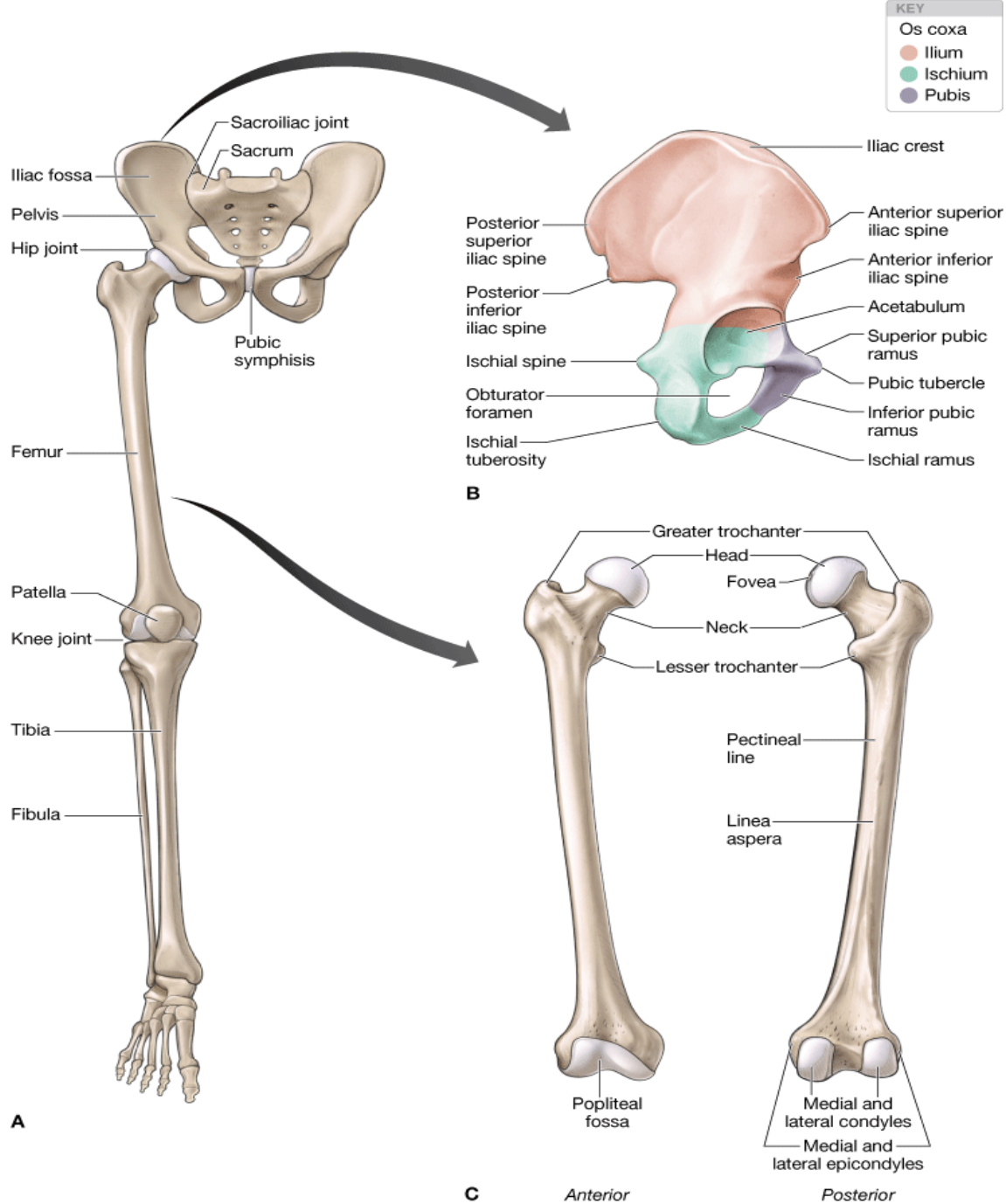
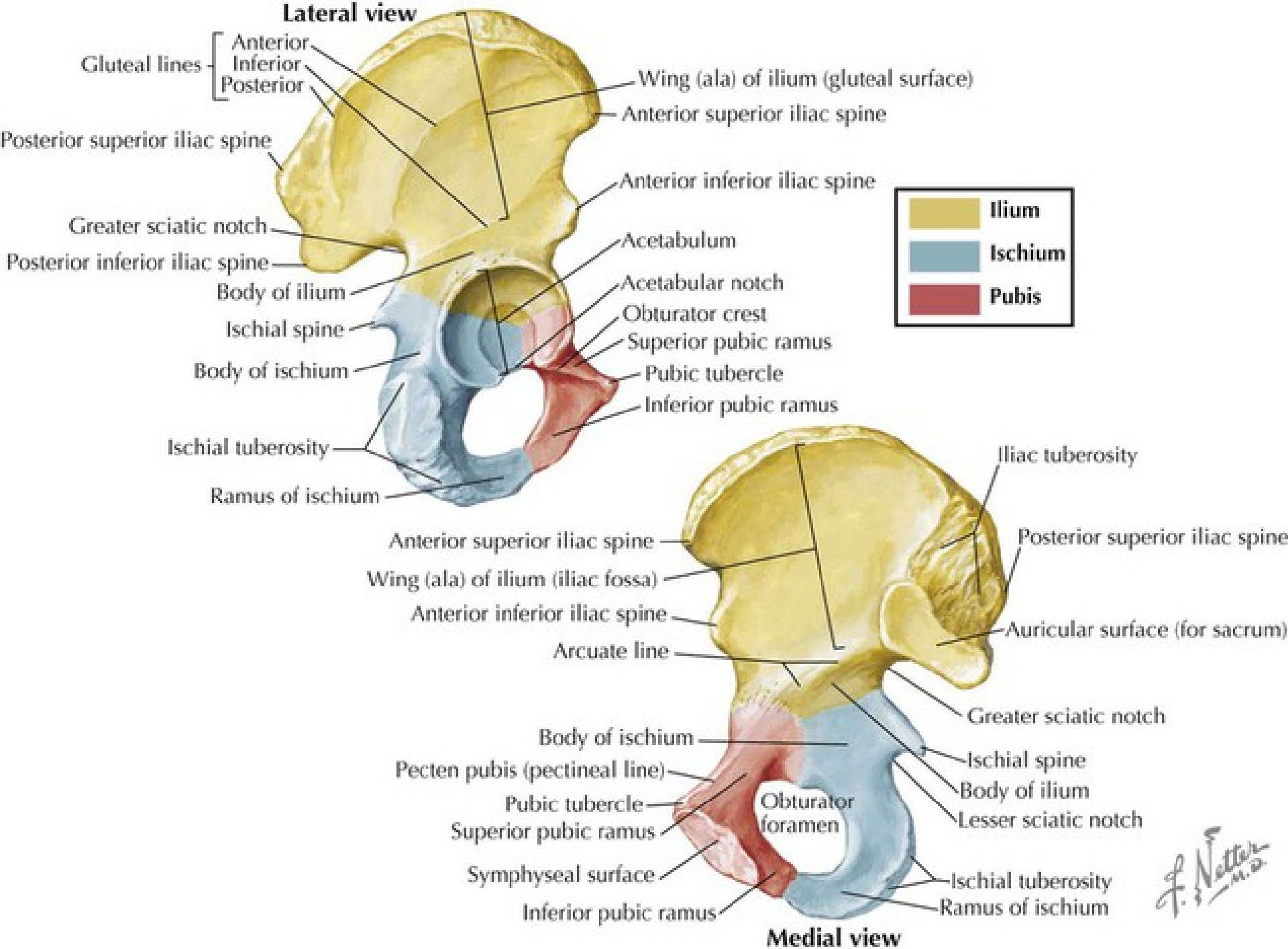


Lower limb

By Dr Qaisar Afridi

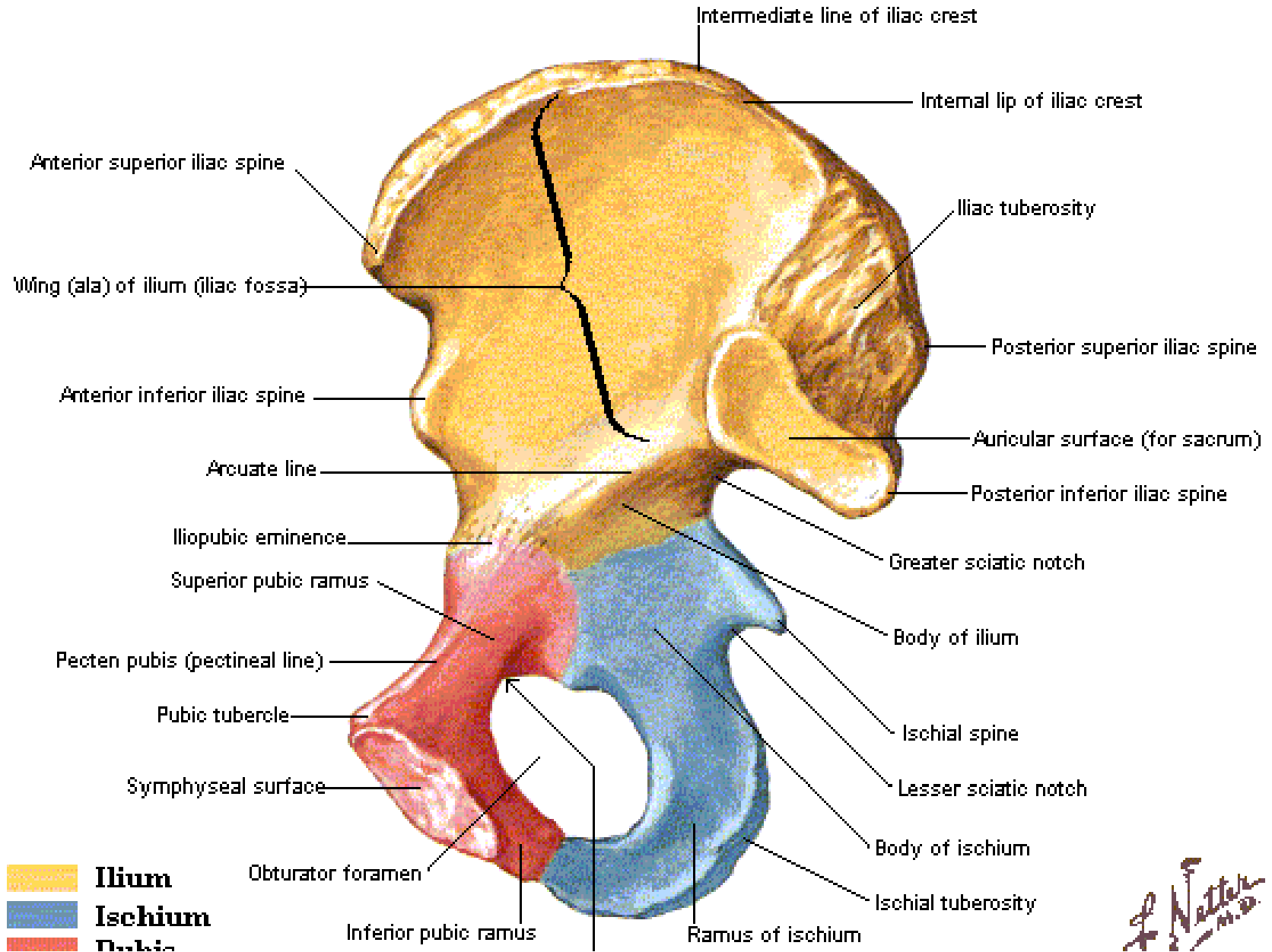




Coxal Bone

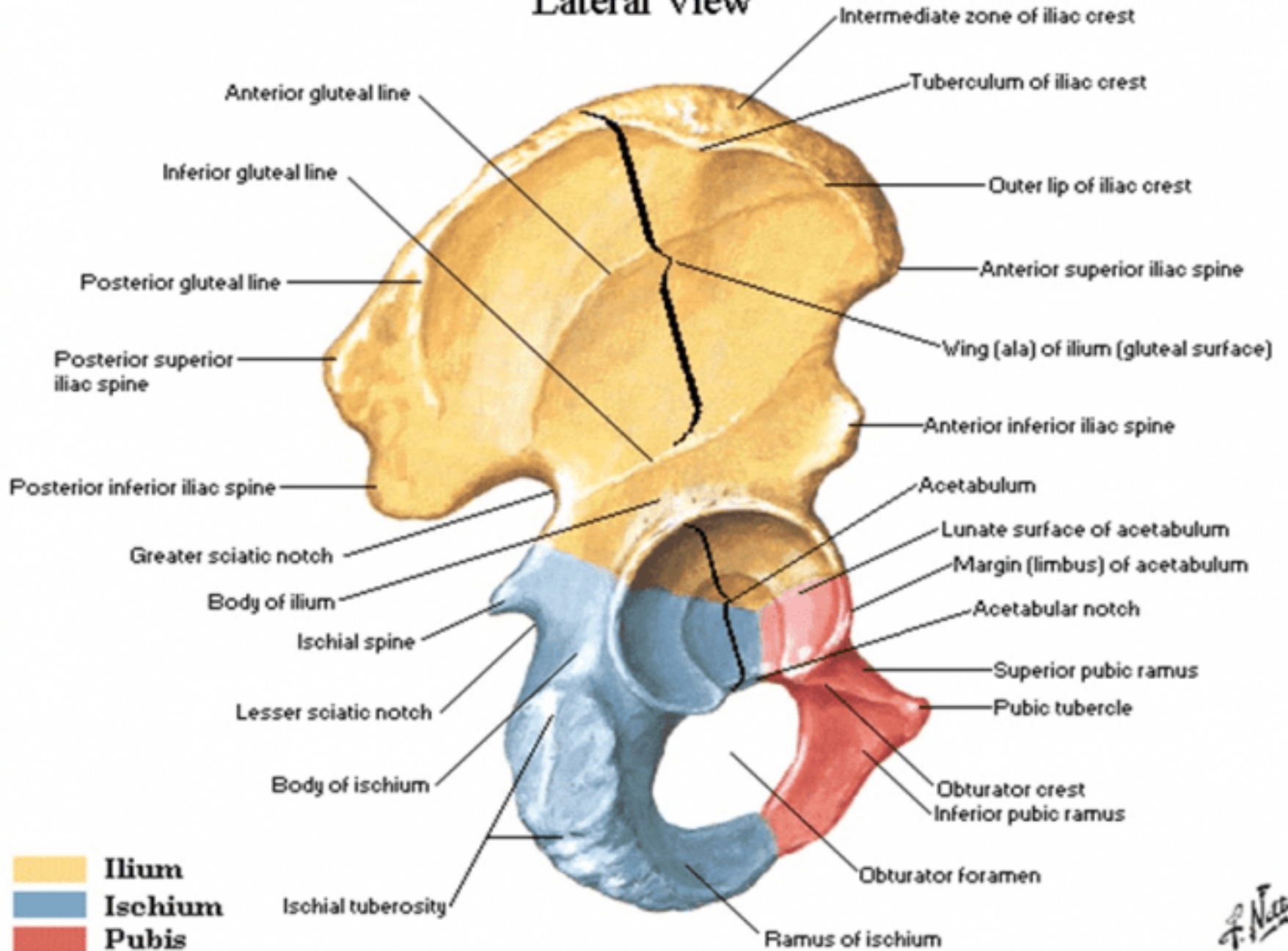


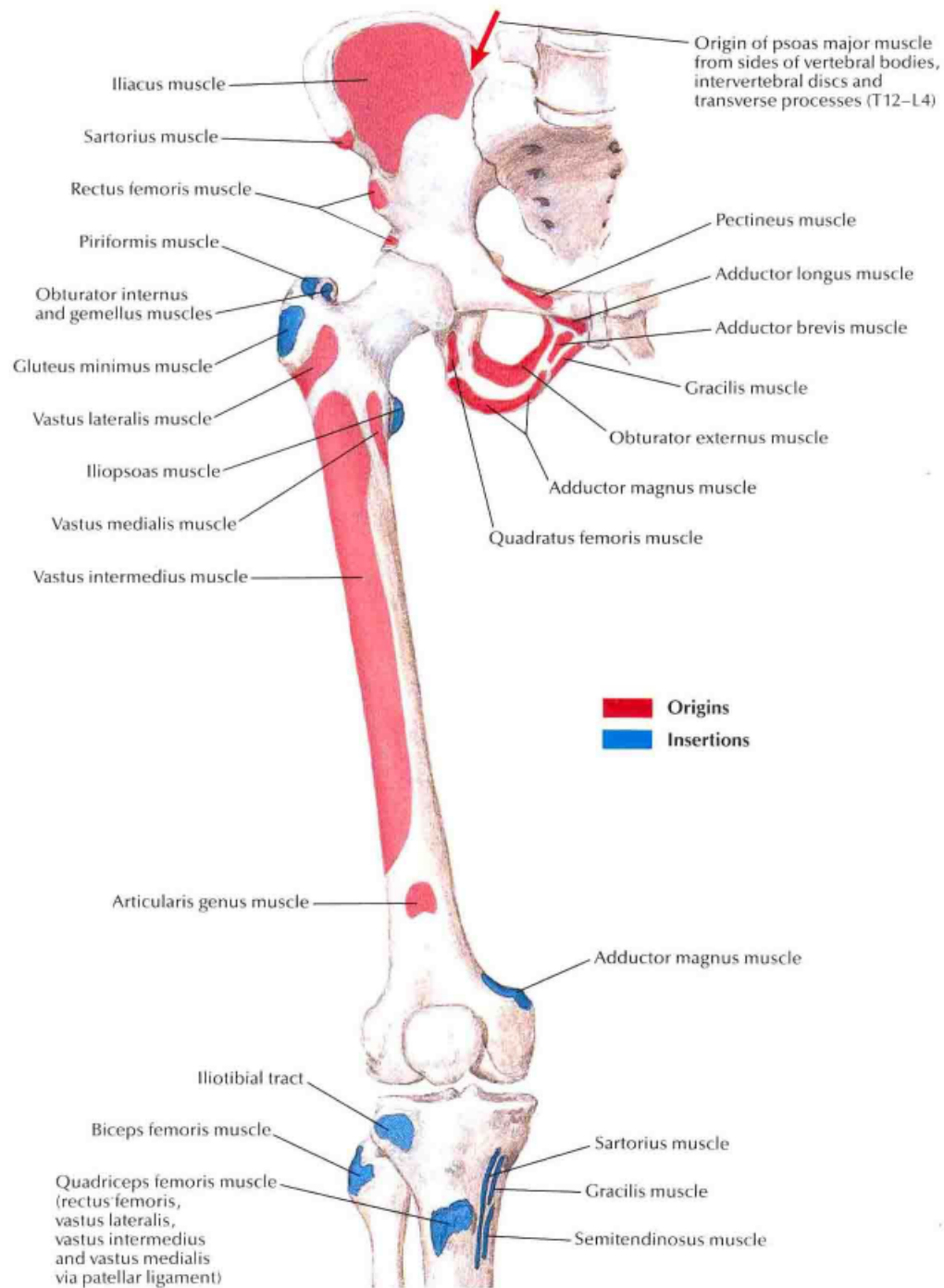
Medial View

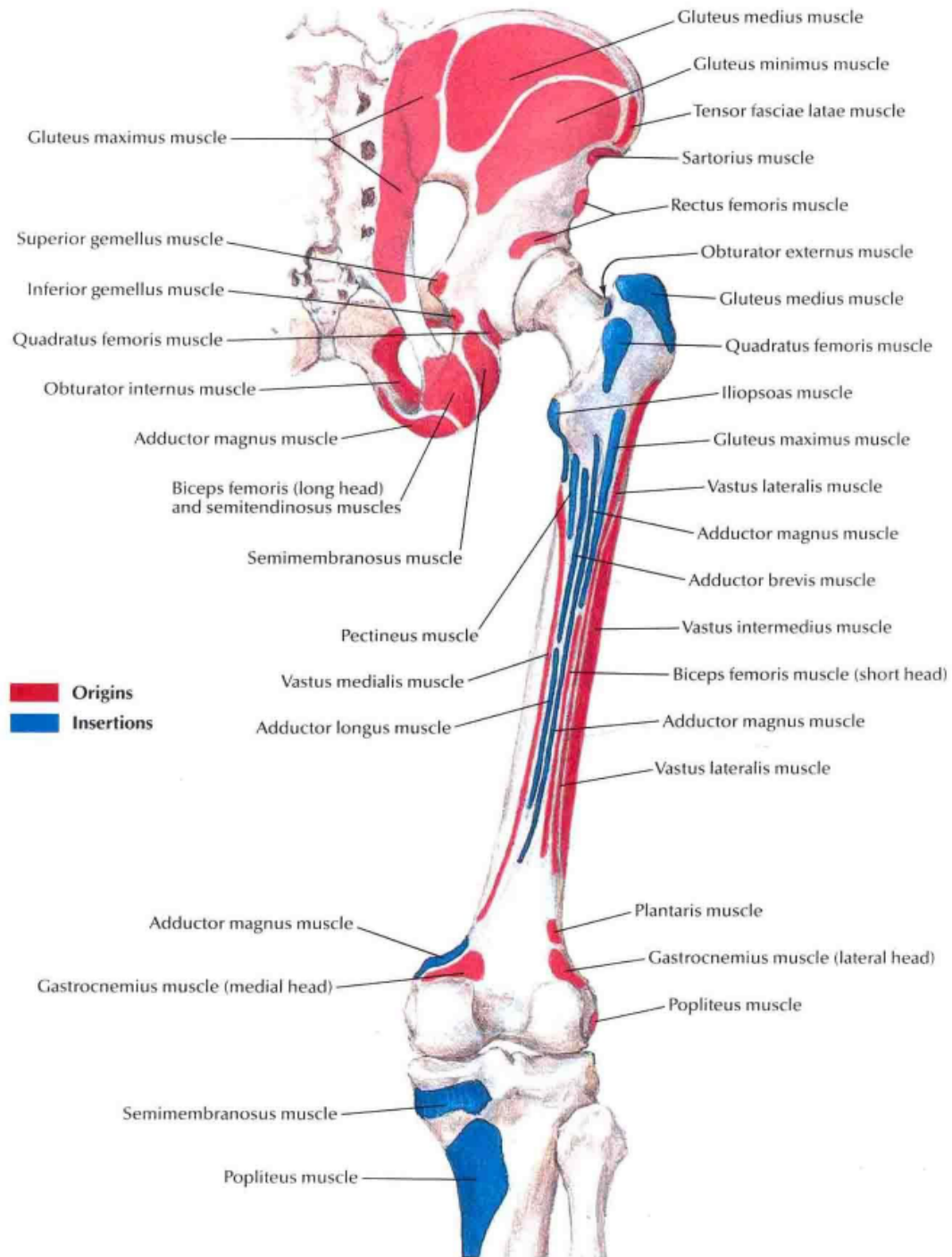


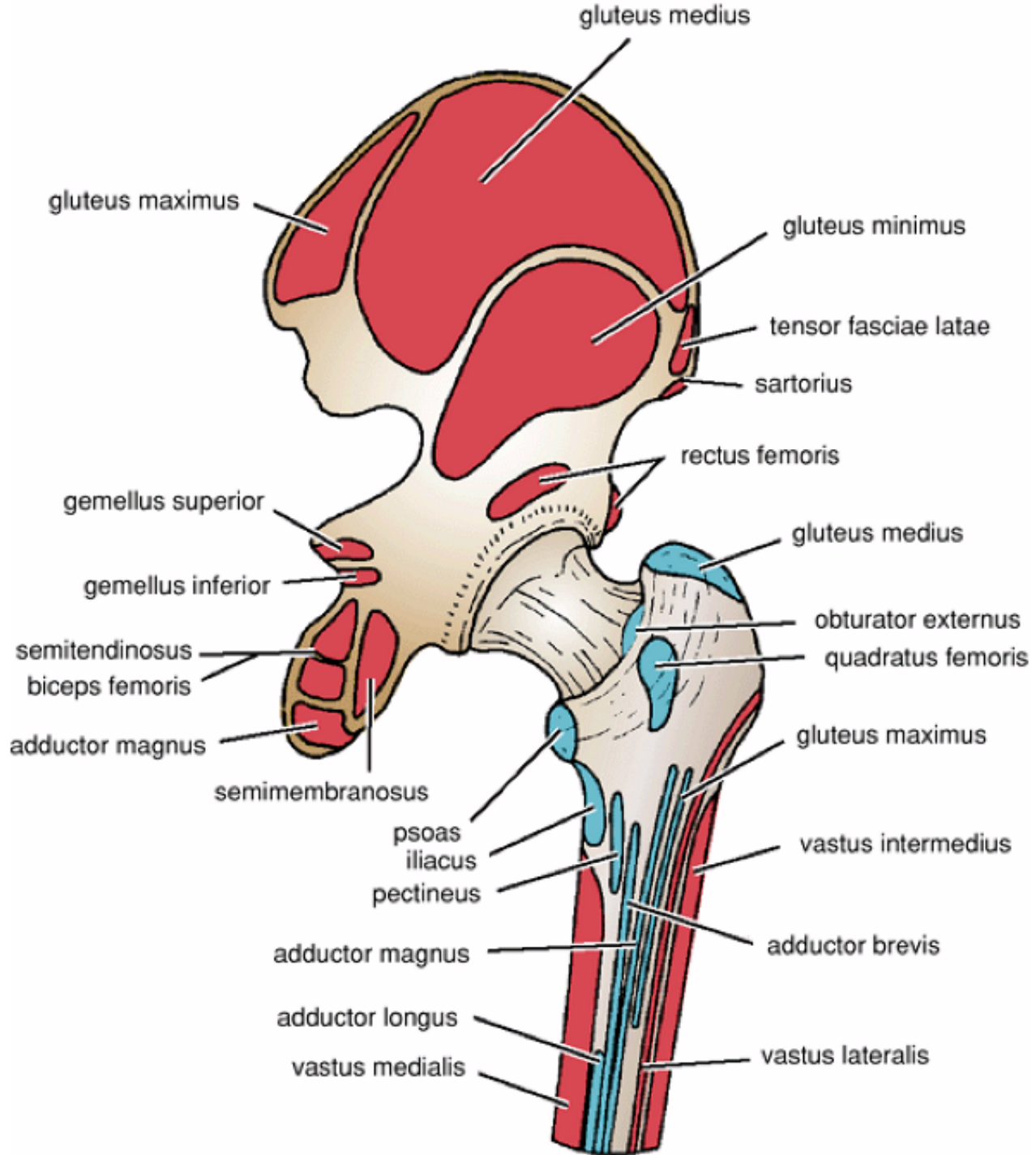
Hip [Coxal] Bone

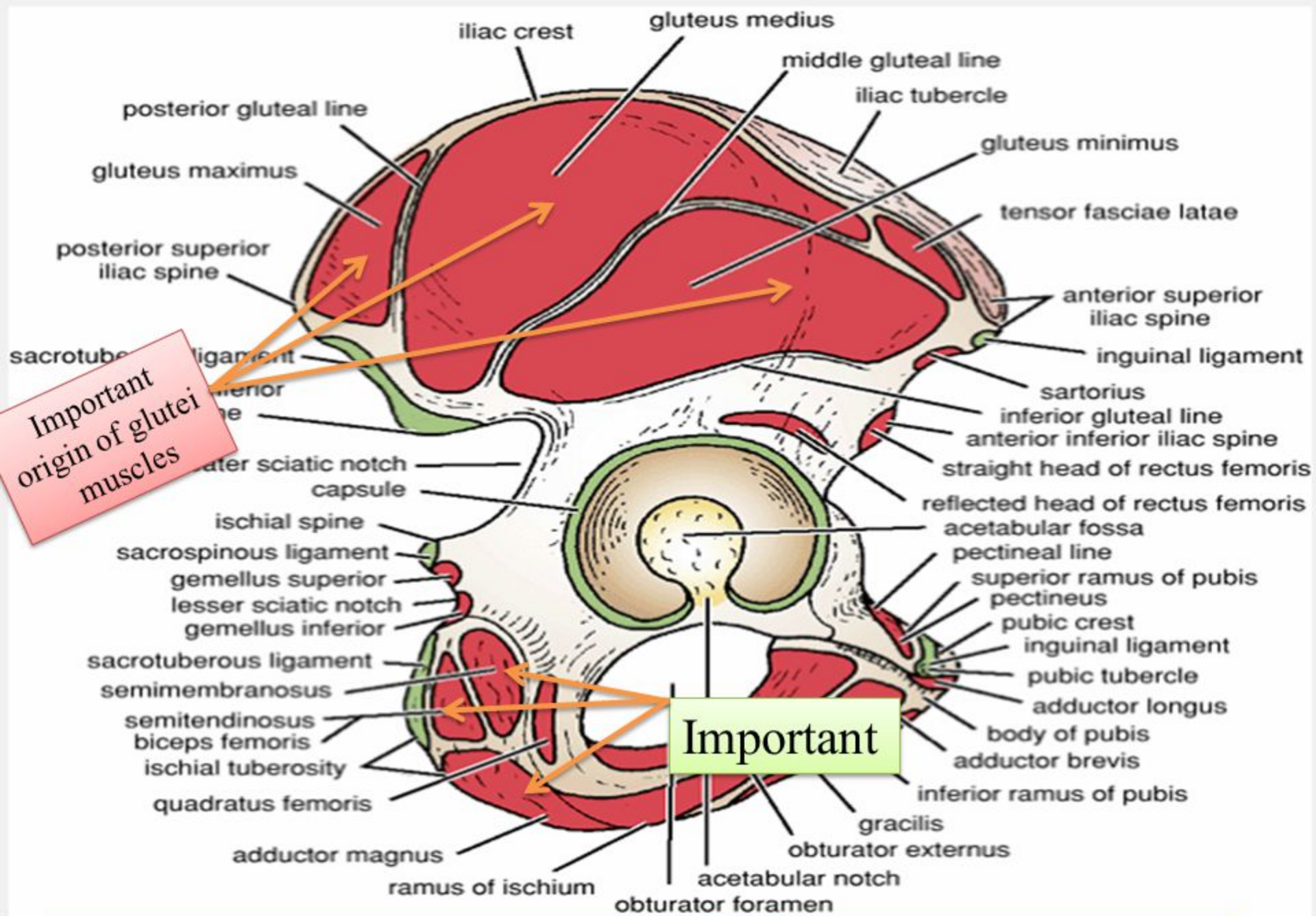
Lateral View

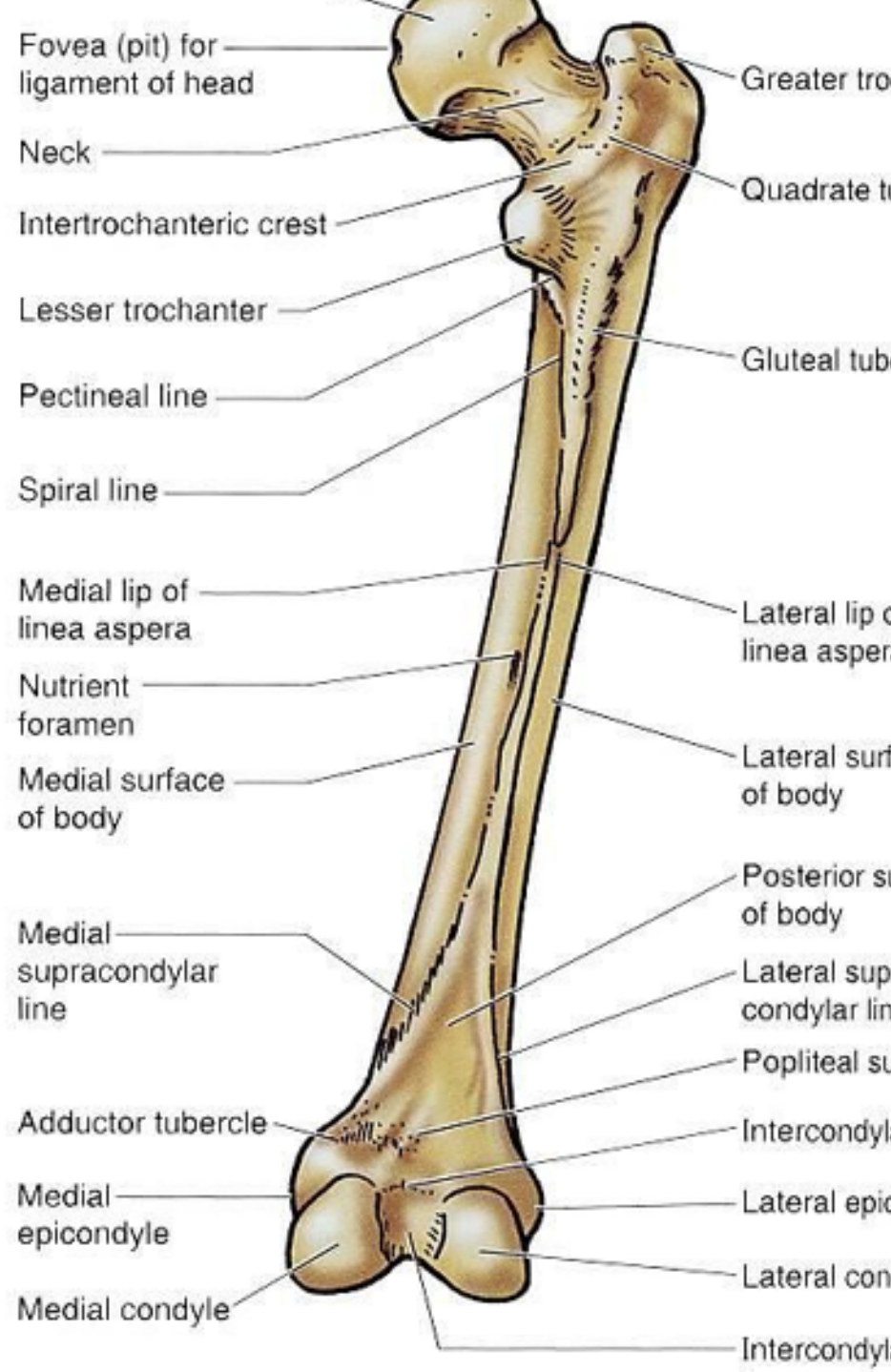
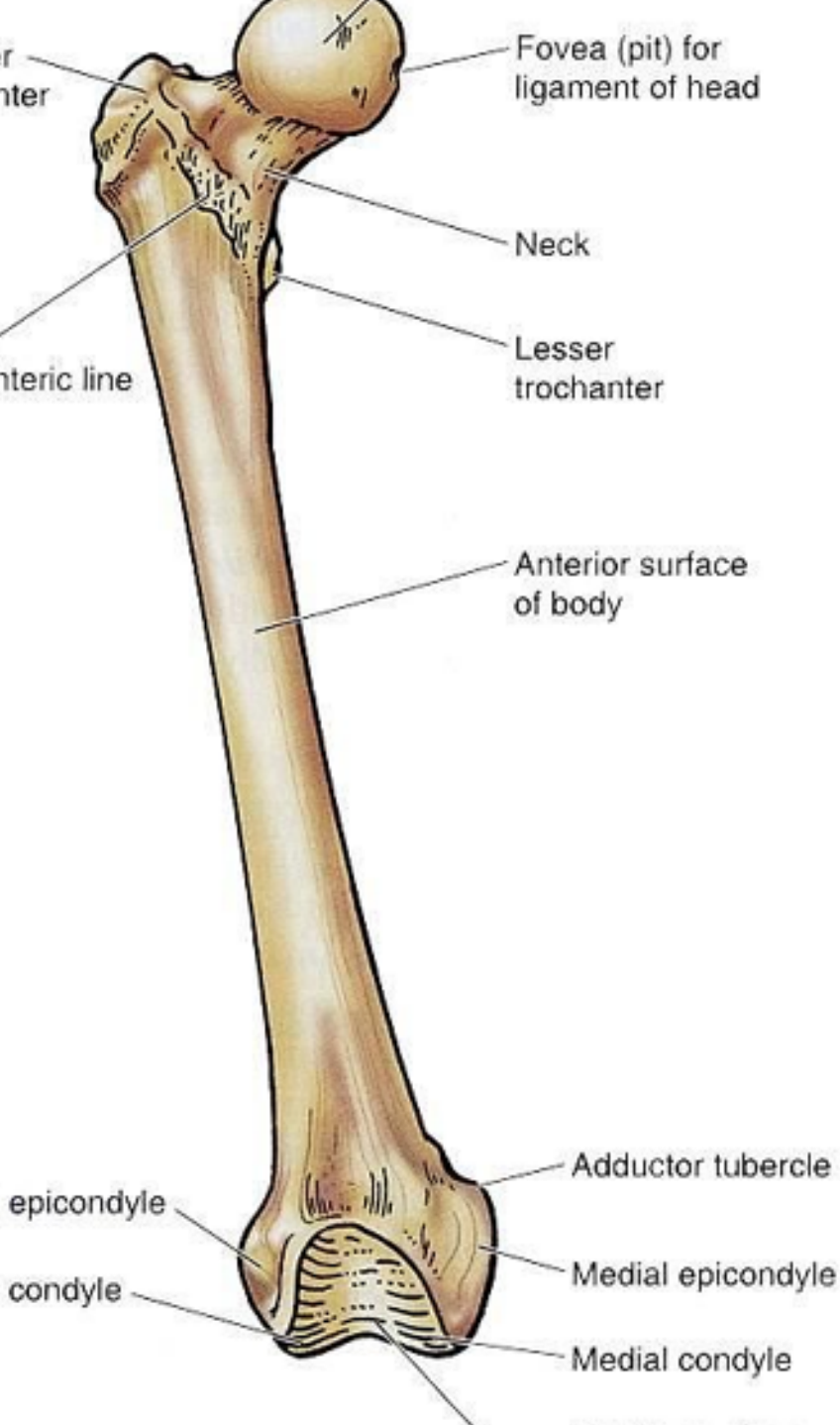


