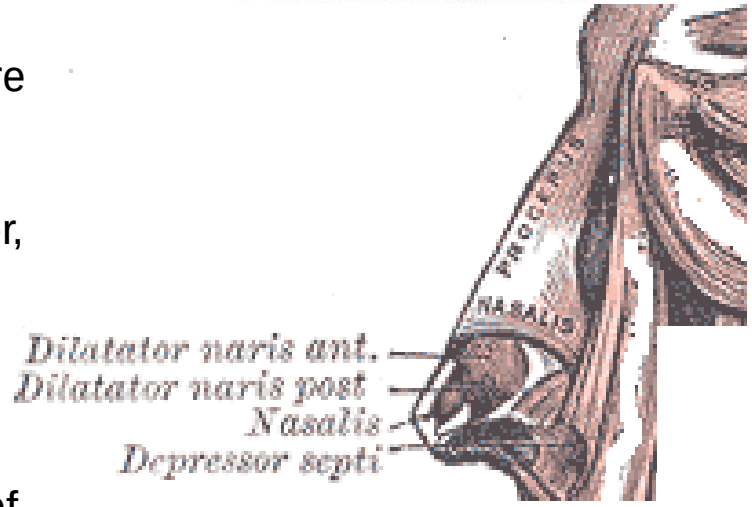
MUSCLES OF THE NOSE

Procerus: draws down the medial angle of eyebrows and produces transverse wrinkles over the bridge of the nose.

Nasalis: depresses the cartilaginous part of nose.

Dilatator naris posterior & anterior: enlarge the aperture of nares. In ordinary breathing, they help to resist the tendency of nostrils to close from atmospheric pressure, but in difficult breathing & even in some emotions, such as anger, they contract strongly.

Depressor septi:direct antagonist of the other muscles of the nose; helps in constriction of the aperture of the nares.



MUSCLES OF THE MOUTH

Quadratus labii superioris: elevator of upper lip, dilator of naris, assists Caninus in producing the nasolabial furrow, giving expression of sadness.

Caninus: produces the nasolabial furrow

Mentalis: raises & protrudes the lower lip, & at the same time wrinkles the skin of chin, expressing doubt or disdain.

MUSCLES OF THE MOUTH

Quadratus labii inferioris: draws the lower lip directly downward and a little lateralward, as in expression of irony.

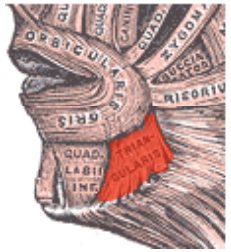
Zygomaticus: draws the angle of the mouth backward and upward, as in laughing.

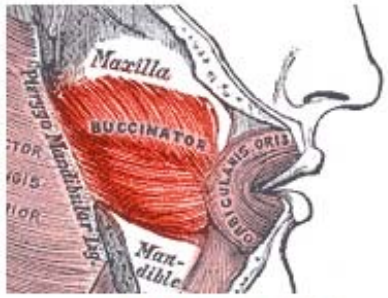
Triangularis: depresses the angle of mouth, being the antagonist of Caninus & Zygomaticus. Platysma which retracts & depresses the angle of the mouth belongs with this group.

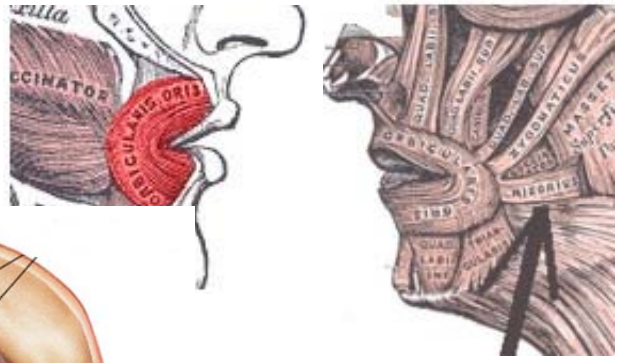
Buccinator: compress cheeks, so that, during mastication, food is kept under immediate pressure of teeth. When cheeks are distended with air, Buccinator expels it from between the lips, as in blowing a trumpet(*buccina,* a trumpet).

