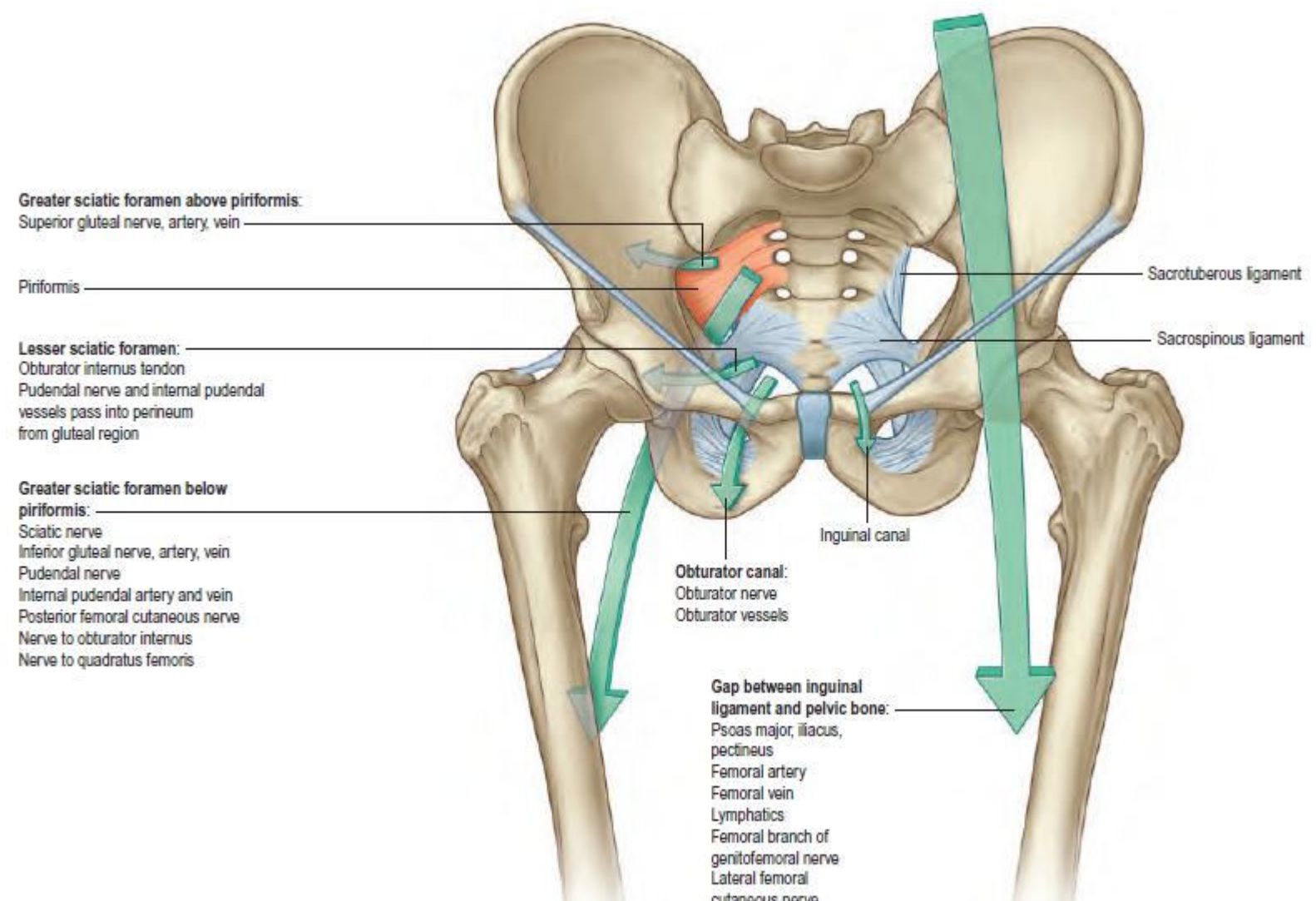


Learning Objectives

- General Plan
- Surface Anatomy
- Skin, fascia and soft tissue
- Bones of the Lower Limb
- Muscles
- Innervation
- Vasculature

