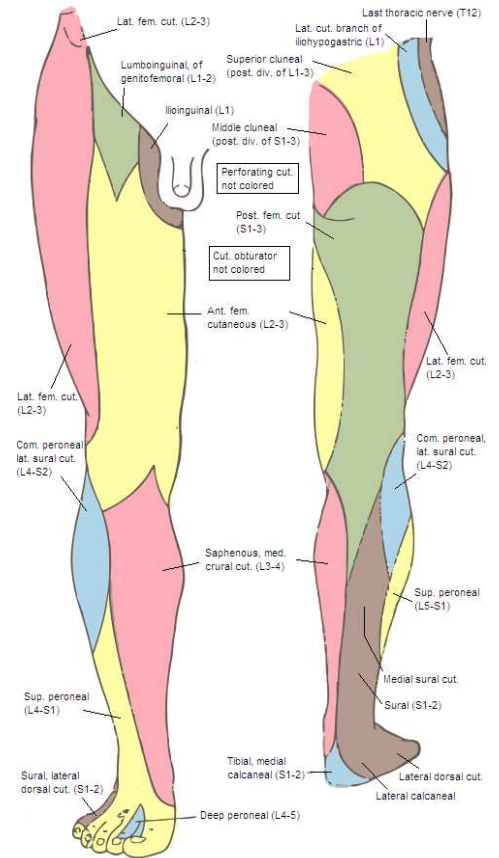
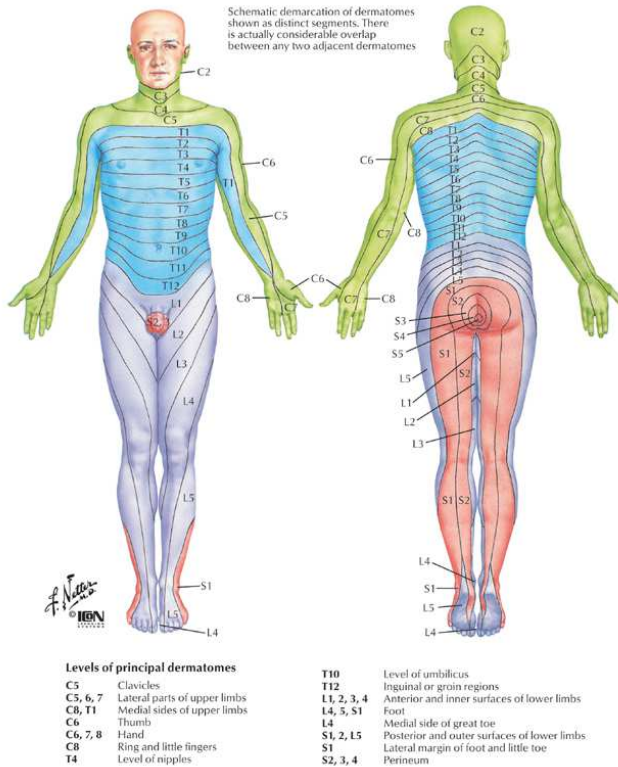


1 Anatomy – Lower limb – Nerves, Vessels, Lymphatics

NERVES



Myotomes

- Hip** Flexion L2/3; Extension L4/5
- Knee** Extension L3/4; Flexion L5/S1
- Ankle** Dorsiflexion L4/5; Plantarflexion S1/2
- Foot** Inversion L4/5; Eversion L5/S1
- Dorsiflexion L5/S1; Plantarflexion S1/2

Femoral Nerve (L2/3/4)

Largest branch lumbar plexus: posterior divisions anterior rami L2/3/4

- Muscles – ant thigh
- Artic – hip and knee
- Sens – antmed thigh
- Continues as saphenous to supply antmed knee/leg/foot

Course: formed in psoas major → deep to ing lig midpoint → splits into ant/post divisions → femoral triangle

Obturator Nerve (L2/3/4)

Anterior divisions L2-4 → formed in psoas major → crosses SI joint → obturator foramen → ant/post branches