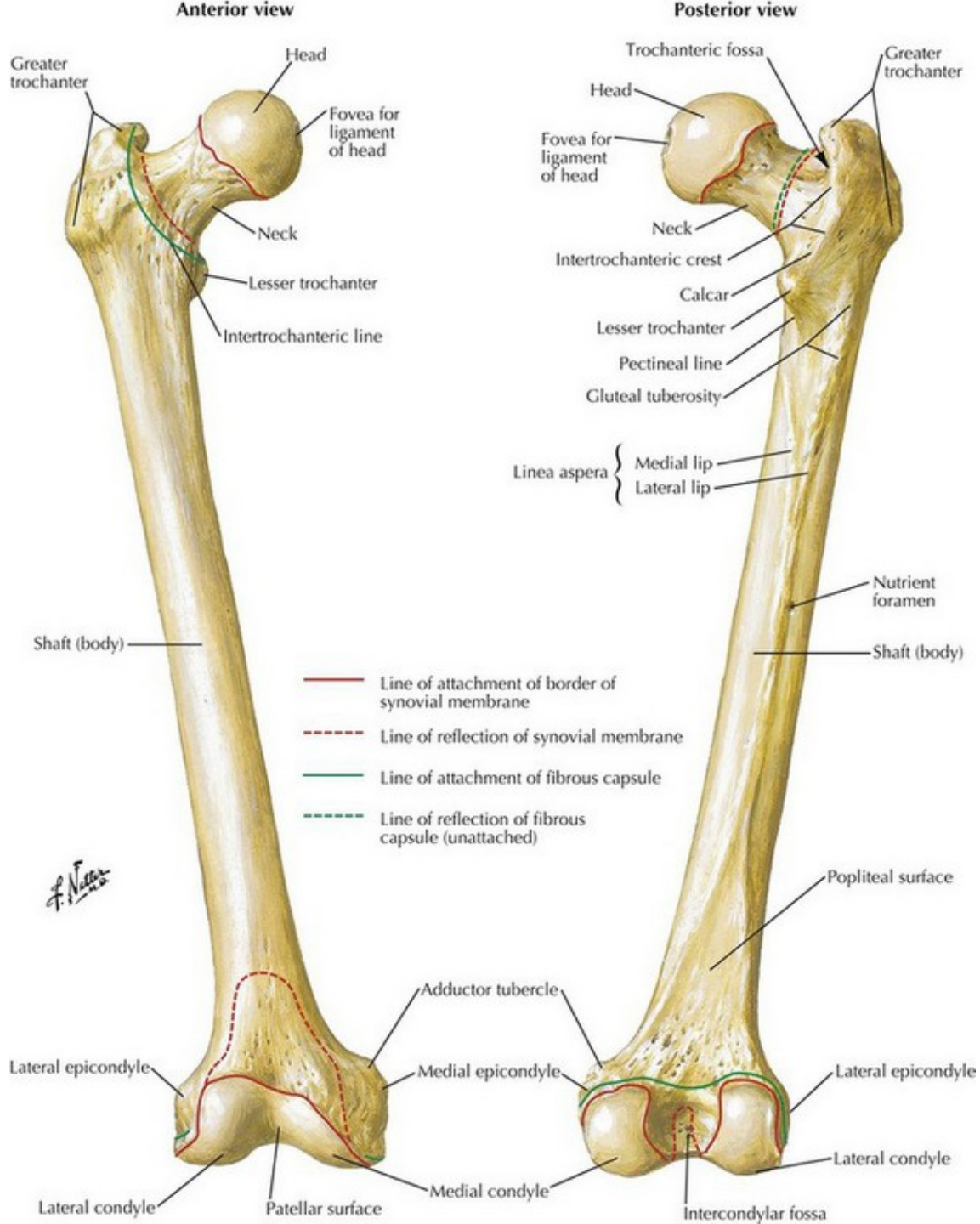


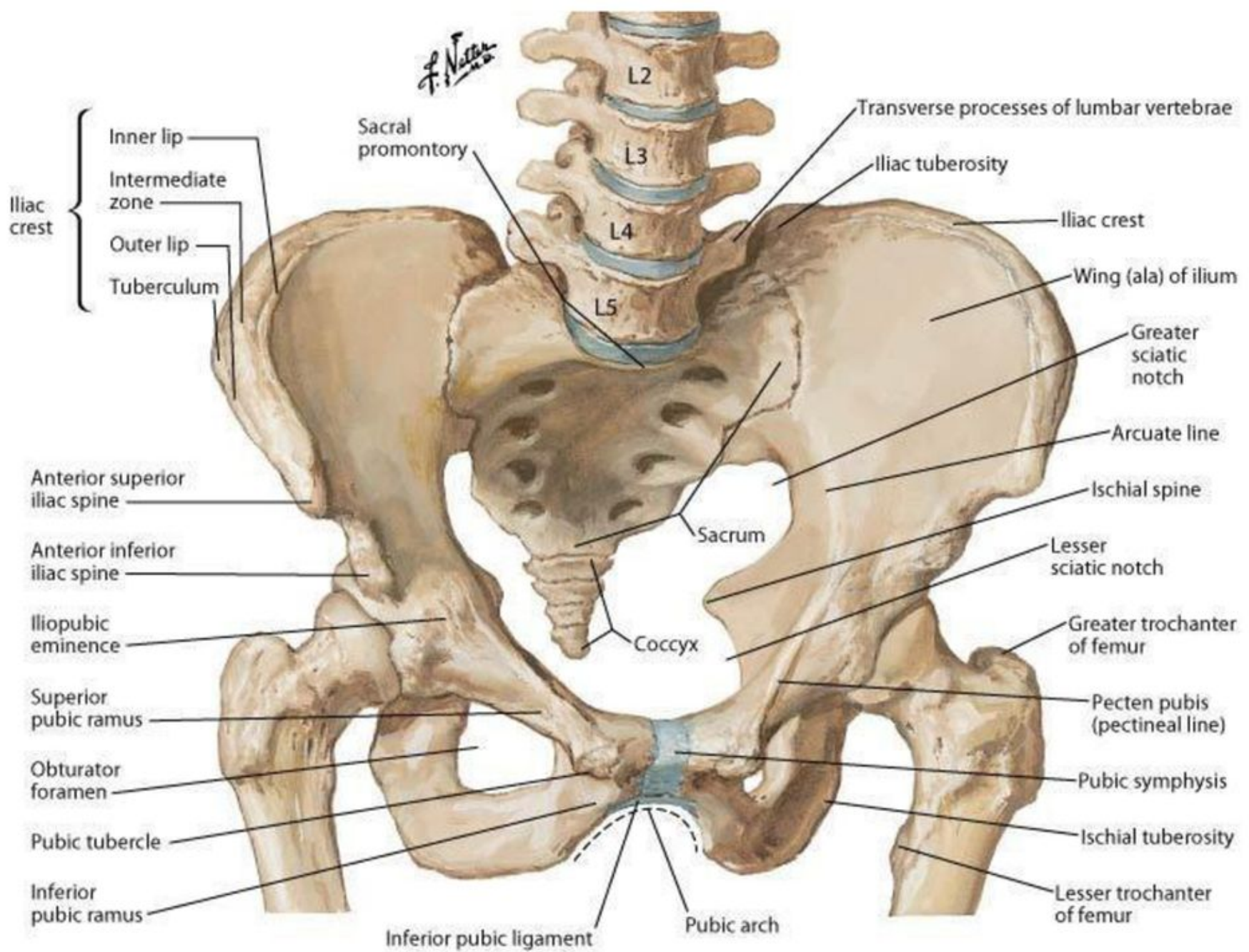


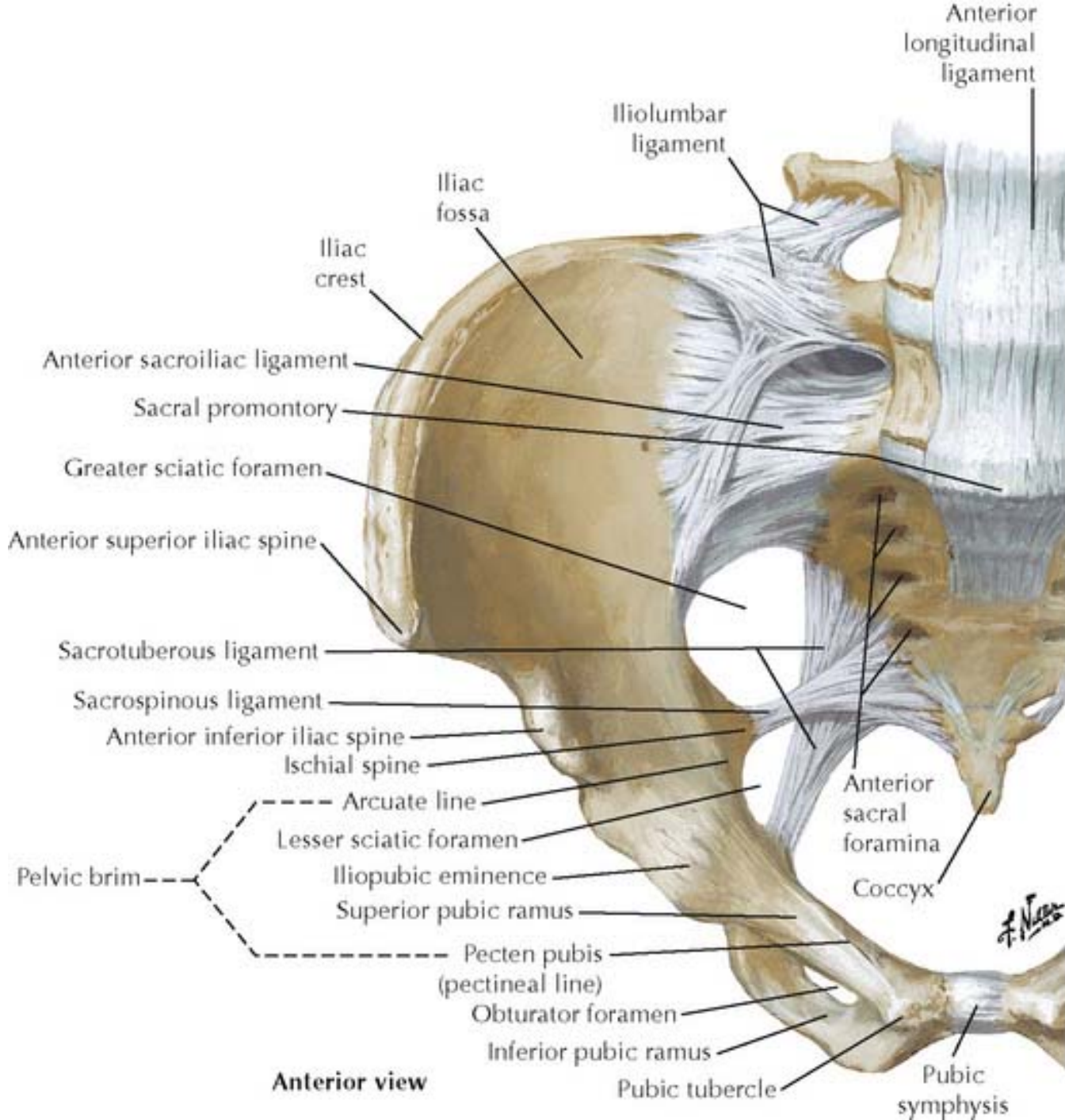








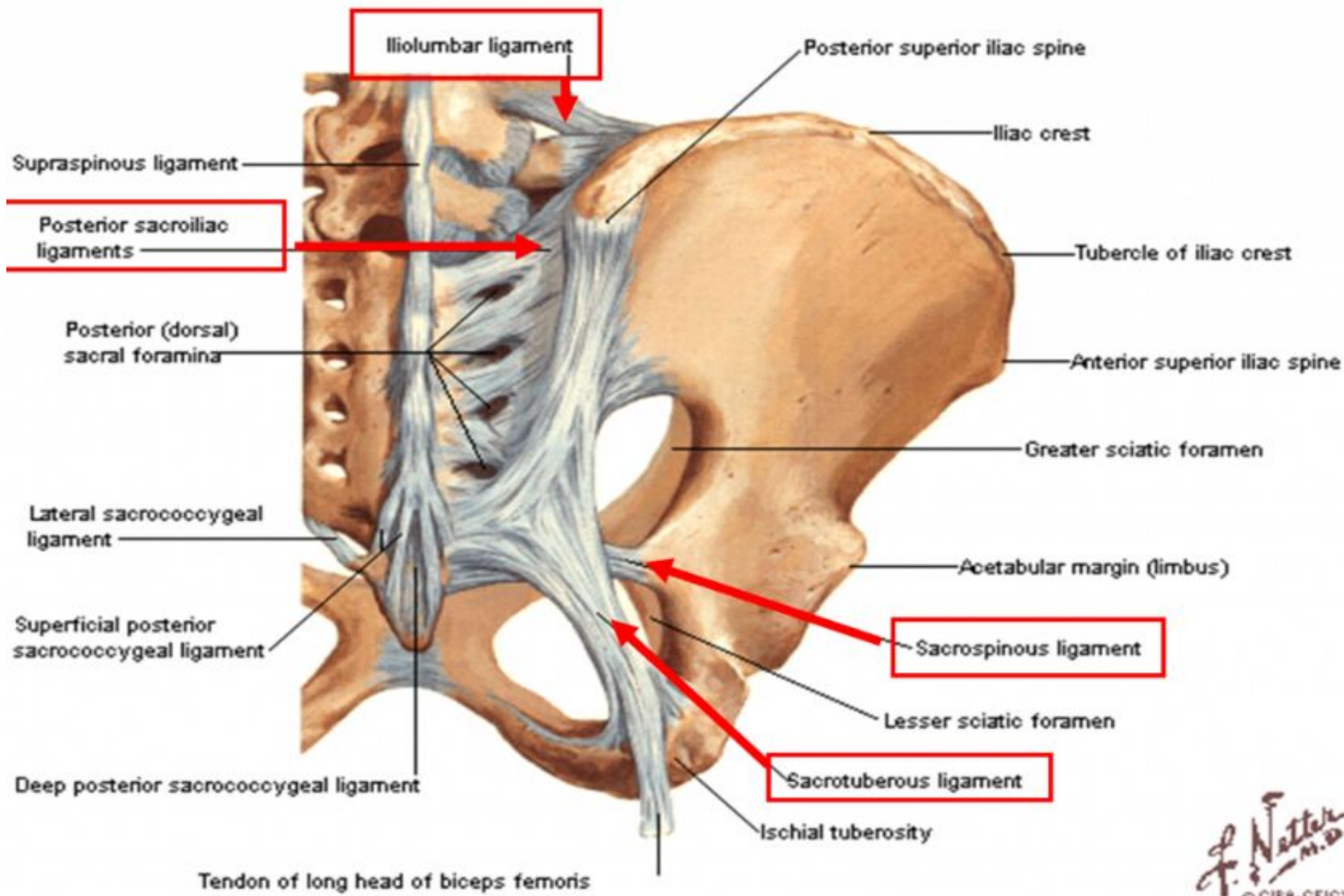




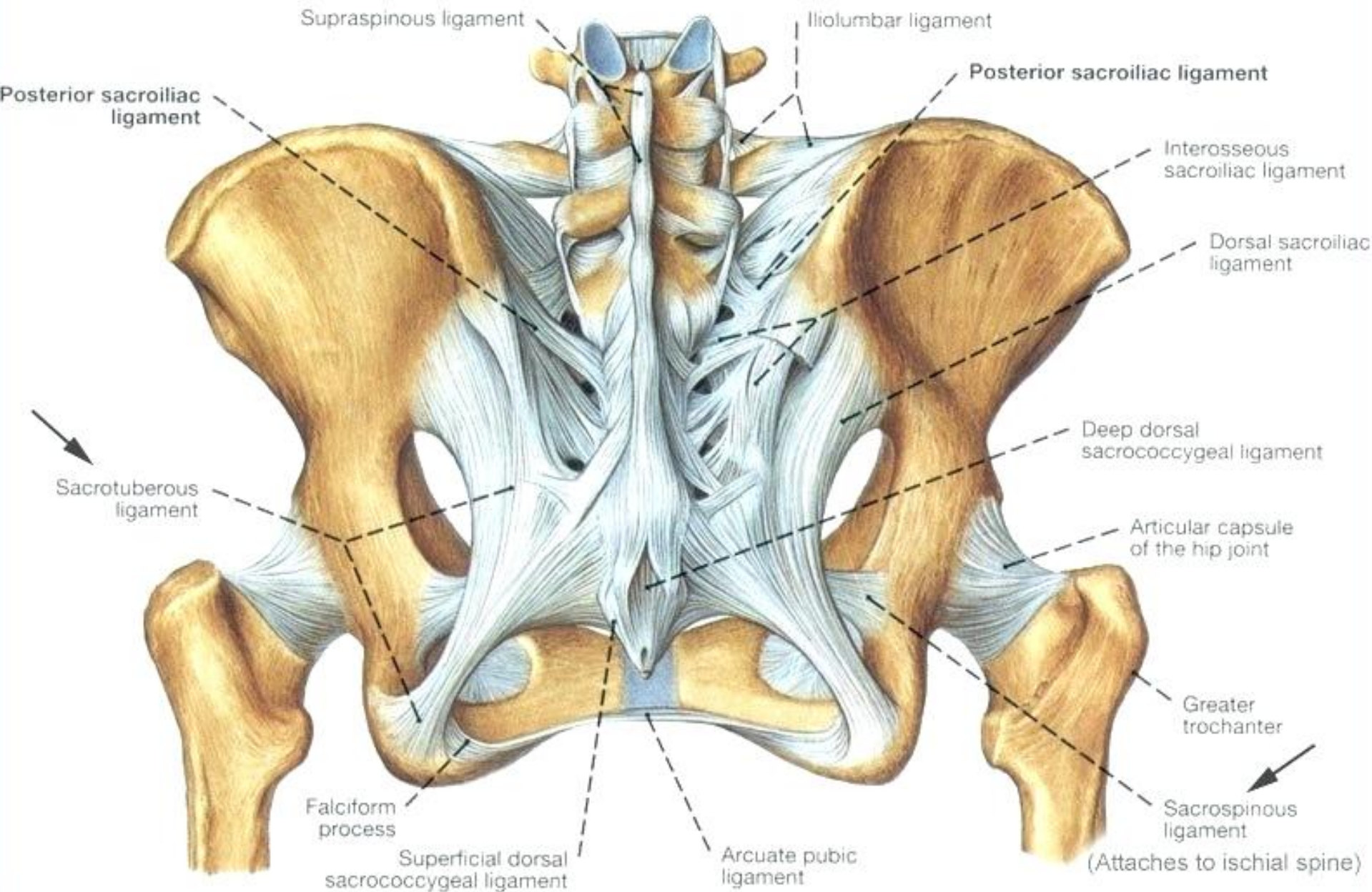
Anterior view

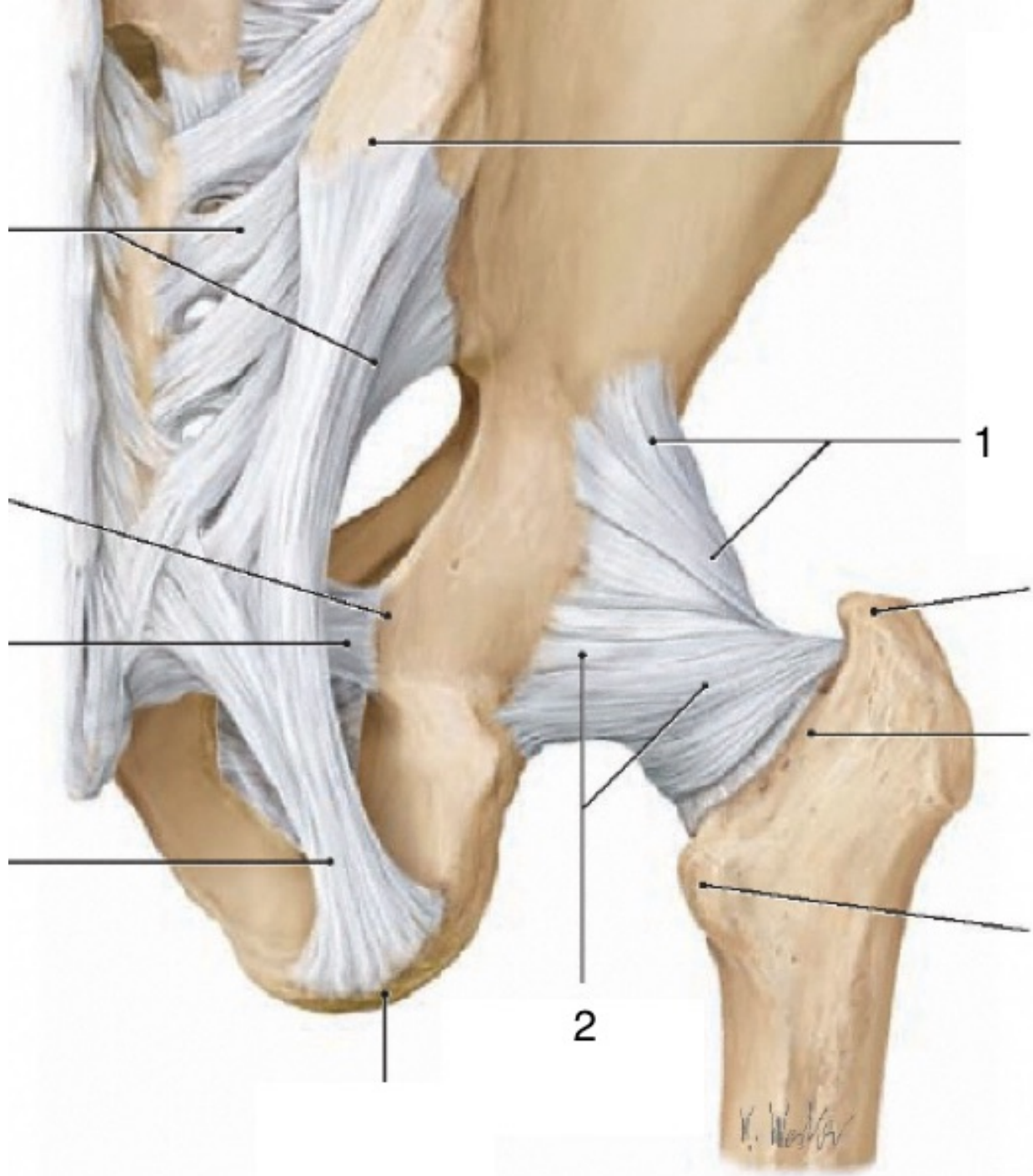
Bones and Ligaments of Pelvis

Posterior View



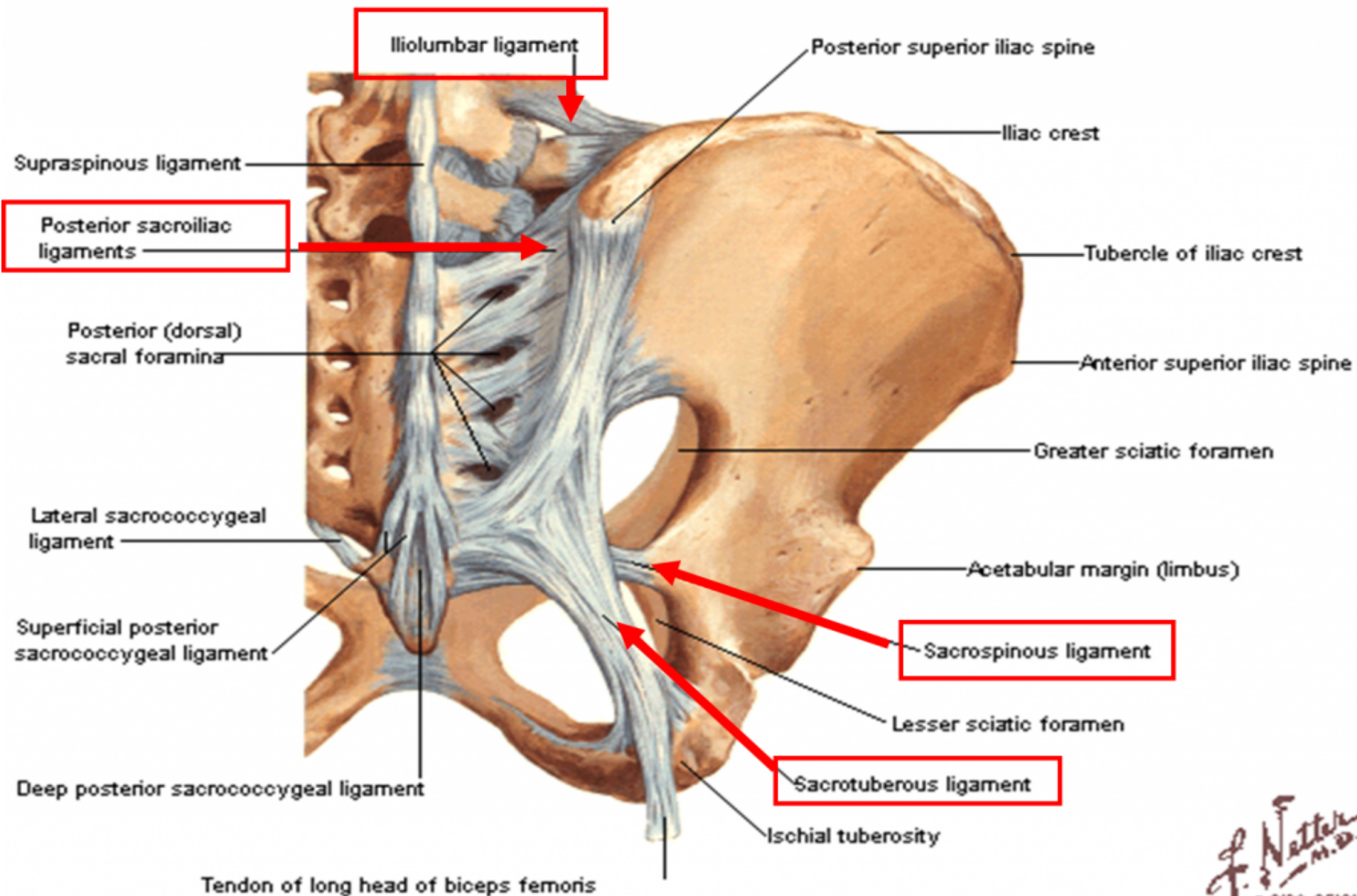
Pelvis and Ligaments, Rear View, Female





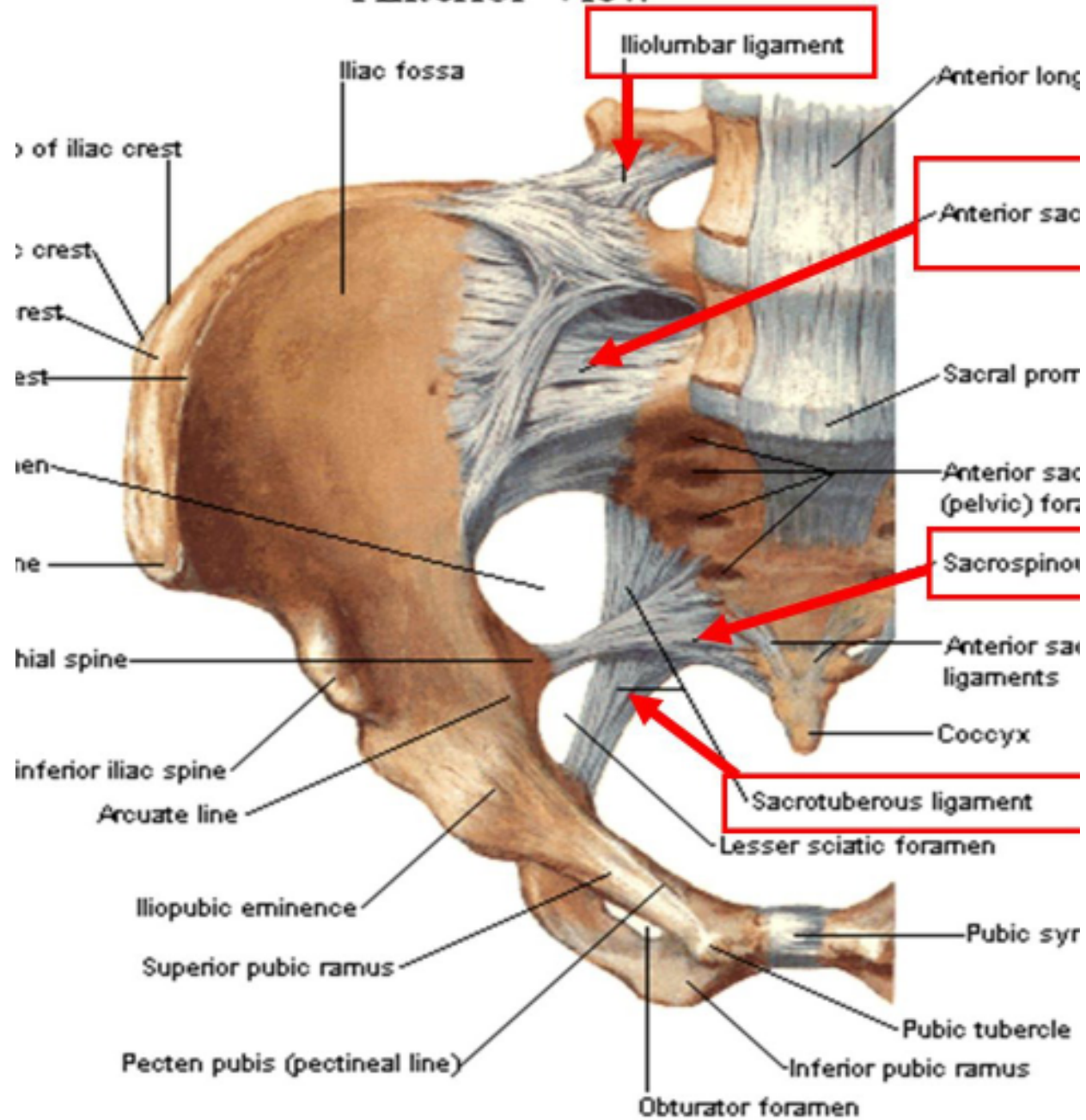
Bones and Ligaments of Pelvis

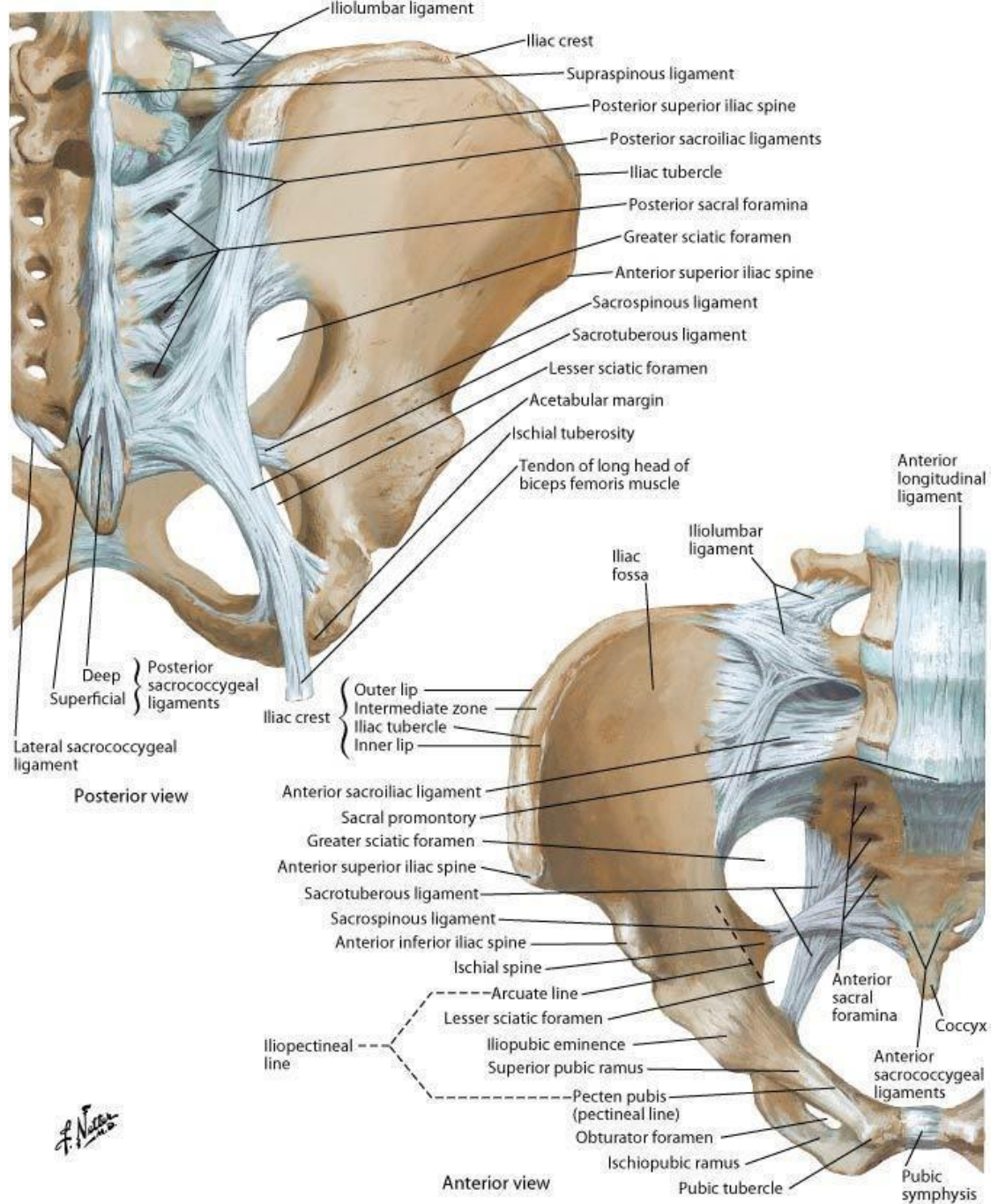
Posterior View



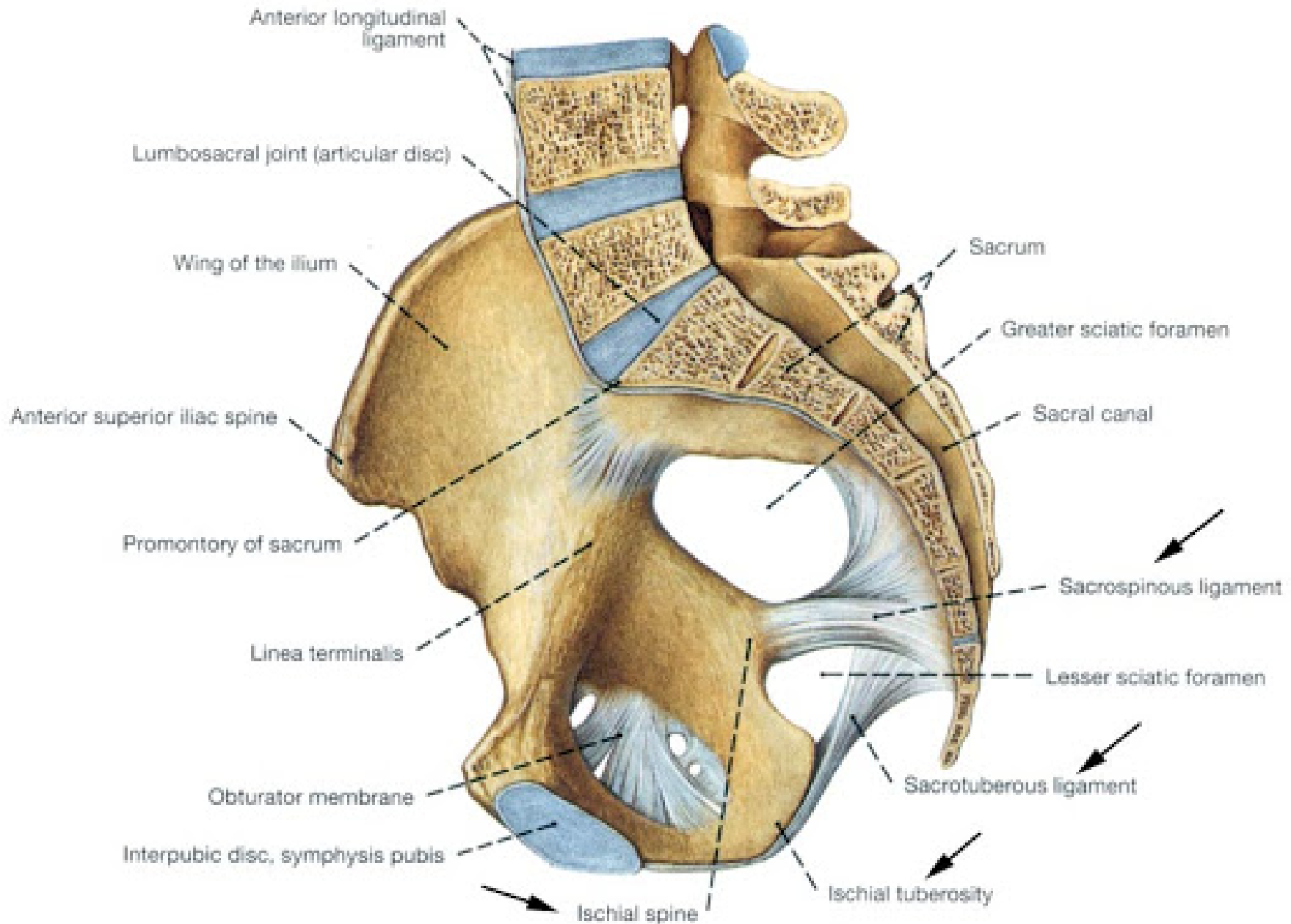
Bones and Ligaments of Pelvis

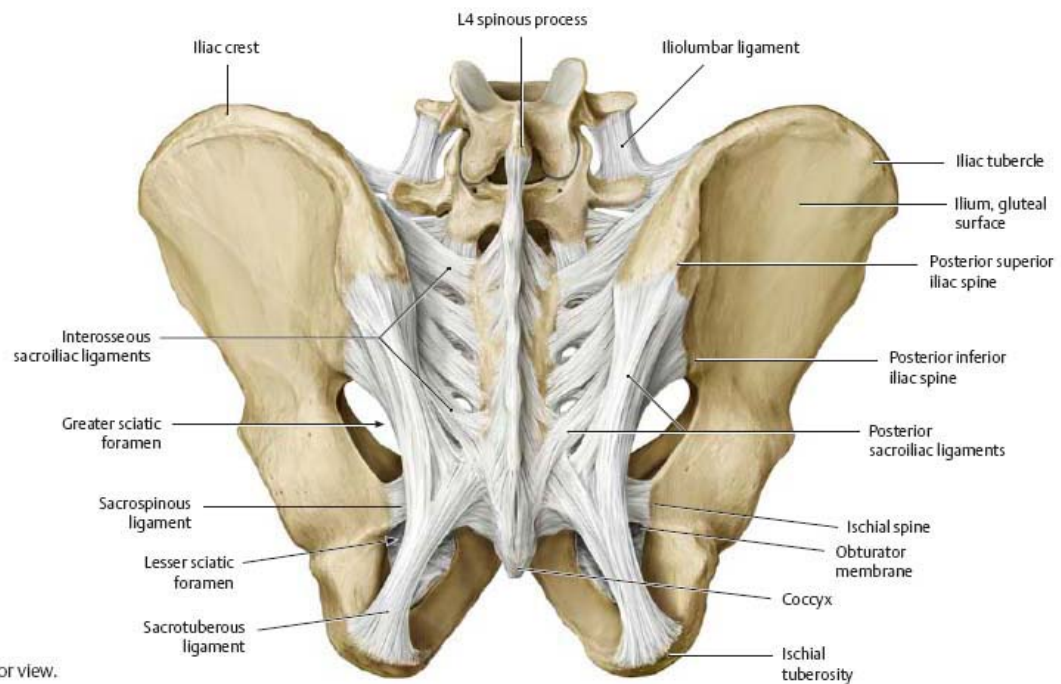
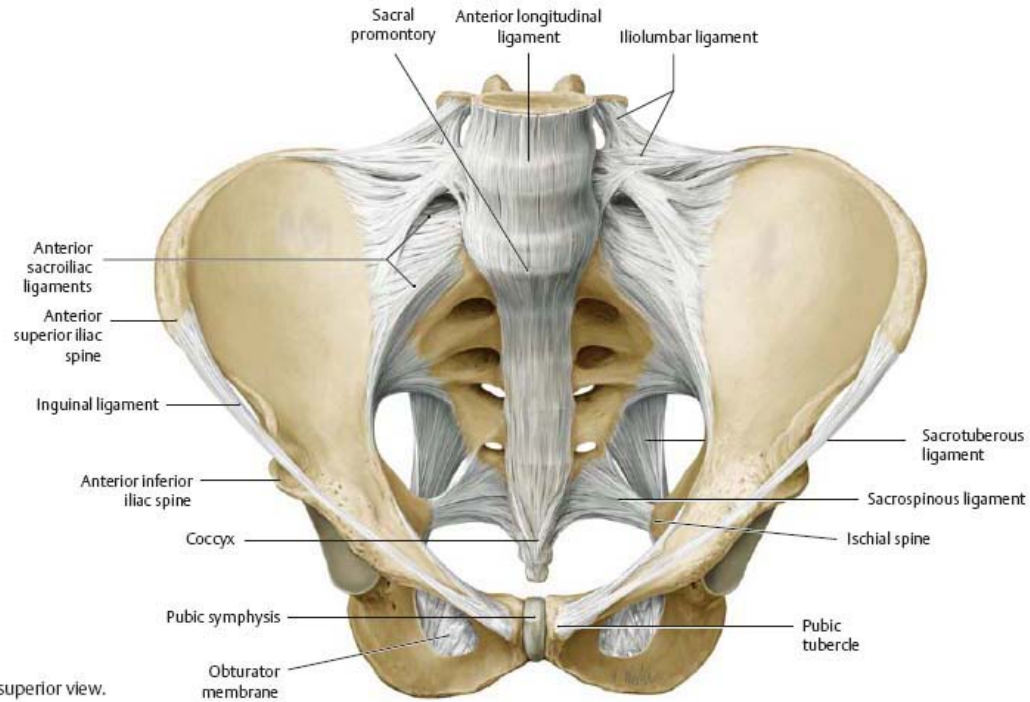
Anterior View

