CADAVER DISSECTION – POSTERIOR LEG REGION

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 posterior leg region: **head of the fibula, medial condyle of the femur, calcaneal tendon (Achilles tendon), medial malleolus of the tibia, lateral malleolus of the fibula, calcaneus bone.**

II. SUPERFICIAL VESSELS & NERVES – Determine the location of any major superficial veins or nerves in your area of dissection to avoid damaging these structures as you dissect.
* Locate the small saphenous vein as it arises posterior to the lateral malleolus and passes along the posterior portion of the leg to enter the popliteal fossa. Locate the great saphenous vein in the subcutaneous tissue on the medial side of the leg. Locate the common fibular nerve on the lateral side of the popliteal fossa as it curves around the head of the fibula. Locate the sural nerve as it arises from the common fibular and tibial nerves and accompanies the small saphenous vein.

III. REMOVAL OF SKIN – Using the following steps, remove the skin from the median line of the posterior leg medially and 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.
   * **Proximal Incision Line** – Cut the skin from a midpoint behind the knee, within the popliteal fossa, both laterally and medially.
   * Avoid damaging the great saphenous vein on the medial side of the knee, the small saphenous vein entering the popliteal fossa from the posterior leg, and. The common fibular nerve on the lateral side of the popliteal fossa.

   **Posterior Midline Incision Line of Leg** – Be careful not to damage the small saphenous vein and the sural nerve alongside the vein as you make this midline incision. Cut the skin from the proximal incision line distally along the posterior midline of the leg to the heel (calcaneus bone).

   **Distal Incision Line** – At the midline just posterior to the lateral malleolus and medial malleolus, cut the skin medially and laterally to these surface anatomical features. * the origin of the small saphenous vein is located posterior to the lateral malleolus.

B. Locate the **Crural Fascia** – Use a smooth probe to locate the separation between the superficial fascia and deep fascia **(crural fascia)**. Using the smooth probe and your fingers (avoid using the scalpel blade unless absolutely necessary), remove the skin from the posterior midline incision line in both the medial and lateral directions revealing the crural fascia. Identify the small saphenous vein and sural nerve.
IV. MUSCLE IDENTIFICATION AND SEPARATION:
After identifying the small saphenous vein and sural nerve, expose the muscles of the posterior compartment of the leg by making a longitudinal cut through the crural fascia along the midline of the leg.

SUPERFICIAL MUSCLES OF THE POSTERIOR COMPARTMENT OF THE LEG
A. Gastrocnemius – Identify the two bellies of the gastrocnemius muscle in the proximal portion of the posterior leg.

B. Soleus – Identify the soleus muscle deep to the gastrocnemius muscle. The gastrocnemius and soleus muscles have a common insertion on the calcaneus bone. The tendon formed by these two muscles as it inserts on the calcaneus bone is termed the calcaneal tendon.

DEEP MUSCLES OF THE POSTERIOR COMPARTMENT OF THE LEG
To reveal the deep muscles of the posterior compartment of the leg, cut through the calcaneal tendon approximately four centimeters above its attachment to the calcaneus bone. * Prior to cutting the calcaneal tendon, identify the thin tendon of the plantaris muscle located deep to the calcaneal tendon.
C. Flexor hallucis longus – Identify the flexor hallucis longus muscle on the lateral side of the posterior leg. Follow the tendon of this muscle as it passes posterior to the medial malleolus.

B. Flexor digitorum longus – Identify the flexor digitorum longus muscle on the medial side of the posterior leg. Follow the tendon of this muscle as it passes posterior to the medial malleolus.

C. Tibialis posterior – Identify the tibialis posterior between the flexor hallucis longus and the flexor digitorum longus muscle on the proximal portion of the posterior leg deep to the soleus muscle. Follow the tendon of this muscle as it passes posterior to the medial malleolus.

• Note the arrangement of the tendons of the deep posterior leg muscles posterior to the medial malleolus. Moving from anterior to posterior, the tendons are arranged – tibialis posterior tendon, flexor digitorum longus tendon, flexor hallucis longus tendon (Tom, Dick, & Harry).

V. VESSEL IDENTIFICATION
Superficial Veins
A. Small saphenous vein (Previously mentioned) - Identify the small saphenous vein on the posterior surface of the leg region.
B. Great saphenous vein – Identify the great saphenous vein on the medial side of the leg.

Artery
C. Popliteal artery – Identify the popliteal artery within the popliteal fossa.
D. Posterior tibial artery – Identify the posterior tibial artery deep to the soleus muscle.
Trace this artery to a point posterior to the medial malleolus.

Deep Vein
E. Popliteal vein – Identify the popliteal vein within the popliteal fossa. * The small saphenous vein joins the popliteal vein within the popliteal fossa.
VI. NERVE IDENTIFICATION

A. **Sciatic nerve** – Identify the sciatic nerve as it enters the posterior thigh from the gluteal region. Follow the nerve deep to the hamstring muscle until it separates into the common fibular (peroneal) nerve and the tibial nerve. The sciatic nerve is actually the common fibular nerve and the tibial nerve combined inside a connective sheath.

B. **Common fibular (peroneal) nerve** – Identify the common fibular nerve as it separates from the tibial nerve proximal to the popliteal fossa. Follow the course of the common fibular nerve as it passes laterally to curve around the head of the fibula.

C. **Tibial nerve** – Identify the tibial nerve as it separates from the common fibular nerve proximal to the popliteal fossa. Follow the course of this nerve as it enters the posterior portion of the leg region.