- Muscles – ob externus, add mag, add long, add brevis, pectineus, gracilis
- Artic – hip and knee
- Sens – medial thigh

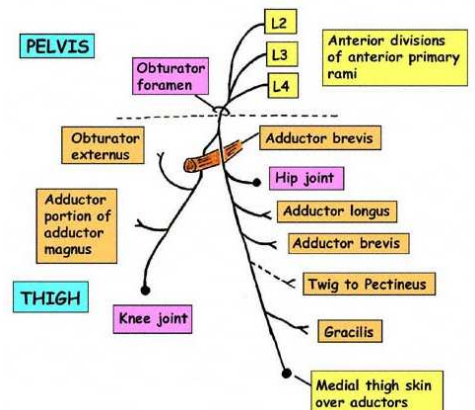
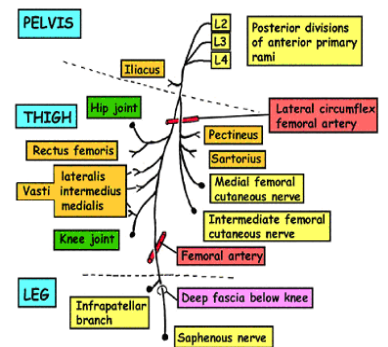
Superior Gluteal Nerve Supplies: gluteus med/min/TFL. No cutaneous innervation

Inferior Gluteal Nerve Supplies: gluteus maximus

Pudendal Nerve (S2/3/4)

Through lesser sciatic foramen, enter pudendal canal

Supplies pelvic floor and perineum (external anal sphincter, anal canal, post 2/3 scrotum/vulva, urethra and vagina)



Sciatic Nerve (L4/5/S1/2/3)

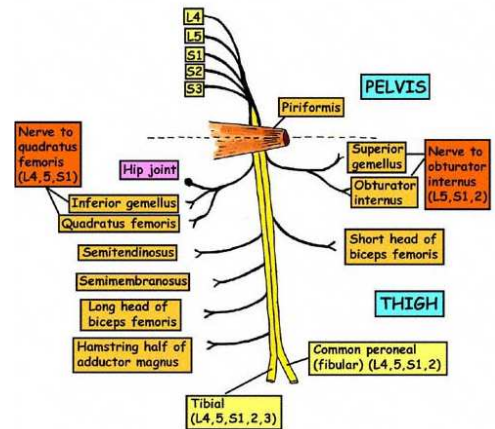
Largest branch sacral plexus

Course: formed at inf border Piriformis → greater sciatic foramen → under glut max → in thigh deep to biceps femoris → divides at apex popliteal fossa into tibial/common peroneal nerves

Musc – all post thigh muscles; ob internus, sup gemellus, quadratus femoris, inf gamellus; all muscles leg/foot
Artic - hip

Sens - most skin leg and foot

Lesion: loss all motor except adduction/flexion thigh and extension knee, loss sensation lower leg and foot



Common peroneal Nerve (L4/5/S1/2)

Foot drop (loss extensor muscles), High stepping gait

Can't evert (peroneus lonus and brevis)

Sensory loss – 1st web space, lat lower leg, dorsum foot

Tibial Nerve

Above apex popliteal fossa → Behind medial malleolus → Under flexor retinaculum divides into med/late plantar nerves

Cutaneous innervation: Medial plantar nerve → medial sole foot; Lateral plantar nerve → lateral sole foot

Also calcaneal branches

Loss of flexion toes and inversion foot

ARTERIES

Blood Supply to Hip

Trochanteric anastomosis (greater trochanter): main supply head of femur – sup/inf gluteal, med/lat circumflex femoral

Cruciate anastomosis (lesser trochanter): inf gluteal, ascending branch 1st perforating, med and lat circumflex femoral Artery of ligamentum teres

Femoral Artery

Continuation external iliac, main artery lower limb - supply thigh

Enters femoral triangle mid-inguinal point, lateral to vein

Lies on psoas major, Bisects femoral triangle, enters adductor canal, through adductor hiatus in add magnus → popliteal