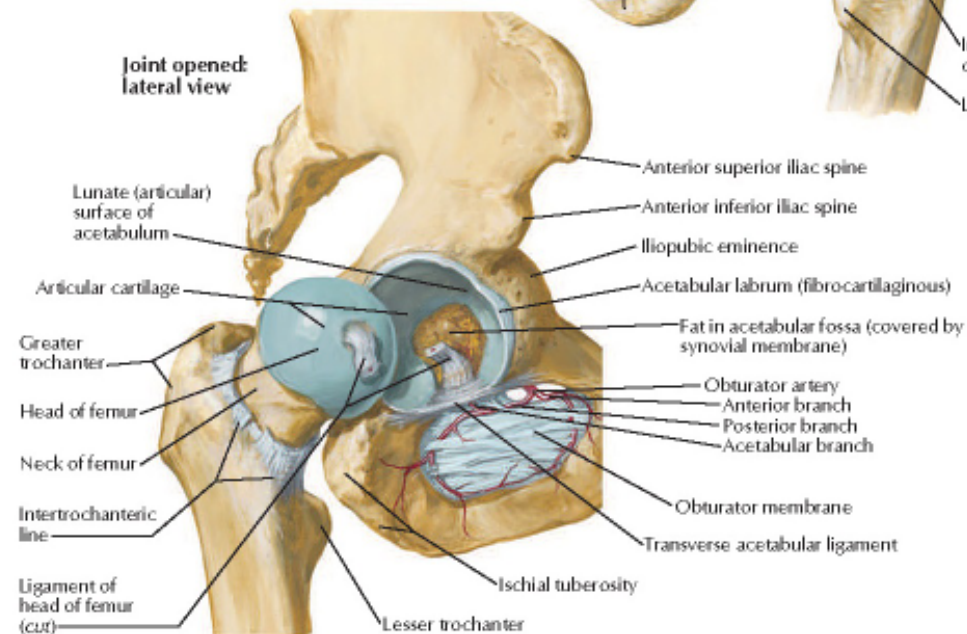
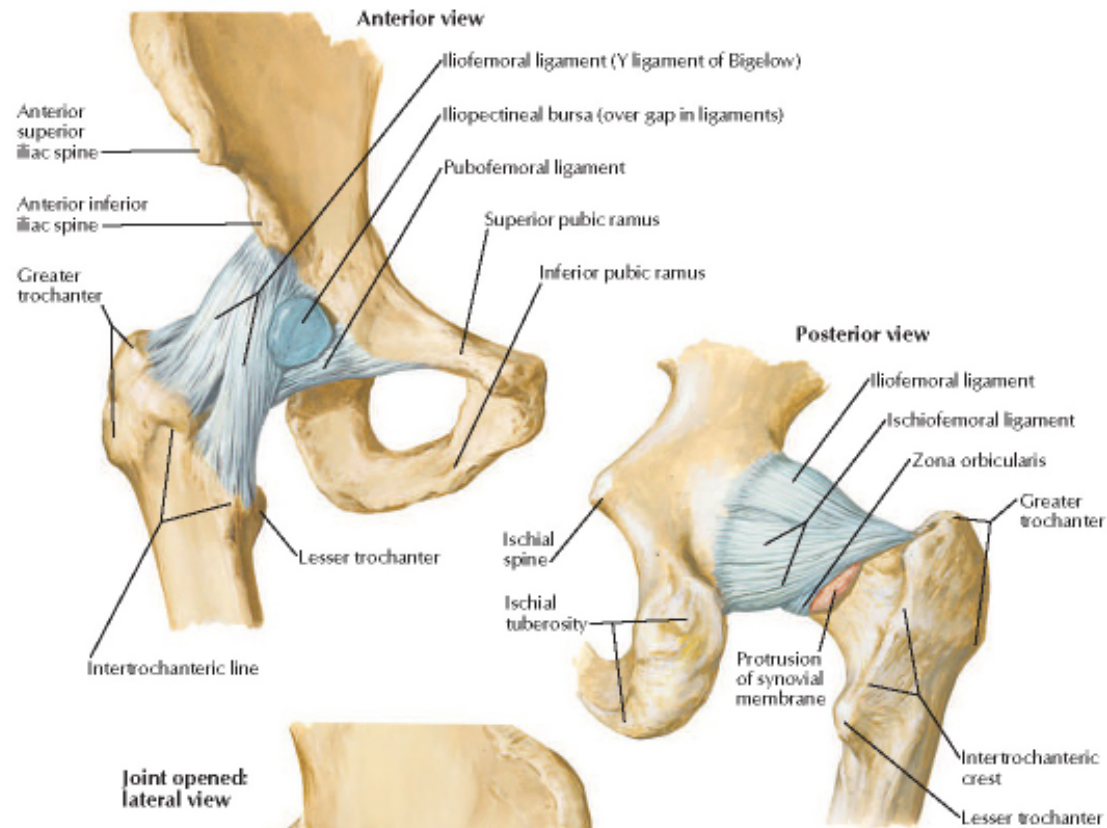




Pelvis and Ligaments, Vertical Cross Section, Female

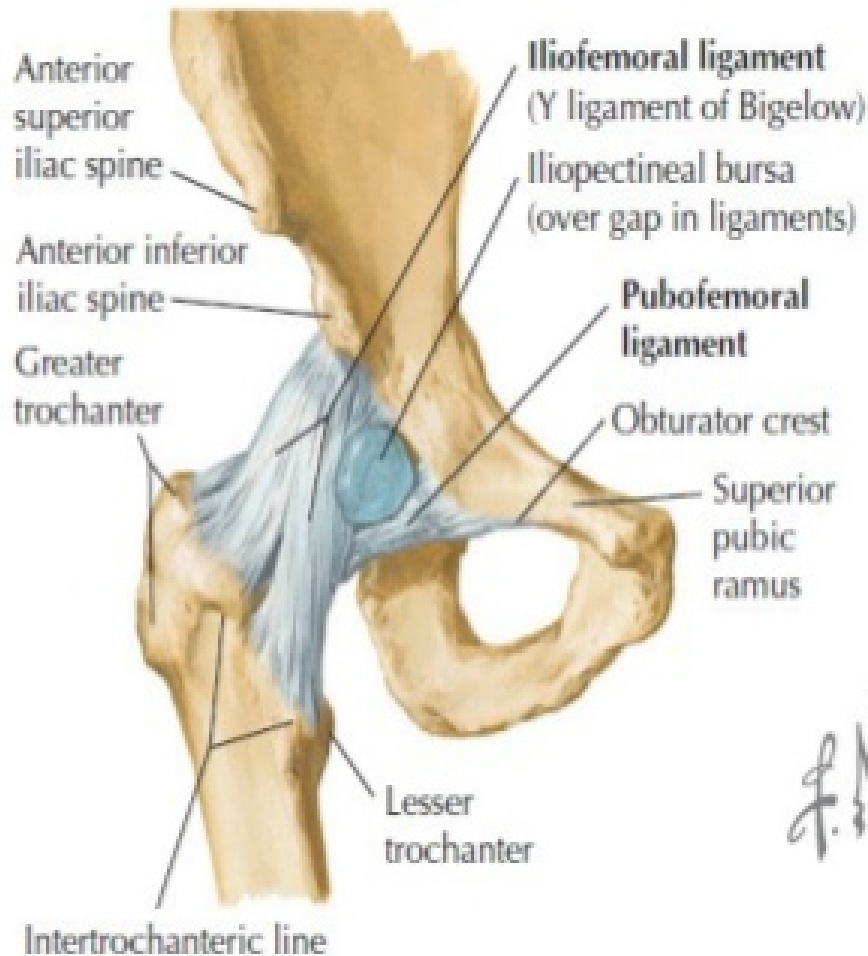




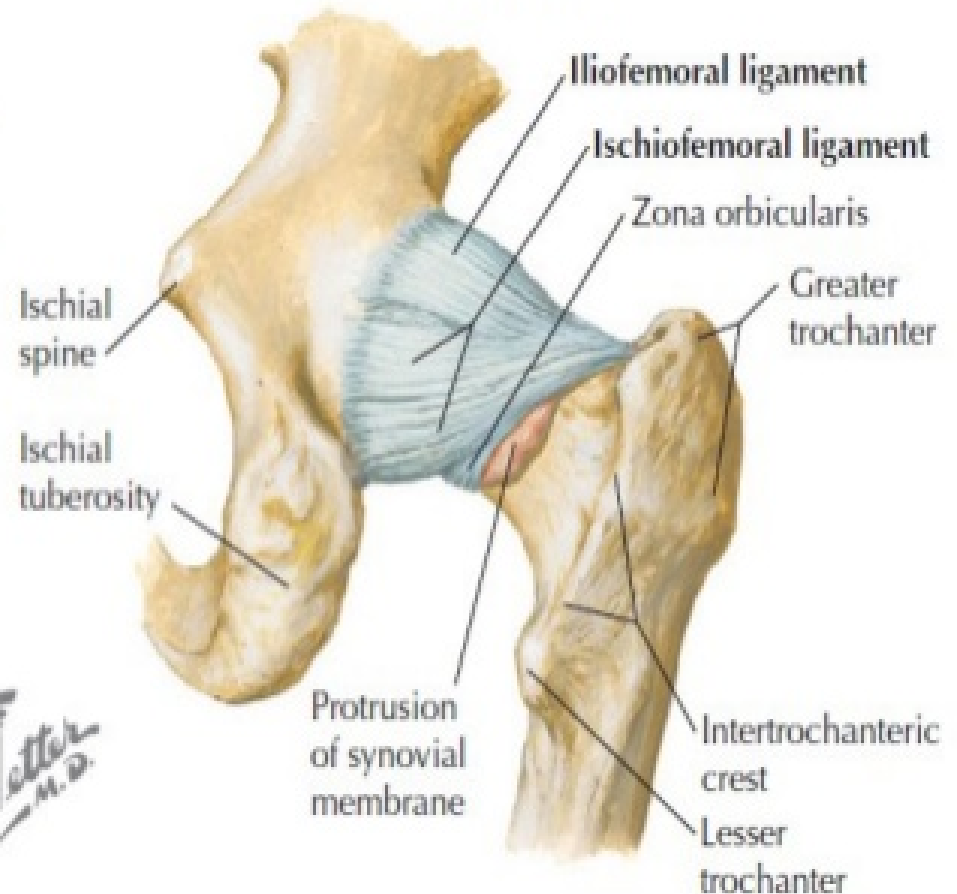


Hip joint ligaments

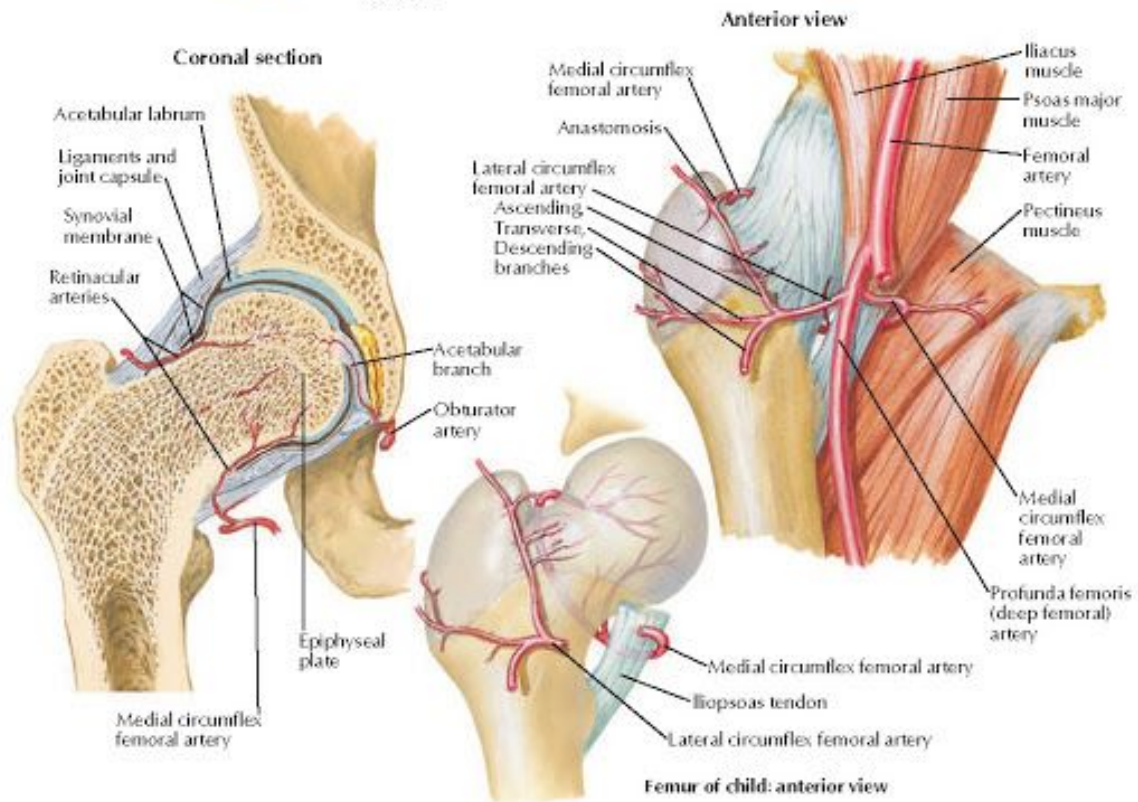
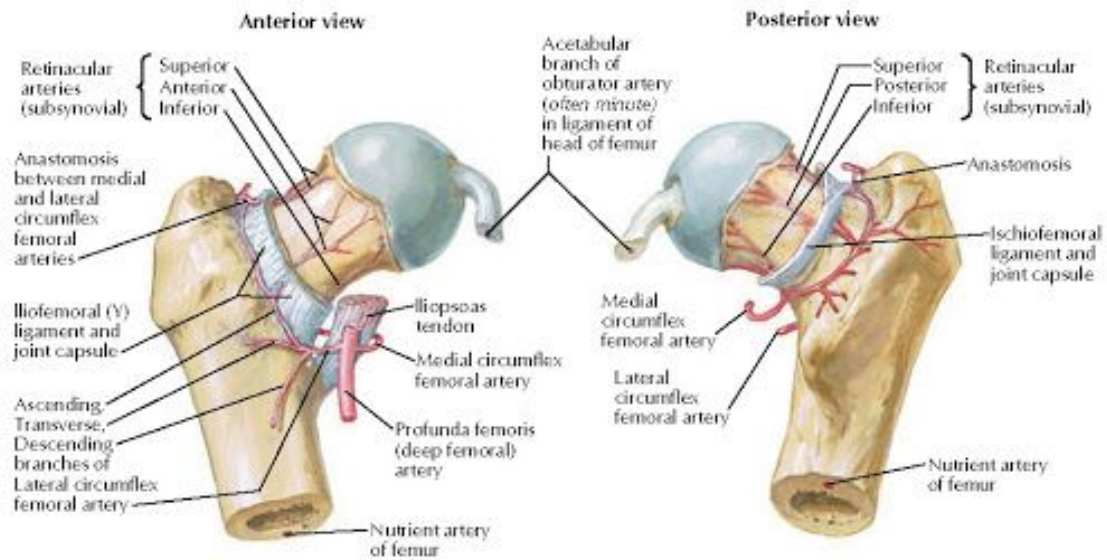
Anterior view



Posterior view



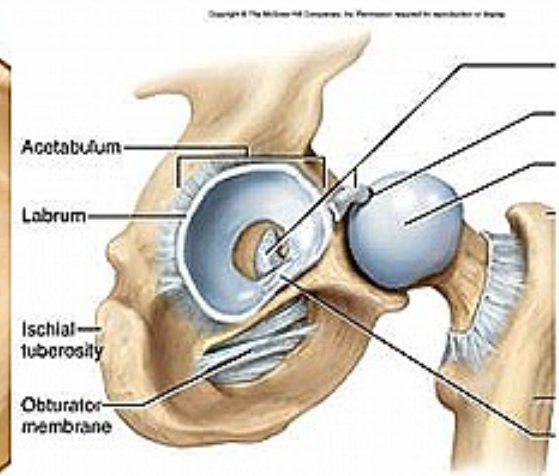
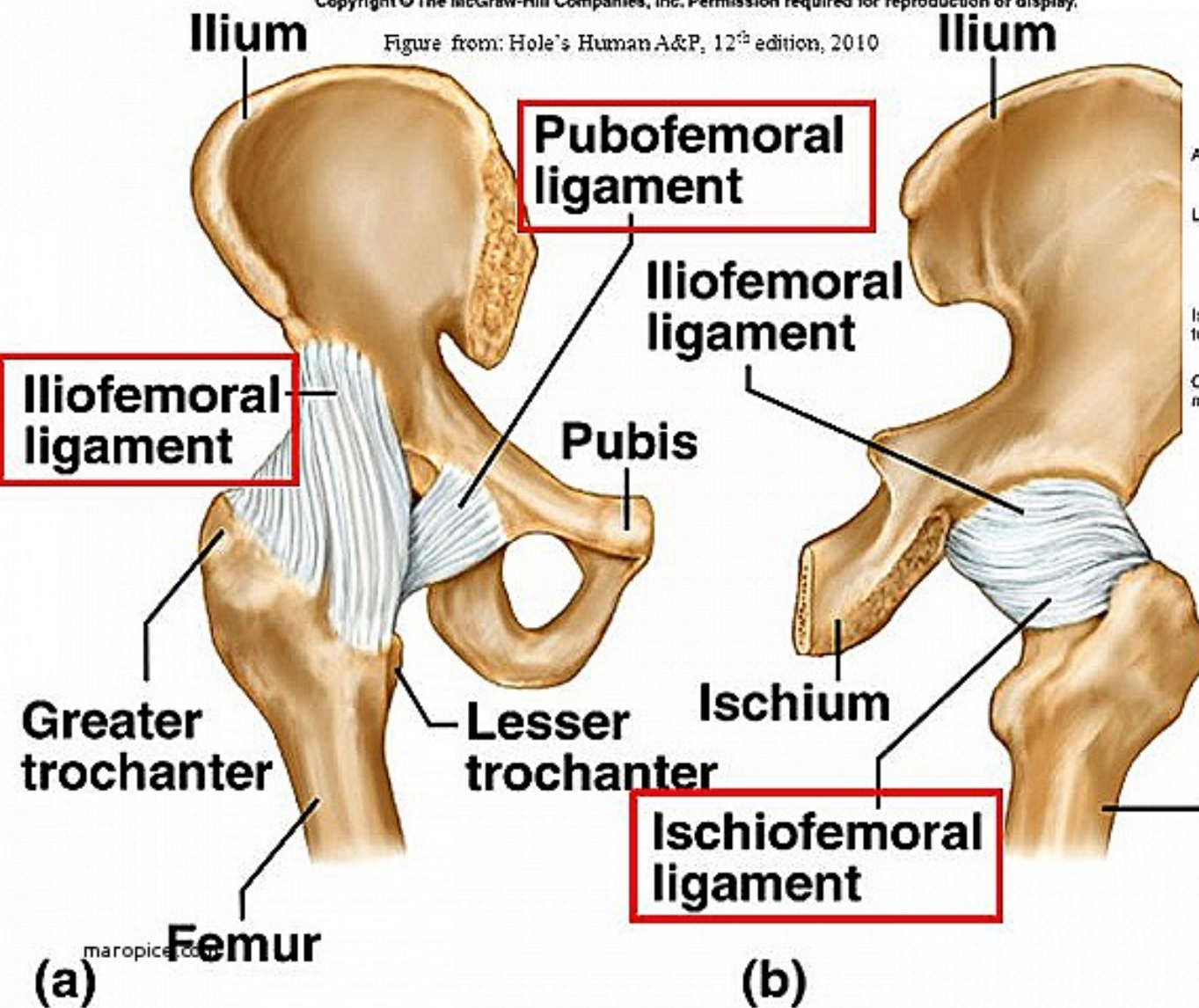
F. J. Netter M.D.



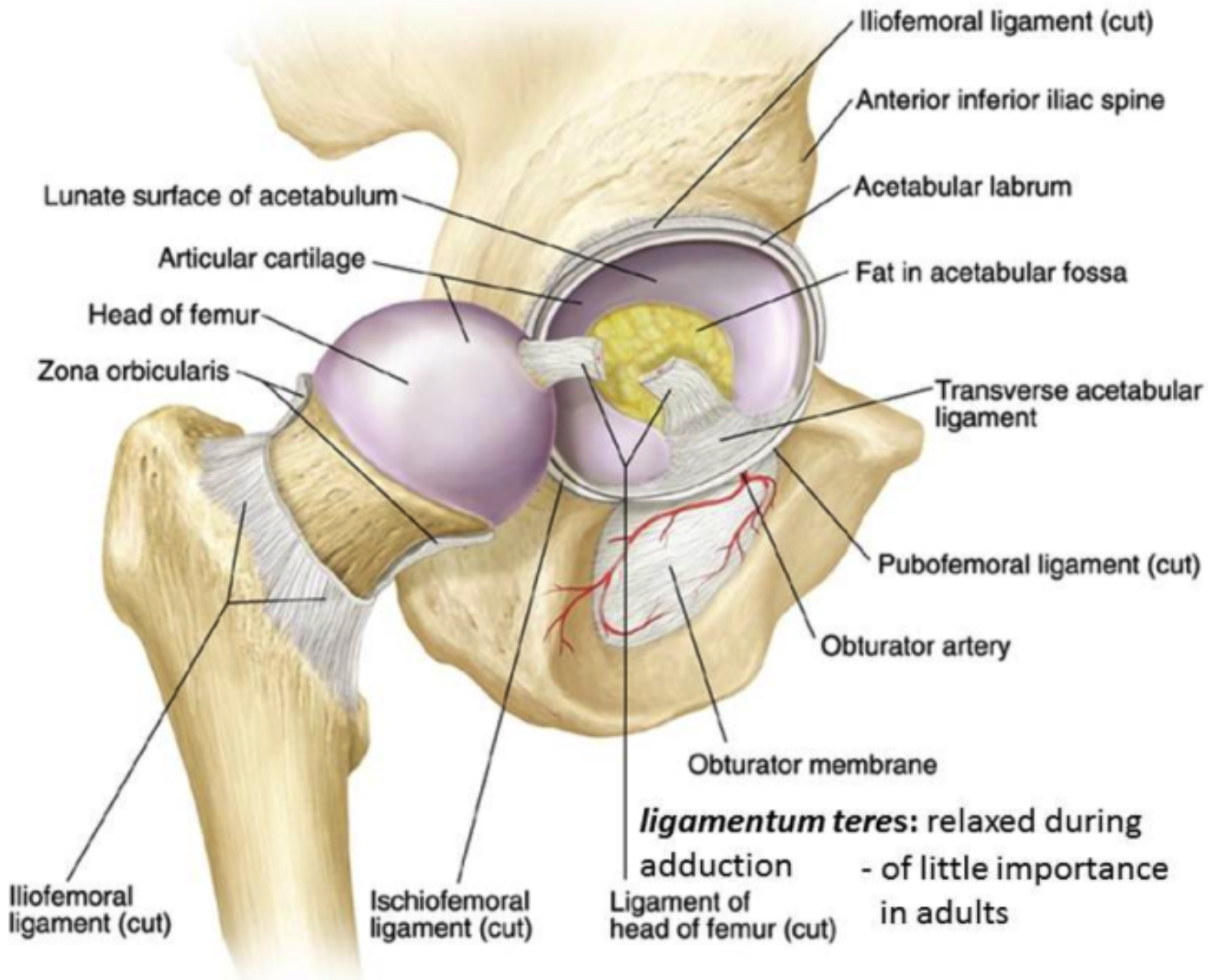
Hip Joint

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Figure from: Hole's Human A&P, 12th edition, 2010



From: Saladin, *Anatomy & Physiology*, McGraw Hill, 2007



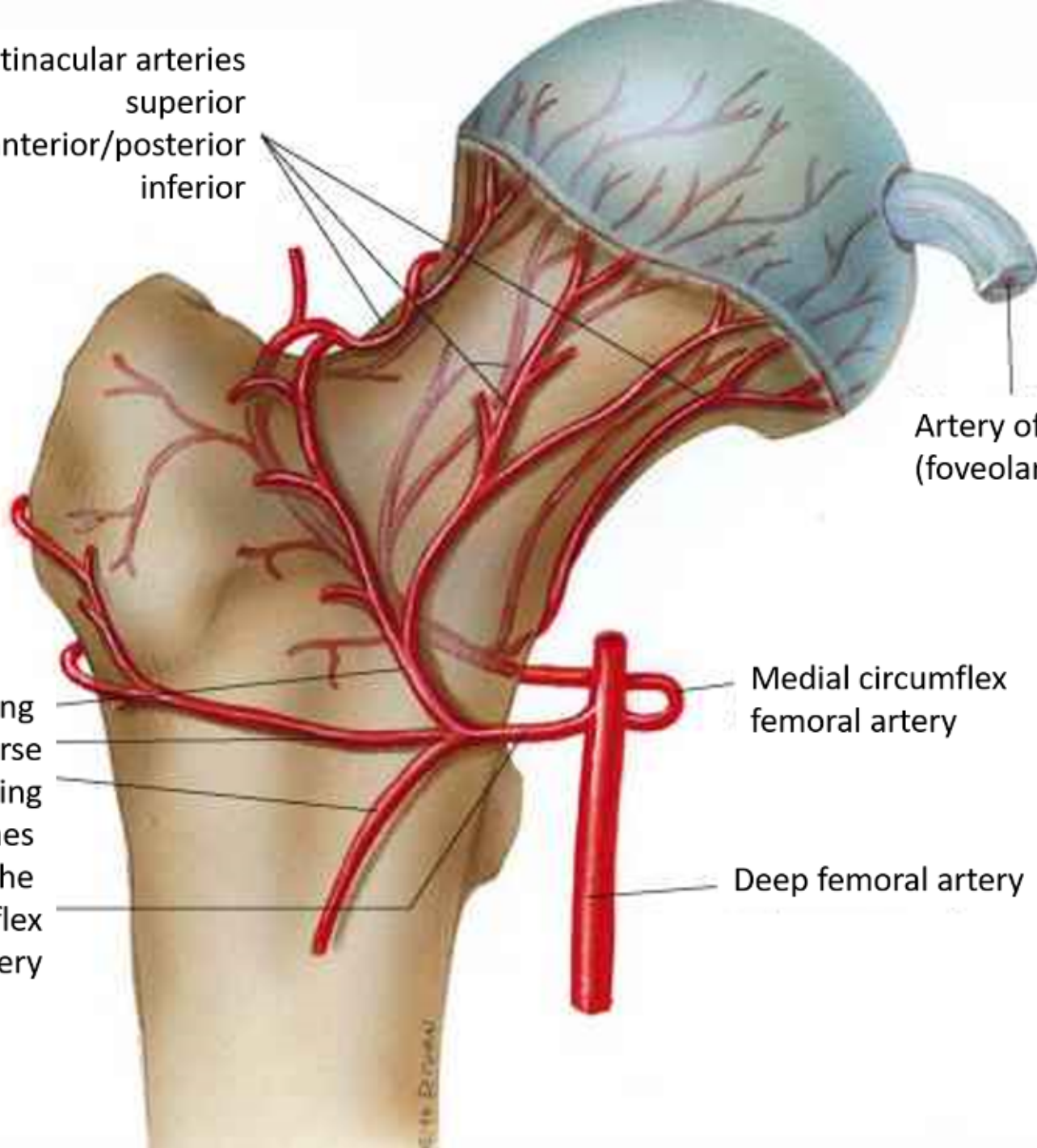
Retinacular arteries
superior
anterior/posterior
inferior

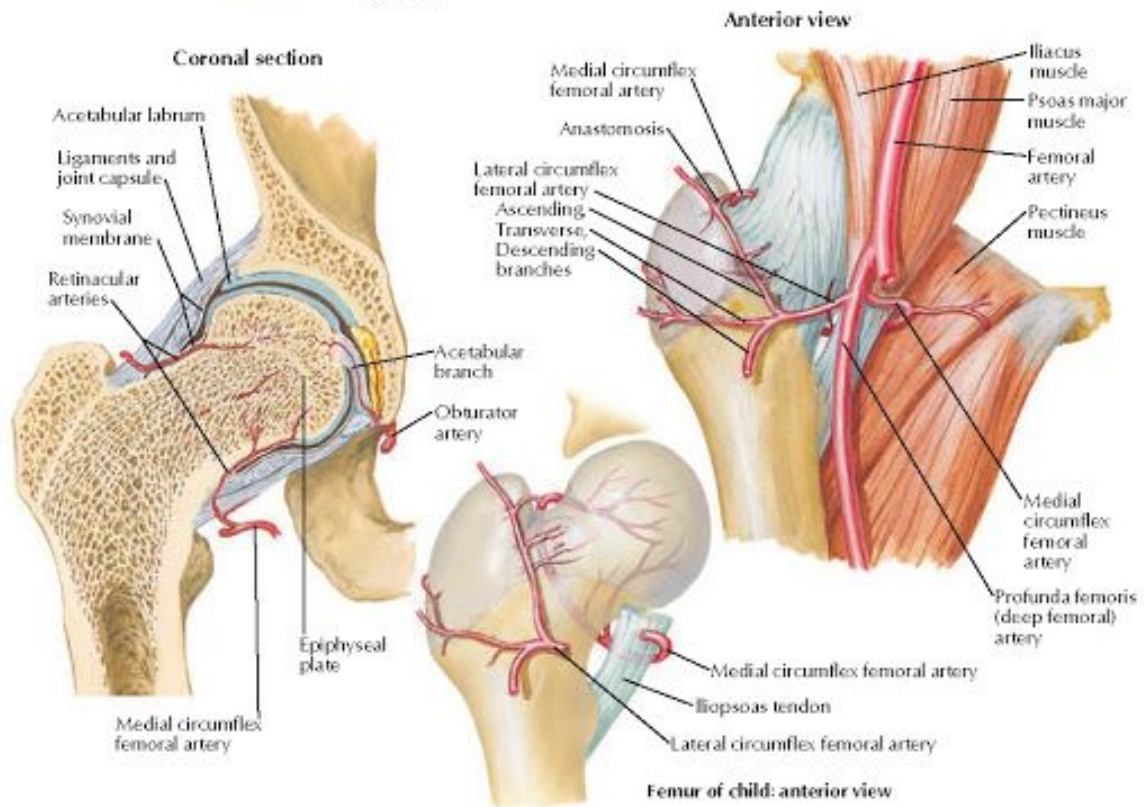
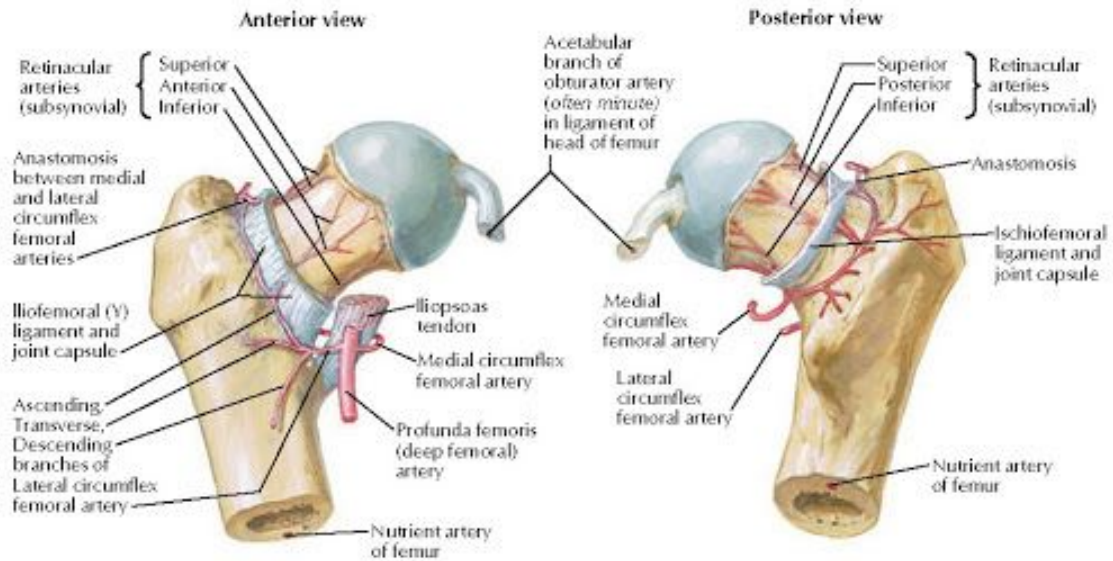
Artery of ligamentum teres
(foveolar artery)

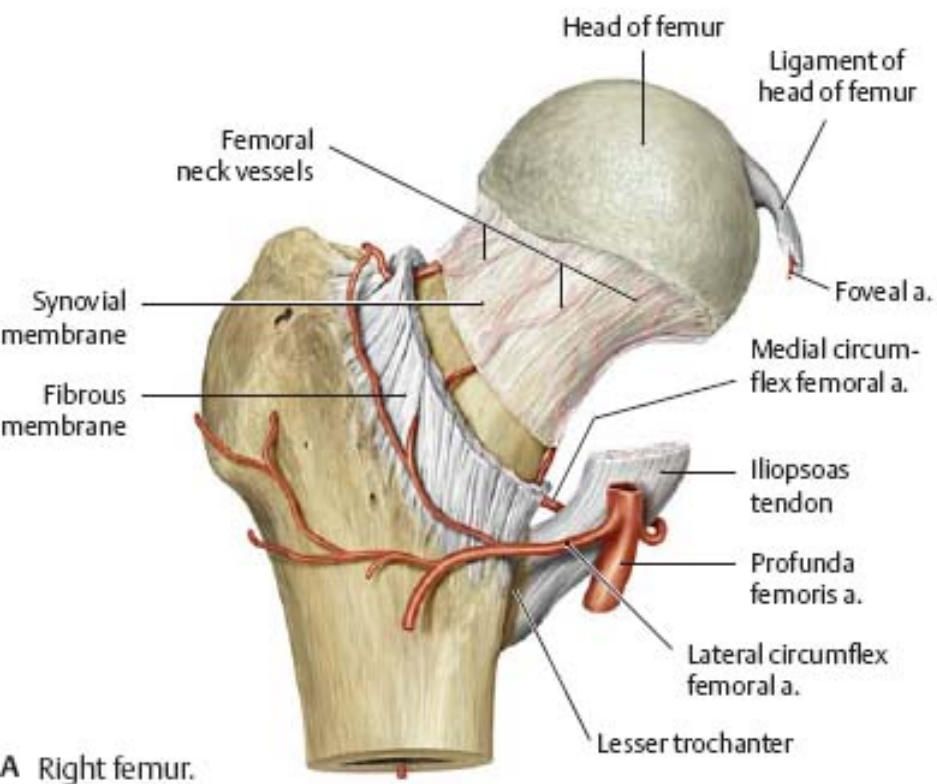
Ascending
transverse
& descending
branches
of the
lateral circumflex
femoral artery