General Plan and Divisions

- Pelvis/Gluteal Region
- Thigh
- Leg
- Foot



Skin, fascia and soft tissue and Compartment Syndrome

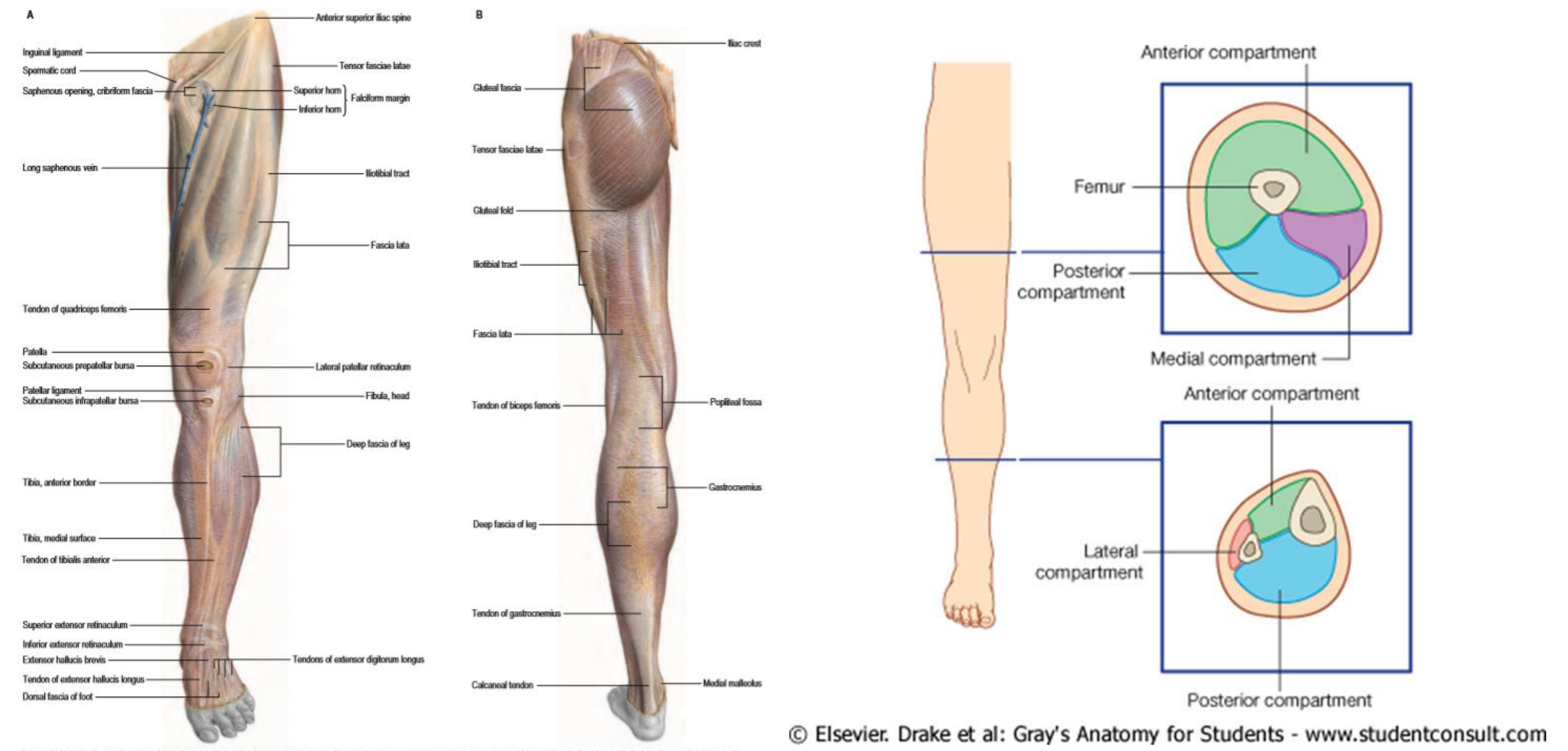
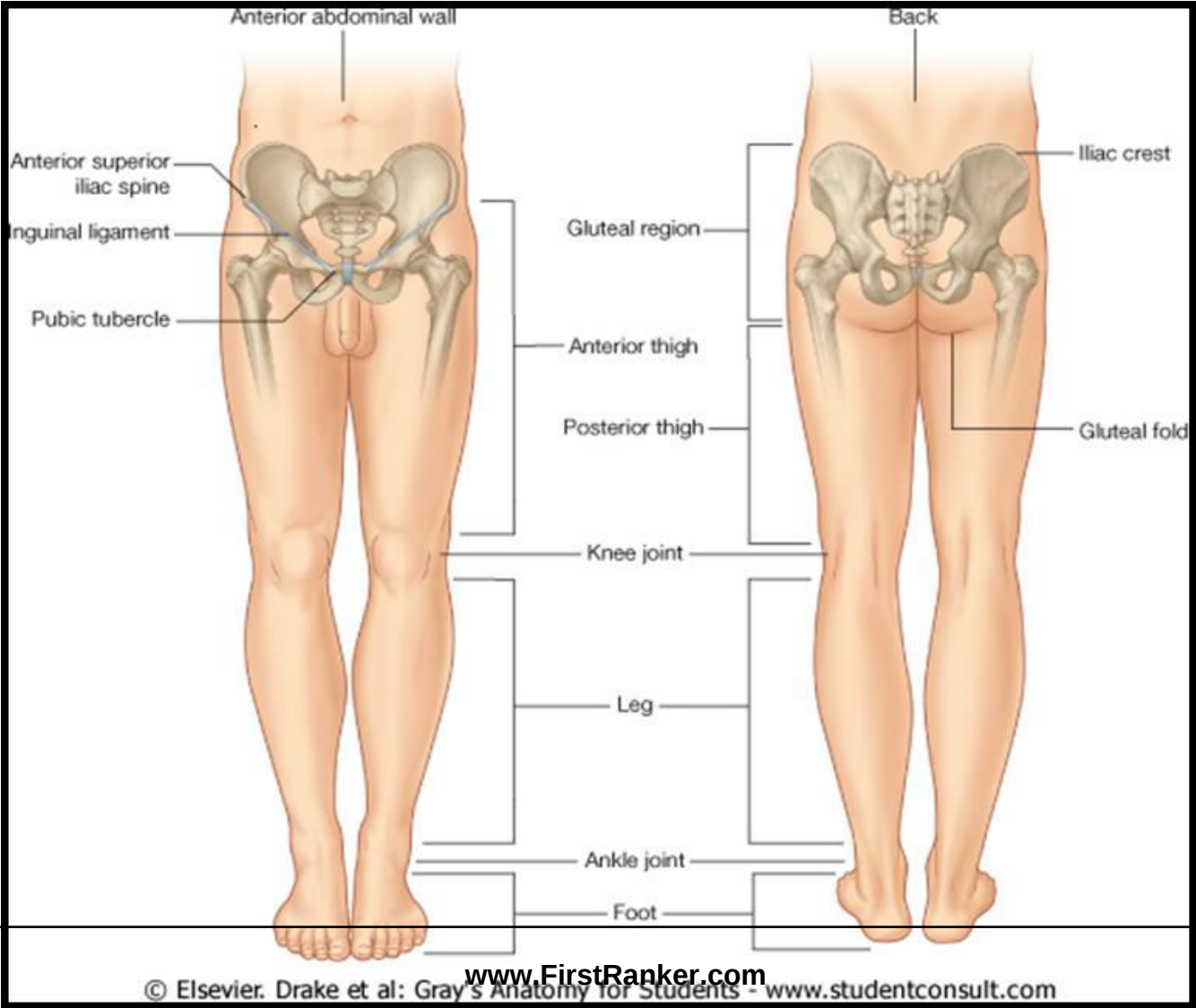
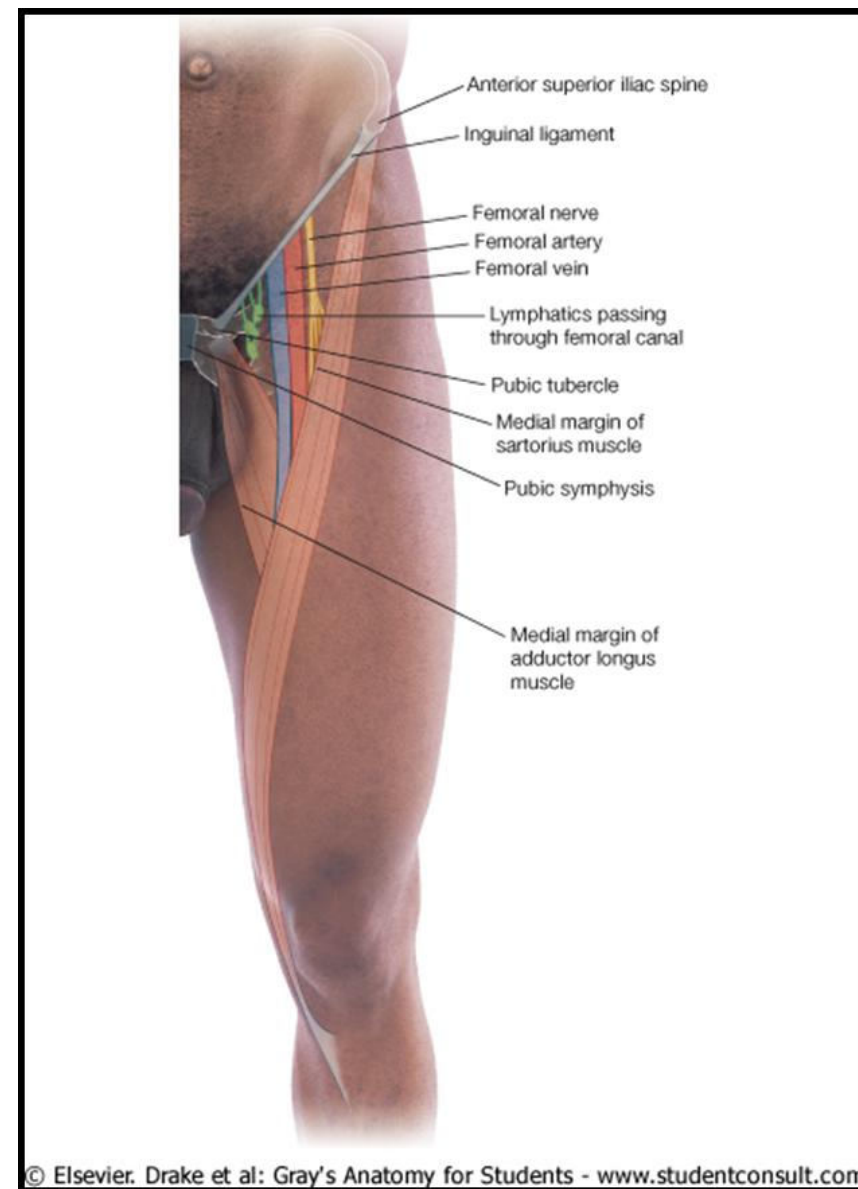


Fig. 78.2 The deep fascia of the lower limb. A, Anterior view. B, Posterior view. (With permission from Waschke J, Paulsen F (eds), Sobotta Atlas of Human Anatomy, 15th ed, Elsevier, Urban & Fischer. Copyright 2013.)