Orbicularis oris: affects direct closure of the lips, bringing lips together

Risorius: retracts the angle of the mouth, produces an unpleasant grinning expression.

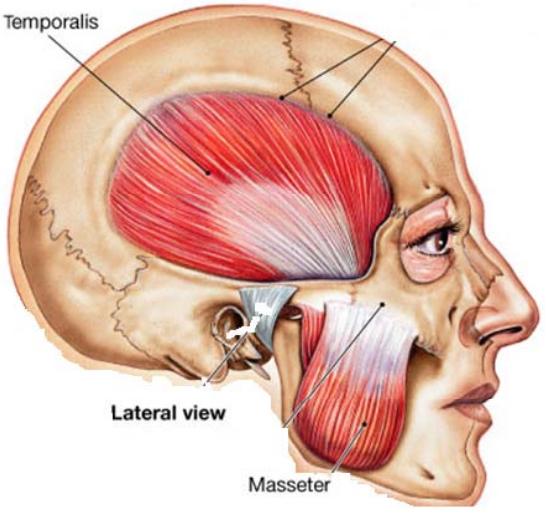


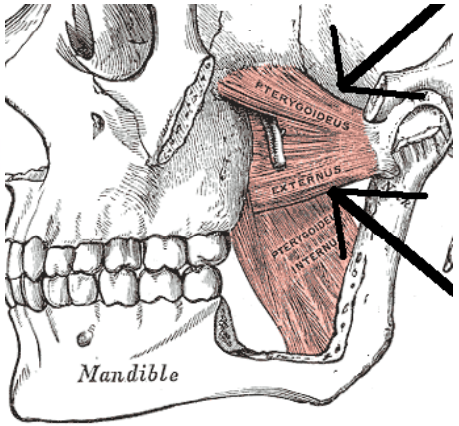




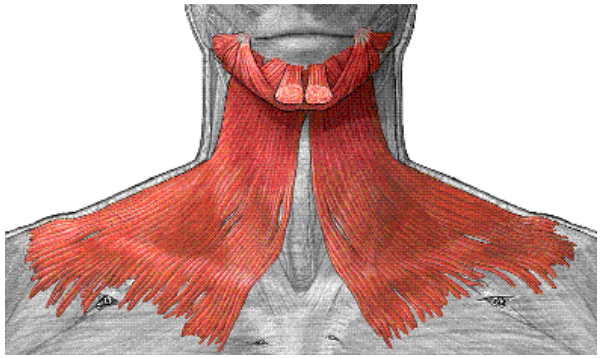
MUSCLES OF MASTICATION:

- **Masseter, Temporalis, Pterygoideus internus (Internal pterygoid muscle)→** All 3 muscles help to raise the mandible against the maxillæ with great force.
- **Pterygoideus externus :** assists in opening the mouth, so that mandible is protruded, assisted by Pterygoideus internus
- Muscles of mastication are supplied by the mandibular nerve.

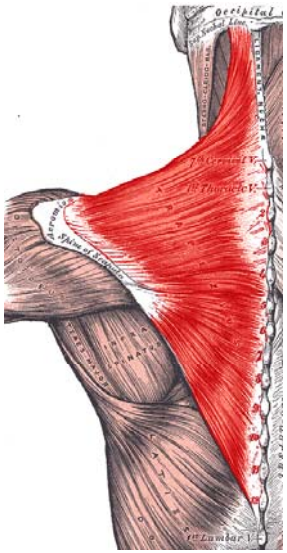




ANTERO-LATERAL MUSCLES OF THE NECK



Superficial Cervical Muscle-Platysma: When entire Platysma is in action, it produces a slight wrinkling of the surface of the skin of the neck in an oblique direction. It depresses the lower jaw & also serves to draw down the lower lip and angle of the mouth in the expression of melancholy.



Lateral Cervical muscles-

(i) Trapezius: move the shoulder blade in toward the spine, as well as up and down, rotate the shoulder blade so that the topmost part of upper arm faces up, bring head and neck in a backward direction, rotate and side bend the neck. Also accessory breathing muscle.

(ii) Sternocleidomastoideus : so-named as it originates on sternum (sterno) and clavicle (cleido).Both sides flex the head and neck forward.Left side causes rotation of head to the right while right side cause rotation of head to the left.