Medial circumflex
femoral artery

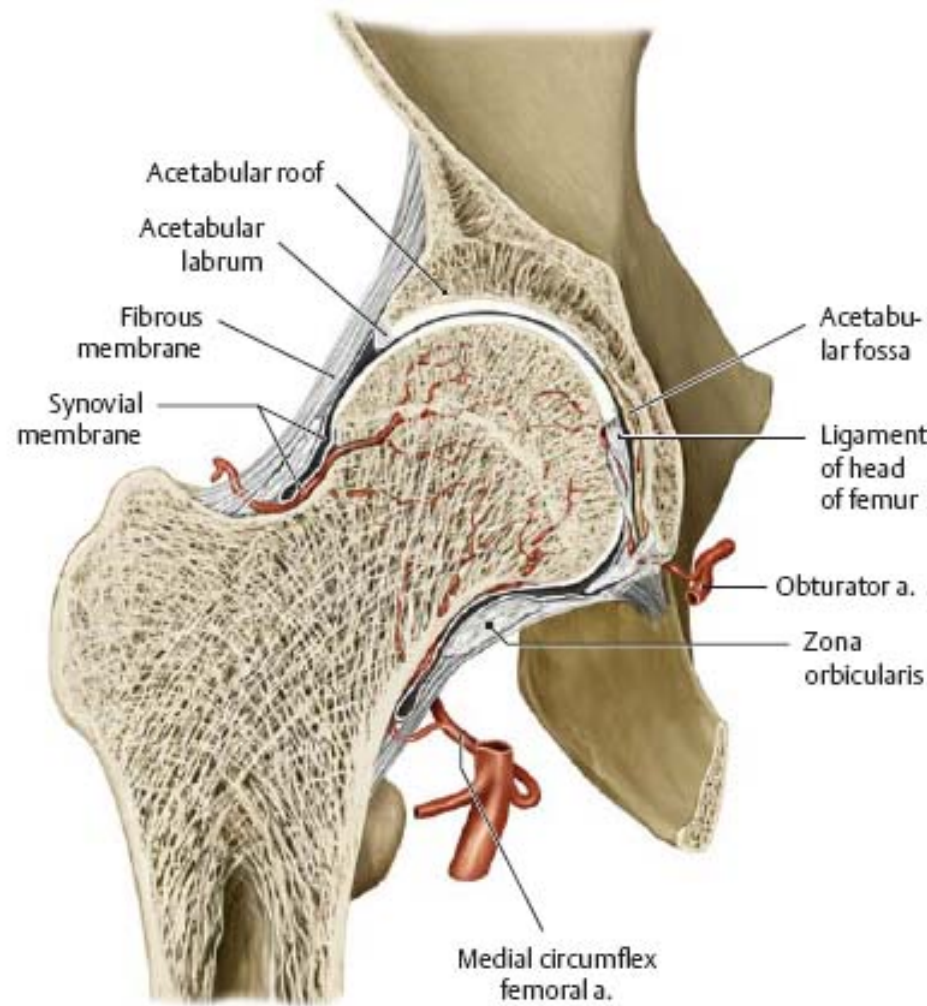
Deep femoral artery



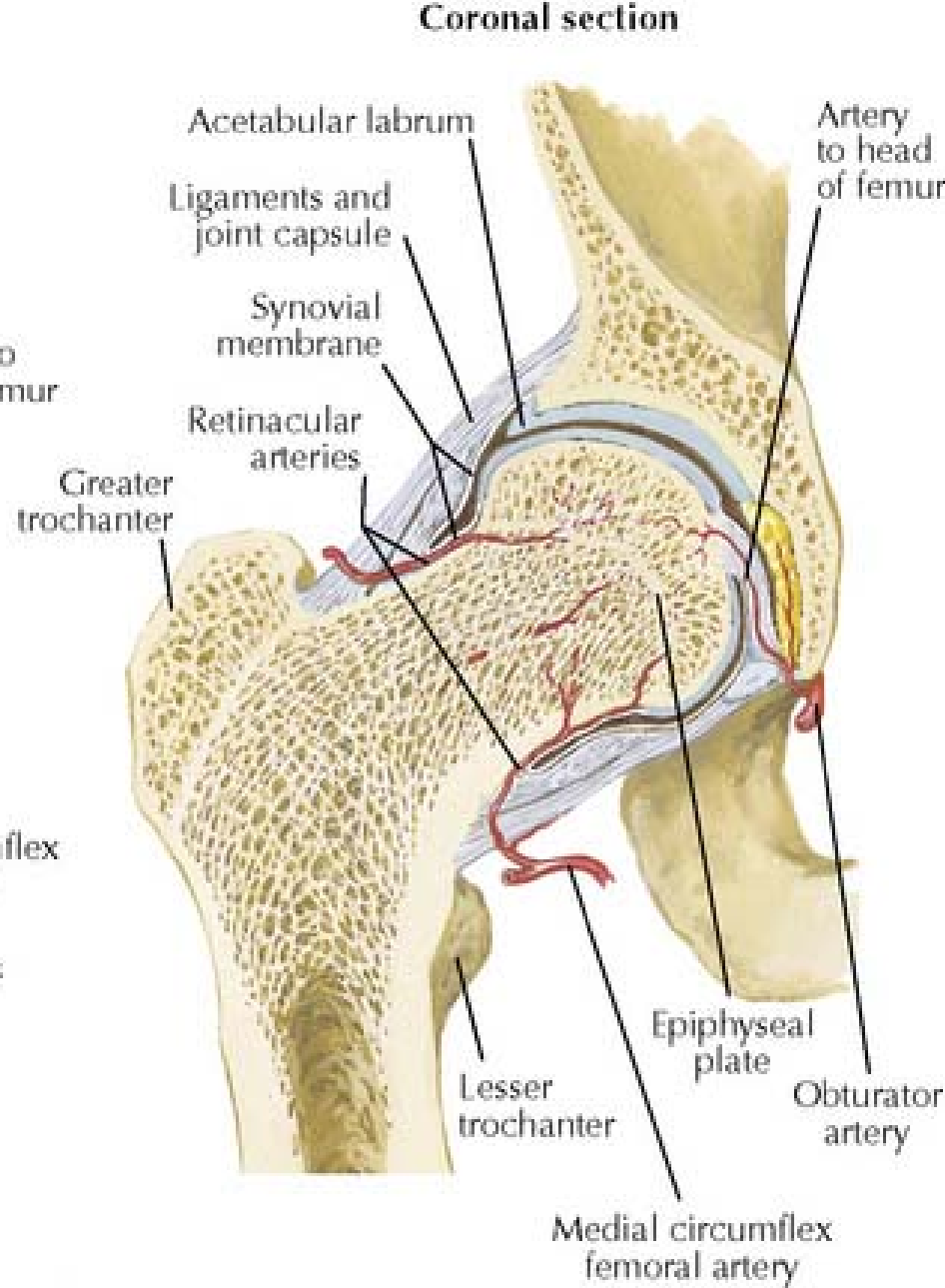
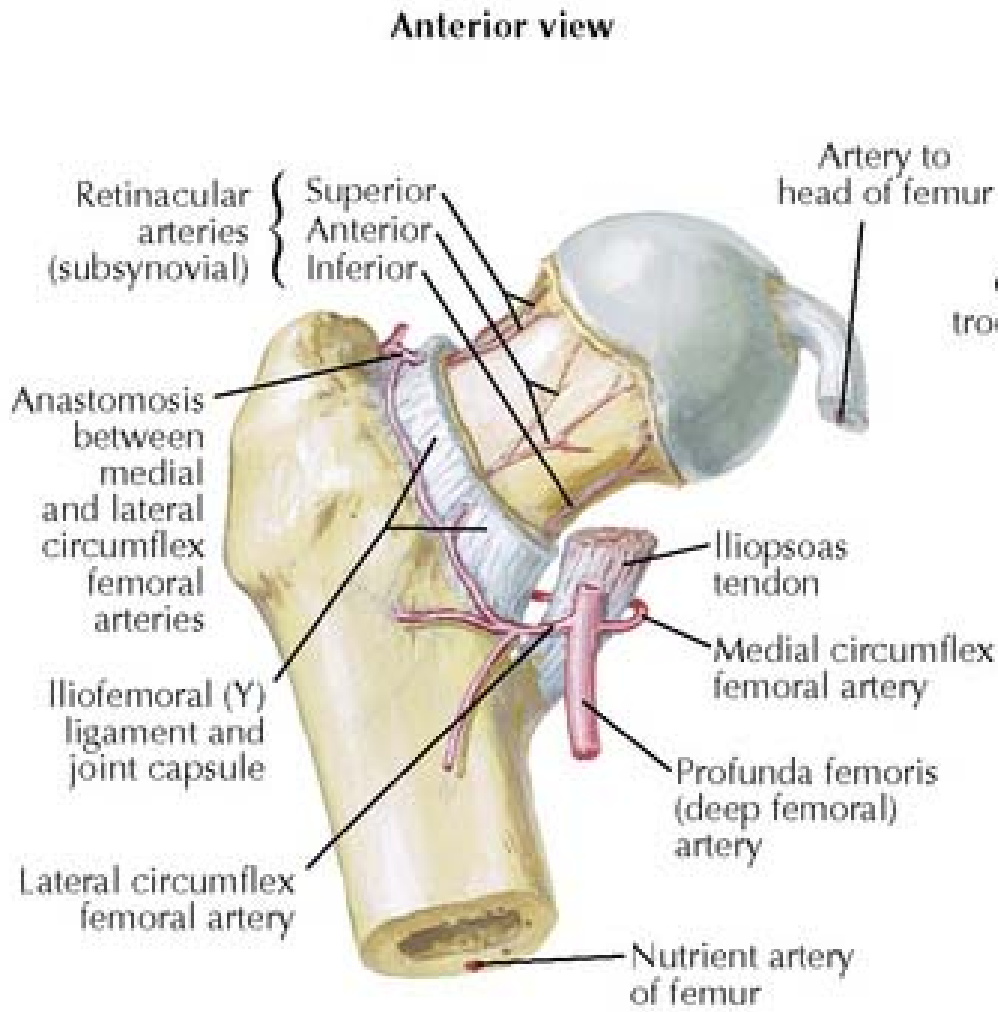




A Right femur.

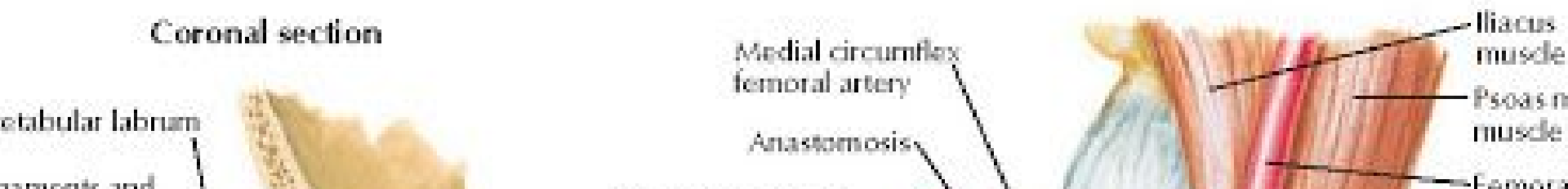
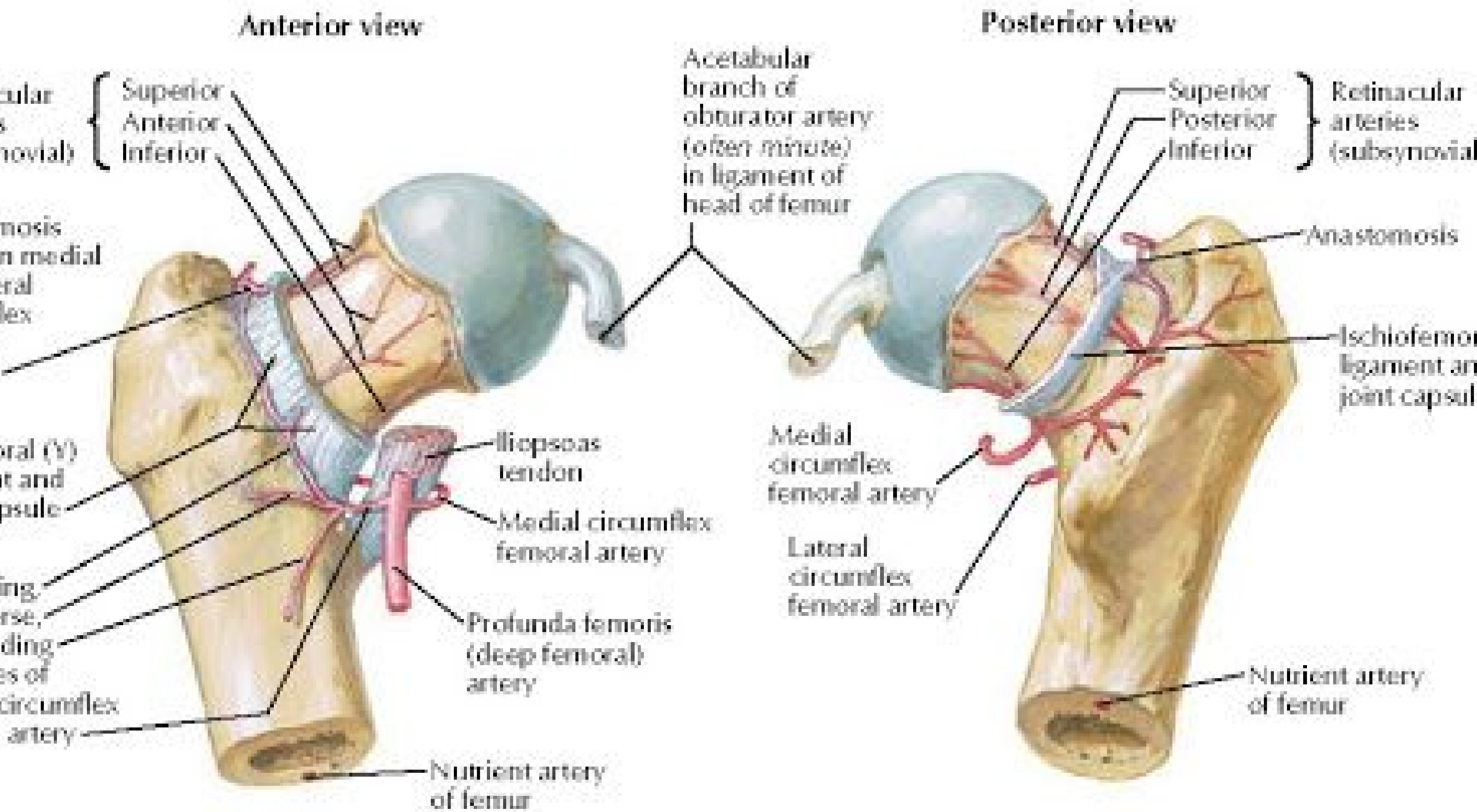


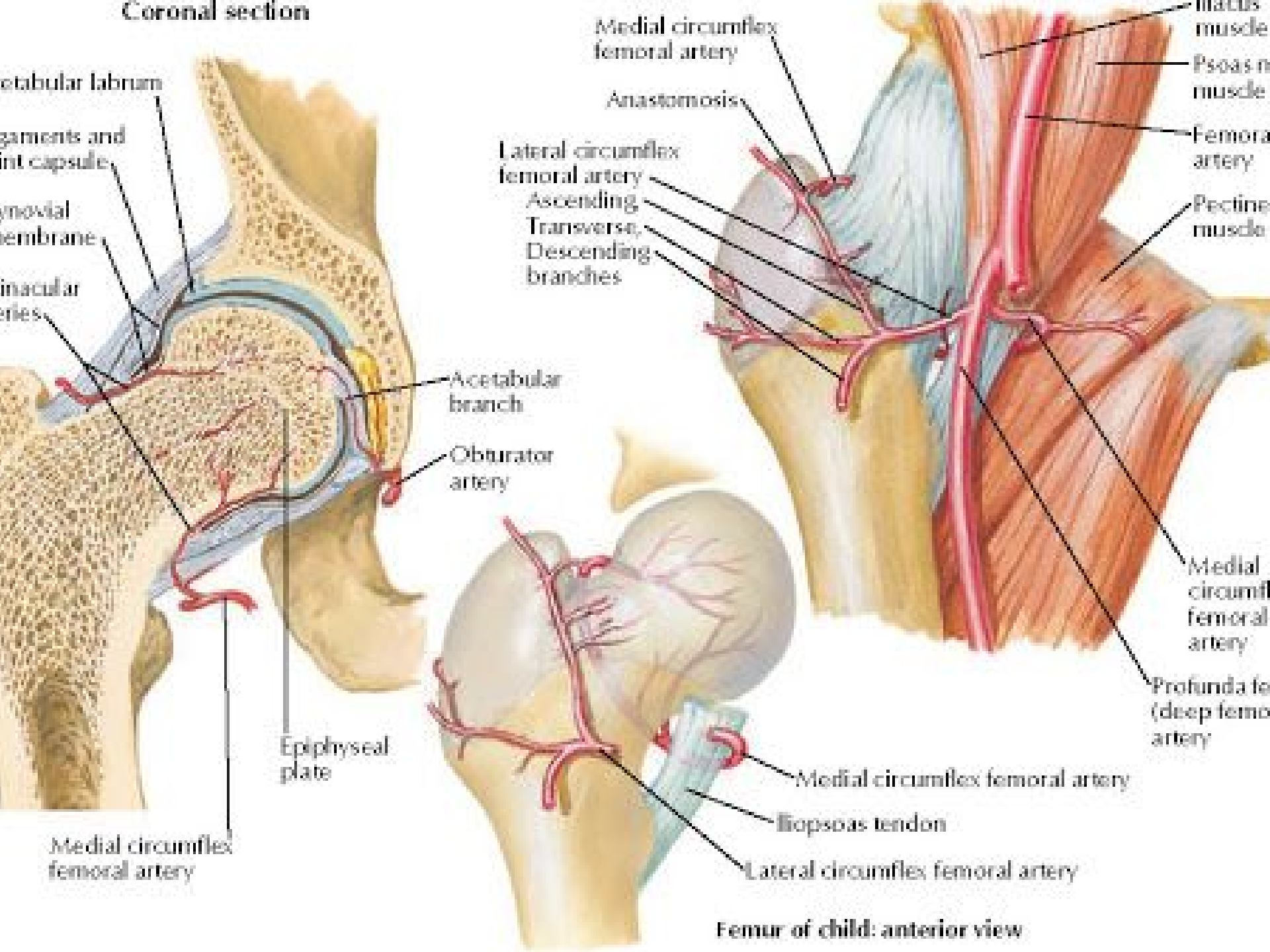
B Coronal section.



A

B





Coronal section

Acetabular labrum
Ligaments and joint capsule
Synovial membrane
Sinusoidal arteries

Medial circumflex femoral artery

Epiphyseal plate

Acetabular branch
Obturator artery

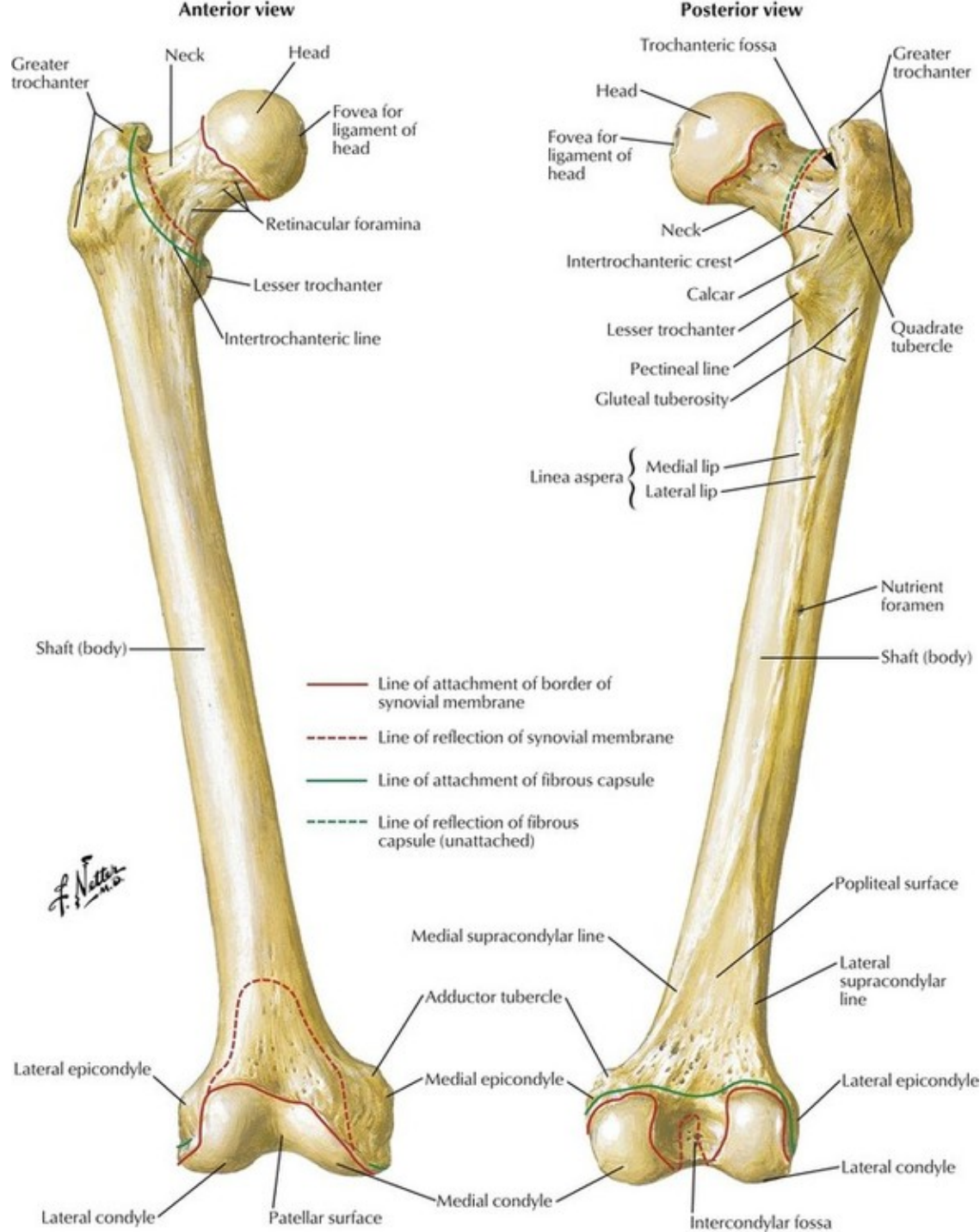
Medial circumflex femoral artery
Anastomosis

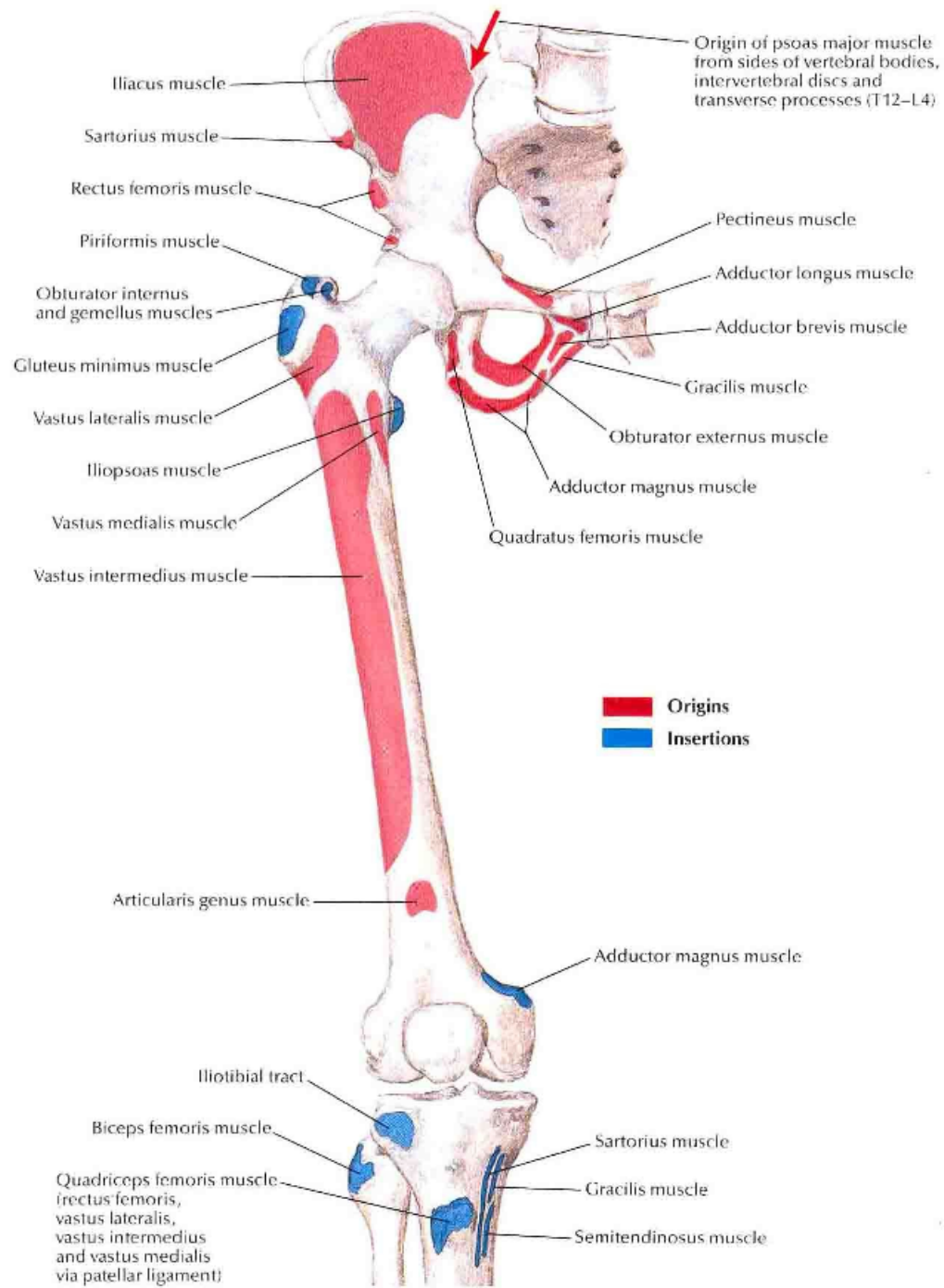
Lateral circumflex femoral artery
Ascending
Transverse,
Descending
branches

Medial circumflex femoral artery
Iliopsoas tendon
Lateral circumflex femoral artery

Femur of child: anterior view

Iliacus muscle
Psoas muscle
Femoral artery
Pectineus muscle
Medial circumflex femoral artery
Profunda femoral artery (deep femoral artery)





Iliacus muscle

Sartorius muscle

Rectus femoris muscle

Piriformis muscle

Obturator internus and gemellus muscles

Gluteus minimus muscle

Vastus lateralis muscle

Iliopsoas muscle

Vastus medialis muscle

Vastus intermedius muscle

Articularis genus muscle

Biceps femoris muscle

Quadriceps femoris muscle (rectus femoris, vastus lateralis, vastus intermedius and vastus medialis via patellar ligament)

Origin of psoas major muscle from sides of vertebral bodies, intervertebral discs and transverse processes (T12-L4)