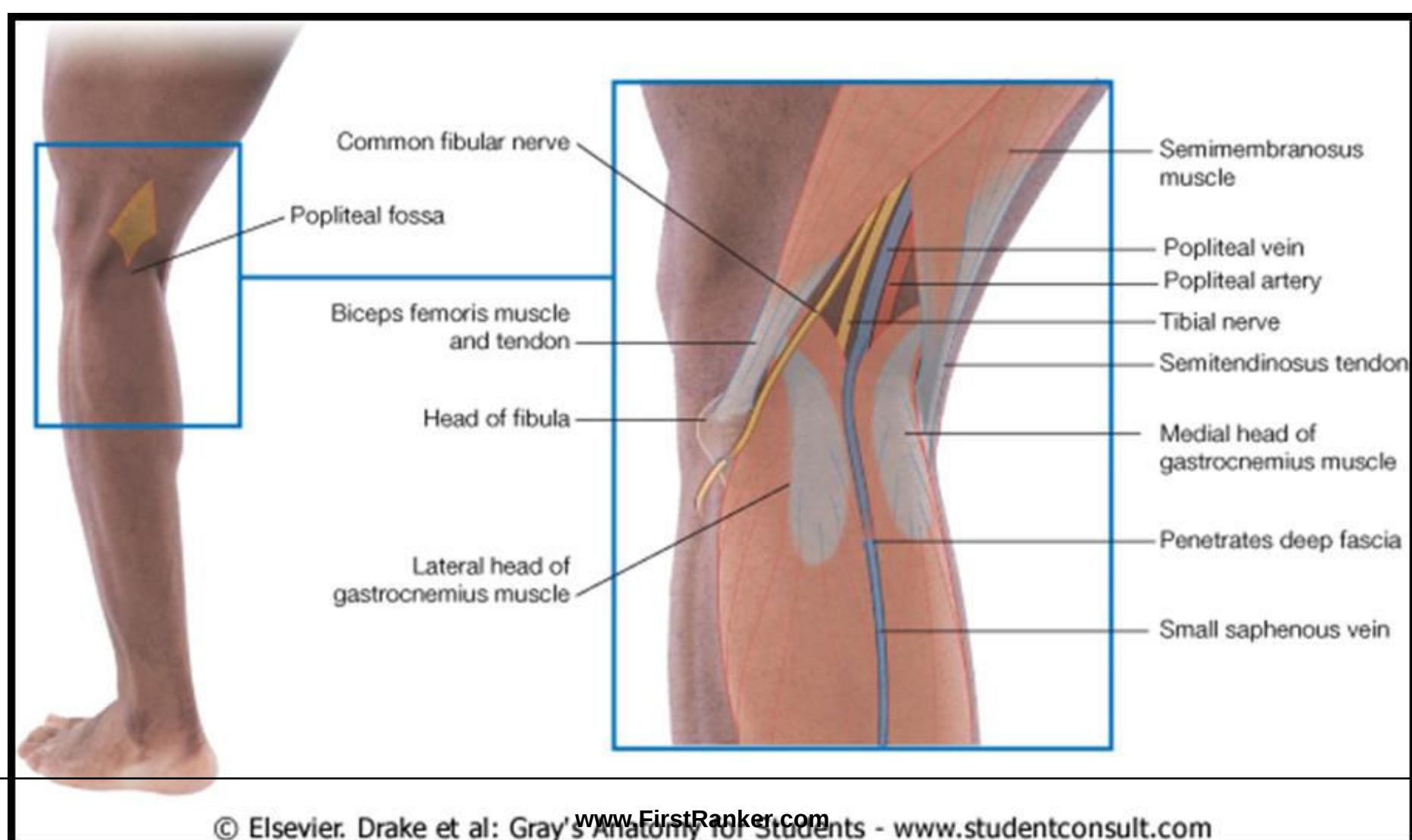
Surface Anatomy Gluteal region / Posterior pelvis



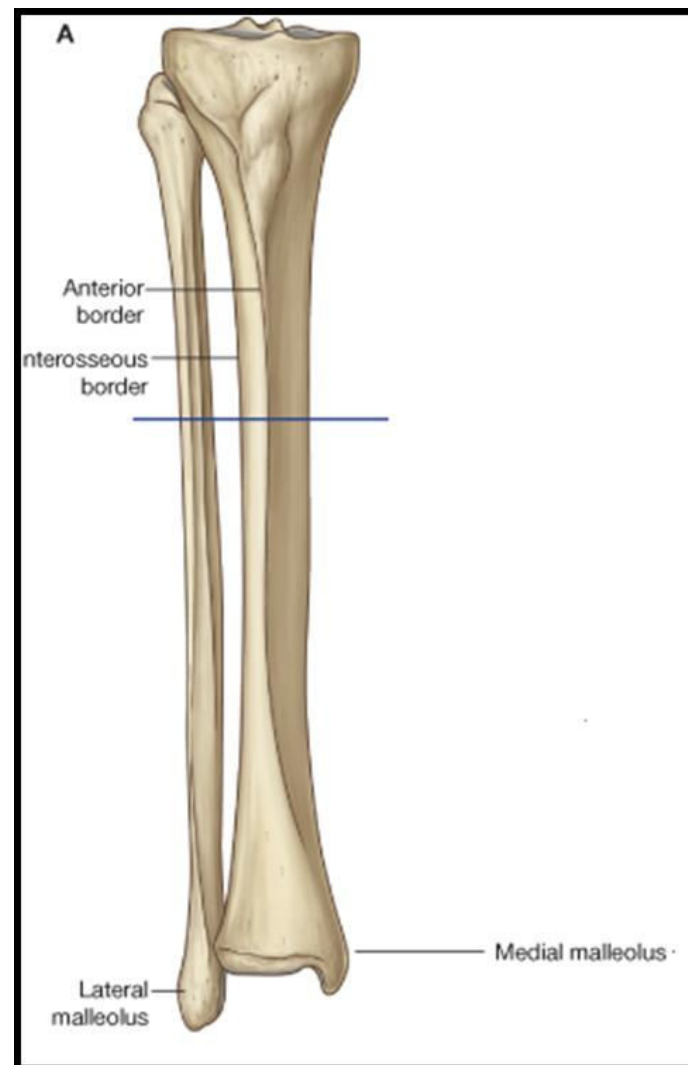
Anterior thigh and leg



Posterior leg/Popliteal fossa



Anterior leg bones/Landmarks



Bones of the Lower Limb

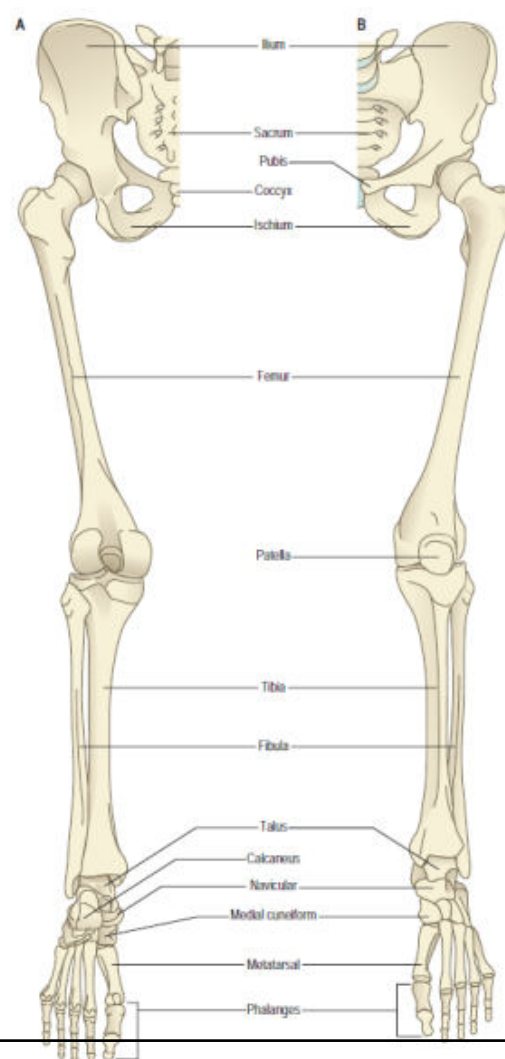
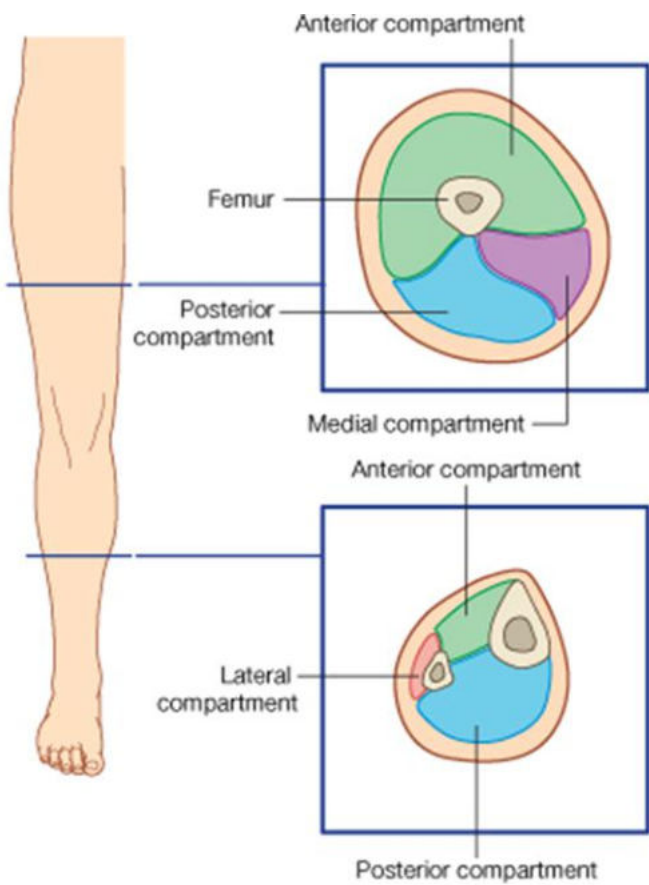
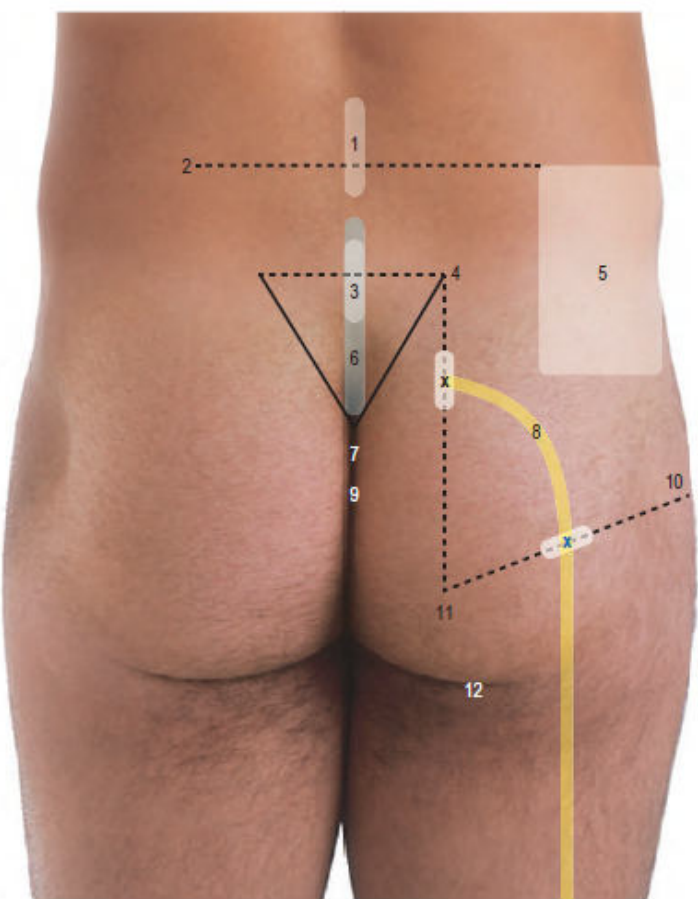


