Sternocleidomastoid) this muscle extends from the clavicle and the sternum to the mastoid region of the skull.

Omohyoid) attaches to the scapula, the clavicle and 1st rib, and the hyoid bone.

Muscles of the Vertebral Column

Erector spinae) these muscles include superficial and deep layers.

The superficial layer can be divided into **spinalis, longissimus,** and **ilocostalis** groups. In the inferior lumbar and sacral regions, the boundary between the lonissimus and the ilocostlis muscles is indistinct. When contracting together, the erector spinae extend the vertebral column.

Deep to the spinalis muscles, smaller muscles include the **semispinalis** group; the **multifidus** muscle; and the **interspinales**, **intertransversarii**, and **rotators** muscles. In various combos, they produce slight extension or rotation of the vertebral column. If injured these muscles can start a cycle of pain→muscle stimulation→contraction→pain.

The muscles of the vertebral column include many posterior extensors, but few anterior flexors. Only a few spinal flexors are associated with the anterior surface of the vertebral column. In the neck, the **longus capitis** and the **longus colli** muscles rotate or flex the neck, depending on whether the muscles of 1 or both sides are contracting.

In the lumbar region, the large **quadratuslumborum** muscles flex the vertebral column and depress the ribs.

Oblique and Rectus Muscles

These muscles lie within the body wall, between the spinous processes of the vertebrae and the ventral midline.

The oblique and rectus muscle groups share embryological origins, and we can divide these groups into cervical, thoracic, and abdominal regions.

The oblique group includes **scalene** muscles of the neck. and the **intercostal** and **transversus** muscles of the thorax.

(anterior, middle, and posterior) elevate the 1st two pair of ribs and assist in flexion of the neck. In the thorax, the oblique muscles extend between the ribs, with the **external intercostal** muscles. Both groups of the intercostal muscles aid in respiratory movements of the ribs.

A small **transversus thoracis** muscle crosses the inner surface of the rib cage by the parietal pleura, a *serous membrane*.

The basic pattern of musculature extends unbroken across the abdominopelvic surface. Here the muscles are called the **external oblique, internal oblique, traversus abdominus,** and **rectus abdominis** muscles ("the abs"). The rectus abdominis inserts at the xiphoid process and originates near the pubic symphysis, this muscle is longitudinally divided by the **linae alba** (white line), a median collagenous partition.

Muscles That Move the Thigh

Gluteal muscles cover the lateral surface of the *ilia*.

Gluteus maximus) the largest and most posterior of the gluteal muscles. Its origin includes parts of the ilium; the sacrum, coccyx, and associated ligaments; and the thoracolumbar fascia. Acting alone this massive muscle produces extension and lateral rotation at the hip joint.

The gluteus maximus share an insertion with the.....

Tensor fasciae latae) it originates on the iliac crest and the anterior superior iliac spine.

Together these 2 muscles pull on the.....

Iliotibial tract) a band of collagen fibers that extend along the lateral surface of the thigh and inserts on the tibia. Helps balancing on 1 foot.

Gluteus medius and the **Gluteus minimus** muscles originate anterior to the origin of the gluteus maximus and insert on the *greater trochanter* of the femur.

Lateral rotators) originate at or inferior to the horizontal axis of the acetabulum.

There are 6 lateral rotator muscles in all:

- **Piriformis** muscle and the **Obturator** muscles are dominant.
  - The **Adductures** originate inferior to the horizontal axis of the acetabulum.
    - ***Adductor mangus*** (adduction and flexion, or adduction and extension, medial or lateral rotation at the hip)
    - ***Adductor brevis***
    - ***Adductor longus***
    - ***Pectineus***
    - ***Gracilis***

All but the adductor mangus originate both anterior and inferior to the joint, so they perform hip flexion as well as adduction. All the other muscles, which insert on low ridges of the posterior surface of the femur, produce medial rotation. (this is where a *pulled groin*(strain) occurs in 1 of these adductors

A pair of muscles controls the internal surface of the pelvis.

Psoas major) originates alongside the inferior thoracic and lumbar vertebrae. Its insertion lie on the lesser trochanter of the femur. Before reaching this insertion its tendons merge with that of the.....

Iliacus) which nestles within the iliac fossa.

These 2 powerful flexors are often grouped together and collectively referred to as the **iliopsoas**.