Pectineus muscle

Adductor longus muscle

Adductor brevis muscle

Gracilis muscle

Obturator externus muscle

Adductor magnus muscle

Quadratus femoris muscle

Origins
Insertions

Adductor magnus muscle

Iliotibial tract

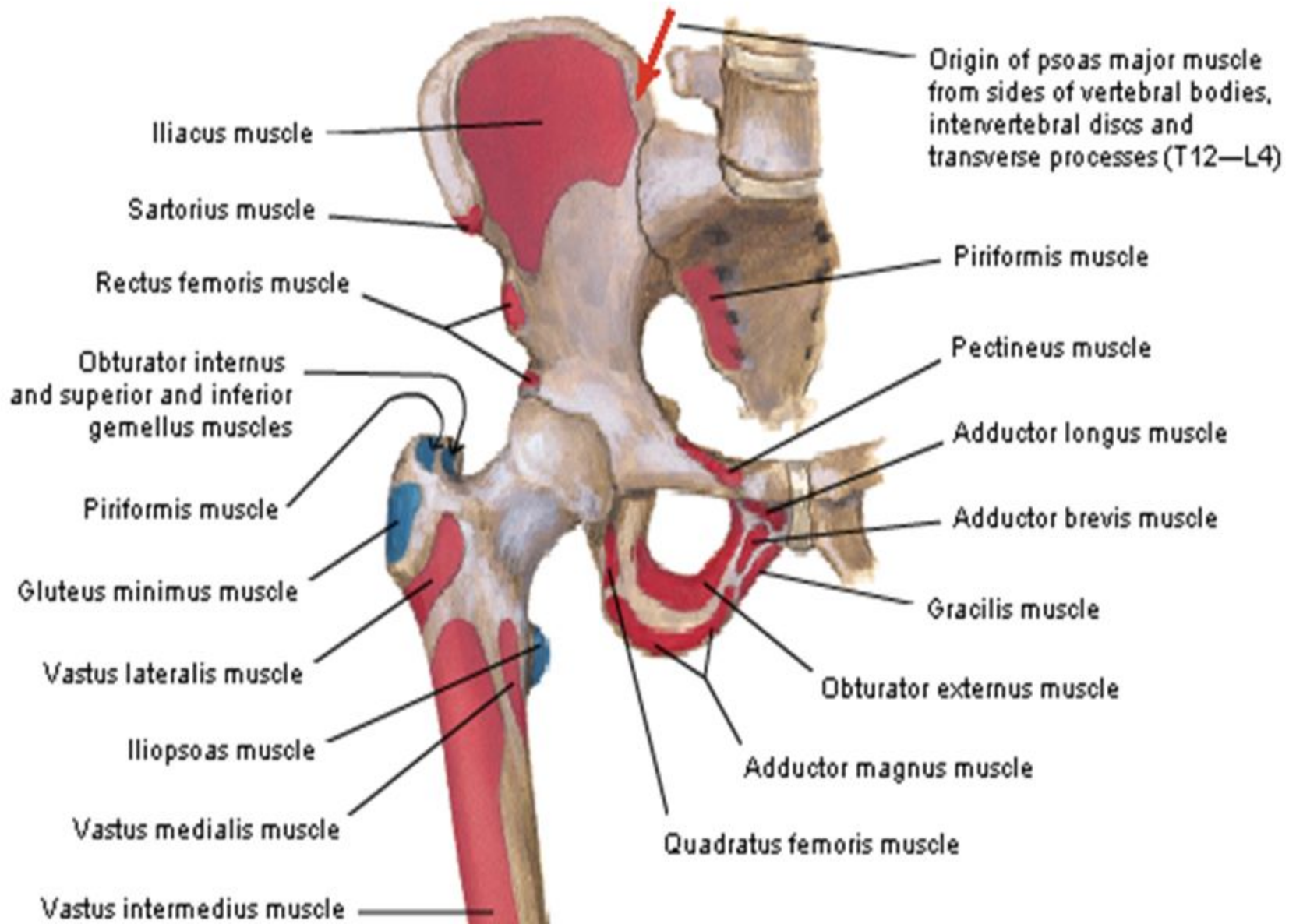
Sartorius muscle

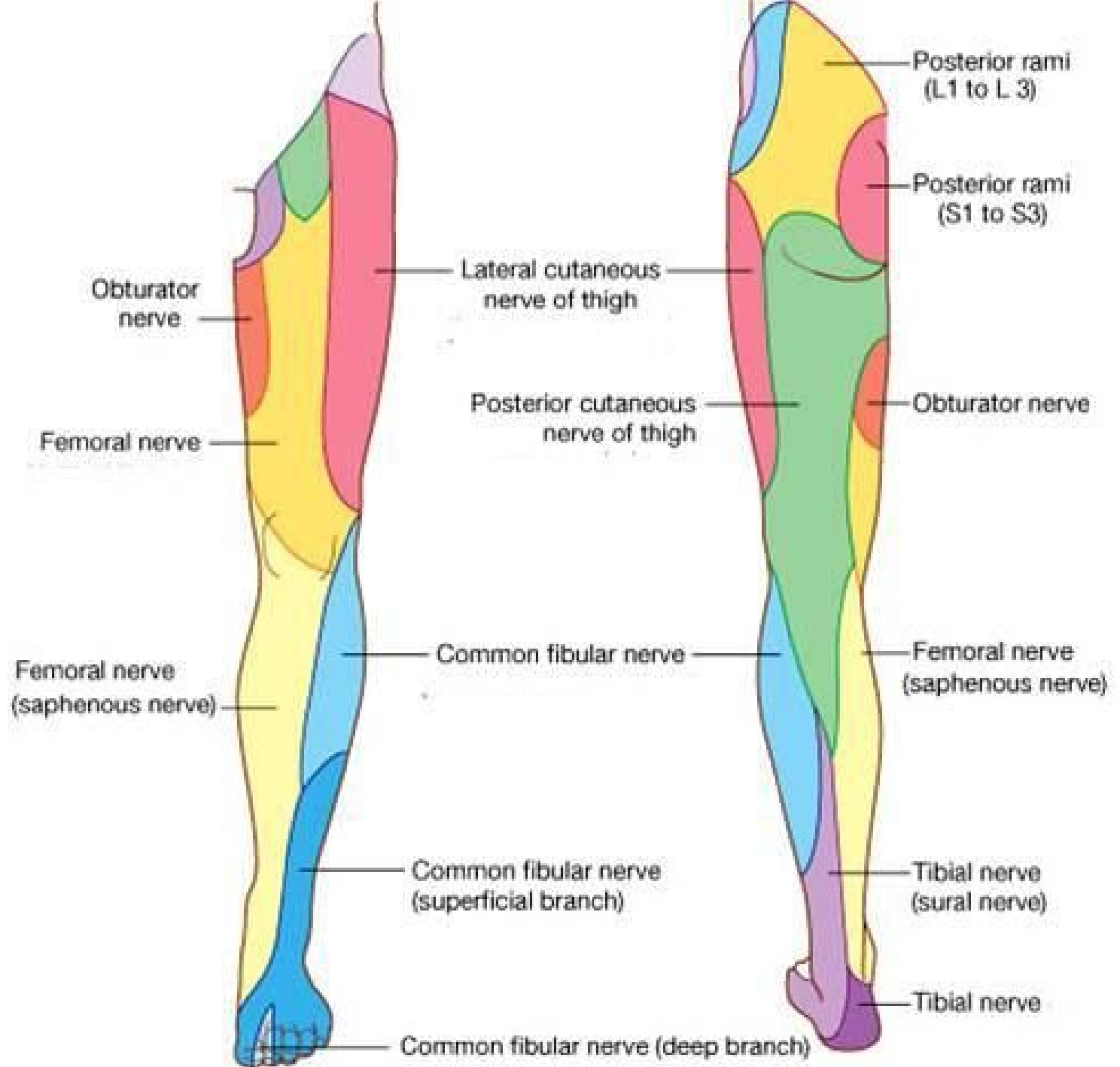
Gracilis muscle

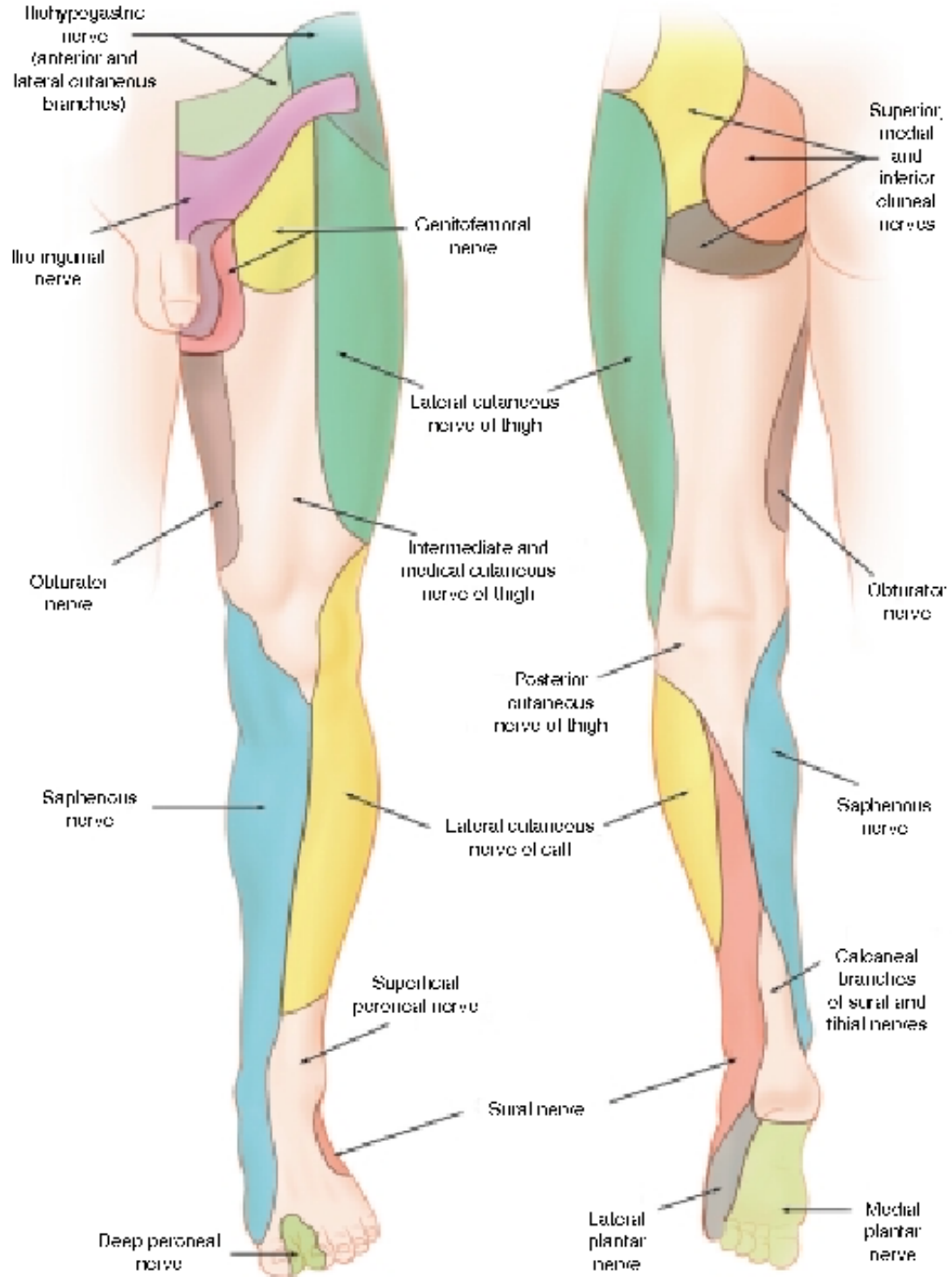
Semitendinosus muscle

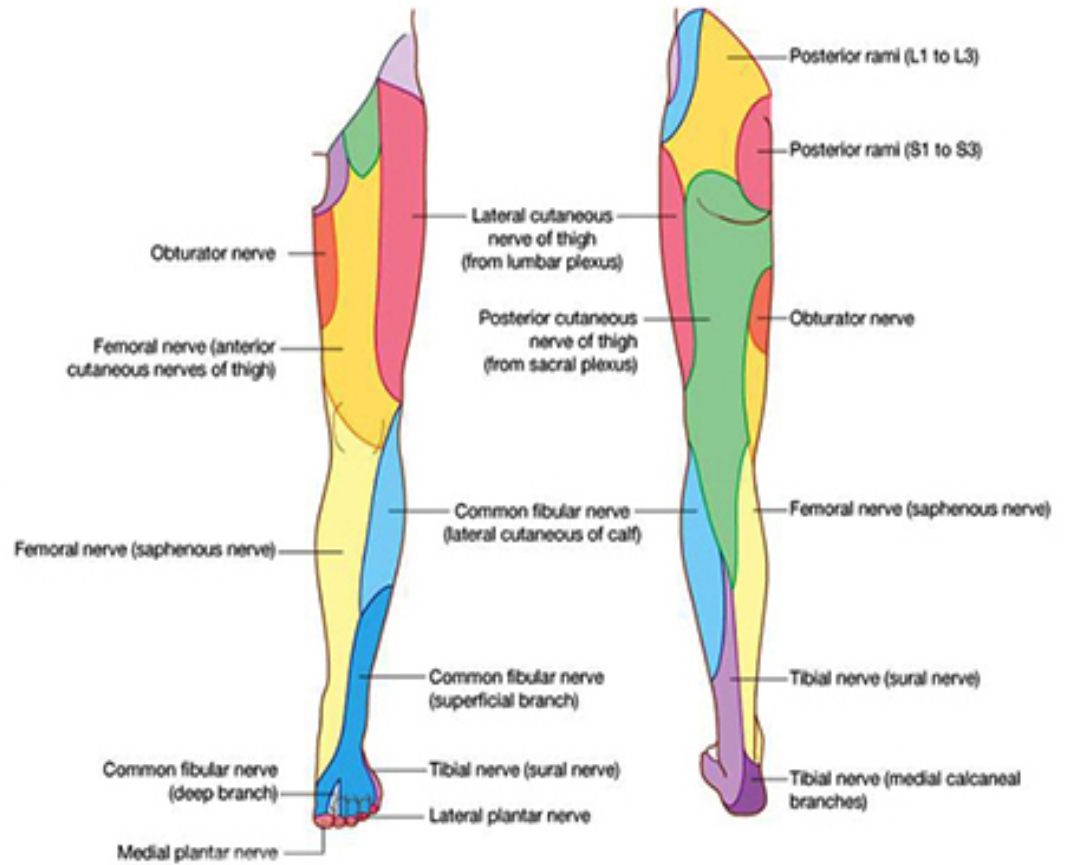
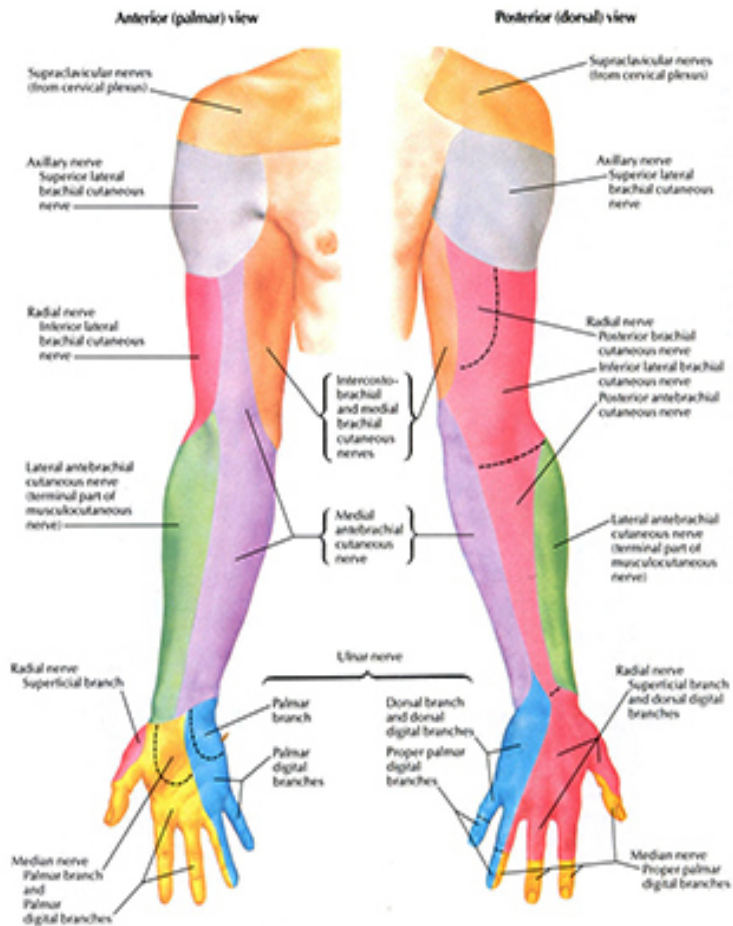


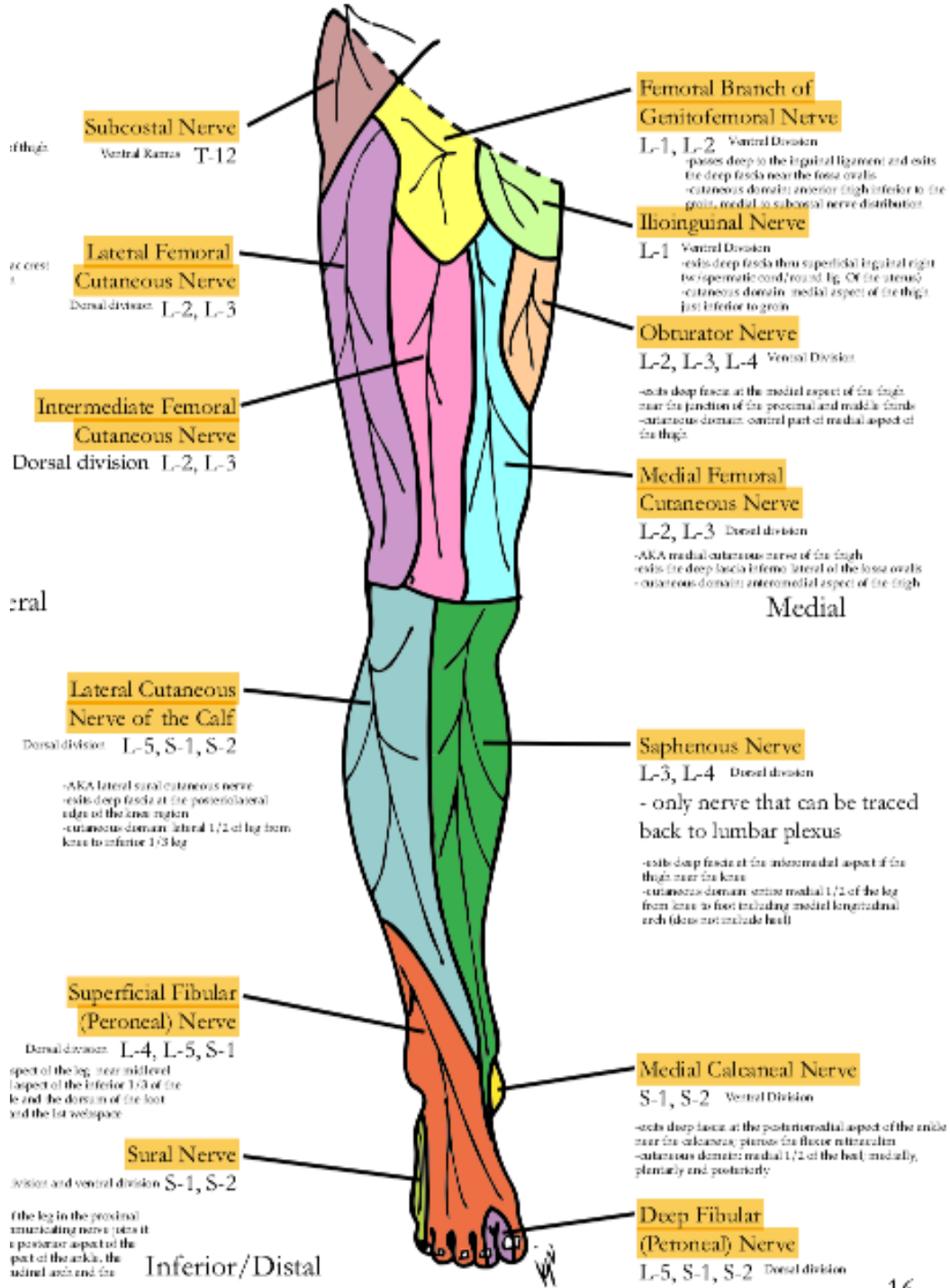
HIP & THIGH MUSCLES ATTACHMENT (ANTERIOR VIEW)











Subcostal Nerve

Ventral Ramus T-12

Lateral Femoral Cutaneous Nerve

Dorsal division L-2, L-3

Intermediate Femoral Cutaneous Nerve

Dorsal division L-2, L-3

Lateral Cutaneous Nerve of the Calf

Dorsal division L-5, S-1, S-2

-AKA lateral sural cutaneous nerve
-exits deep fascia at the posterolateral edge of the knee region
-cutaneous domain: lateral 1/2 of leg from knee to inferior 1/3 leg

Superficial Fibular (Peroneal) Nerve

Dorsal division L-4, L-5, S-1

aspect of the leg, near midline (aspect of the inferior 1/3 of the leg and the dorsum of the foot and the 1st webspace)

Sural Nerve

Anterior and ventral division S-1, S-2

(The leg in the proximal communicating nerve opens it a posterior aspect of the part of the ankle, the distal arch and the...)

Inferior/Distal

Femoral Branch of Genitofemoral Nerve

L-1, L-2 Ventral Division

-passes deep to the inguinal ligament and exits the deep fascia near the femoral orifice
-cutaneous domain: anterior thigh inferior to the groin, medial to subcostal nerve distribution

Ilioinguinal Nerve

L-1 Ventral Division

-exits deep fascia then superficial inguinal ring (to spermatic cord/round lig. of the uterus)
-cutaneous domain: medial aspect of the thigh just inferior to groin

Obturator Nerve

L-2, L-3, L-4 Ventral Division

-exits deep fascia at the medial aspect of the thigh near the junction of the proximal and middle thirds
-cutaneous domain: central part of medial aspect of the thigh

Medial Femoral Cutaneous Nerve

L-2, L-3 Dorsal division

-AKA medial cutaneous nerve of the thigh
-exits the deep fascia infero-lateral of the femoral orifice
-cutaneous domain: anteromedial aspect of the thigh

Medial

Saphenous Nerve

L-3, L-4 Dorsal division

- only nerve that can be traced back to lumbar plexus

-exits deep fascia at the anteromedial aspect of the thigh near the knee
-cutaneous domain: entire medial 1/2 of the leg from knee to foot including medial longitudinal arch (does not include heel)

Medial Calcaneal Nerve

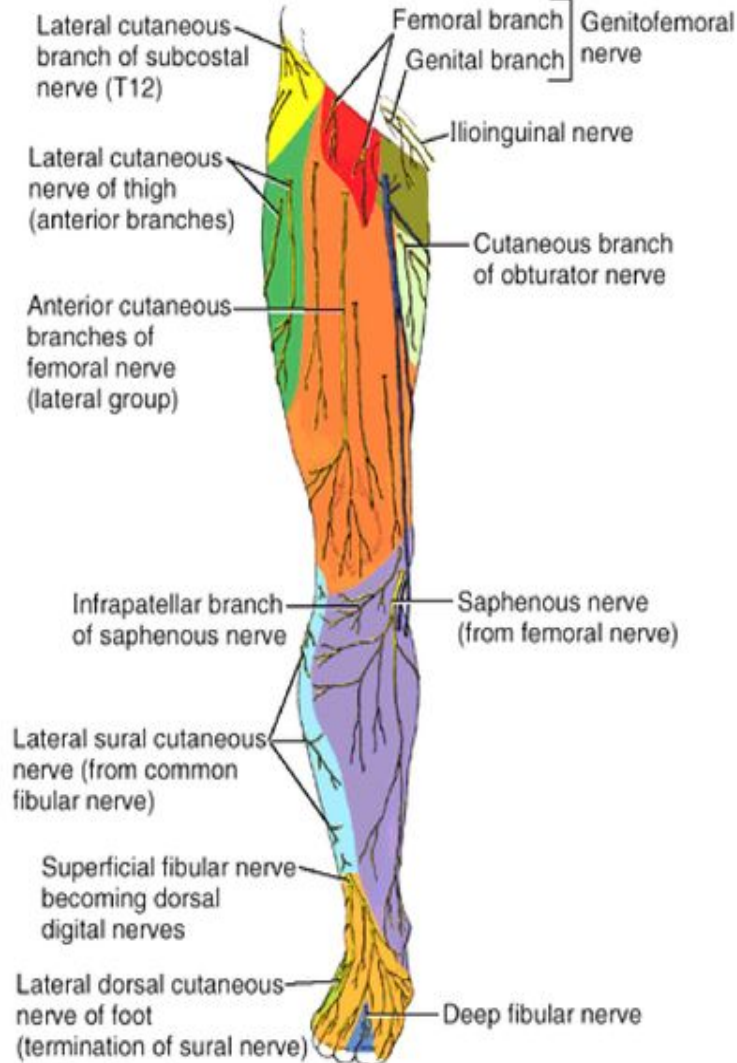
S-1, S-2 Ventral Division

-exits deep fascia at the posteromedial aspect of the ankle near the calcaneus, pierces the flexor digitorum profundus
-cutaneous domain: medial 1/2 of the heel, medially, plantarily and posteriorly

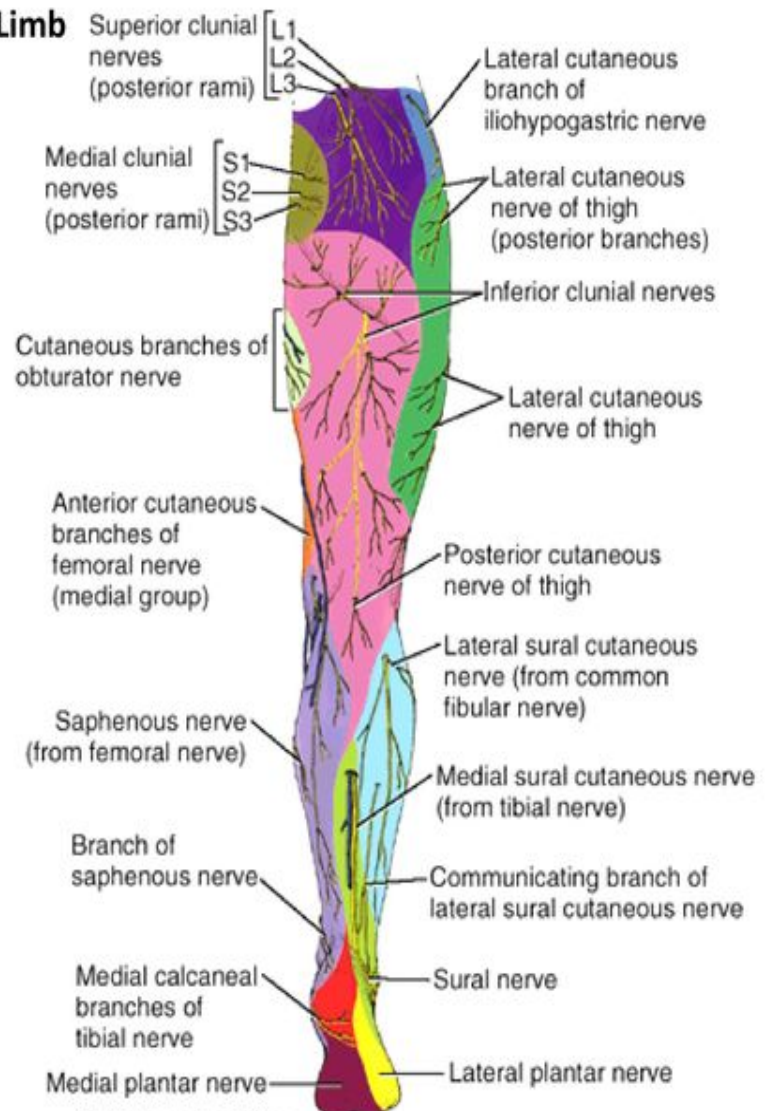
Deep Fibular (Peroneal) Nerve

L-5, S-1, S-2 Dorsal division

Cutaneous Innervation of Lower Limb

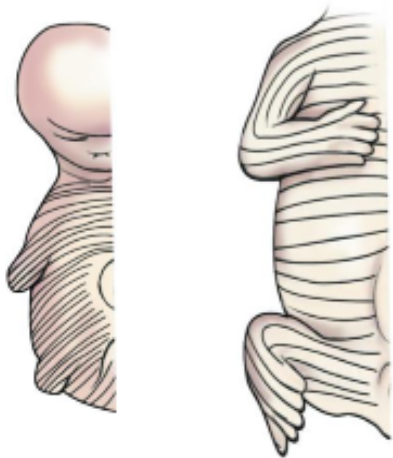
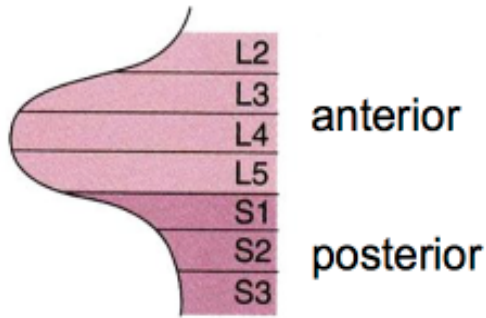


(A) Anterior view

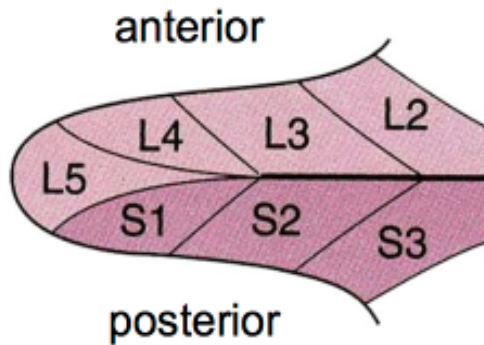


(B) Posterior View

LIMB DEVELOPMENT & DERMATOMES



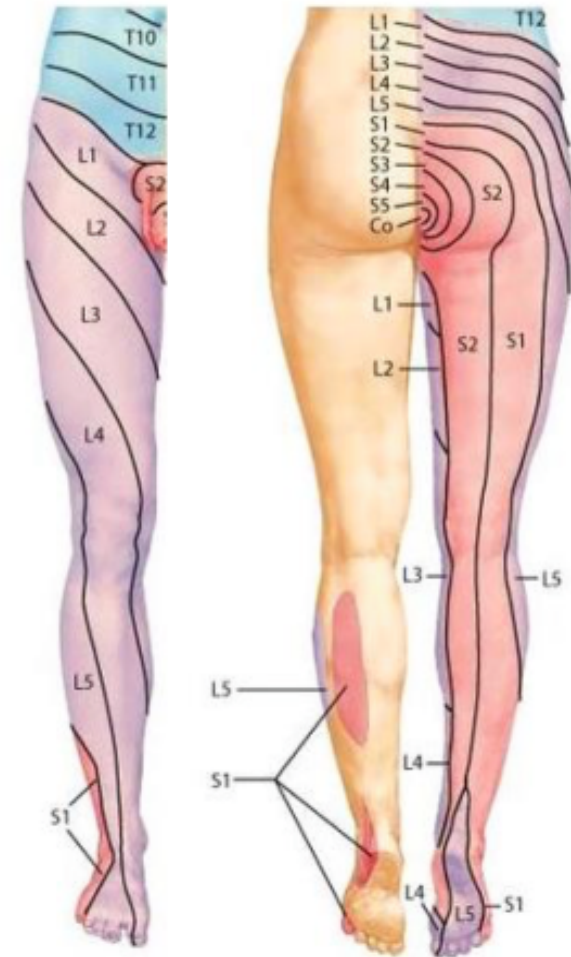
WEEK 5



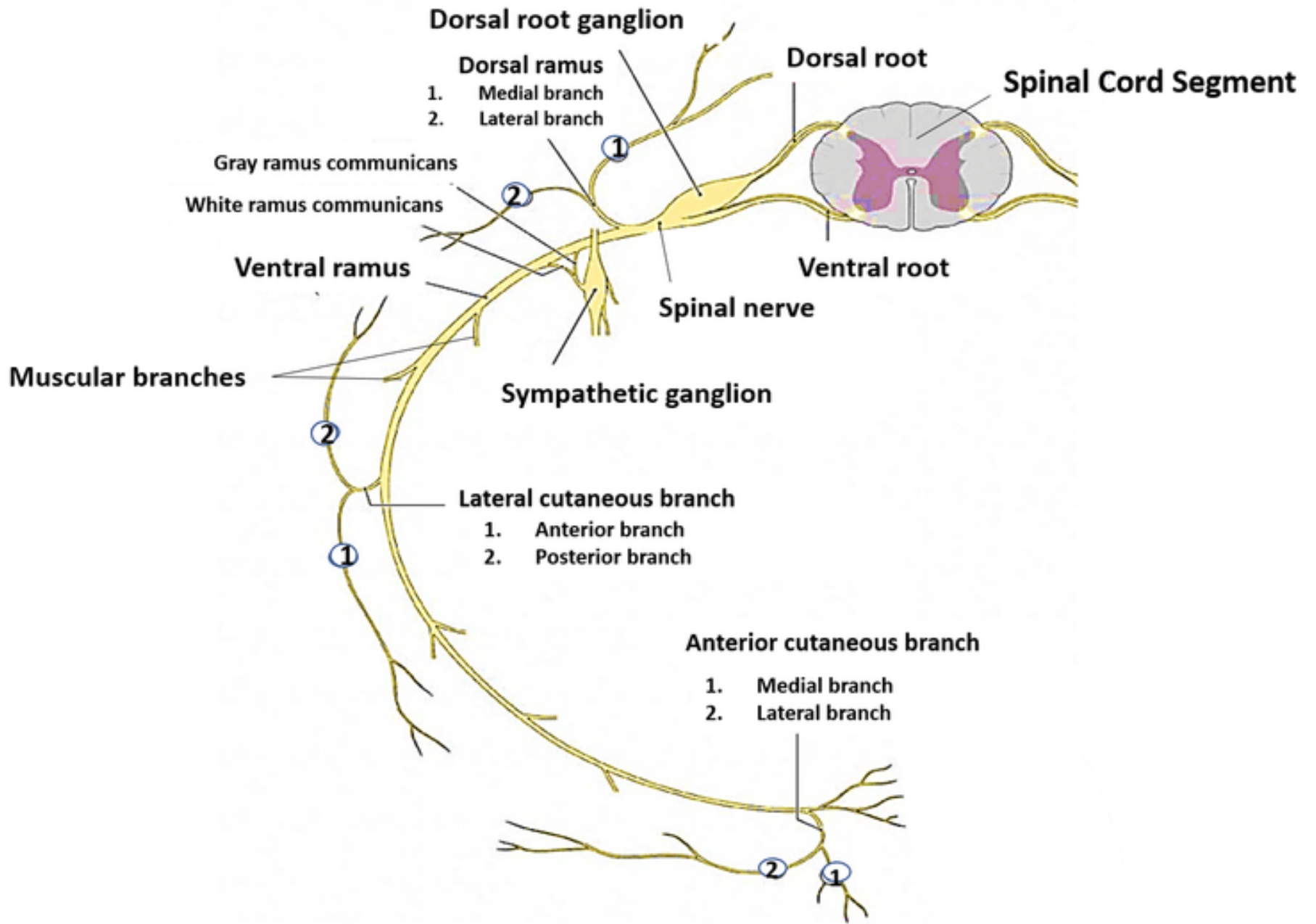
90° medial rotation

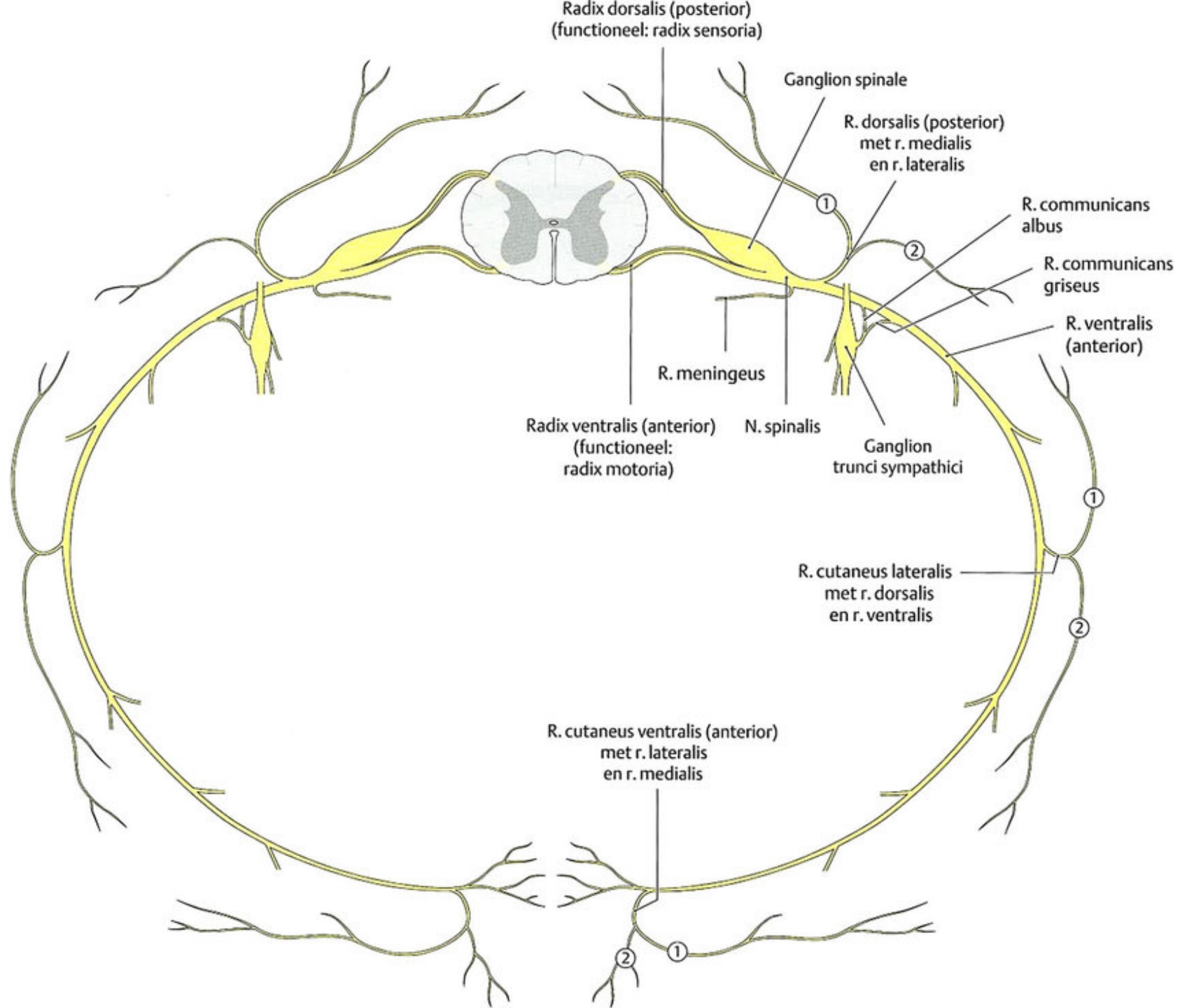
WEEK 7

Dermatome: 1 spinal nerve innervates 1 strip of skin



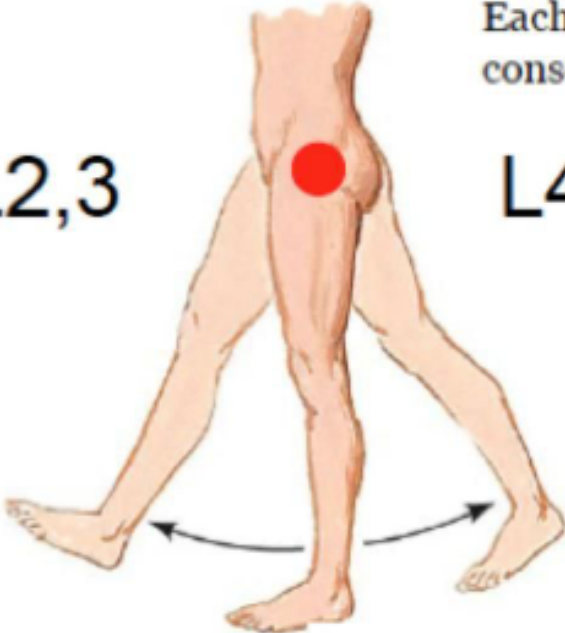
ADULT





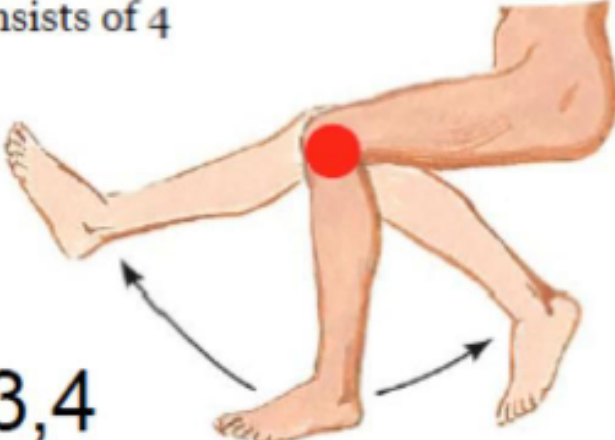
Each joint movement consists of 4 consecutive spinal nerve

L2,3



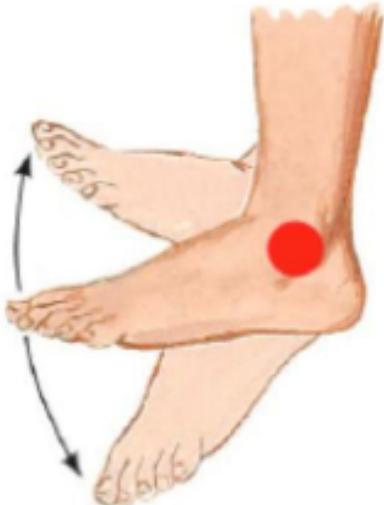
L4,5

L3,4



L5,S1

L4,5

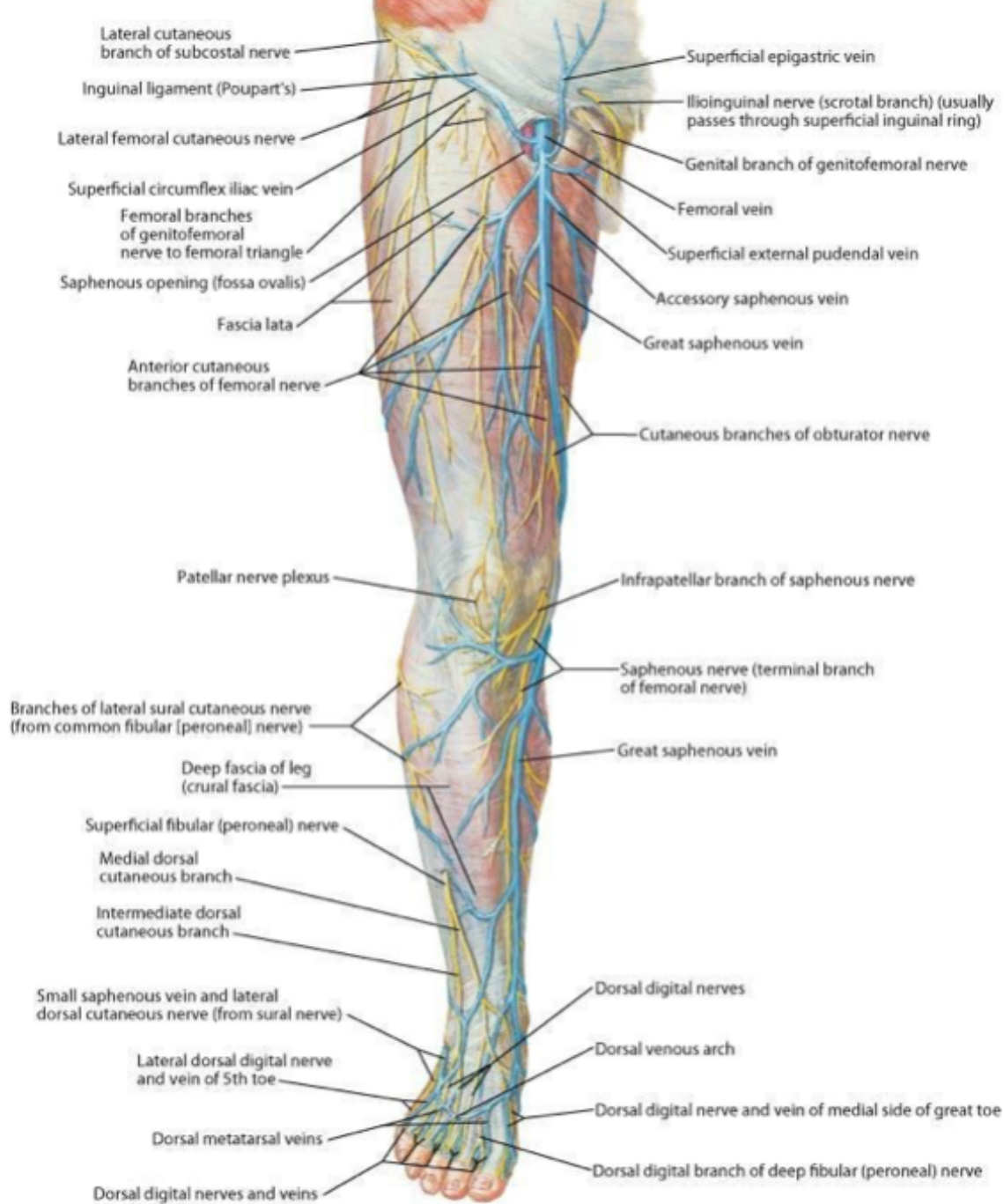


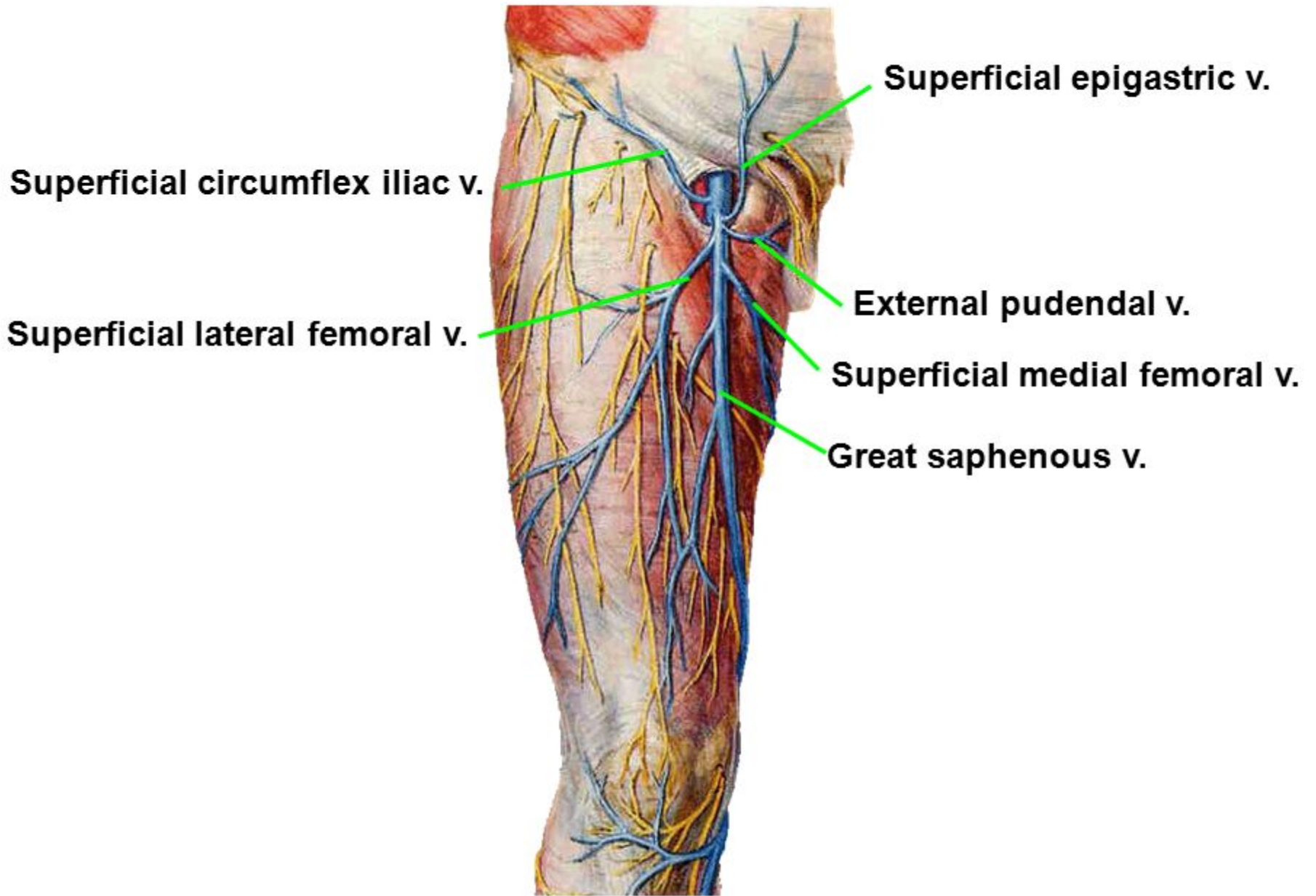
S1,2

L4



L5,S1





Dissection

Superficial circumflex iliac v.