4 superficial branches in femoral triangle

- Sup epigastric, sup circumflex iliac, sup/deep ext pudendal

Branches

- Profunda femoris (deep artery thigh) in fem triangle
- Muscular
- Medial and Lateral circumflex femoral
- Perforating
- Desc genicular branch in adductor canal

Relations

Psoas major post, fem nerve lat, fem vein med in sheath/post in add canal
At add canal sartorius superficial, add long/add mag deep
Saphenous nerve passes ant from lat → med

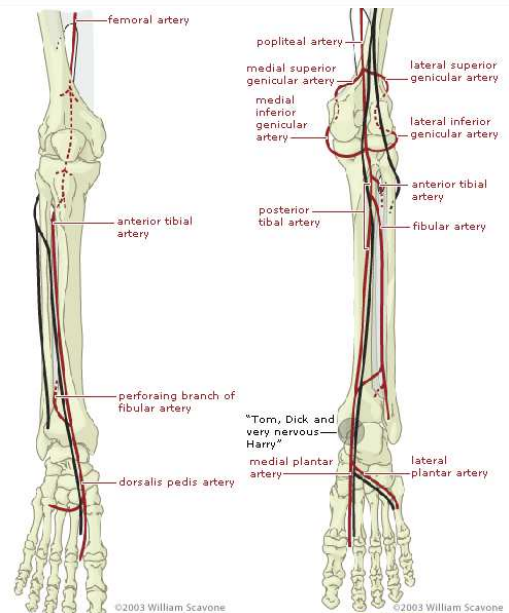
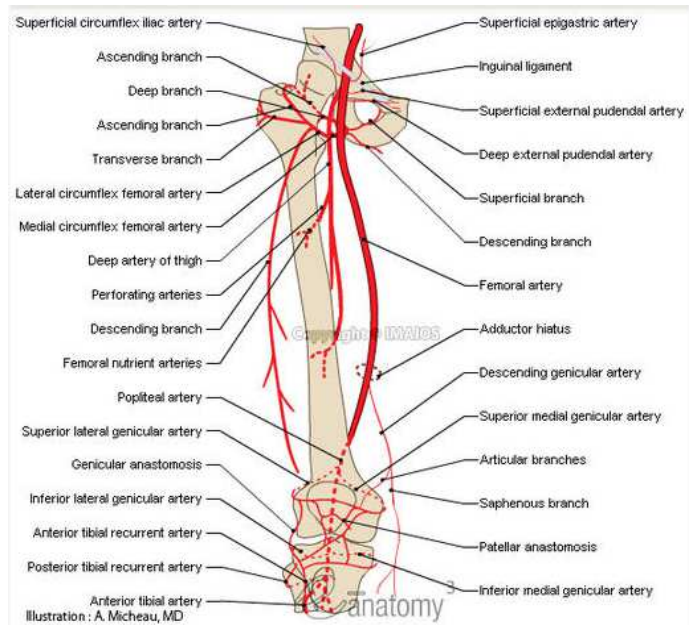
Obturator artery

Helps deep artery supply adductor muscles

Internal iliac → thru obturator foramen → enter thigh → ant/post branches

Inferior gluteal artery

- Muscular branch to piriformis, obturator int, glut max
- Anastomotic branch to trochanteric/cruciate anast
- Cutaneous branches to buttock and back of thigh
- Artery to sciatic nerve



Popliteal Artery

Femoral artery through adductor hiatus → popliteal fossa medial to femur, on capsule of knee → between 2 heads gastroc
Crossed by tibial nerve and popliteal vein → Ceases as under fibrous arch soleus - dividing into ant and post tibial arteries

Branches form *genicular anastomosis*

Muscular branches to muscles in popliteal fossa

Genicular arteries (5)

Anterior tibial artery becomes dorsalis pedis (passes into sole to join lateral planter to complete plantar arch)

Posterior tibial artery ceases under flexor retinaculum divide into med/lat plantar arteries

