CADAVER DISSECTION – BACK REGION (Superficial, Intermediate, & Deep Back)

All of the terms indicated below in BOLD print should be identified during the student’s oral presentation on this region.

PROCEDURE:
I. SURFACE ANATOMICAL LANDMARKS – Prior to dissection, identify the following surface anatomical landmarks of the back region: external occipital protuberance, vertebra prominens, spinous processes T1-L5, Spine of scapula, acromion of scapula, medial border of scapula, inferior angle of scapula, and iliac crest.

II. SUPERFICIAL VESSELS & NERVES – Determine the location of any major superficial veins or superficial nerves in your area of dissection to avoid damaging these structures as you dissect.

Although there are no major superficial veins in the back region, you will observe, as you remove the skin, some superficial nerves passing through the deep fascia to supply the skin.

III. REMOVAL OF SKIN – Using the following steps, remove the skin from the median line of the cervical, thoracic, and lumbar regions of the vertebral column laterally.

A. Incision Lines - Use a marking pencil to outline the incision lines (illustrated on the handout). Use a scalpel blade to cut through the skin. Insert a smooth probe under the skin along the remaining incision lines (instructor will demonstrate). When making your remaining incision, only cut to the smooth probe to avoid damaging superficial structures deep to the skin.

   Median Incision Line – Cut the skin along the median line from the external occipital protuberance to L5.

   Lateral Incision Lines
      Superior Cut – Cut the skin laterally from the external occipital protuberance in a lateral and inferior direction along the superior border of the scapula to the acromion process.
      Inferior Cut – Cut the skin laterally from L5 along the iliac crest to the midaxillary line.

B. Locate the Epimysium of the Gluteal Muscles - Use a smooth probe to locate the separation between the superficial fascia and the deep fascia. Using the smooth probe and your fingers (avoid using the scalpel blade unless absolutely necessary), remove the skin from the median line to the proximal and midaxillary line of the thorax and abdomen.

   * Avoid cutting into the fibers of the trapezius and latissimus dorsi muscles.

IV. MUSCLE IDENTIFICATION AND SEPARATION
SUPREFICIAL EXTRINSIC BACK MUSCLES

A. Trapezius – Identify the outline of the trapezius muscle and separate the inferior margin from the underlying tissue. Cut through the origin of the trapezius muscle beginning at vertebral level T12. Use a smooth probe to separate the trapezius muscle from deeper muscle prior to cutting the trapezius. At vertebral level T6, locate the origin of the rhomboideus major muscle deep to the trapezius. * Avoid cutting the rhomboideus major
and minor muscles deep to the trapezius. Continue cutting the origin of the trapezius muscle up to the occipital bone.
Reflect the muscle away from its origin identifying the accessory nerve on the inner superior surface of the muscle.

B. Rhomboideus – Identify the rhomboideus major and rhomboideus minor muscles. Cut through the origin of the both rhomboideus muscles as they attach to the vertebral column. Begin at vertebral level T6 and continuing up to vertebral level C7. * Avoid cutting the serratus posterior superior muscle located just deep to the rhomboideus muscles. Identify the dorsal scapular nerve on the inner medial surface of the rhomboideus muscles.

C. Levator scapulae – Identify the levator scapulae muscle originating from the transverse processes of the upper cervical vertebrae and inserting into the superior portion of the medial border of the scapula.

D. Latissimus dorsi – Identify the superior border of the latissimus dorsi muscle originating from vertebral level T6. Begin to cut through the origin of the latissimus dorsi muscle beginning at the superior border. * Avoid cutting the serratus posterior inferior muscle deep to the latissimus dorsi. Continue to cut through the origin in an inferior direction at the attachment of the muscle to the vertebral column. Continue to vertebral level L4. The fascia which attaches the latissimus dorsi muscle to the vertebral column and the iliac crest is termed the thoracolumbar fascia. Locate the lateral border of the latissimus dorsi as it originates from the iliac crest. Reflect the muscle laterally to reveal the serratus posterior inferior muscle.

*With trapezius and latissimus dorsi muscles reflected laterally, identify the following.

E. Supraspinatus muscle – Identify the supraspinatus muscle located superior to the spine of the scapula.

F. Infraspinatus muscle – Identify the infraspinatus muscle located inferior to the spine of the scapula.

G. Teres minor muscle – Identify the teres minor muscle originating from the lateral border of the scapula. The fibers of the teres minor muscle and infraspinatus both run in the same lateral direction inserting on the greater tubercle of the humerus.

H. Teres major muscle – Identify the teres major muscle originating from the inferior angle of the scapula. The fibers of the teres major muscle and latissimus dorsi muscle both run in the same lateral and superior direction inserting near the intertubercular sulcus on the anterior surface of the humerus. Note that the long head of the triceps brachii muscle passes between the teres minor and teres major muscles to insert on the infraglenoid tubercle of the scapula.

INTERMEDIATE EXTRISIC BACK MUSCLES

I. Serratus posterior superior muscle – Identify the serratus posterior superior muscle deep to the rhomboideus muscles.

J. Serratus posterior inferior muscle – Identify the serratus posterior inferior muscle deep to the latissimus dorsi muscle.

DEEP INTRINSIC BACK MUSCLES

K. Splenius capitis muscle – Identify the splenius capitis muscle located medial to the levator scapulae muscle. The fibers of the splenius capitis muscle run superior and lateral from the origin at the vertebral column.
L. **Semispinalis capitis muscle** – Identify the semispinalis capitis muscle located medial to the splenius capitis muscle in the neck region.

M. **Erector spinae** – Identify the erector spinae muscles as they lie in the grooves of “gutters” on either side of the vertebral column. Remove the fascia which covers this muscle to reveal the three muscular columns. Identify the three columns of the erector spinae from medial to lateral: *spinalis, longissimus*, and *iliocostalis*.

**OTHER MUSCLES**

N. **Deltoid** – Identify the posterior portion of the deltoid muscle as it originates from the spine of the scapula.

O. **Serratus anterior** – Identify the inferior border of the serratus anterior muscle, deep to the latissimus dorsi, as the fibers of this muscle curve around the lateral portion of the thorax. The fibers of this muscle run superior and medial on the posterior portion of the thorax to insert on the underside portion of the medial border of the scapula.

**V. NERVE IDENTIFICATION**

A. **Accessory nerve** – Identify the accessory nerve, cranial nerve # XI, on the underside of the trapezius muscle.

B. **Dorsal scapular nerve** – Identify the dorsal scapular nerve on the underside of the rhomboideus muscles.

C. **Thoracodorsal nerve** – Identify the thoracodorsal nerve on the underside of the latissimus dorsi muscle.