Lateral cutaneous n. of thigh

Anterior cutaneous n. of thigh

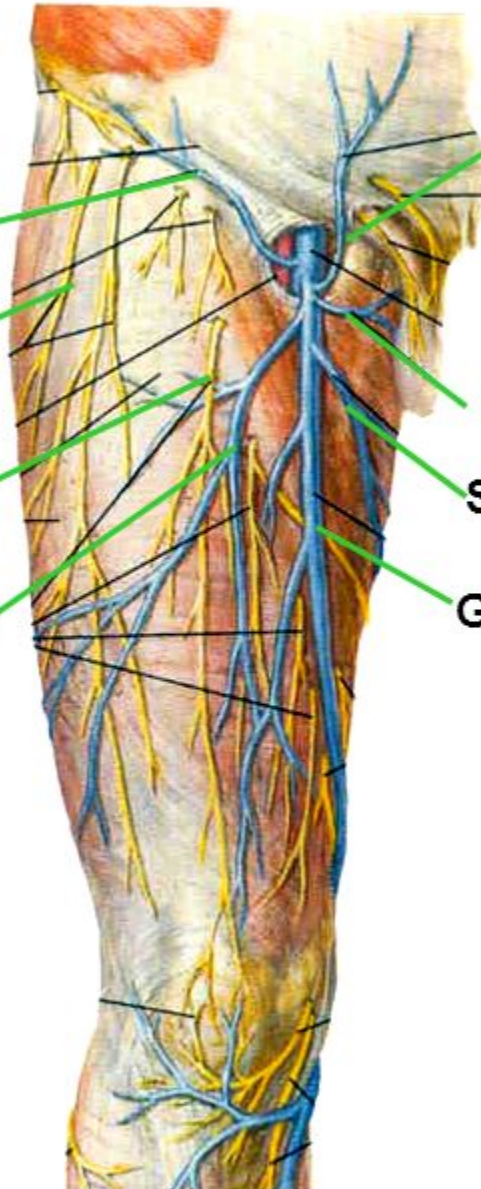
Superficial lateral femoral v.

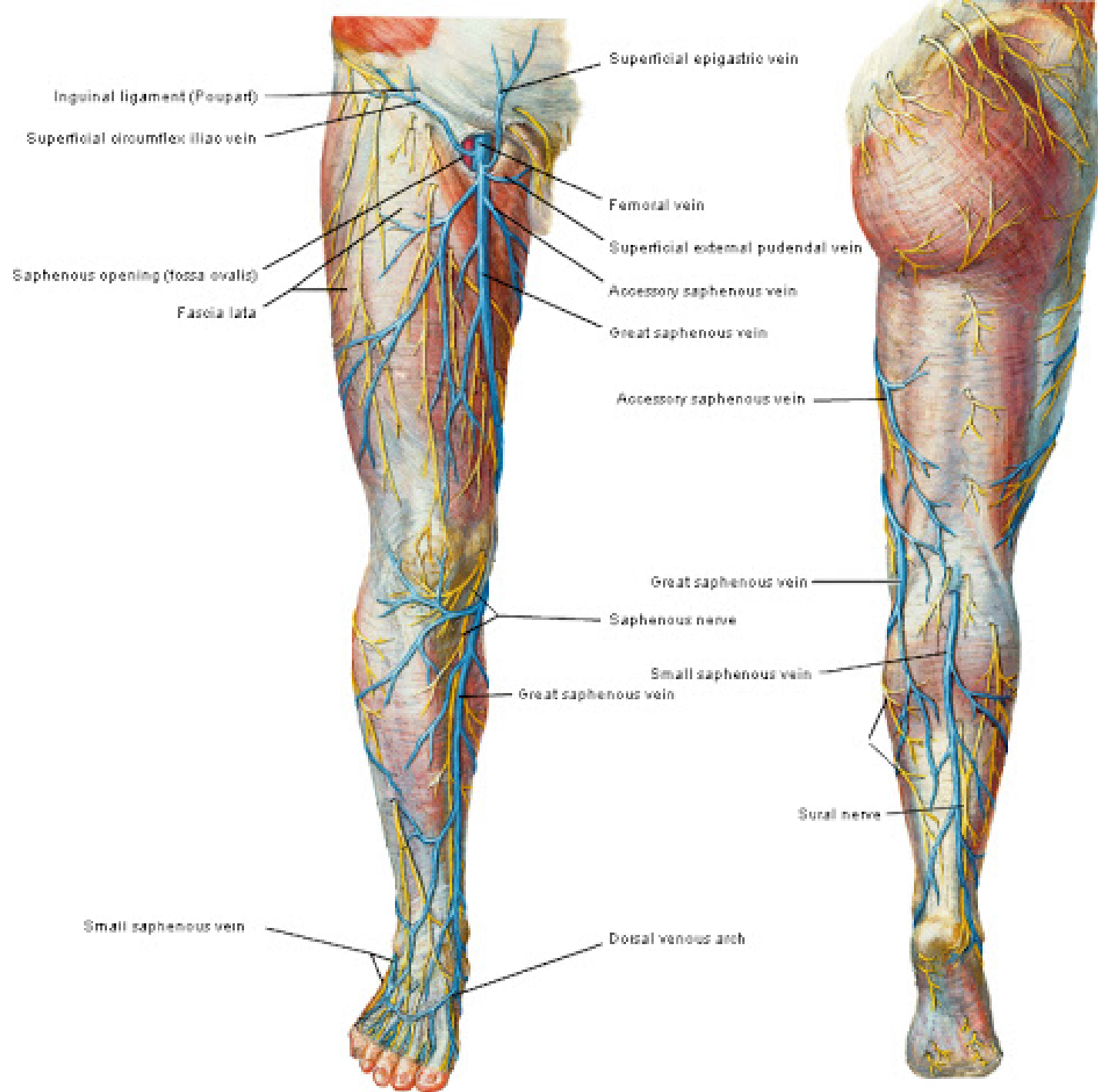
Superficial epigastric v.

External pudendal v.

Superficial medial femoral v.

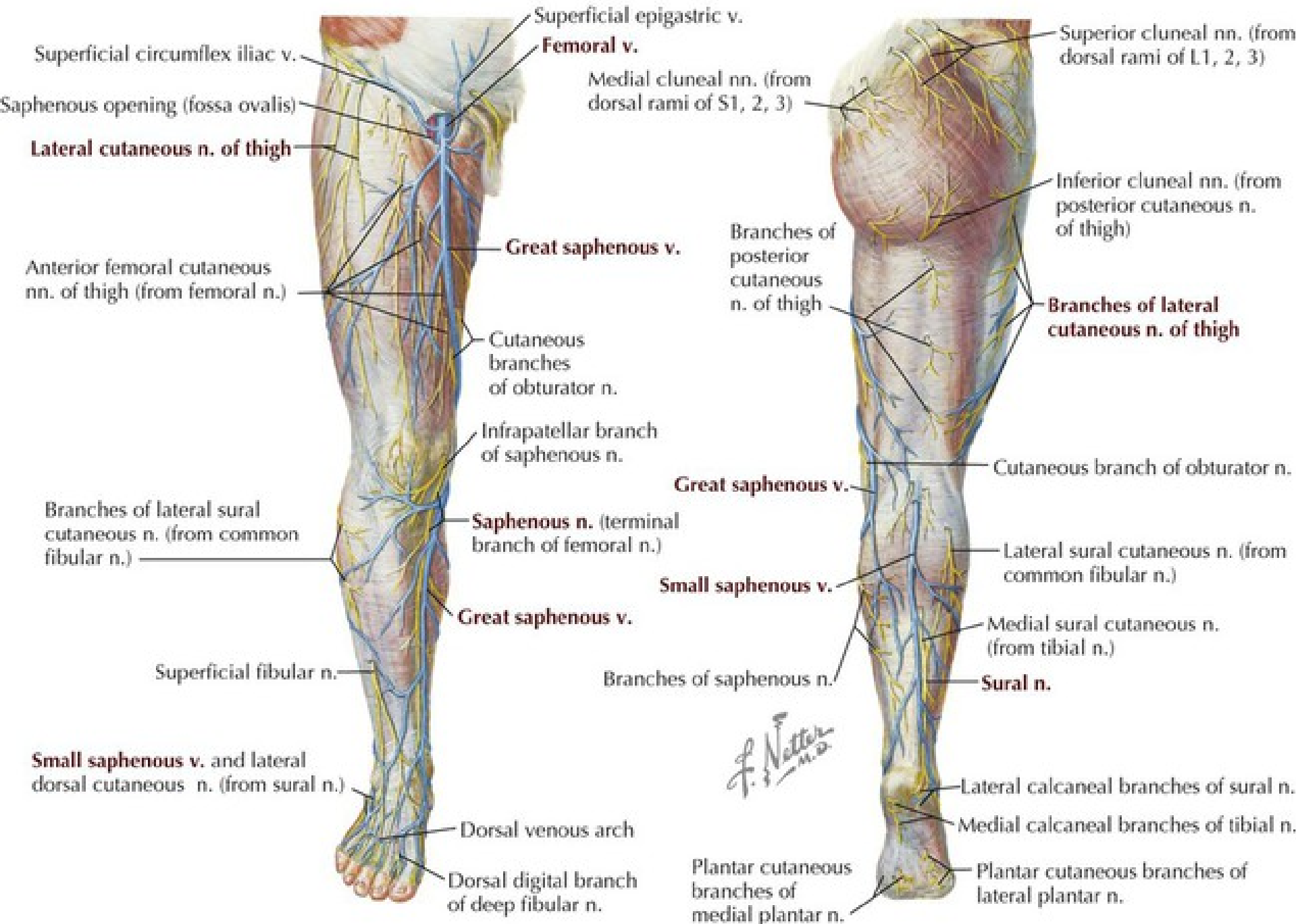
Great saphenous v.

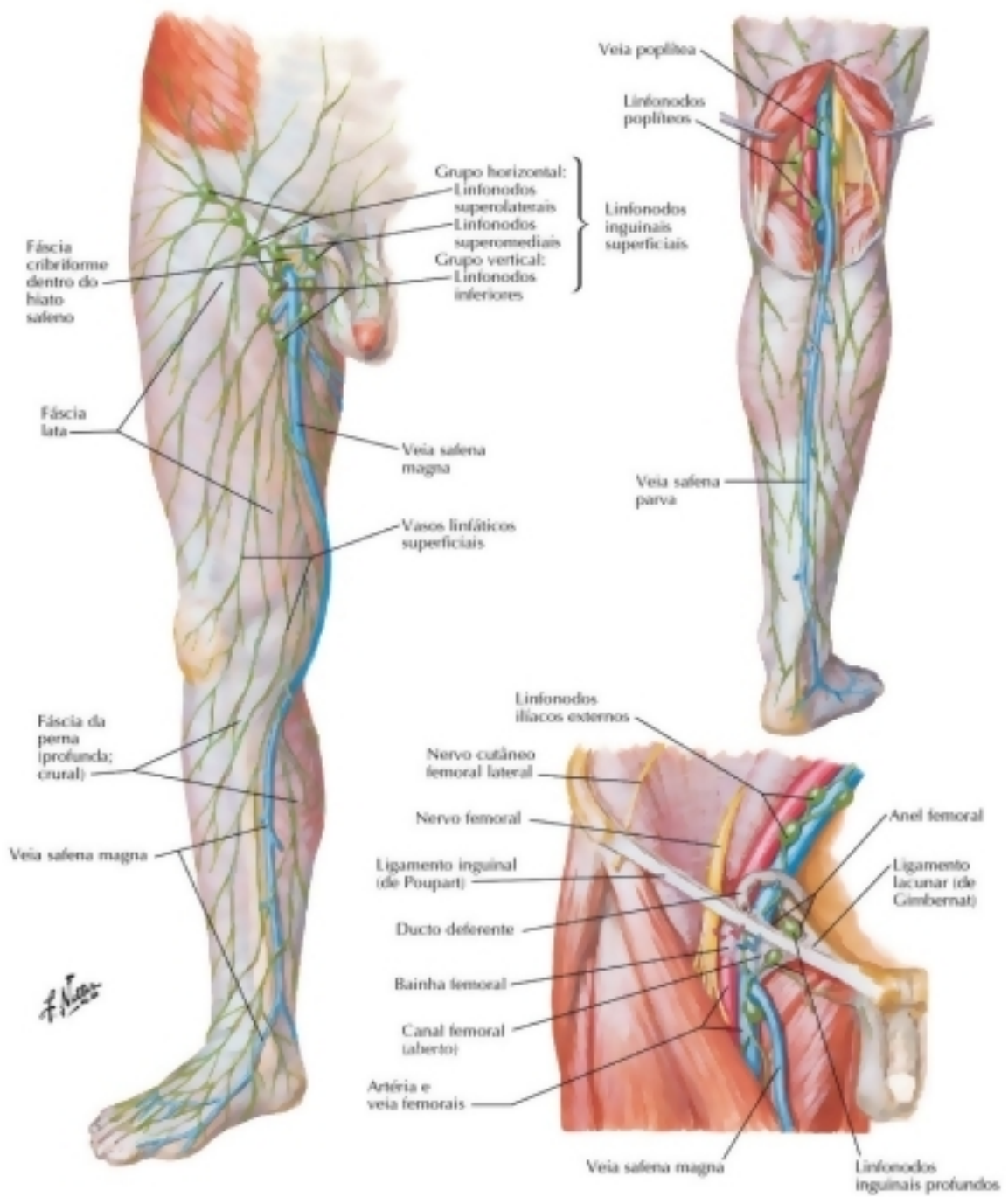


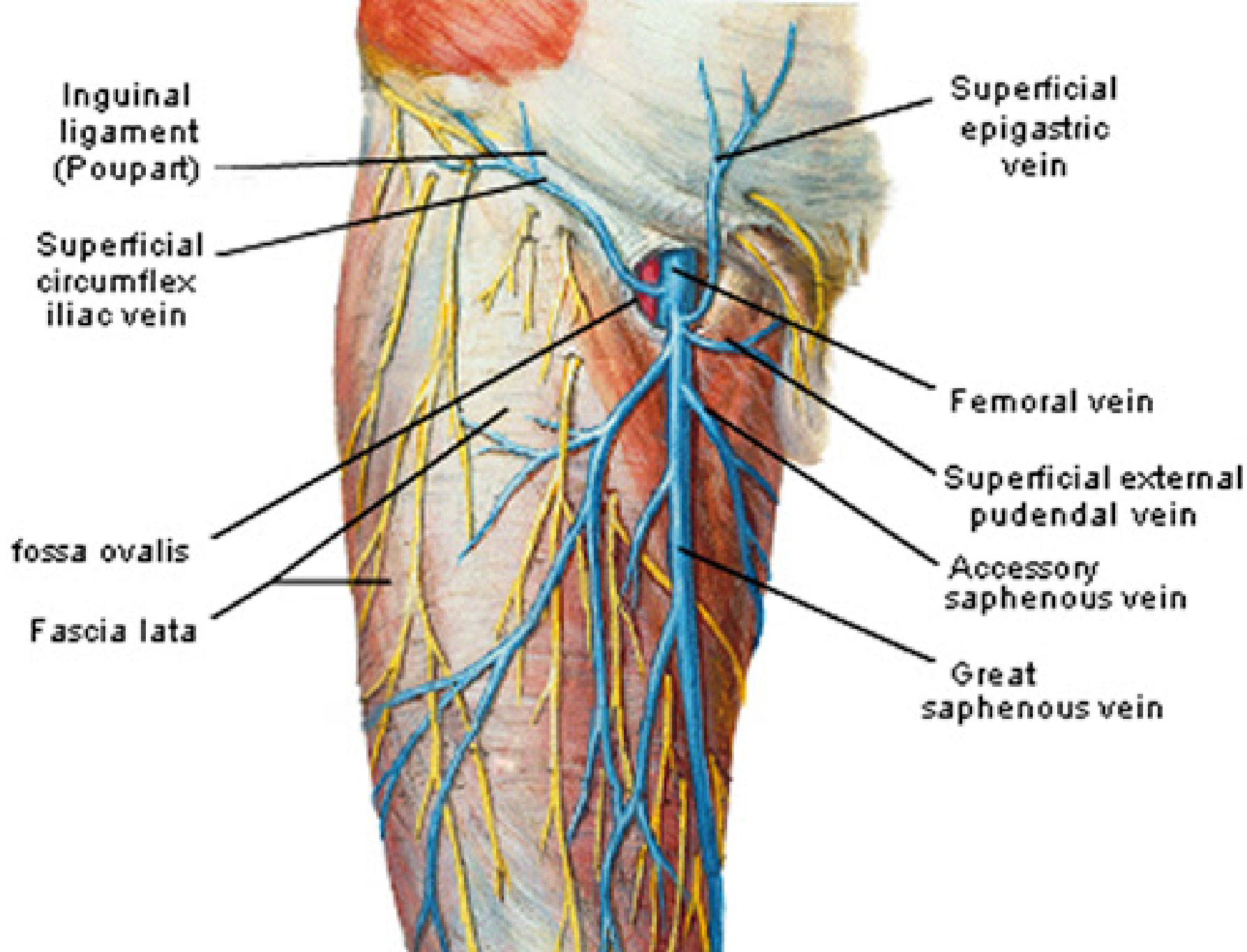


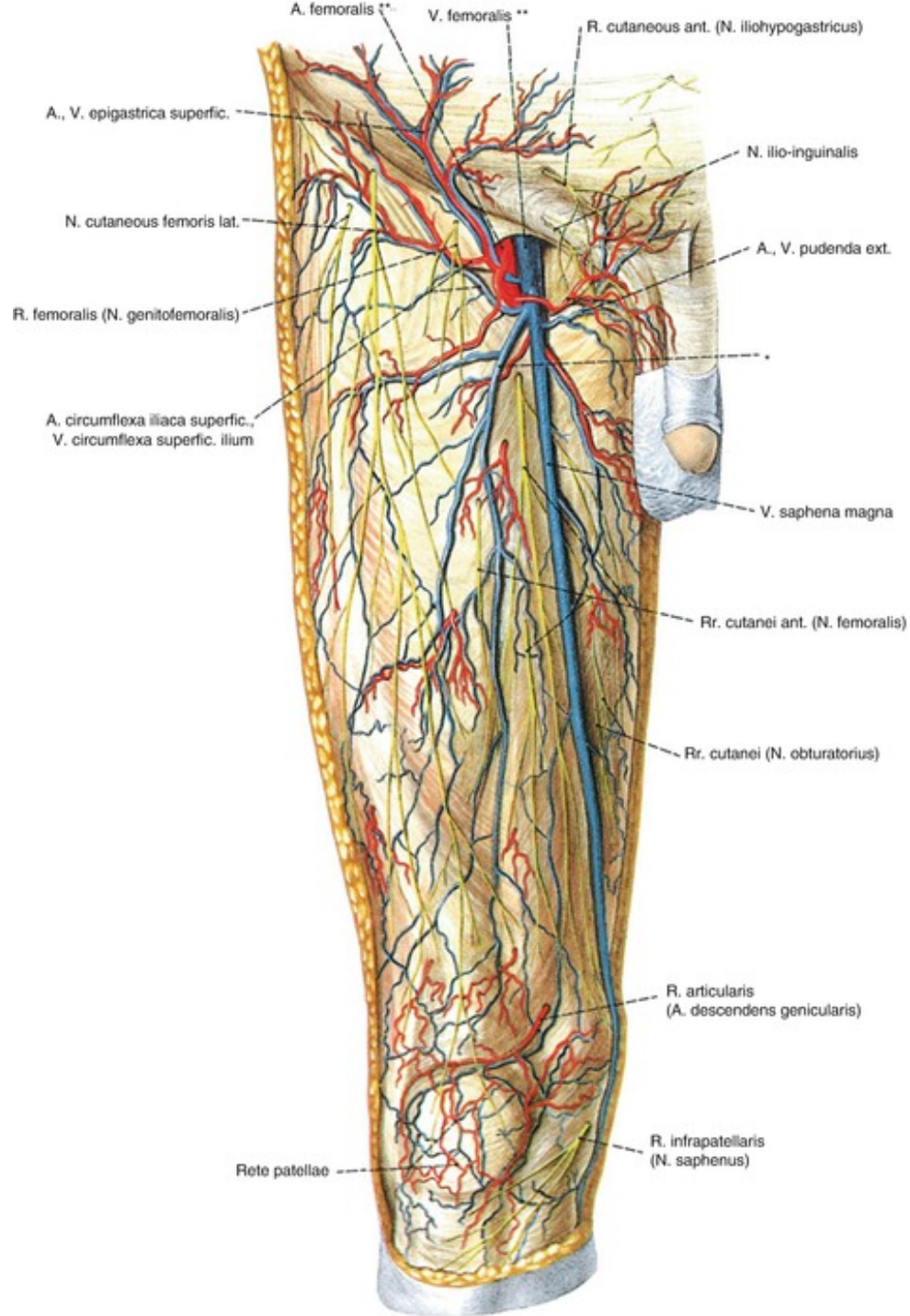
Anterior view

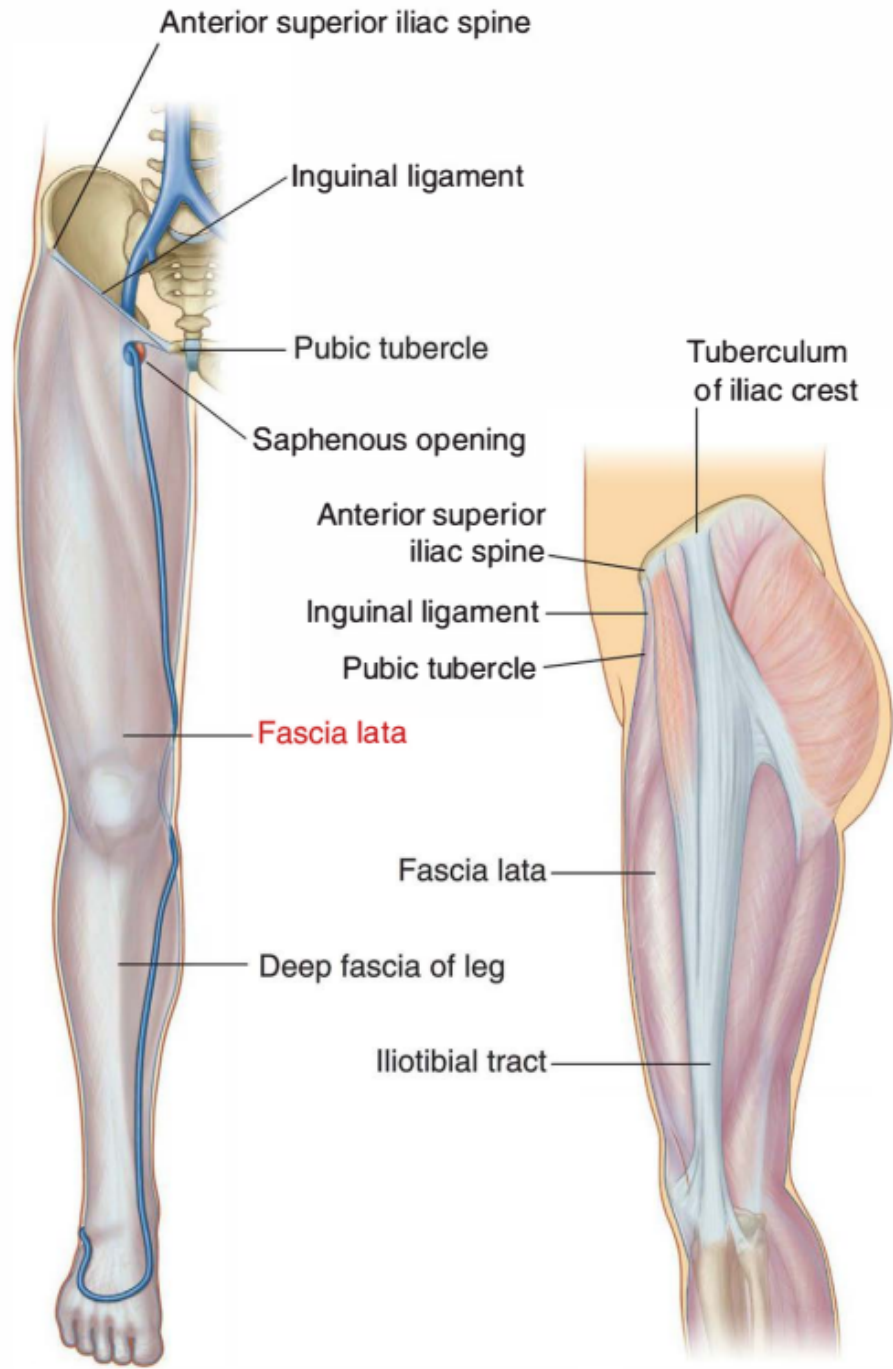
Posterior view

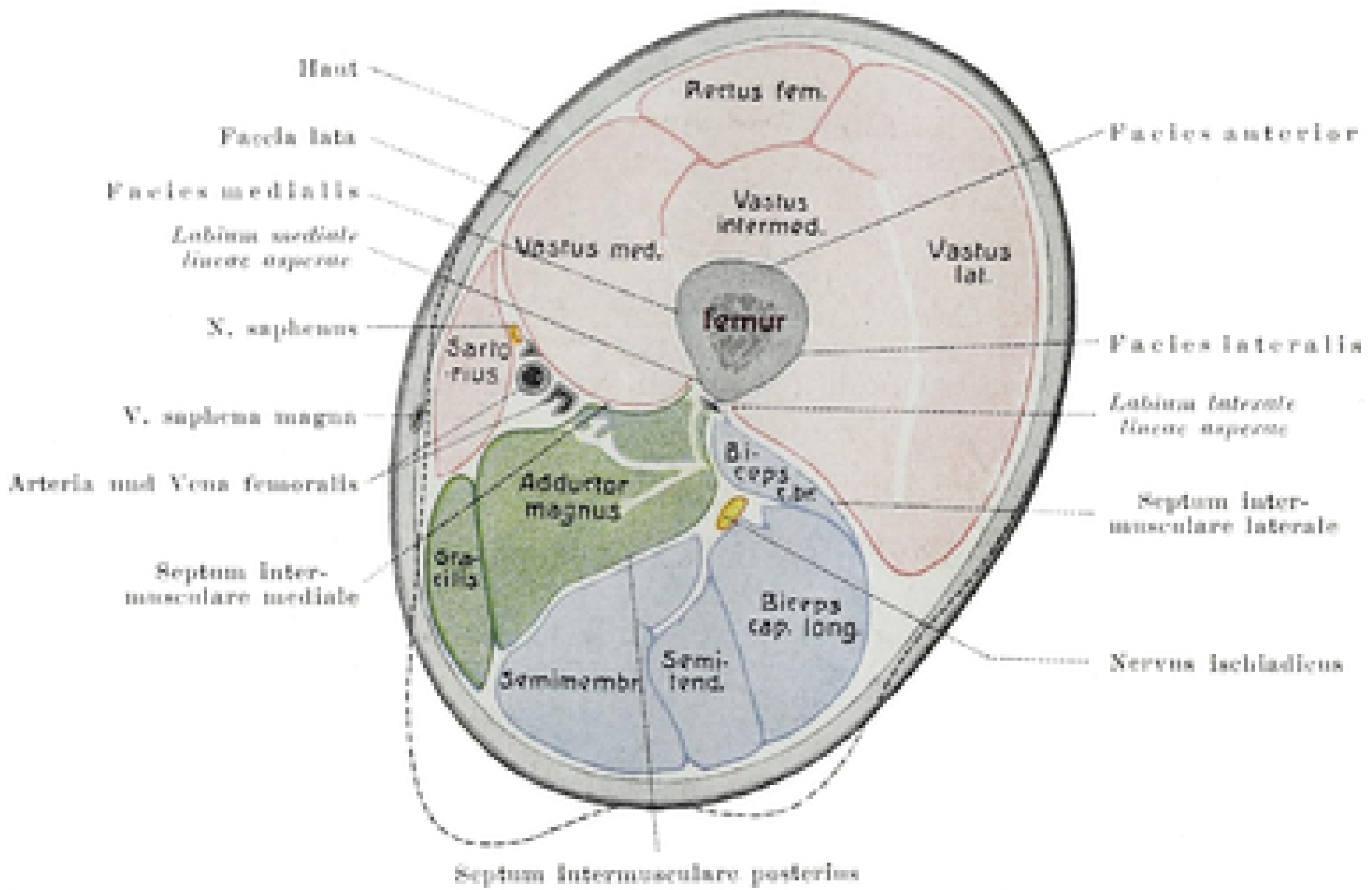












Haut

Facies lateralis

Facies medialis

Labium mediale lineae asperae

N. saphenus

V. saphenus magnus

Arteria und Vena femoralis

Septum intermusculare mediale

Rectus fem.

Vastus med.

Vastus intermed.

Vastus lat.

Femur

Sartorius

Adductor magnus

Biceps cap. br.

Gracilis

Seminembr.

Semi-tend.

Biceps cap. long.

