AXIAL MUSCLES OF HEAD AND TRUNK

11/19/81, rvsd 2 Dec 1999, 21 Nov 01, 17 Nov 03, 19Nov07, 17Nov08, 16Nov09
S&M, p. 209, Martini 5th, 320-335, Kapit and Elson: pl 27-26, Martini 6th: 340-357, Martinii 7th: 334-349, 8th: 341-358

600 muscles in body, named for: shape, location, action, attachments; divisions, number, relationship, size

HEAD AND NECK: (p 346) facial muscles move skin, not bone, facial expression. arise fr bone or superficial fascia, insert into skin

- **orbicularis oculi** — sphincter around eye, winks, squints, closes
- **orbicularis oris** — closes mouth, purses lips
- **epicranius:** — two parts: **frontalis** & **occipitalis**, attach to galea aponeurotica, moves scalp
- **corrugator** — draws eyebrows together, frown
- procerus — wrinkles skin between eyebrows
- **mentalis** — pouting muscle
- risorius — draws mouth laterally (means laughter)
- **zygomaticus major & minor** — raise angle of mouth, smiling
- **platysma** — superficial muscle of neck, orig in fascia of deltoid & pectoralis tightens neck, depresses mandible

MASTICATION: (p349, 350)

- **temporalis** — fan shaped — **origin** frontal, temporal, parietal; **insertion** coronoid process and mandibular ramus (near articulation with mandibular fossa)
- **masseter** — four sided, orig in zygomatic arch, to angle and ramus of mandible
- **pterygoid** — lateral and medial: positions jaw, side wise grinding, protrusion of jaw
- **buccinator** — positions food for chewing

Tongue: **many have "gloss-" on name: intrinsic** (shape of tongue) and **extrinsic** (movement of tongue)

THROAT: (p 352, under platysma)

sternocleidomastoid major muscle of neck, marks anterior, posterior triangles of neck, **orig**: manub & clavicle, **inserts**: mastoid p.

Anterior triangle of neck deep muscles move the hyoid bone**:**

- suprahyoid — attaches to styloid process, mandible, inserts into hyoid, moves up&down during swallowing
- infrahyoid — attach to manubrium, clavicle, thyroid cartilage of larynx, etc, pull down on hyoid and larynx following swallowing

Posterior triangle of neck: posterior border: **trapezius**, lower: **clavicle**, front: **sternocleidomastoid**.

- Scalenes — fr top 2 ribs to transverse process of cervical vert
- **splenius capitis** — **"bandage muscle**," holds down deeper muscles of neck
  - **insert** in mastoid process, occipital and transverse proc of 1st 3 cerv vert.
  - **orig in spinous processes** of upper thoracic and **7th cerv vert and**
- **ligamentum nuchae:** — sail-like ligament, attach to midline of occipital and spines of cervical vertebra. anchors many post neck muscles, inhibits neck fr flexion

VERTEBRAL COLUMN: (p 353) (each of these groups is subdivided according to points of insertion.)

- **erector spinae:** — principal movers of back, cause muscle spasms **of back and low** back pain
  - e.s. spinalis — go from spinous processes to same of other vertebrae
  - e.s. longissimus — from transverse processes to same of other vert.
  - e.s. iliocostalis — from crest of sacrum or iliac crest to ribs
- **rectus abdominus** — act to flex the spine
- **quadratus lumborum** — from iliac crest to lumbar transverse processes and12th rib

Deep Thoracic muscles: ribs slope down, thus as they are raised, thoracic cavity volume increases.

- **external intercostal** — inhalation — raise the ribs — fibers run down and forward
- **internal intercostal** — exhalation — pull ribs down — fibers run down and backward

ABDOMINAL WALL (p 355)

- **rectus abdominus** — **tendinous inscriptions** run across: three transverse fibrous bands, **linea alba** vertically

Three layers of muscles in the side (note in bacon):

- **external abdominal oblique** — extension of ex. intercostal, fibers *down medially*.
- **internal abdominal oblique** — **fibers** run mostly *upwards, medially* (down inguinal canal, forms **cremaster**)
- **transversus abdominis** — deepest, encircles abdominal cavity

All three form broad aponeuroses, inserts into **linea alba**

aponeuroses form inguinal ligament at lower margins (runs from pubic tubercle to ant sup iliac spine)

- **Inguinal canal** — **opening** between muscle fascia and ligament runs ensheathed by fascia of obliques.
  (**Men: Inguinal hernia** due to excess intra abdominal pressure, intestine enters canal)
- **quadratus lumborum** — posterior portion of abdominal wall, iliac crest to 12th rib and lumbar transverse processes

The above four muscles aid in forced expiration, defecation and urination

FLOOR OF ABDOMINOPELVIC CAVITY (p 357)

genitalia & coccygeus openings through these for rectum, urethra, vagina

muscular floor called **pelvic diaphragm**

- **levator ani** — tenses pelvic floor, raises anus
- **ischiocavernosus** — compress, stiffen penis, clitoris,
- **bulbospongiosus** — ejects urine and semen. Narrows vaginal opening, stiffens clitoris