Fig. 78.3 An overview of the bones of the lower limb. A, Posterior aspect. B, Anterior aspect.

Muscles



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Segmental innervation of the muscles of the lower limb

Table 78.1 Segmental innervation of the muscles of the lower limb

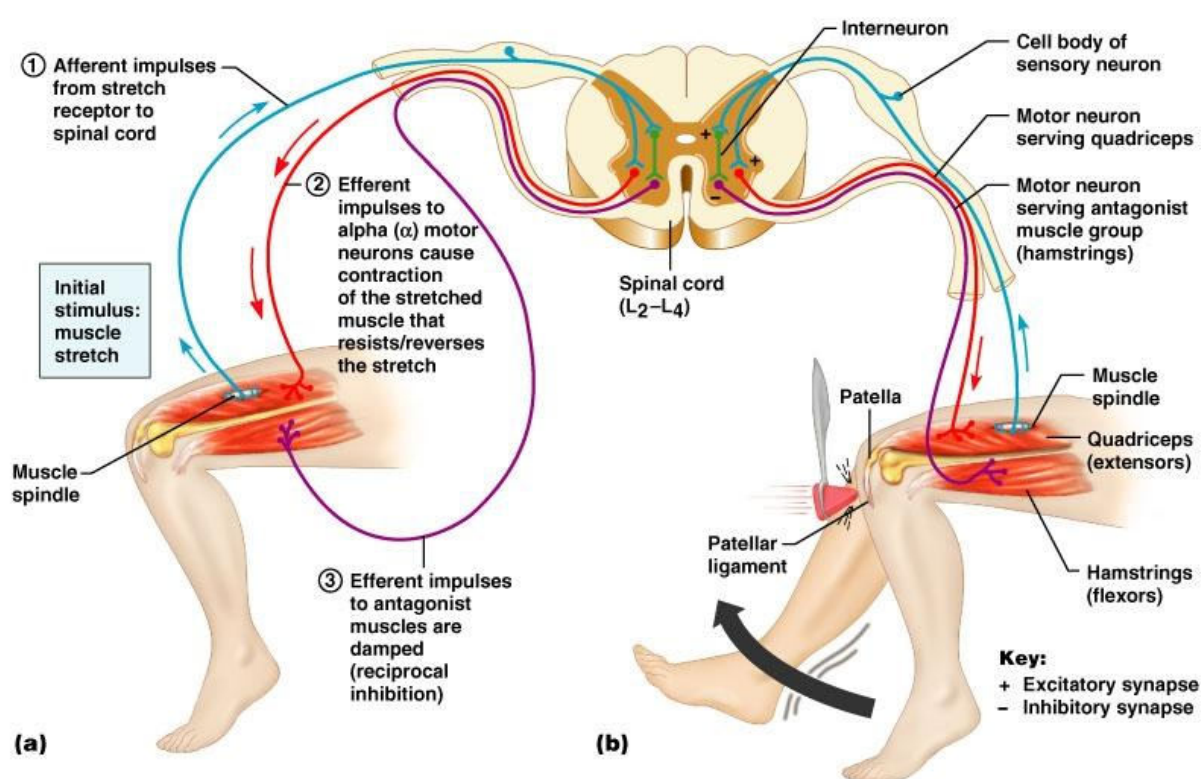
Segment	Muscles supplied
L1	Psoas major, psoas minor
L2	Psoas major, iliacus, sartorius, gracilis, pectineus, adductor longus, adductor brevis
L3	Psoas major, quadriceps femoris, adductors (magnus, longus, brevis)
L4	Psoas major, quadriceps femoris, tensor fasciae latae, adductor magnus, obturator externus, tibialis anterior, tibialis posterior
L5	Gluteus medius, gluteus minimus, obturator internus, semimembranosus, semitendinosus, extensor hallucis longus, extensor digitorum longus, fibularis tertius, popliteus
S1	Gluteus maximus, obturator internus, piriformis, biceps femoris, semitendinosus, popliteus, gastrocnemius, soleus, fibularis longus and fibularis brevis, extensor digitorum brevis
S2	Piriformis, biceps femoris, gastrocnemius, soleus, flexor digitorum longus, flexor hallucis longus, some intrinsic foot muscles
S3	Some intrinsic foot muscles (except abductor hallucis, flexor hallucis brevis, flexor digitorum brevis, extensor digitorum brevis)

Segmental innervation of joint movements of the lower limb

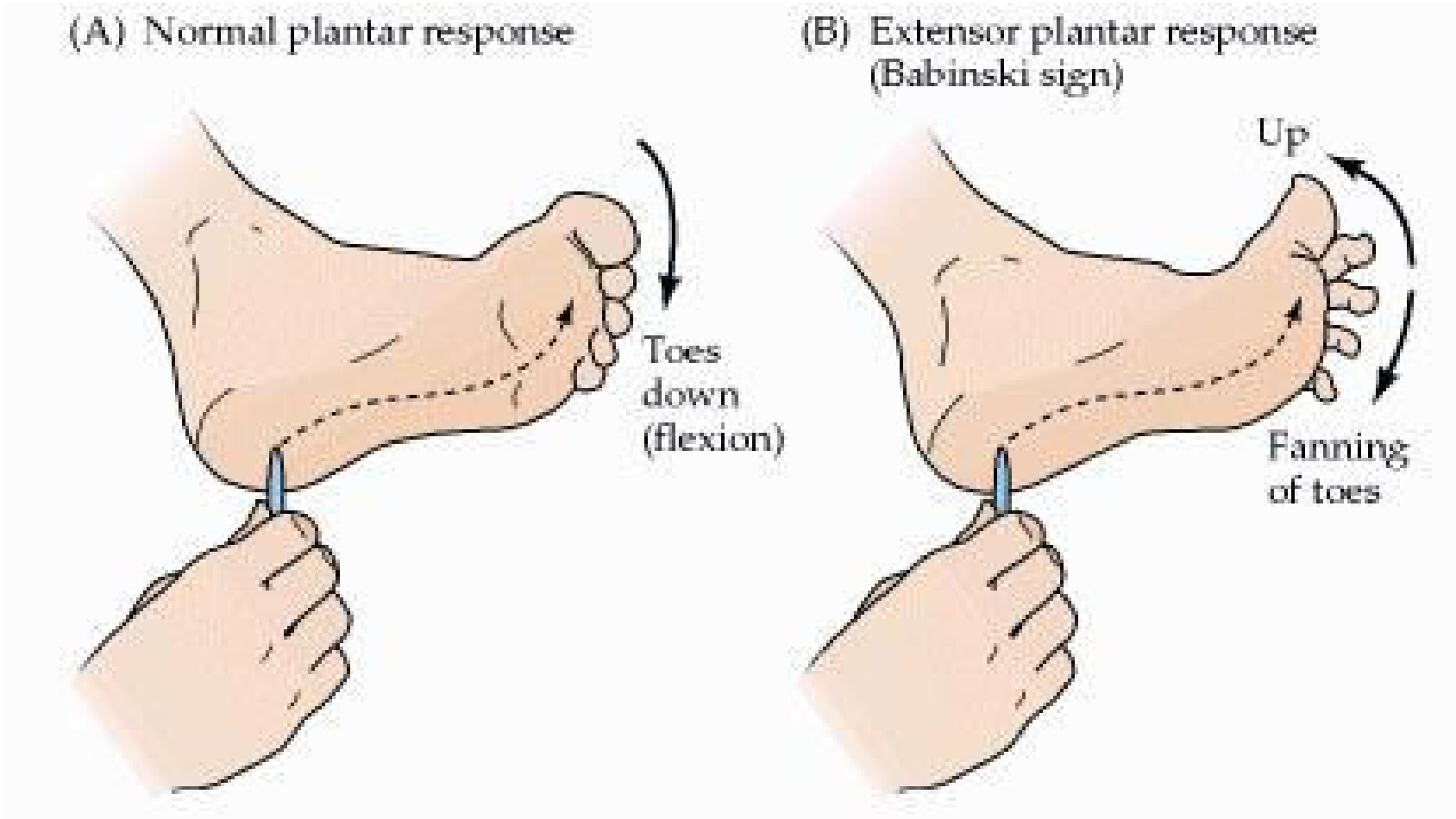
Table 78.2 Segmental innervation of joint movements of the lower limb