Facies anterior

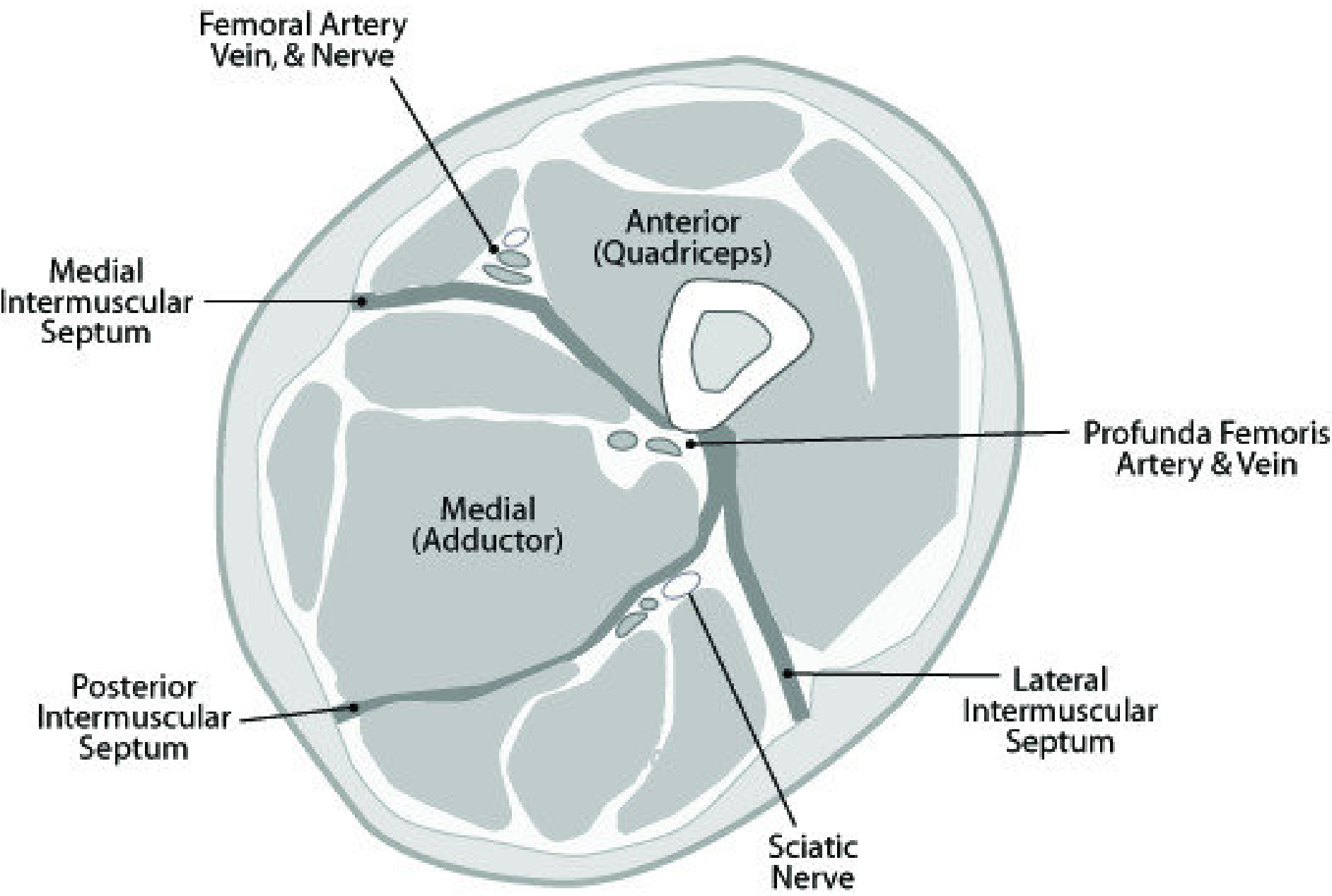
Facies lateralis

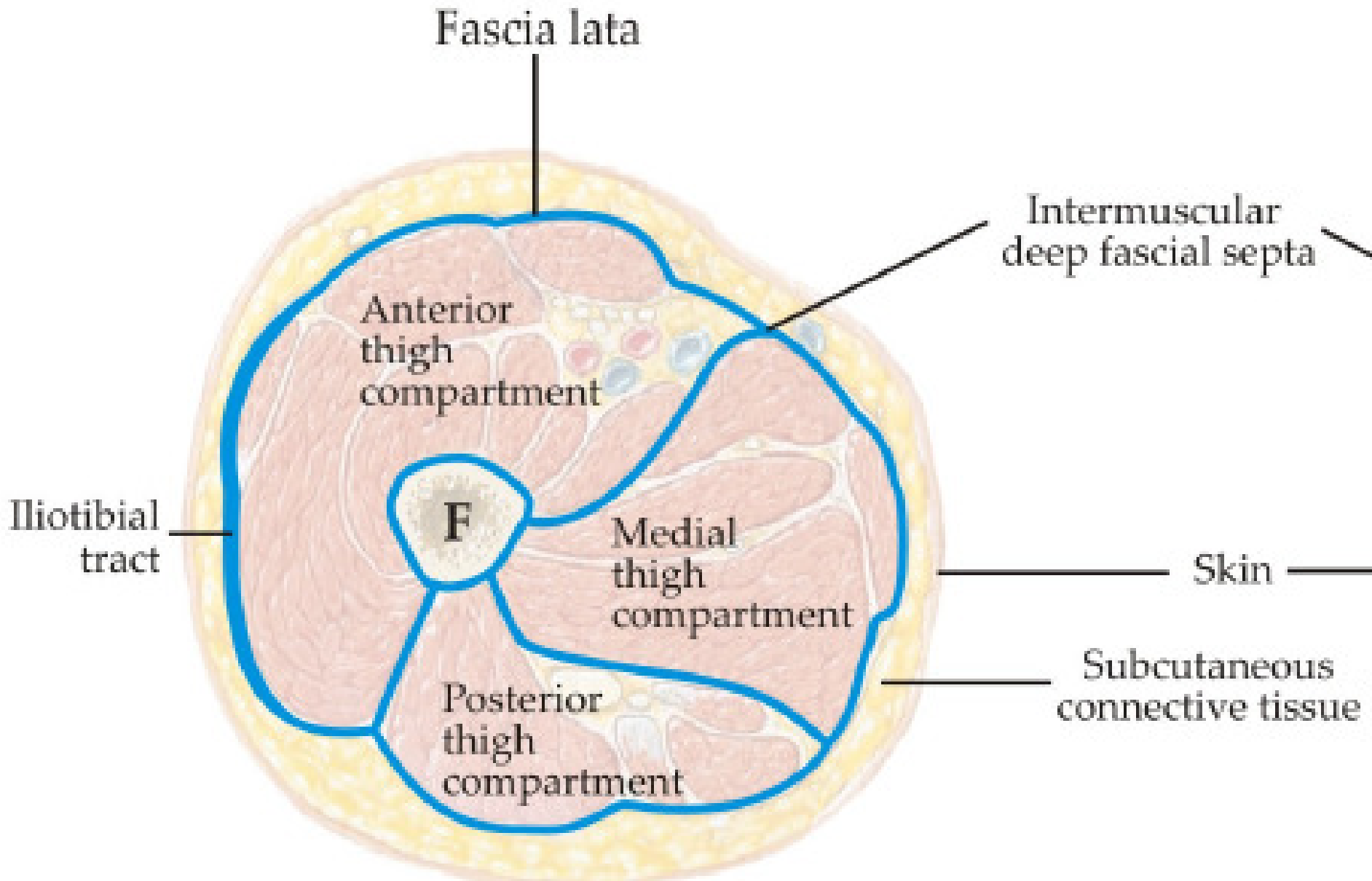
Labium laterale lineae asperae

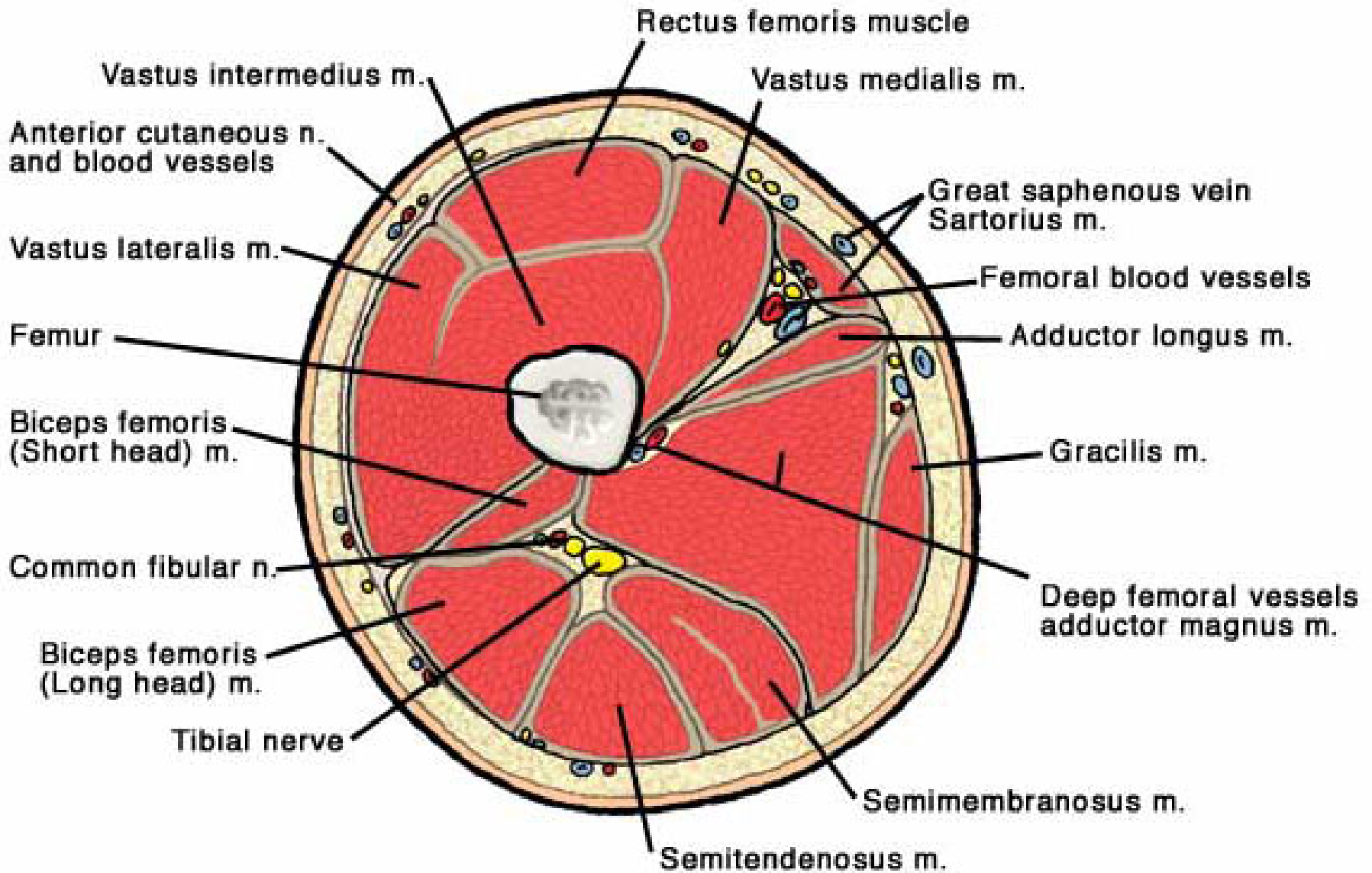
Septum intermusculare laterale

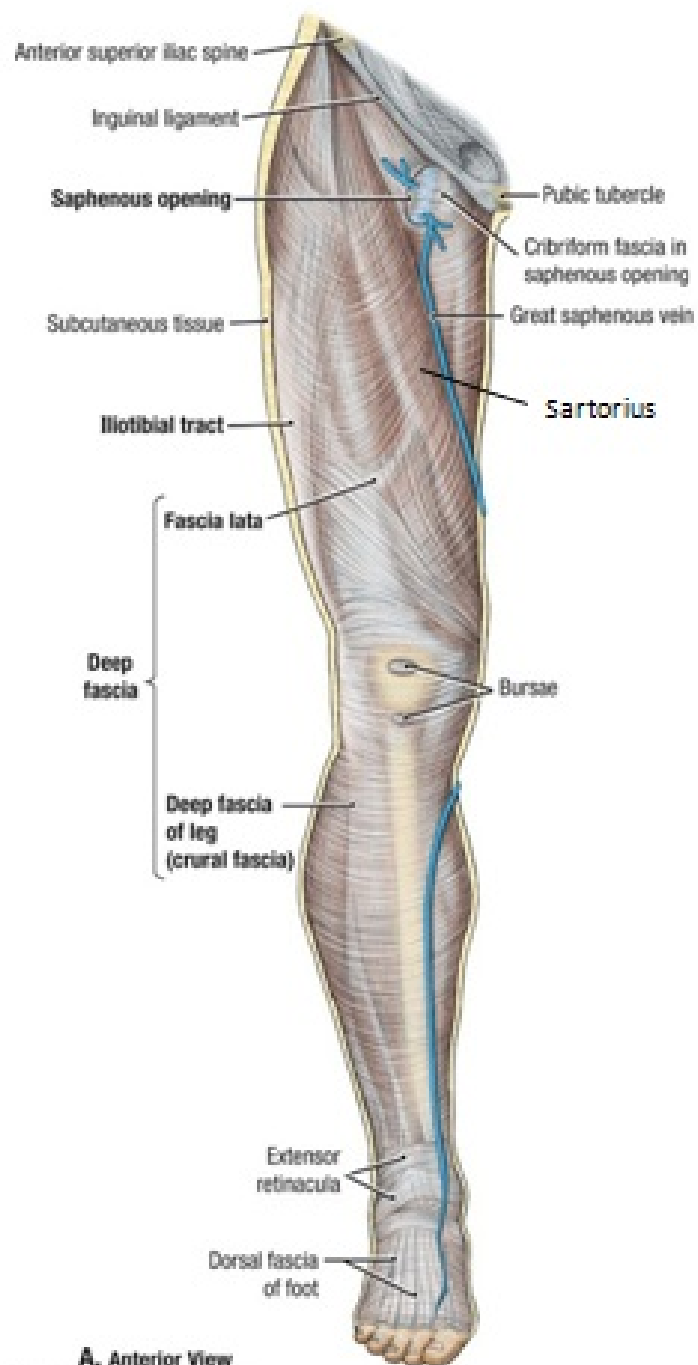
Nervus ischiadicus

Septum intermusculare posterius

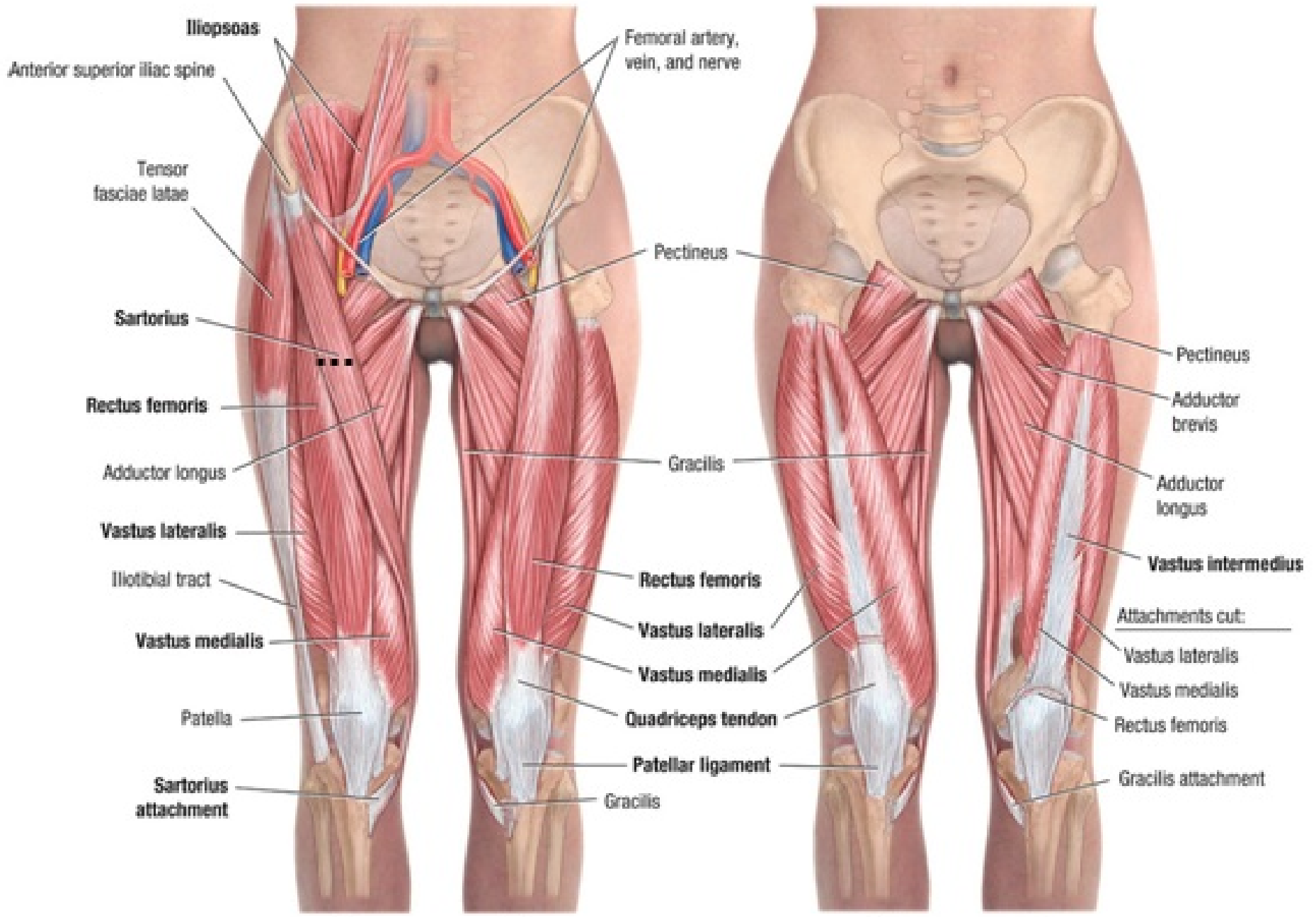








A. Anterior View



A

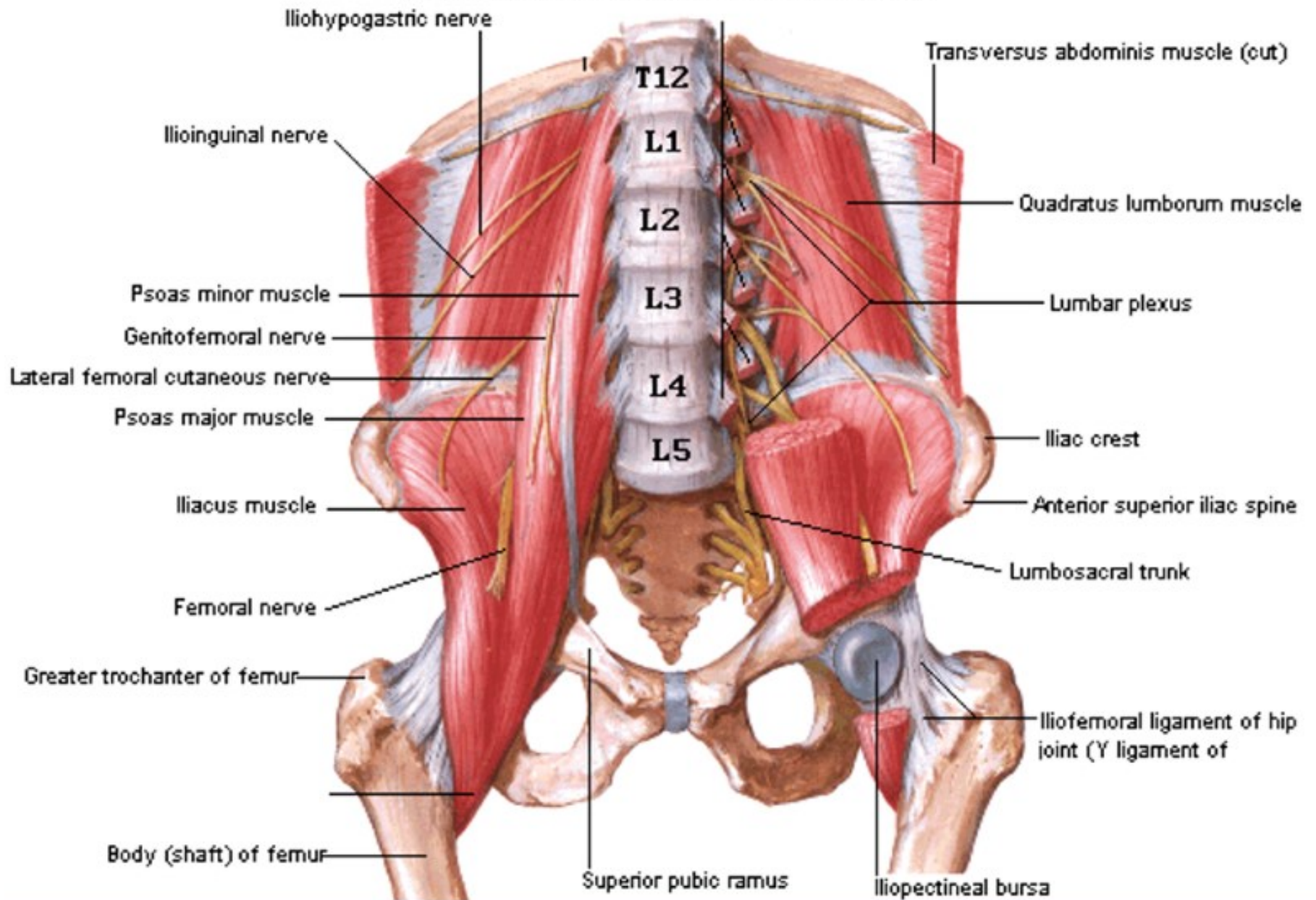
B

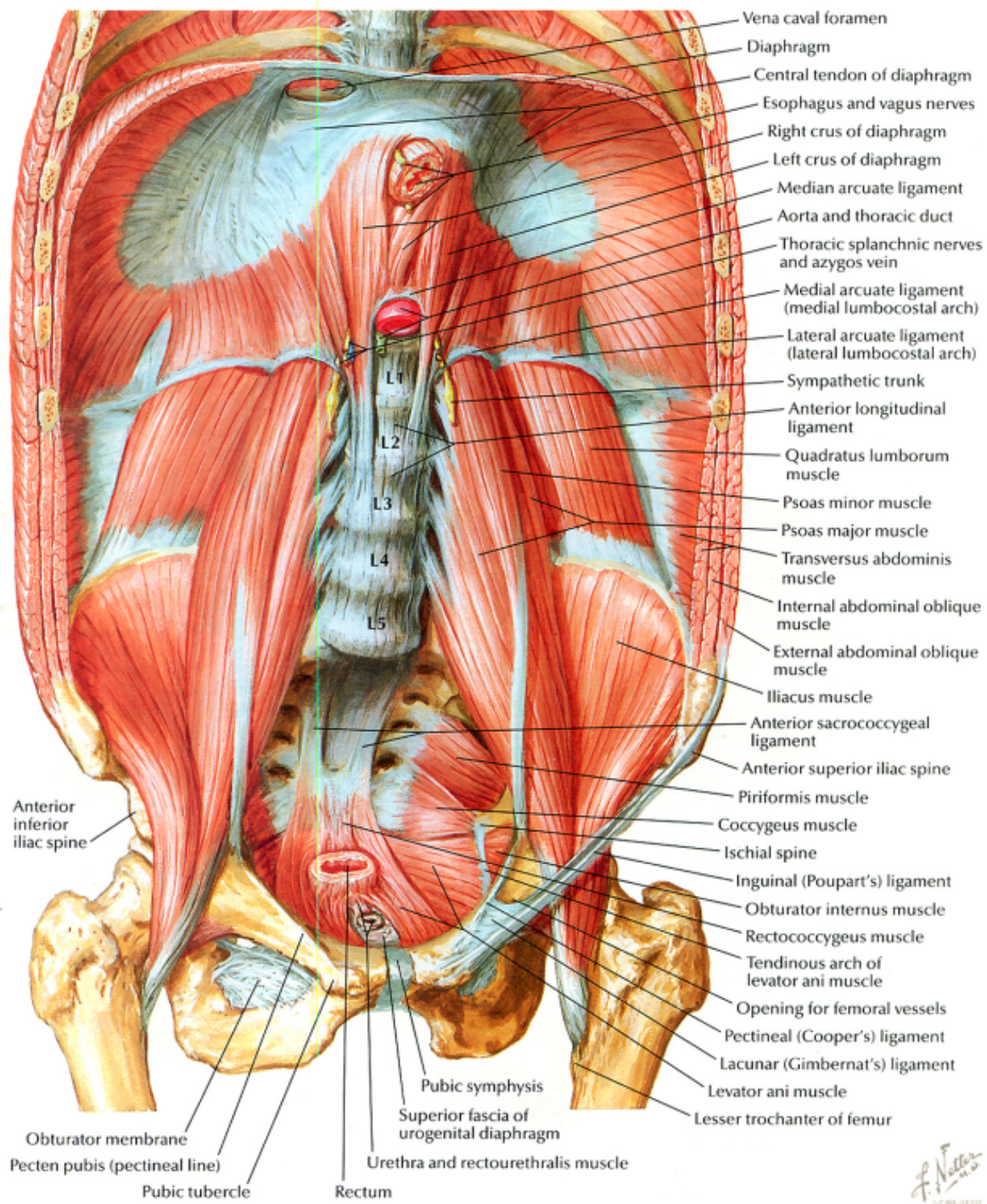
C

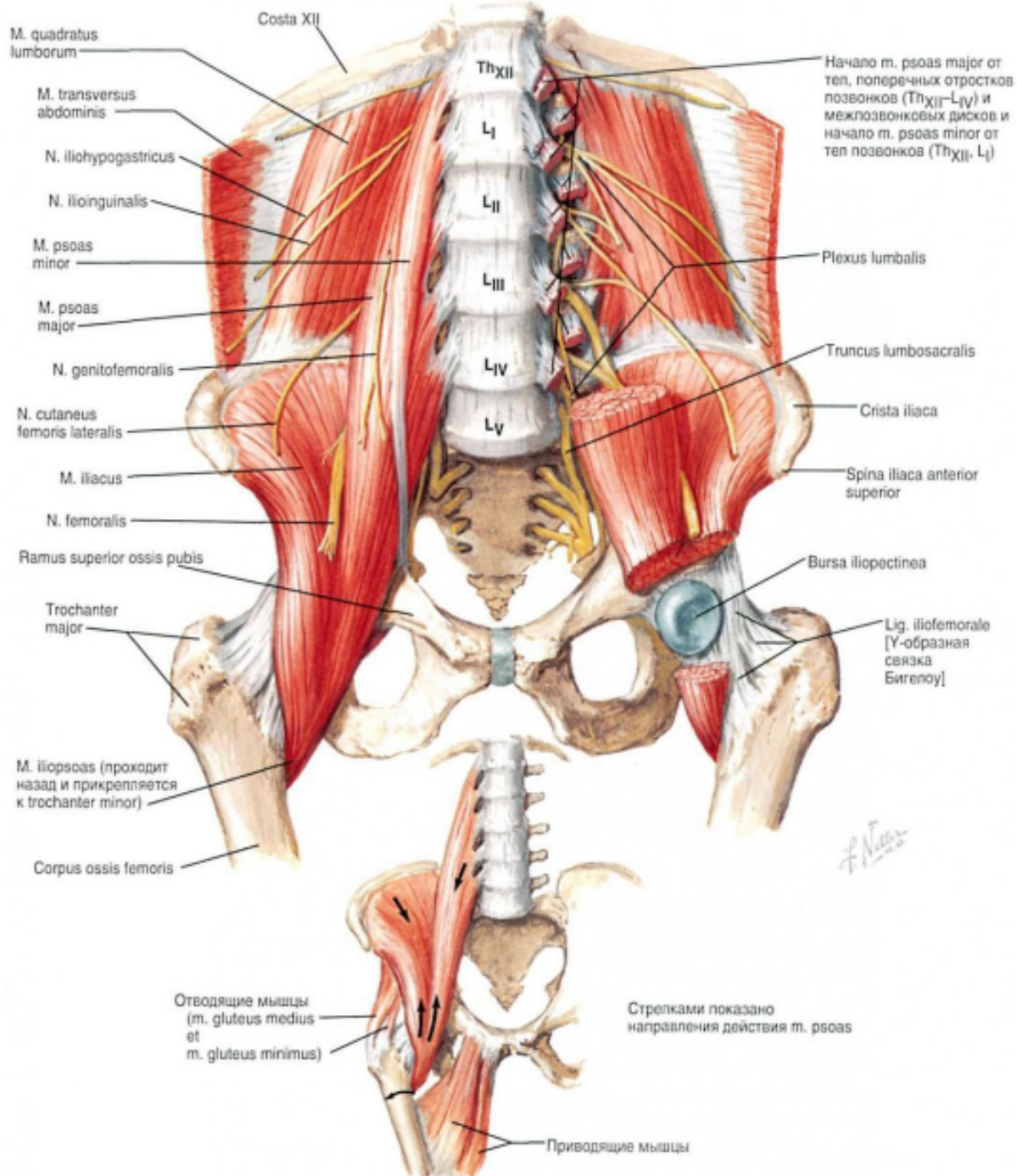
D

Anterior Views

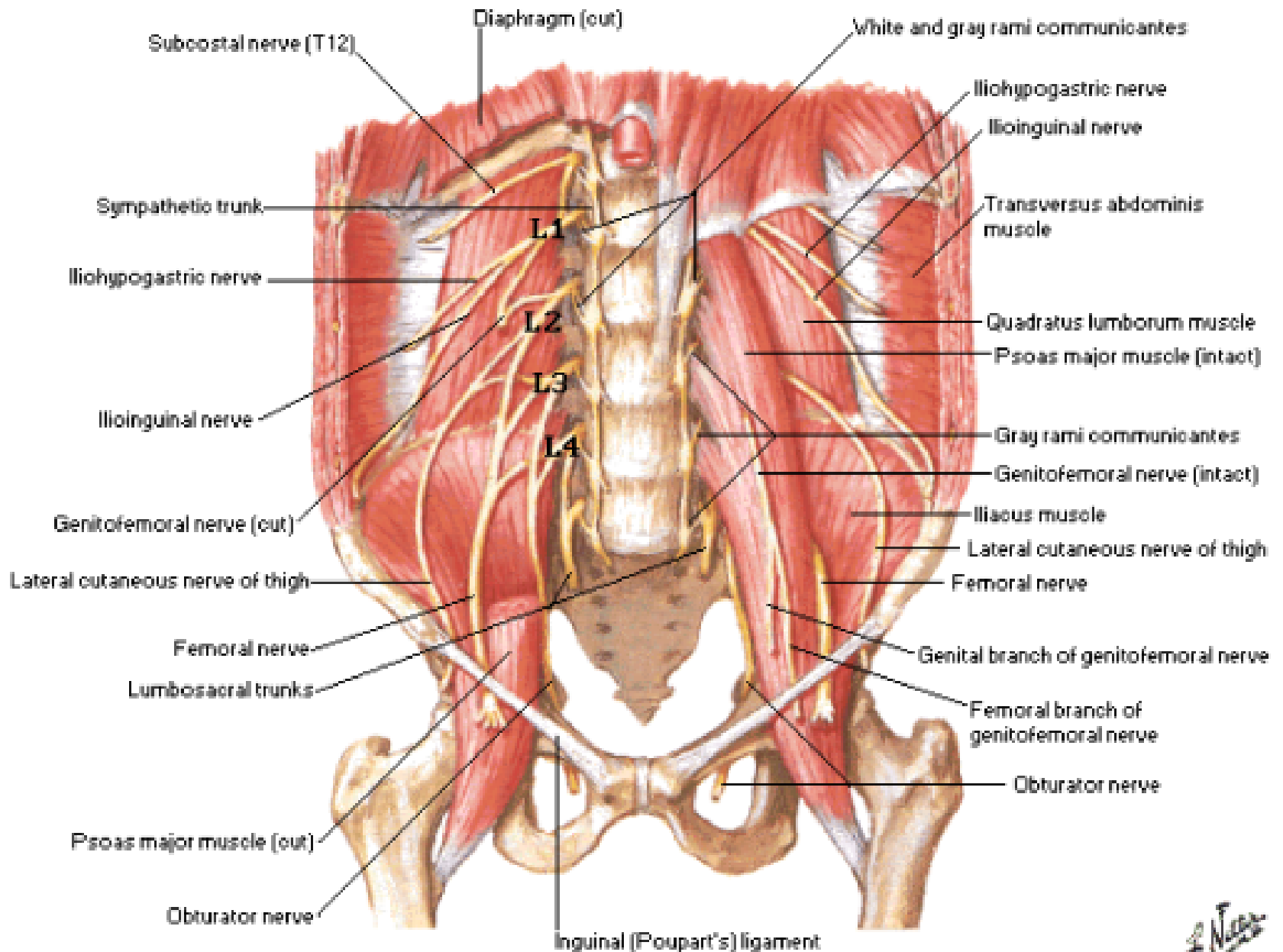
Psoas and Iliacus Muscles





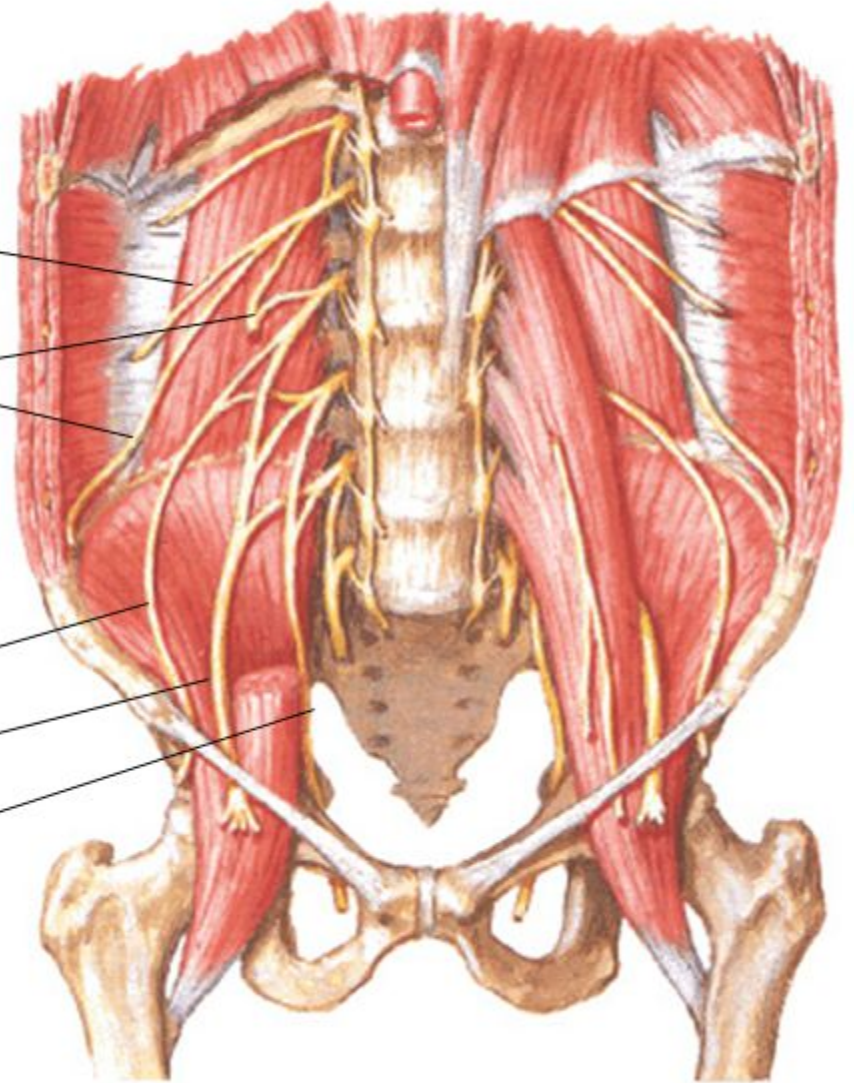


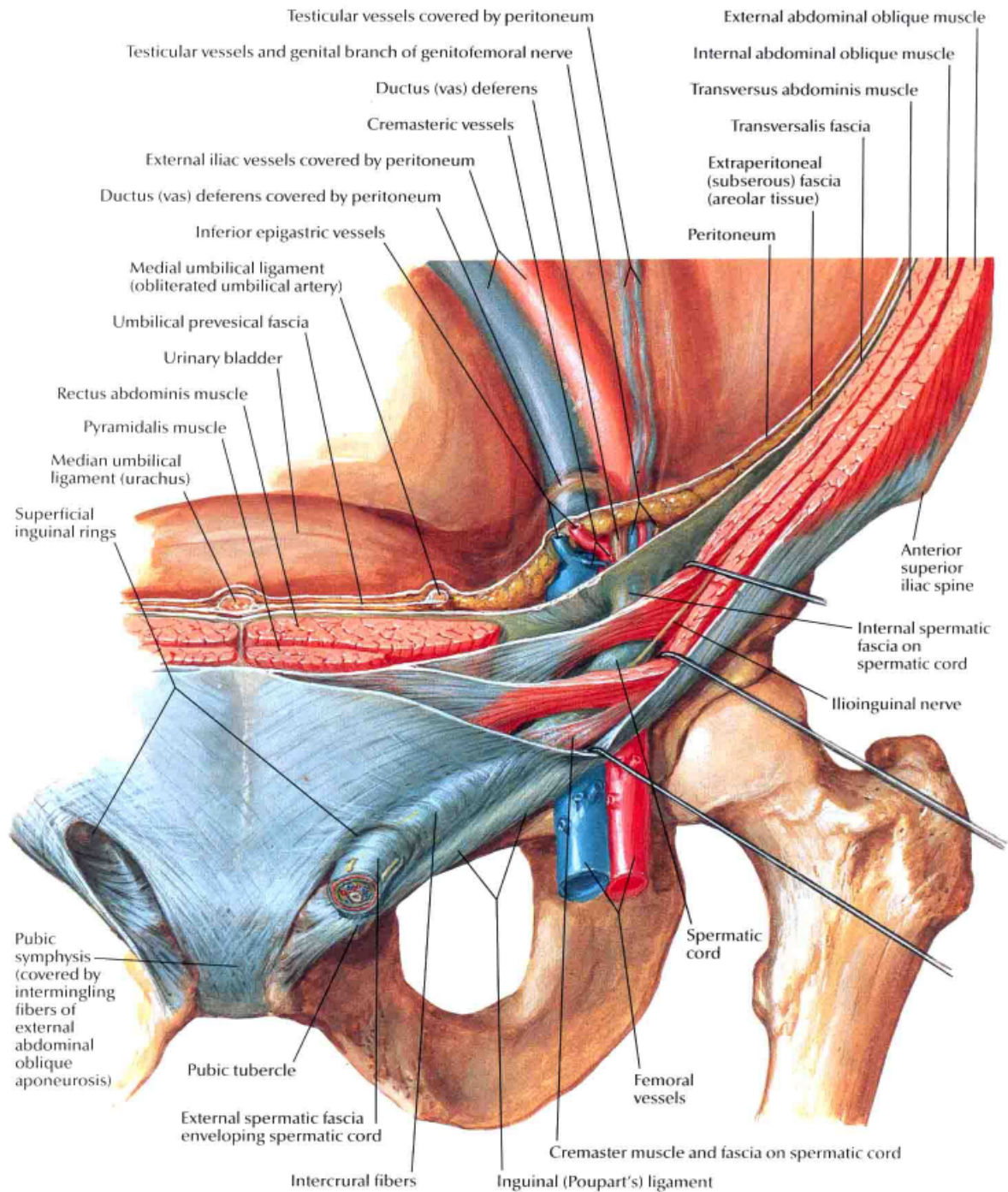
Lumbar Plexus in Situ

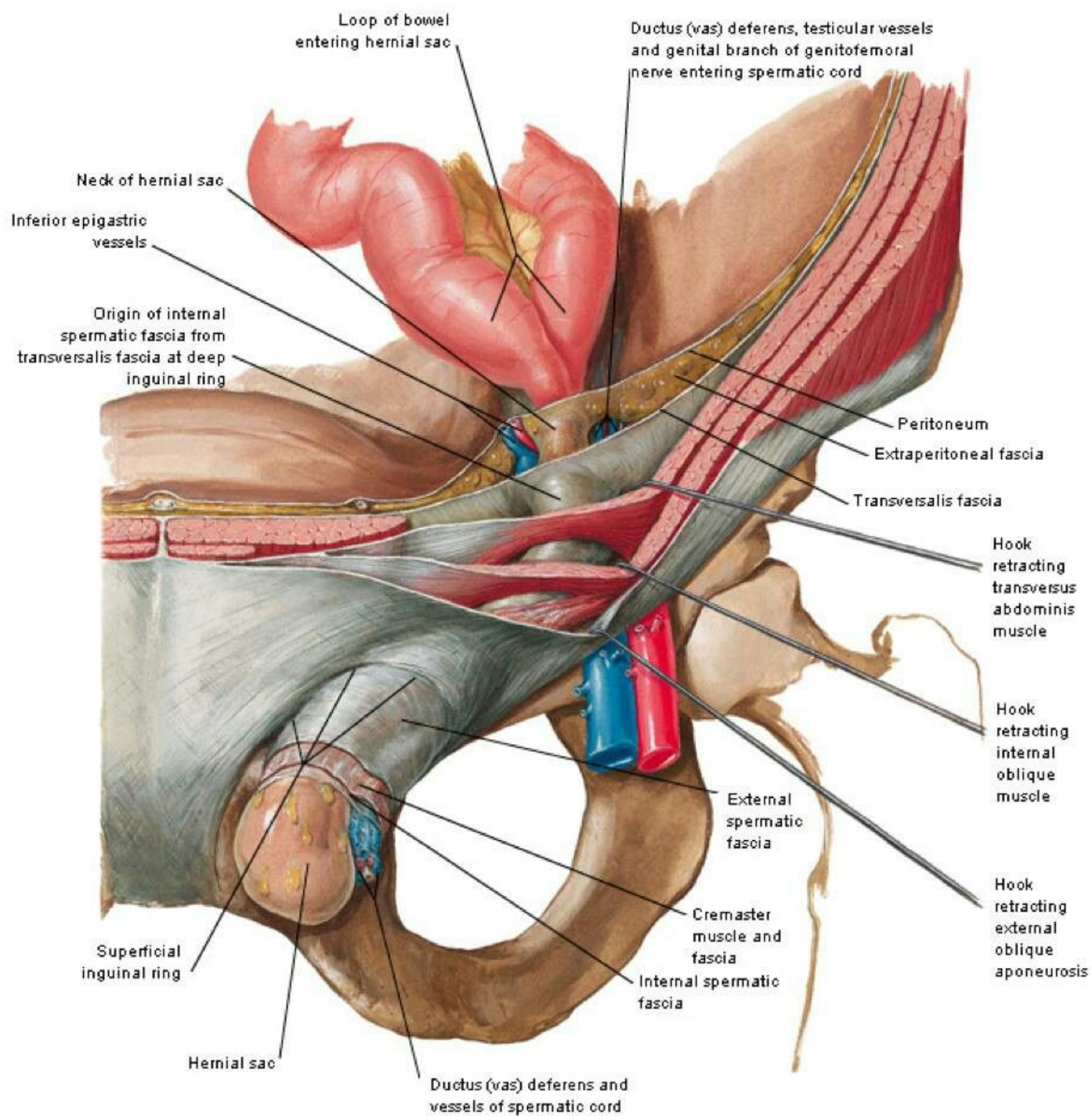


Plexus lumbalis (Th12 – L4)

- n. iliohypogastricus
- n. ilioinguinalis
- n. genitofemoralis
 - r. genitalis
 - r. femoralis
- n. cutaneus femoris lateralis
- n. femoralis
- n. obturatorius







