CADAVER DISSECTION – ANTERIOR LEG

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 on the anterior leg: patella, tibial tuberosity, head of fibula, crest of tibia medial malleolus, lateral malleolus.

II. SUPERFICIAL VESSELS – Determine the location of any major superficial veins or nerves in your area of dissection to avoid damaging these vessels and nerves as you dissect.
* The great saphenous vein is located on the medial surface of the lower limb. It originates anterior to the medial malleolus and extends up the medial surface of the leg. The saphenous nerve accompanies the vein on the medial surface of the leg.

III. REMOVAL OF SKIN – Using the following steps, remove the skin from the anterior leg.
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 medially and laterally from the point one centimeter proximal to the patella. * Avoid cutting the great saphenous vein on the medial side of the lower limb.

Anterior Incision Line – Cut the skin from the midpoint of the proximal incision line – along the crest of the tibia to the dorsal surface of the foot – approximately one centimeter proximal to the beginning of the toes.

Ankle Incision Line – Cut the skin medially and laterally from a point between the medial malleolus and the lateral malleolus. This cut should be just beneath the skin to avoid damaging the extensor retinaculum on the anterior surface of the ankle and the superficial veins. * Avoid cutting the great saphenous vein on the medial side at the ankle and the small saphenous vein on the lateral side at the ankle.

Distal Incision Line – Cut the skin medially and laterally from the end of the anterior incision line just proximal to the toes. * Avoid cutting the tendons of the muscles inserting on the dorsal surface of the foot.

B. Locate the Epimysium of the Anterior Leg Muscles – Use a smooth probe to locate the separation between the superficial fascia and deep fascia (termed crural lata in the leg). The crural fascia fuses with the anterior and lateral surfaces of the tibia. Using the smooth probe and your fingers (avoid using the scalpel blade unless absolutely necessary), remove the skin from the anterior incision line in both a medial and lateral direction.
• Locate the great saphenous vein in the subcutaneous tissue on the medial side of the leg and expose the vein from a point anterior to the medial malleolus to the medial side of the knee.
IV. MUSCLE IDENTIFICATION AND SEPARATION:
To expose the muscles on the anterior side of the leg, make a longitudinal cut through the crus
fascia just lateral to its attachment to the tibia. *Avoid damaging the inferior extensor
retinaculum on the anterior surface of the ankle and dorsal surface of the foot. You will need to
cut the superior extensor retinaculum in order to identify the tendons, vessels, and nerve deep to
the retinaculum. Identify the superior fibular nerve as it passes through the crus fascia to
supply the dorsal surface of the foot.

ANTERIOR COMPARTMENT OF THE LEG
A. Tibialis anterior – Identify the tibialis anterior muscle. Separates the tendon for this
muscle to its insertion on the medial side of the foot. The tendon will run deep to the
inferior extensor retinaculum.
B. Extensor digitorum longus – Identify the extensor digitorum longus muscle. Separate its
tendons to the dorsal surface of the foot. These tendons will run deep to the inferior
extensor retinaculum.
C. Extensor hallucis – Identify the tendon of extensor hallucis muscle as it merges between
the tibialis anterior and extensor digitorum longus muscles on the distal portion of the
anterior leg. The tendon of this muscle will run deep to the inferior extensor retinaculum.
D. Fibularis (peroneus) tertius – Identify fibularis (peroneus) tertius muscle just anterior to
the lateral malleolus.

LATERAL COMPARTMENT OF THE LEG
E. Fibularis (peroneus) longus – Identify fibularis (peroneus) longus muscle. Separate the
tendon for this muscle to a point posterior to the lateral malleolus.
F. Fibularis (peroneus) bravis – Identify the fibularis (peroneus) bravis muscle. This
muscle is located deep to the tendon of the fibularis longus in the distal portion of the leg.

V. VESSEL AND NERVE IDENTIFICATION
A. Great saphenous vein – Identify the great saphenous vein, an example of a superficial
vein, previously exposed.
B. Small saphenous vein – You may be able to identify the origin of the small saphenous
vein posterior to the lateral malleolus. The small saphenous vein is located on the
posterior surface of the lower limb. It originates near the lateral malleolus, continuing up
the posterior surface of the leg, entering the popliteal fossa, and connecting with the
popliteal vein.
C. Anterior tibial artery – Identify the anterior tibial artery located between the tibialis
anterior muscle and the extensor hallucis longus muscle. The deep fibular nerve
accompanies this artery. This artery continues into the dorsal portion of the foot to
become the dorsalis pedis artery. Identify this artery on the dorsal surface of the foot.
D. Deep fibular nerve – Identify the deep fibular nerve as it accompanies the anterior tibial
artery between the tibialis anterior and extensor hallucis longus muscles.
E. Superficial fibular nerve – Identify the superficial fibular nerve, as it emerges deep to
the fibularis longus muscle. This nerve supplies the muscles of the lateral leg and the
dorsal surface of the foot.