Region	Muscles supplied	Segment
Hip	Flexors, adductors, medial rotators	L1–3
	Extensors, abductors, lateral rotators	L5, S1
Knee	Extensors	L3, 4
	Flexors	L5, S1
Ankle	Dorsiflexors	L4, 5
	Plantar flexors	S1, 2
Foot	Invertors	L4, 5
	Evertors	L5, S1
	Intrinsic muscles	S2, 3

Knee reflex (L2–4) and Ankle Reflex (S1-S2)



Plantar Reflex

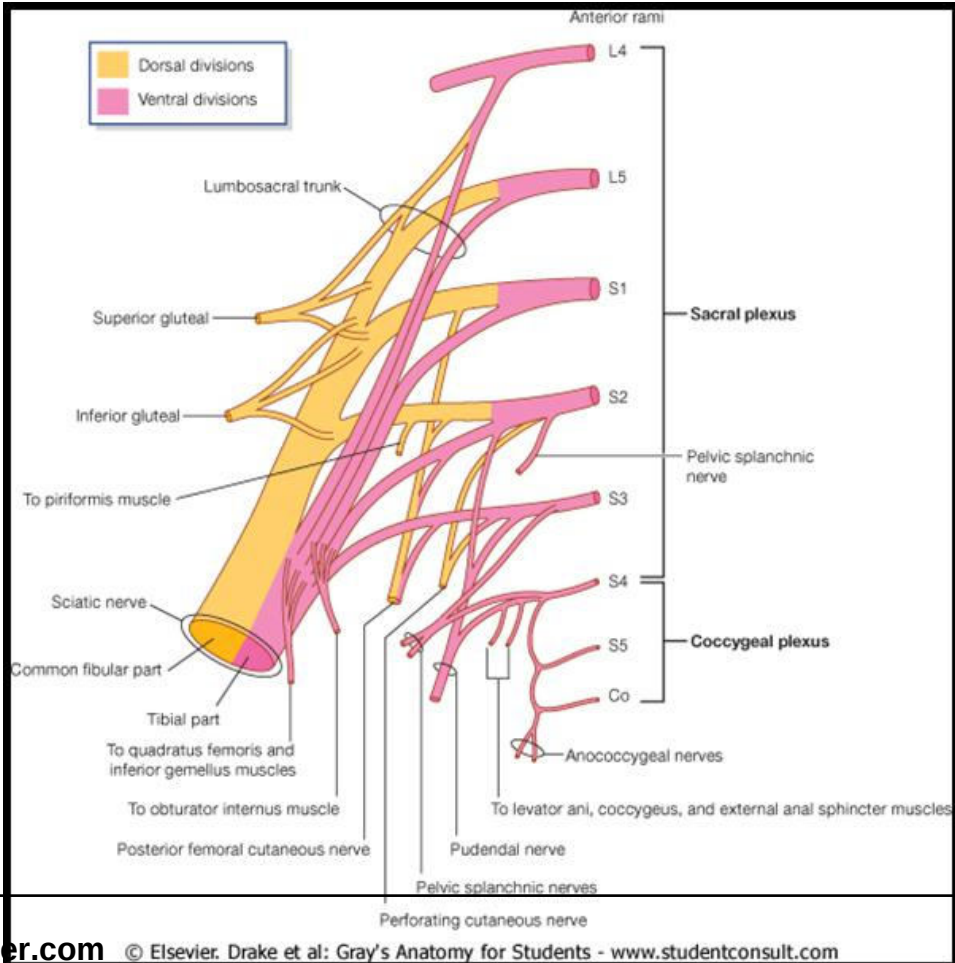
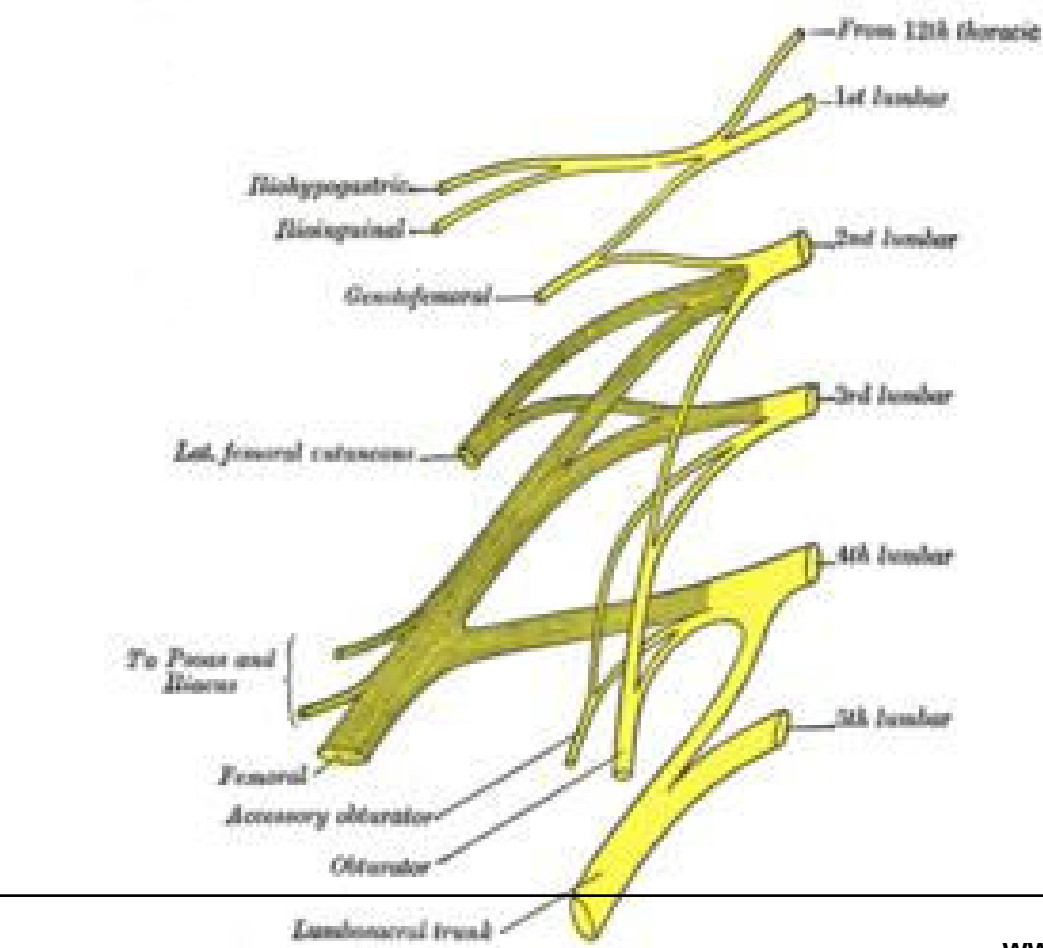