Branches

Peroneal artery

Circumflex fibular artery

Nutrient artery to tibia

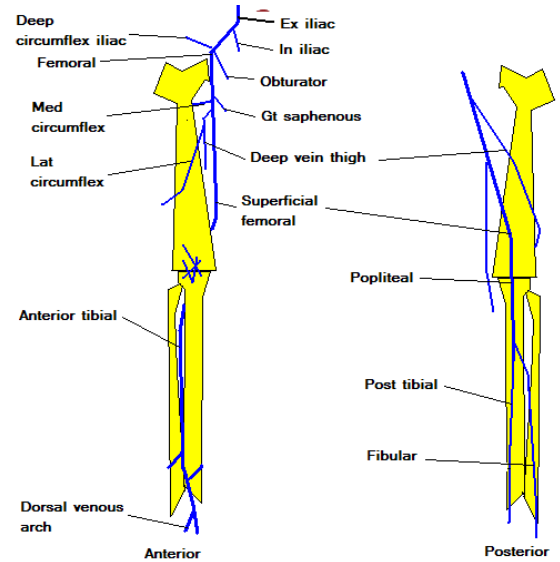
Muscular branch to deep flexors

Med calcaneal branch

Lat planter Terminal branch, supplies great toe

Lat planter Terminal, forms planter arch across base

MTs, join by dorsal pedis



VEINS

Femoral Vein

Continuation popliteal vein prox to adductor hiatus → adductor canal → femoral canal → ex iliac post to inguinal ligament

Receives greater saphenous vein/deep vein of thigh in fem triangle

NB: superficial femoral vein actually a deep vein

Popliteal Vein

Begins distal border popliteus as post tibial and ant tibial veins meet → peroneal vein drains into it

Lies in sheath with popliteal artery

Becomes femoral vein as passes through adductor hiatus

Small saphenous vein drains in in popliteal fossa

Med/lat plantar veins form post tibial/peroneal veins post to med/lat malleoli

Superficial veins

Great Saphenous Vein

Dorsal venous arch → ant to med malleolus → post to med condyle femur → saphenous opening → enters femoral vein in femoral triangle

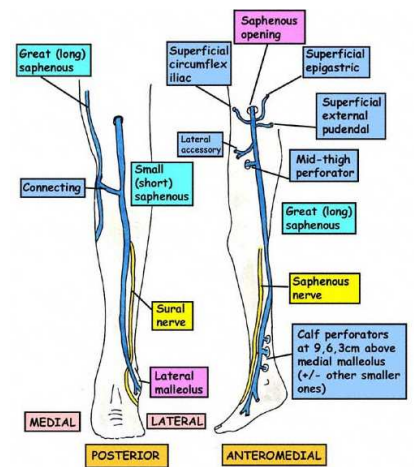
Communicates with small saphenous vein

Landmark at knee – 4 finger widths behind medial border patella

Saphenous opening: inf to med part inguinal ligament, 4cm inflat to pubic tubercle

Small Saphenous Vein Union dorsal vein little toe/dorsal venous arch → post to lat mal → between 2 gastroc → popliteal

Venous cutdowns Ant to med malleolus (saphenous nerve accomp great saphenous vein)



Lymphatic drainage

Superficial and deep vessels

Sup from antmed follow great saphenous vein to superficial ing LNs; from postlat follow lesser to popliteal LNs

Superficial inguinal nodes Superficial → deep → external iliac nodes

Vertical drain lower limb

Medial drain abdomen below umbilicus, genitalia (not testes)

Lateral drain buttock

Deep inguinal nodes Drain anterior perineum, thigh, leg, foot

Popliteal nodes Receive from heel and calf; Drain to deep inguinal nodes

Innervation of the foot

- 1 Saphenous – med dorsum to base big toe
- 2 Sup peroneal – dorsum
- 3 Deep peroneal – 1st web space
- 4,5 Med and lat plantar – sole
- 6 Sural – lateral
- 7 Med calcaneal – heel