Innervation

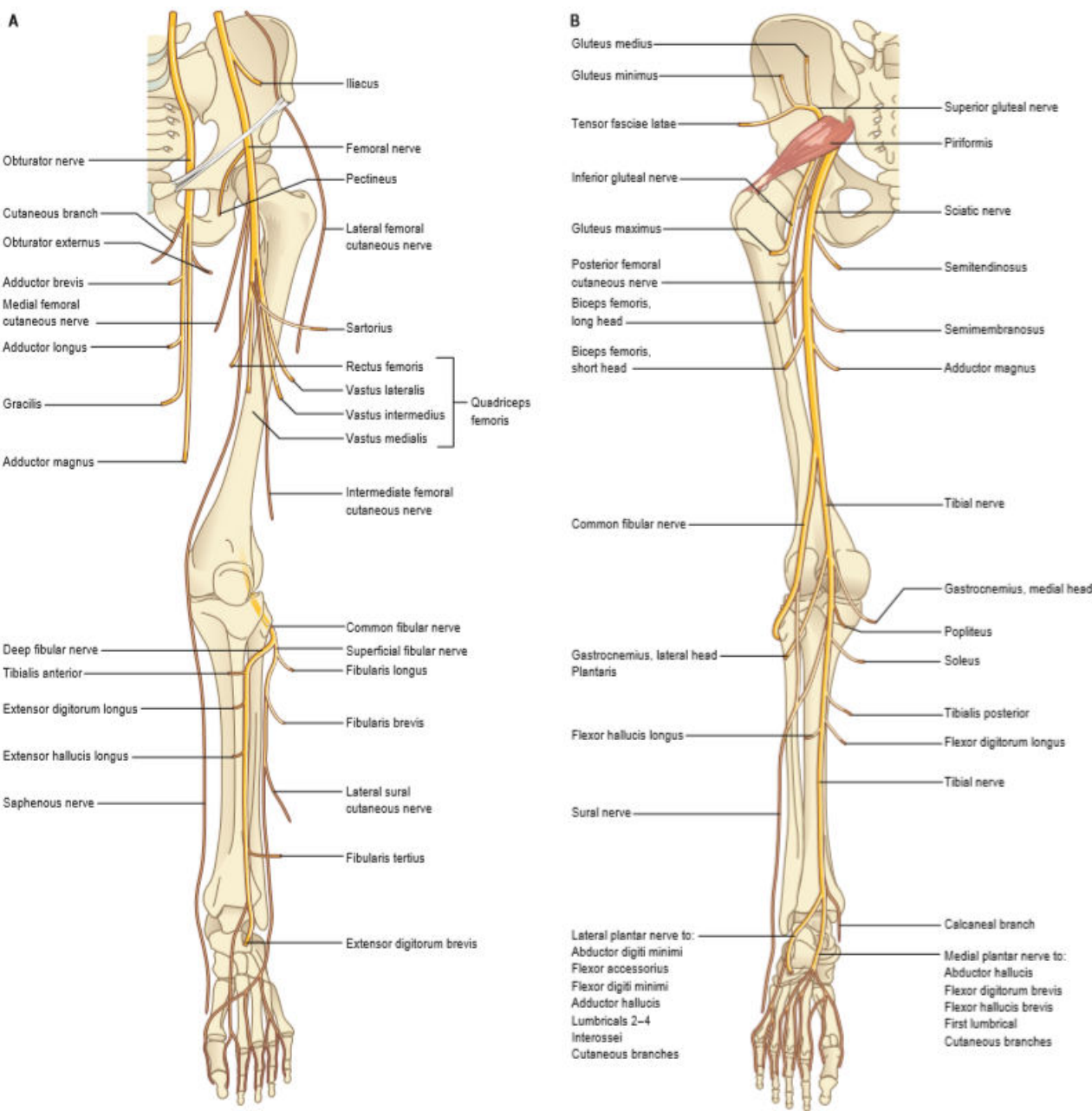
Plexuses of the Lower Limb/Lumbosacral plexus

Lumbar Plexus

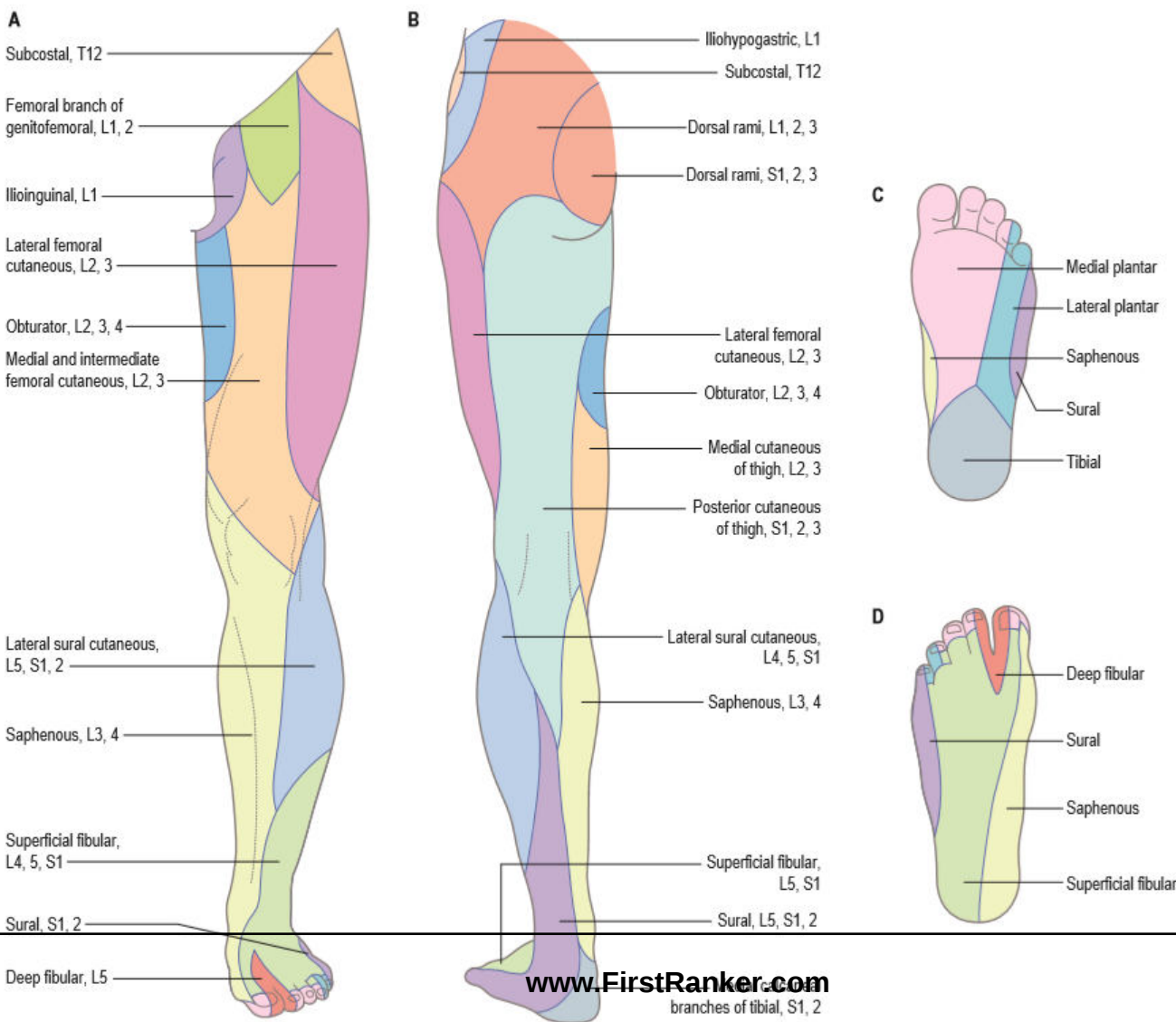
Sacral Plexus



Continued.....



Cutaneous Innervations



Dermatomal(T12-S3) and Autonomic(T10-L2)

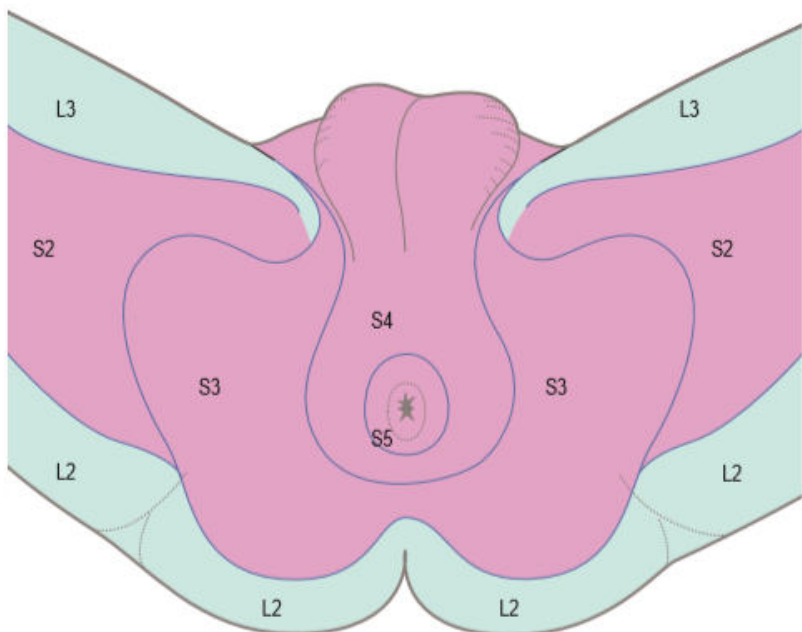


Fig. 78.13 Dermatomes of the perineum. (With permission from O'Brien M, Aids to the Examination of the Peripheral Nervous System, 5th Edition, May 2010, Elsevier, Saunders.)

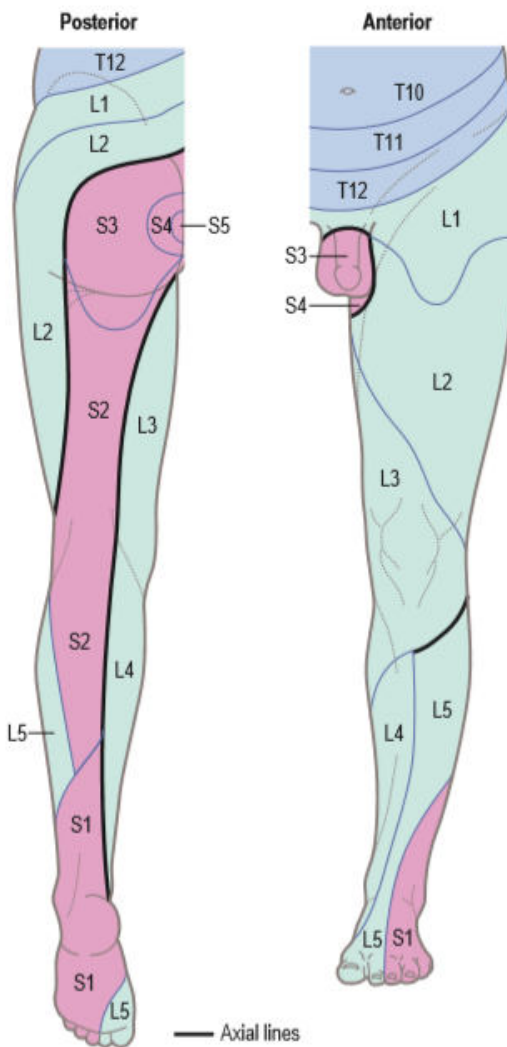
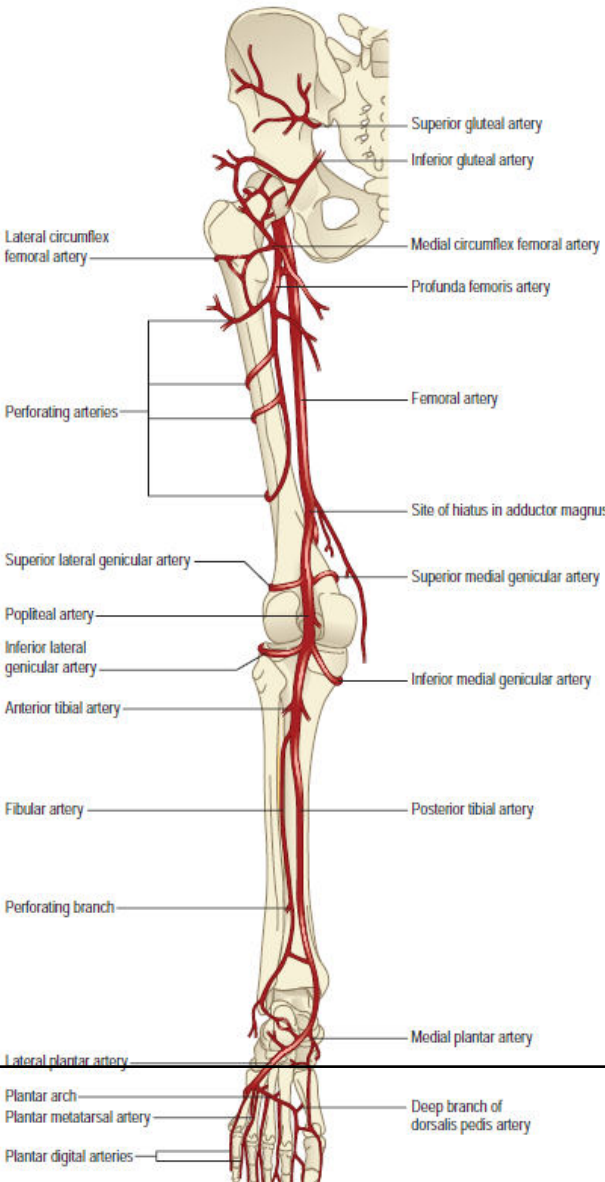
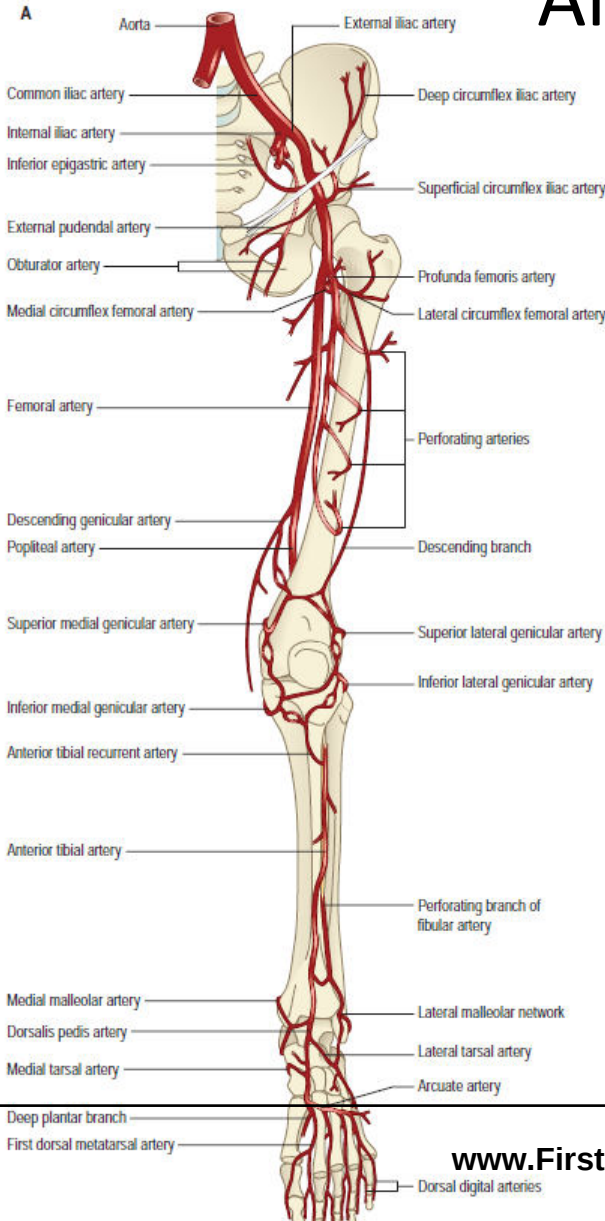


Fig. 78.14 Dermatomes of the lower limb. There is considerable variation and overlap between dermatomes, but the overlap across axial lines (heavy black) is minimal. (With permission from O'Brien M, Aids to the Examination of the Peripheral Nervous System, 5th Edition, May 2010, Elsevier, Saunders.)

Vasculature(Arteries)

Arteries(Anterior)

Arteries(Posterior)



Vasculature(Veins)

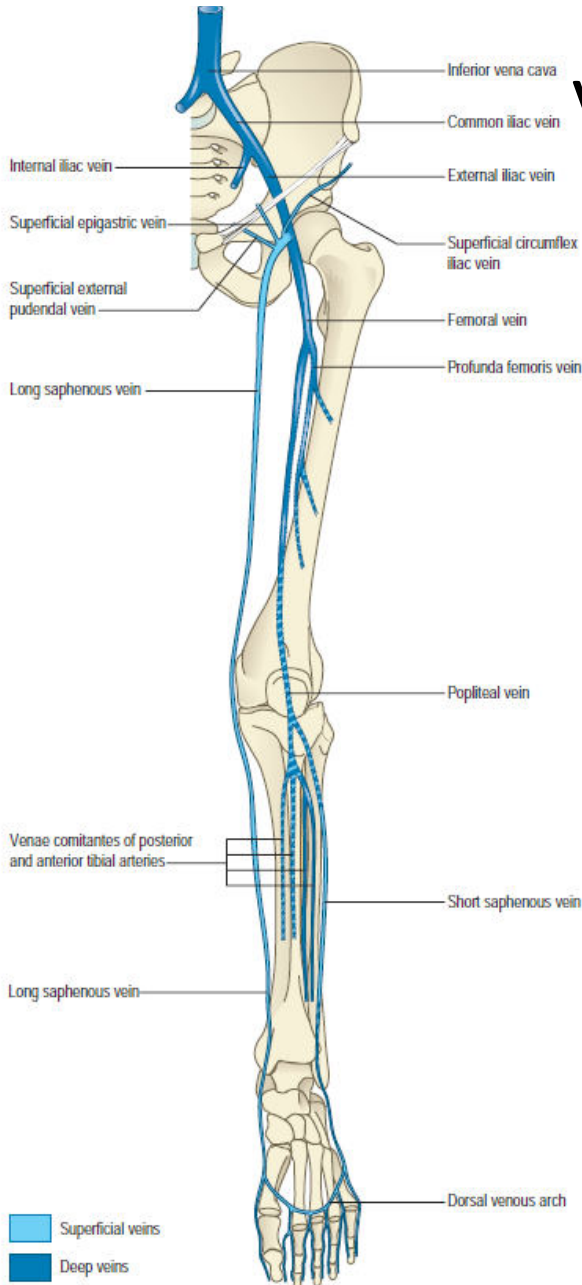
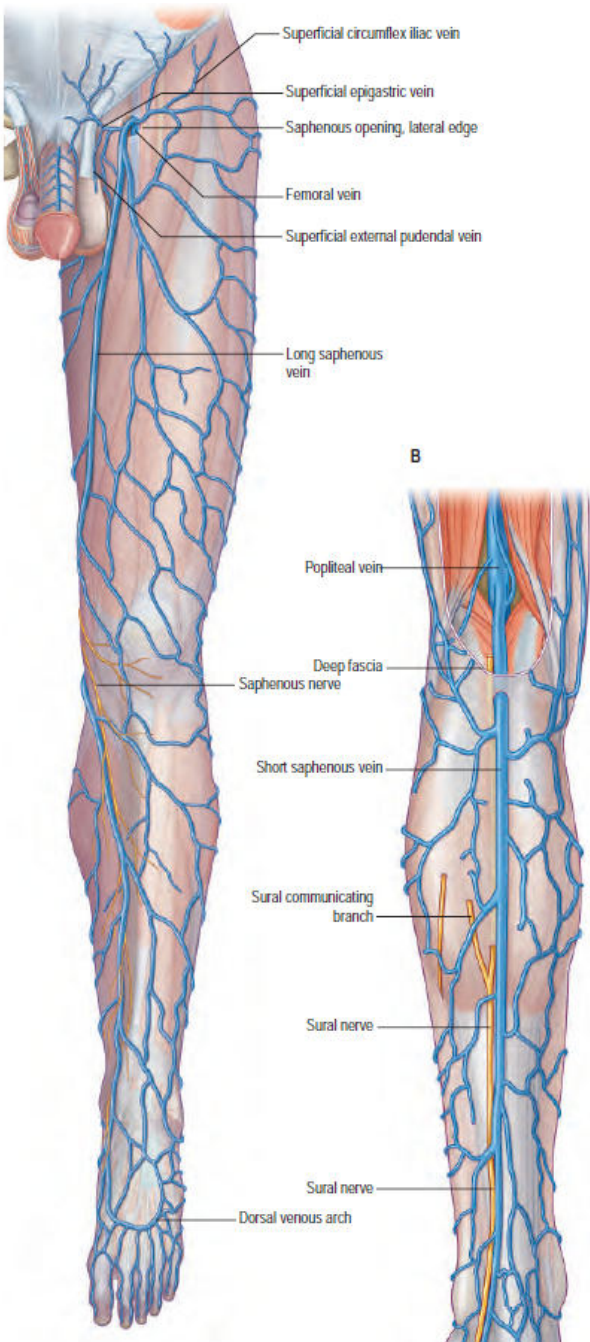
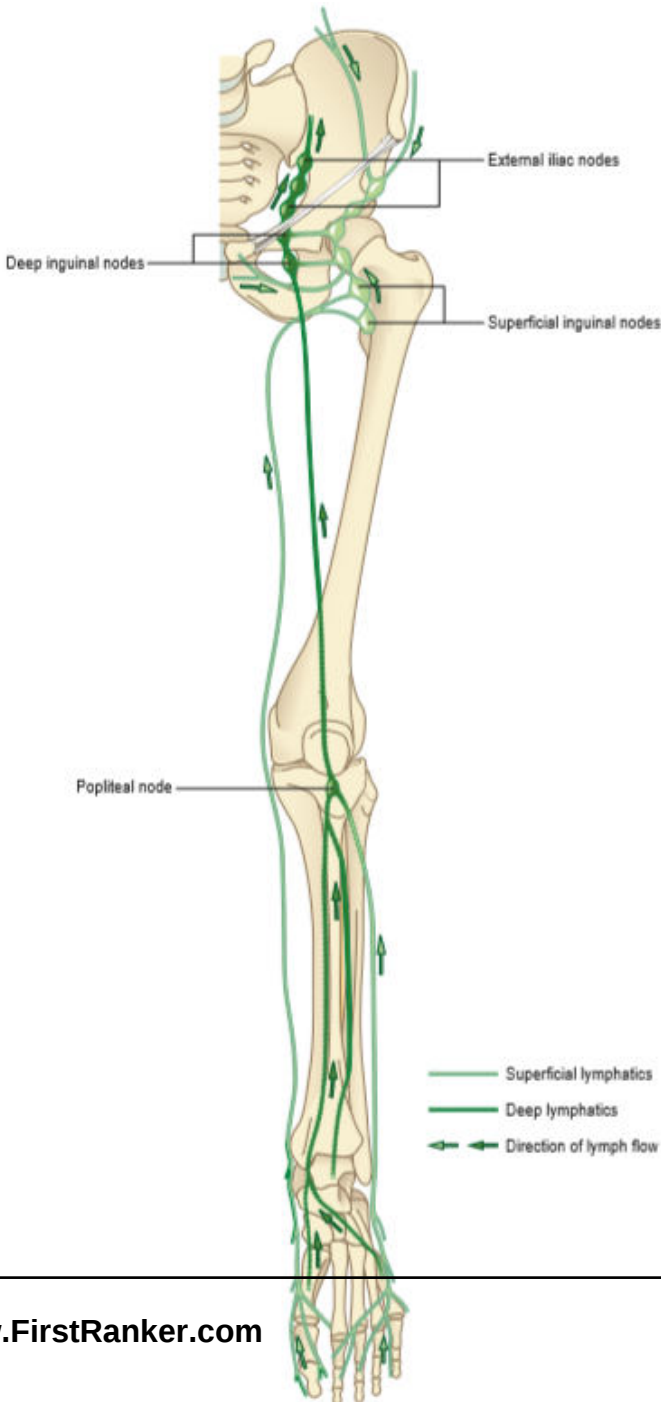


Fig. 78.8 An overview of the veins of the lower limb.



Lymphatic Drainage



MCQs

Q. There was a discussion among the students about the general action plan of the lower limb muscles. Which of the following statement is most consistent with general action plan of the lower limb muscles?

- a. Predominantly act through their distal attachment
- b. Predominantly act through their proximal attachment
- c. Predominantly act through both a) and b)
- d. There is no any general of action plan

Q. Which of the following is the most important action of Gluteus medius and minimus ?

- a. Abduction of hip
- b. Rotation of hip
- c. Stabilization of hip
- d. Flexion of hip