Arteries of the pelvis

Common iliac artery ●

External iliac artery ●

-Some internal supply

inferior epigastric a. ←

Accessory obturator a. ←

-Becomes **femoral artery** as it passes under the inguinal ligament

Internal iliac artery ●

-mixed internal/external supply

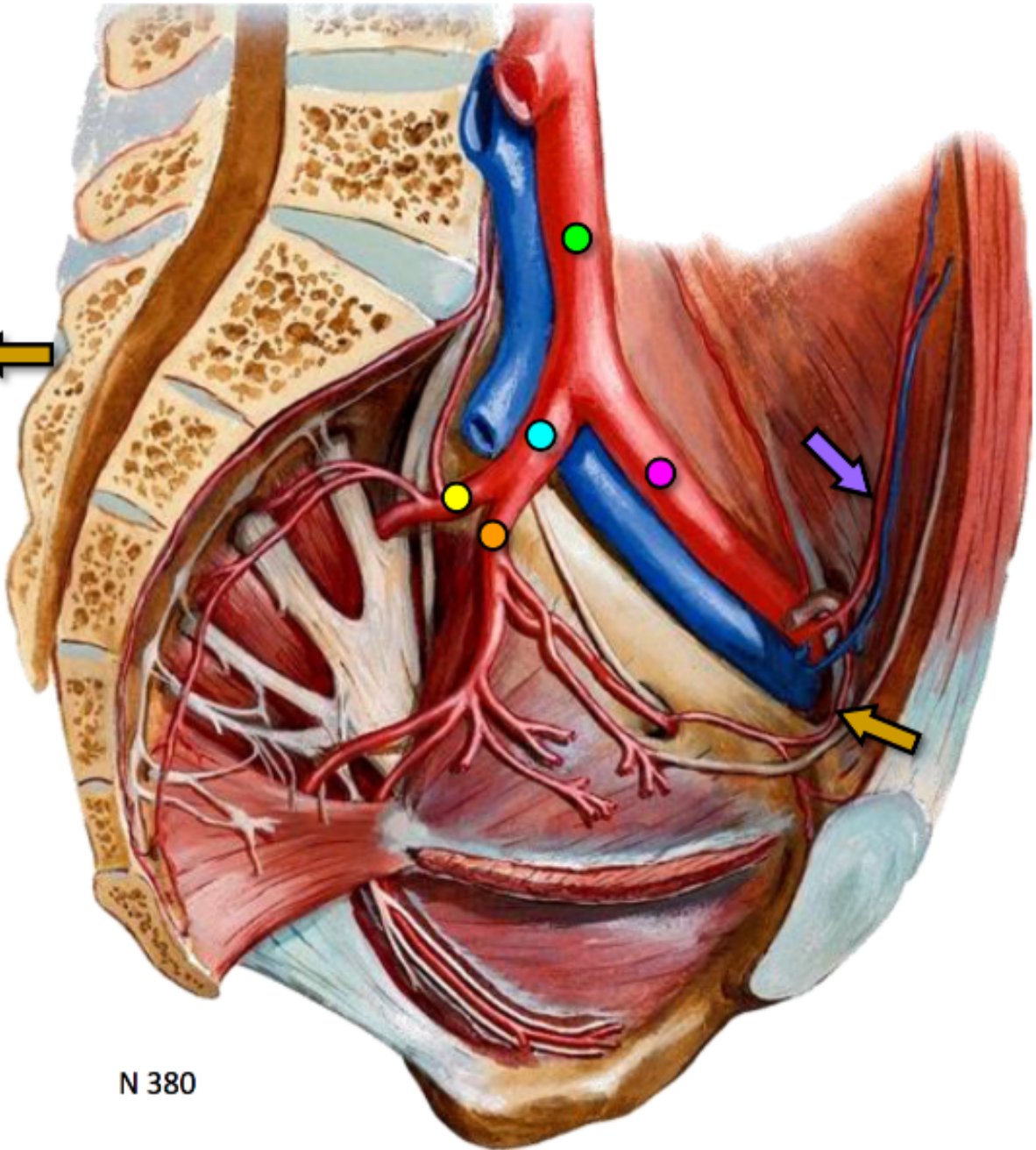
Anterior division ●

viscera of pelvis & perineum

Posterior division ●

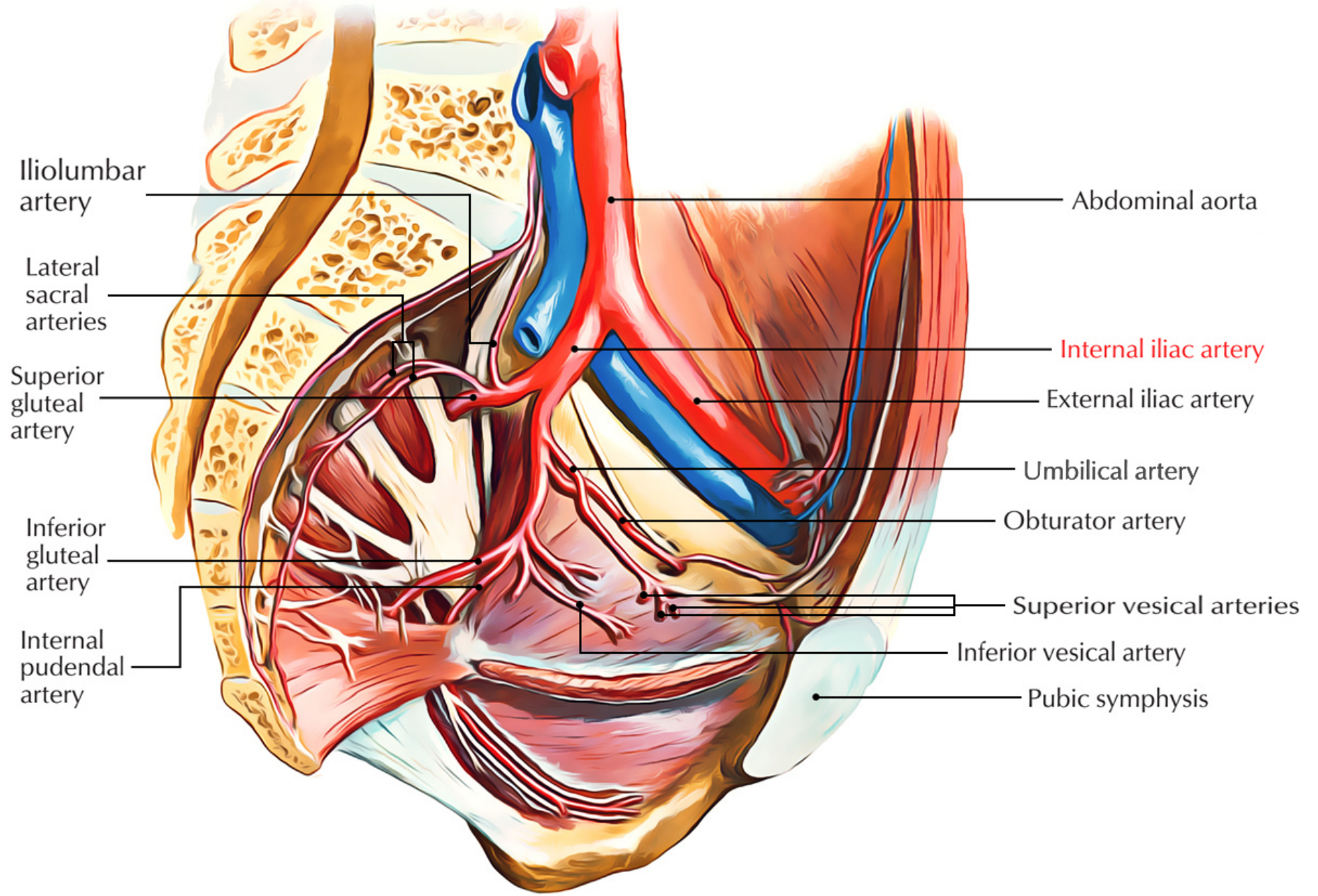
posterior wall, gluteal

region



N 380

Variation common; look for where the artery is going in addition to where it is from



Iliolumbar artery

Lateral sacral arteries

Superior gluteal artery

Inferior gluteal artery

Internal pudendal artery

Abdominal aorta

Internal iliac artery

External iliac artery

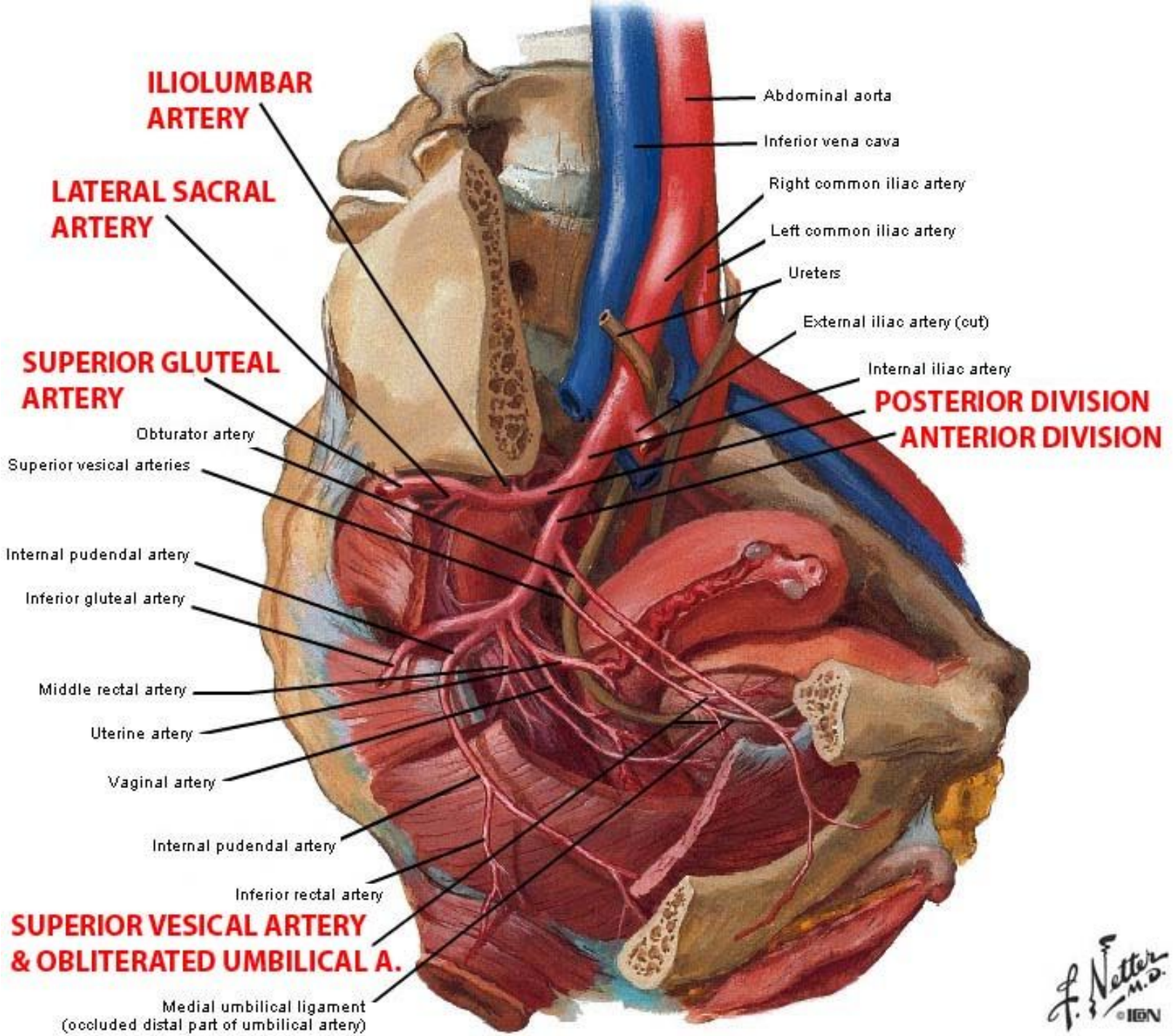
Umbilical artery

Obturator artery

Superior vesical arteries

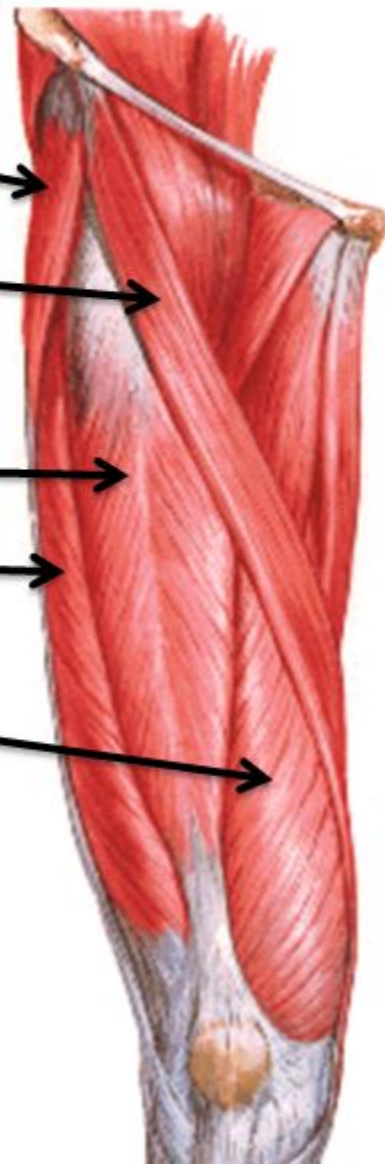
Inferior vesical artery

Pubic symphysis



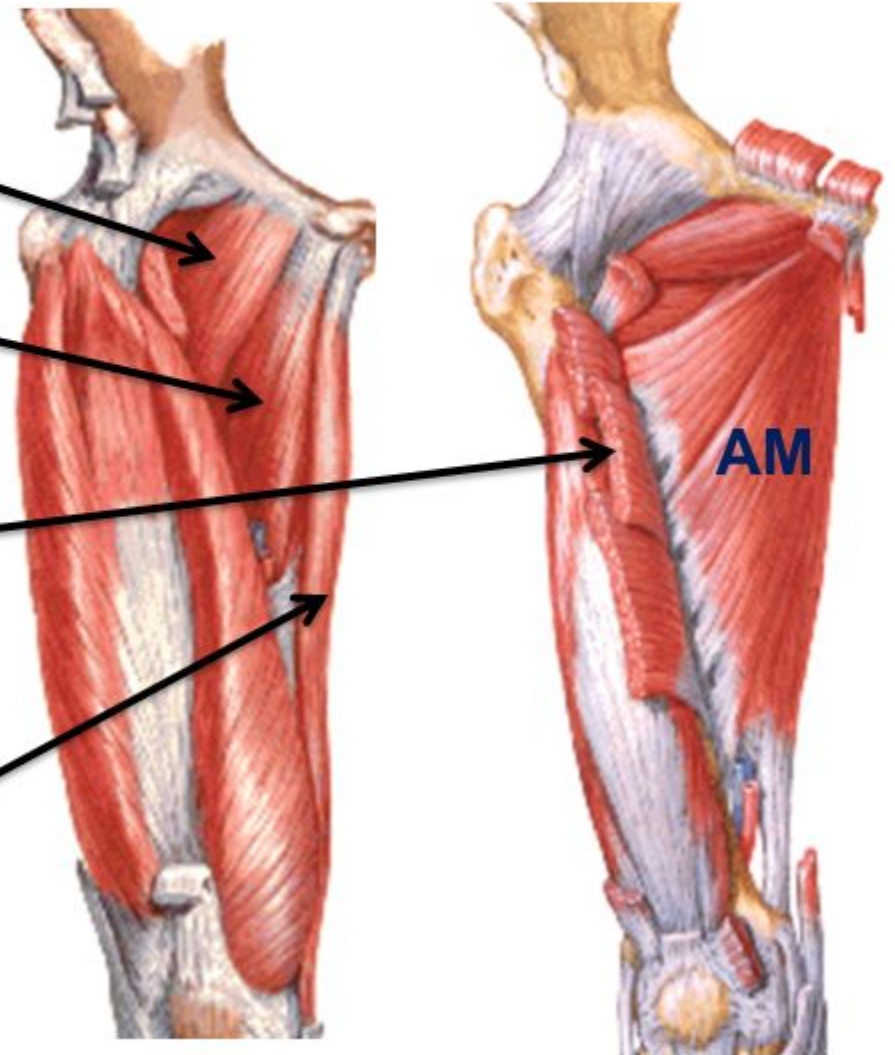
MUSCLES OF ANTERIOR COMPARTMENT

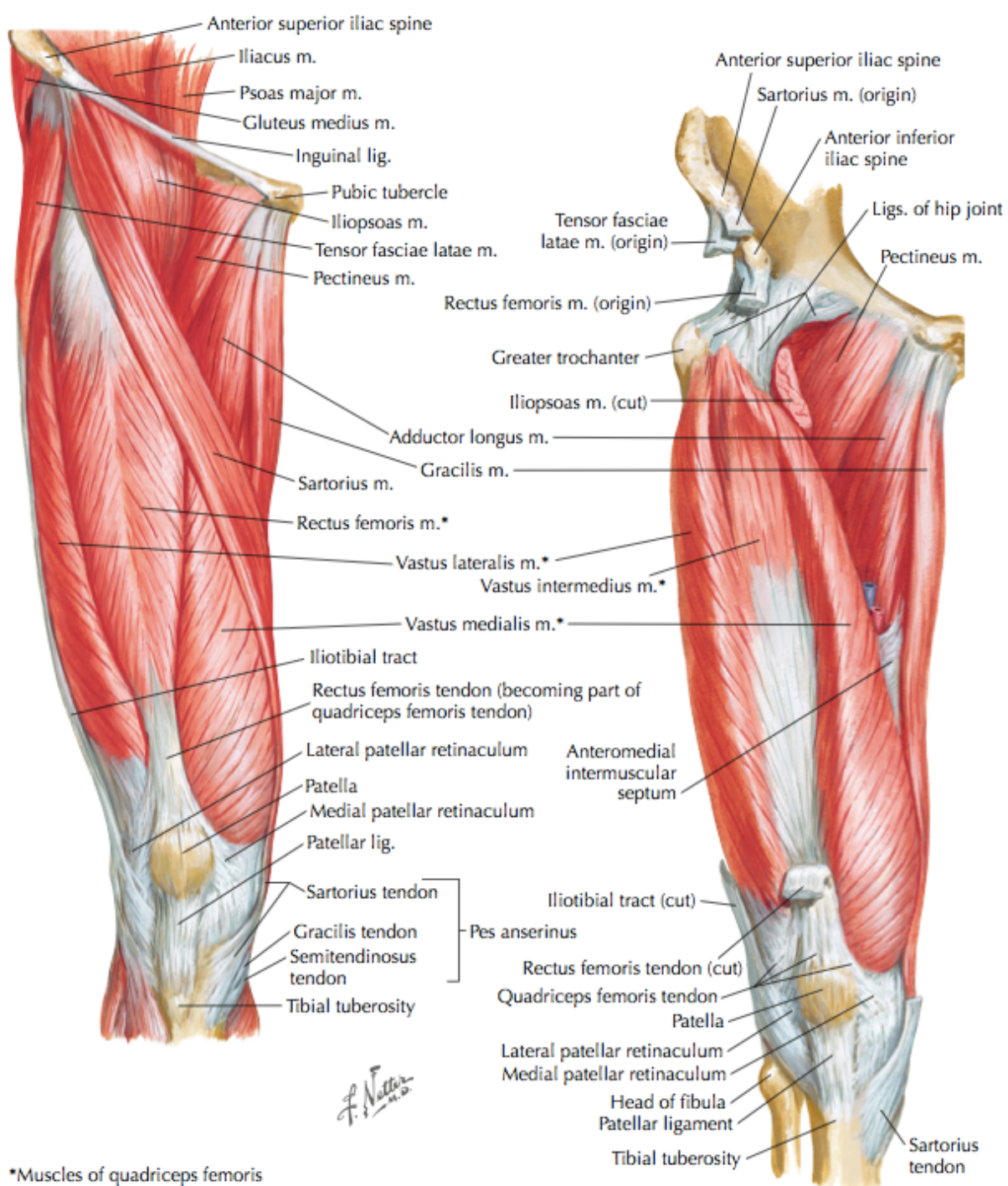
- **Tensor fascia lata**
- **Sartorius**
- **Quadriceps femoris**
 - Rectus femoris
 - Vastus lateralis
 - Vastus medialis
 - Vastus intermedius
- **Articularis genus**



MUSCLES OF MEDIAL COMPARTMENT

- Pectineus
- Adductor longus
- Adductor brevis
- Adductor magnus
- Gracilis

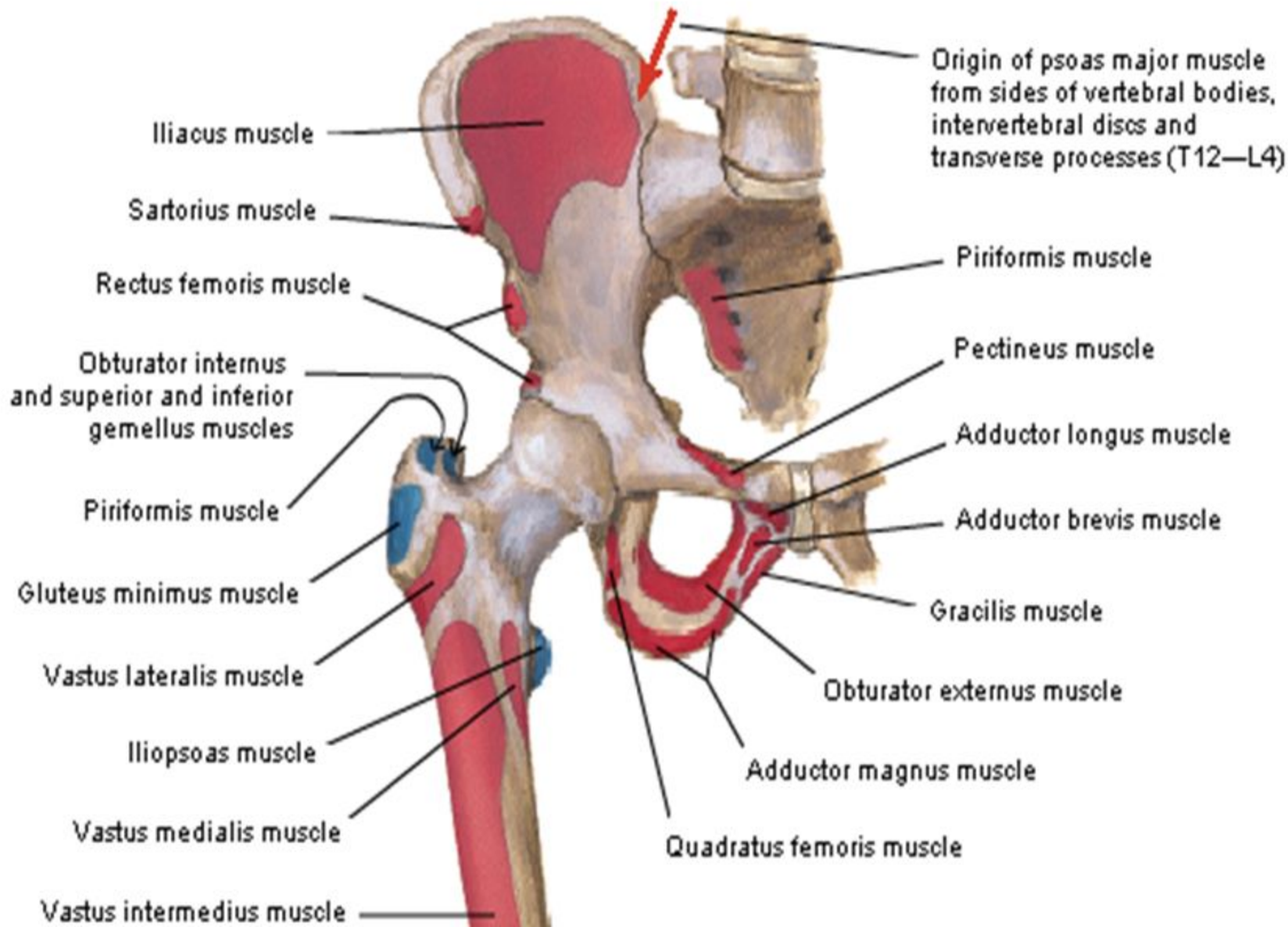


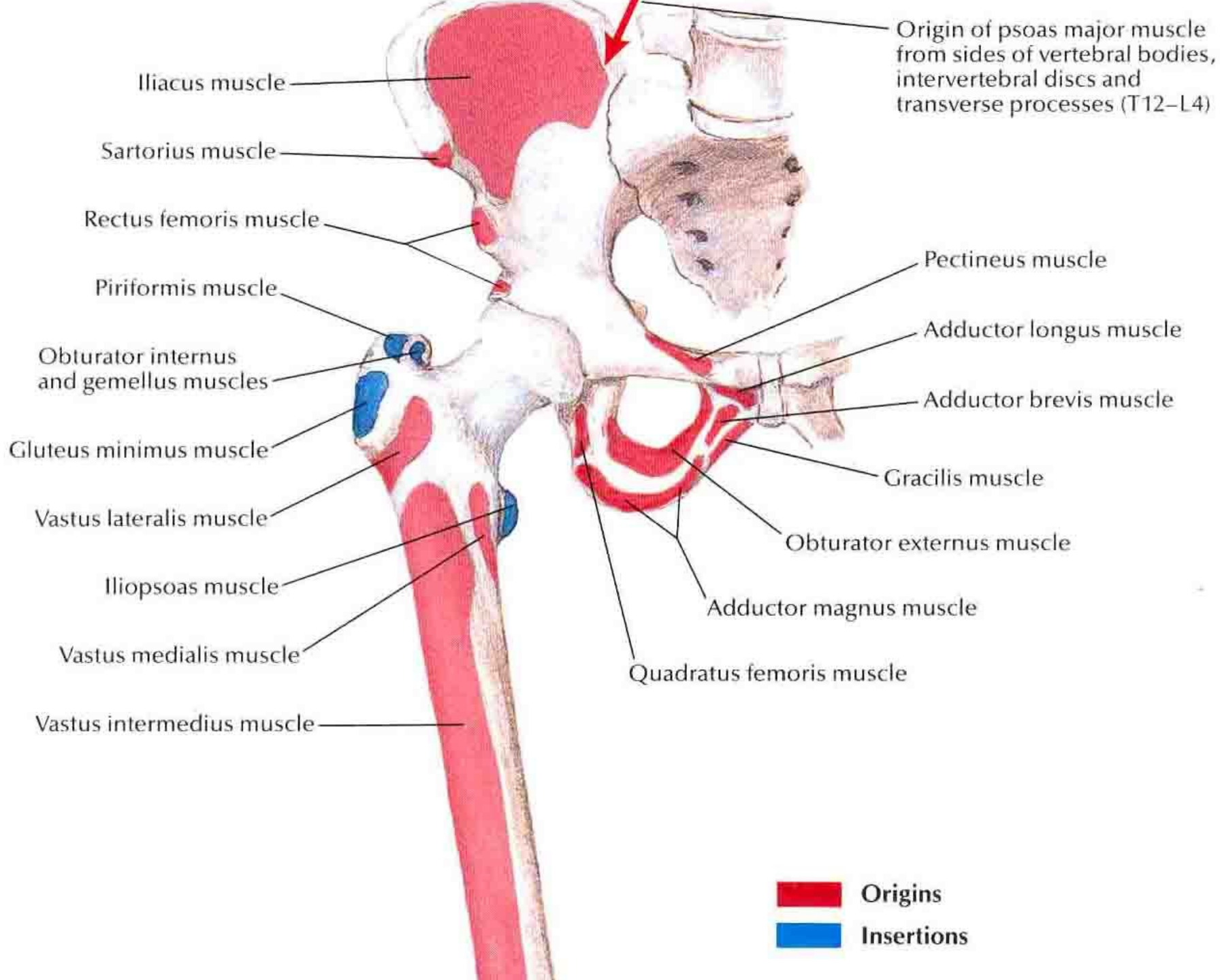


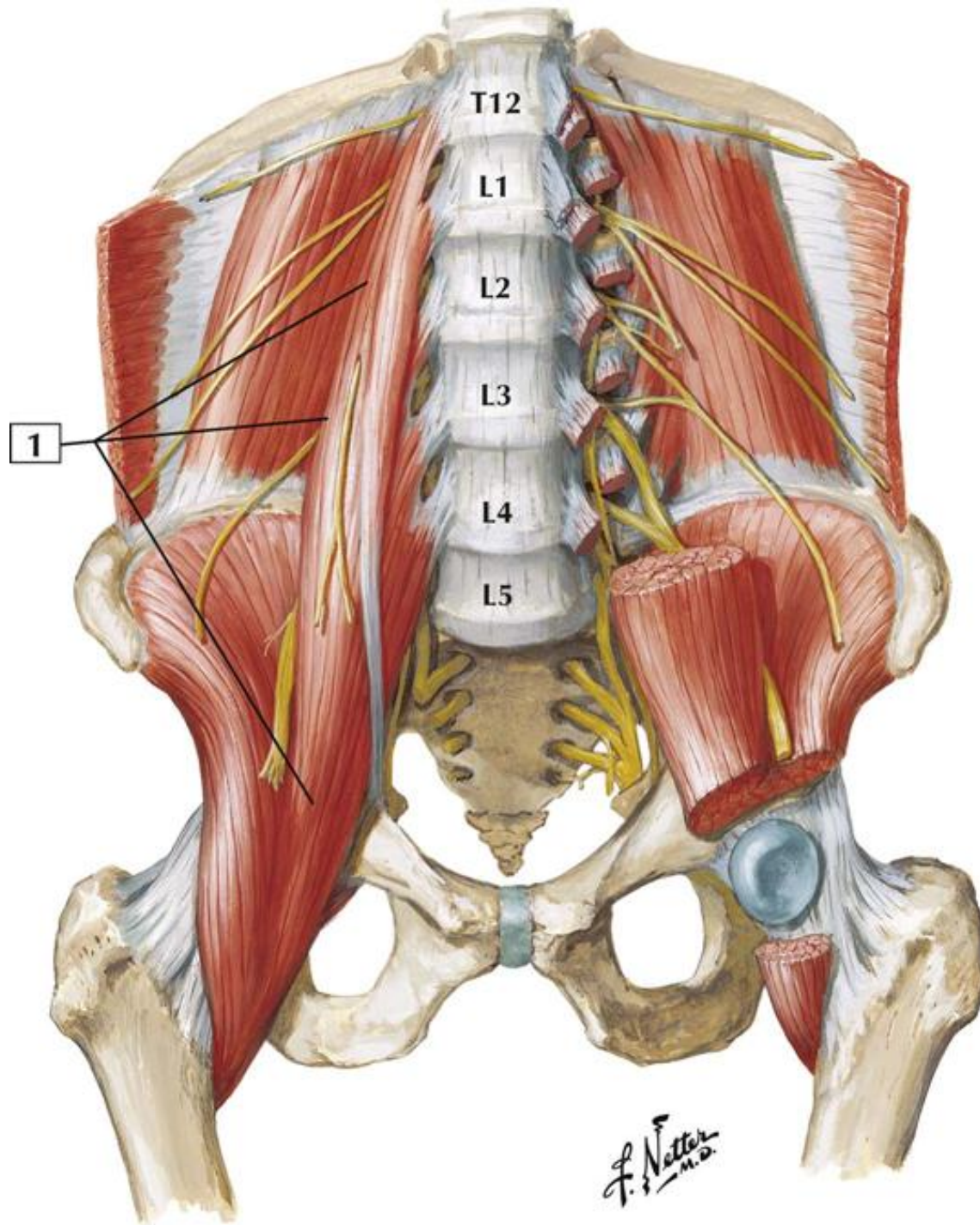
*Muscles of quadriceps femoris

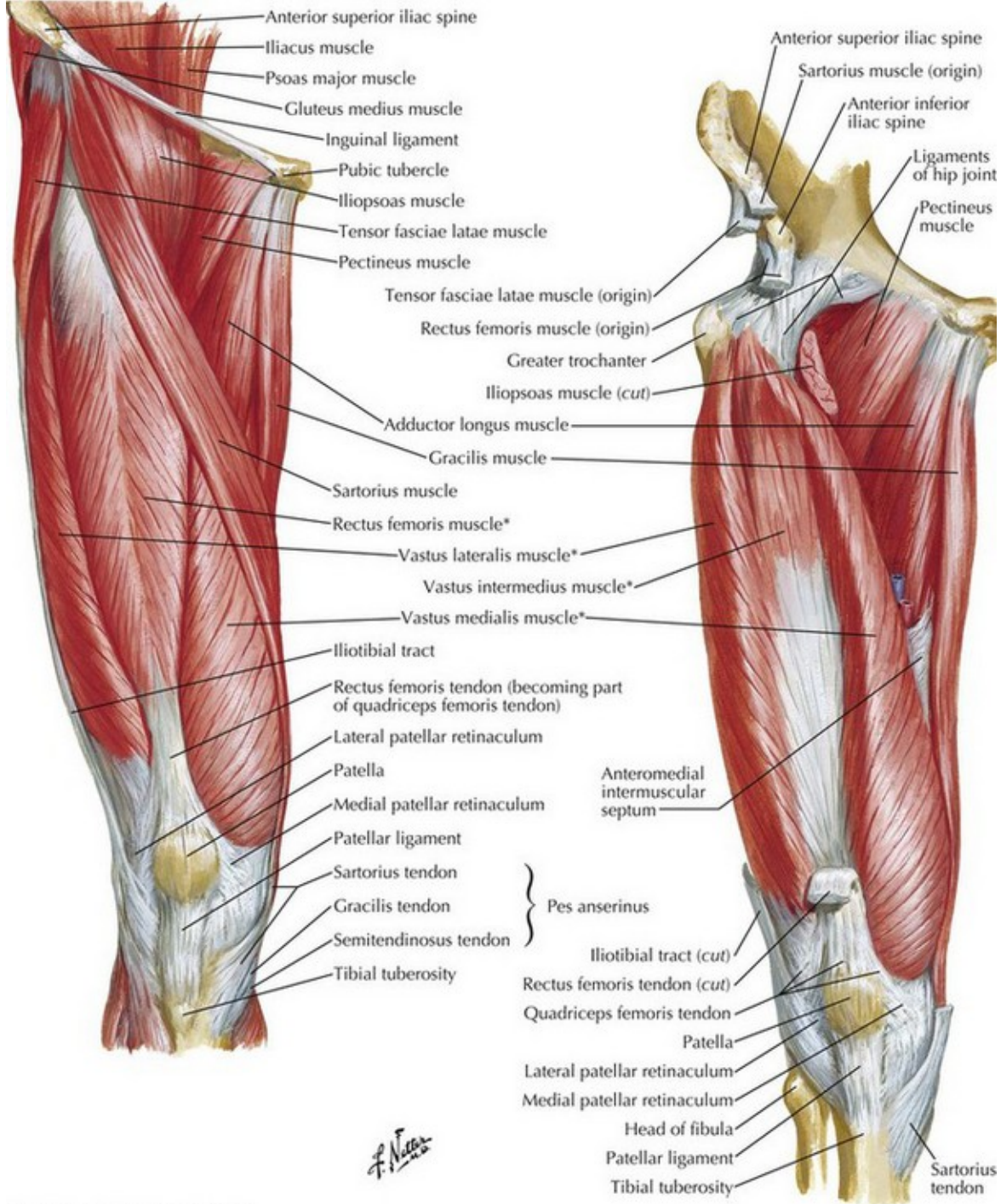


HIP & THIGH MUSCLES ATTACHMENT (ANTERIOR VIEW)



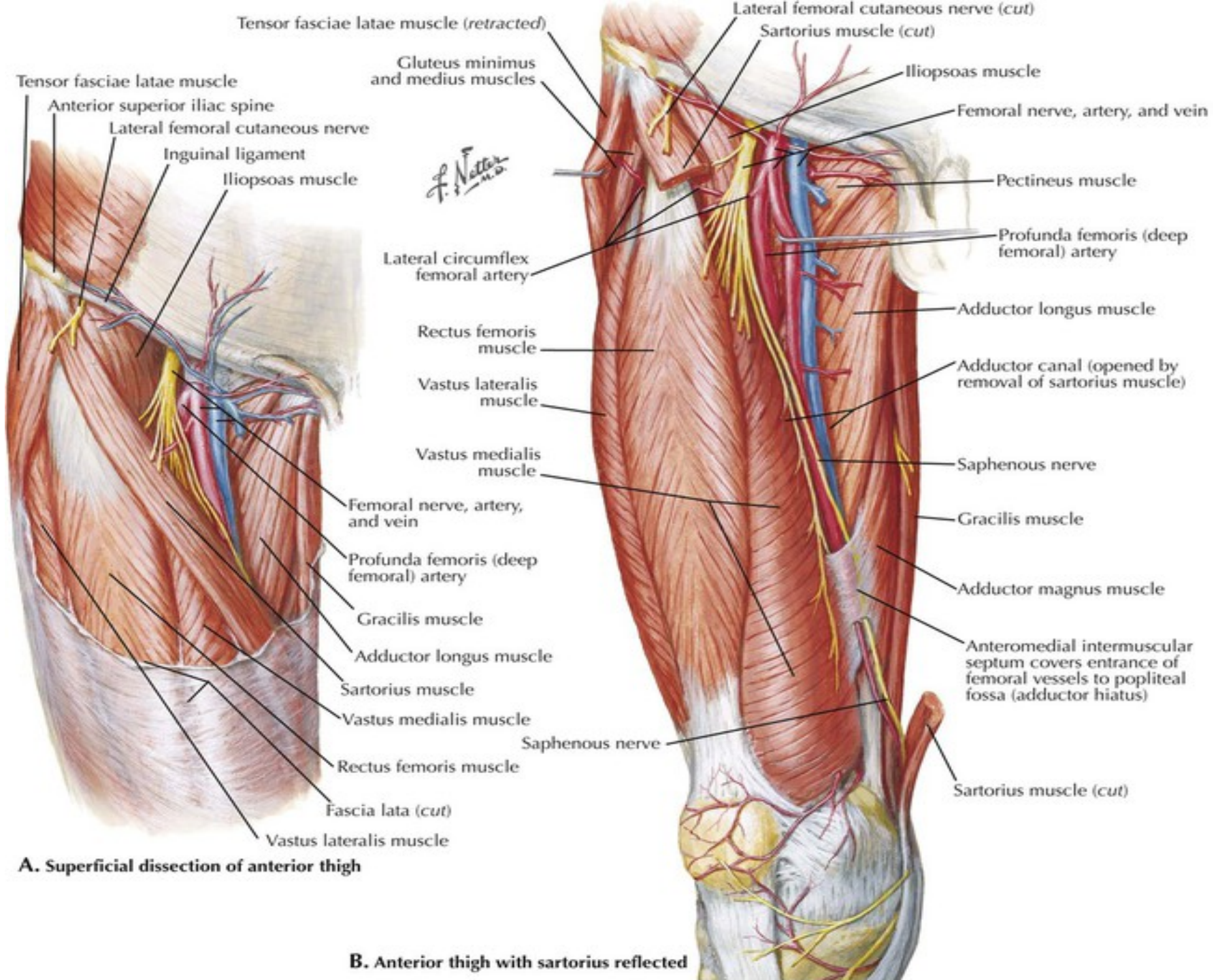


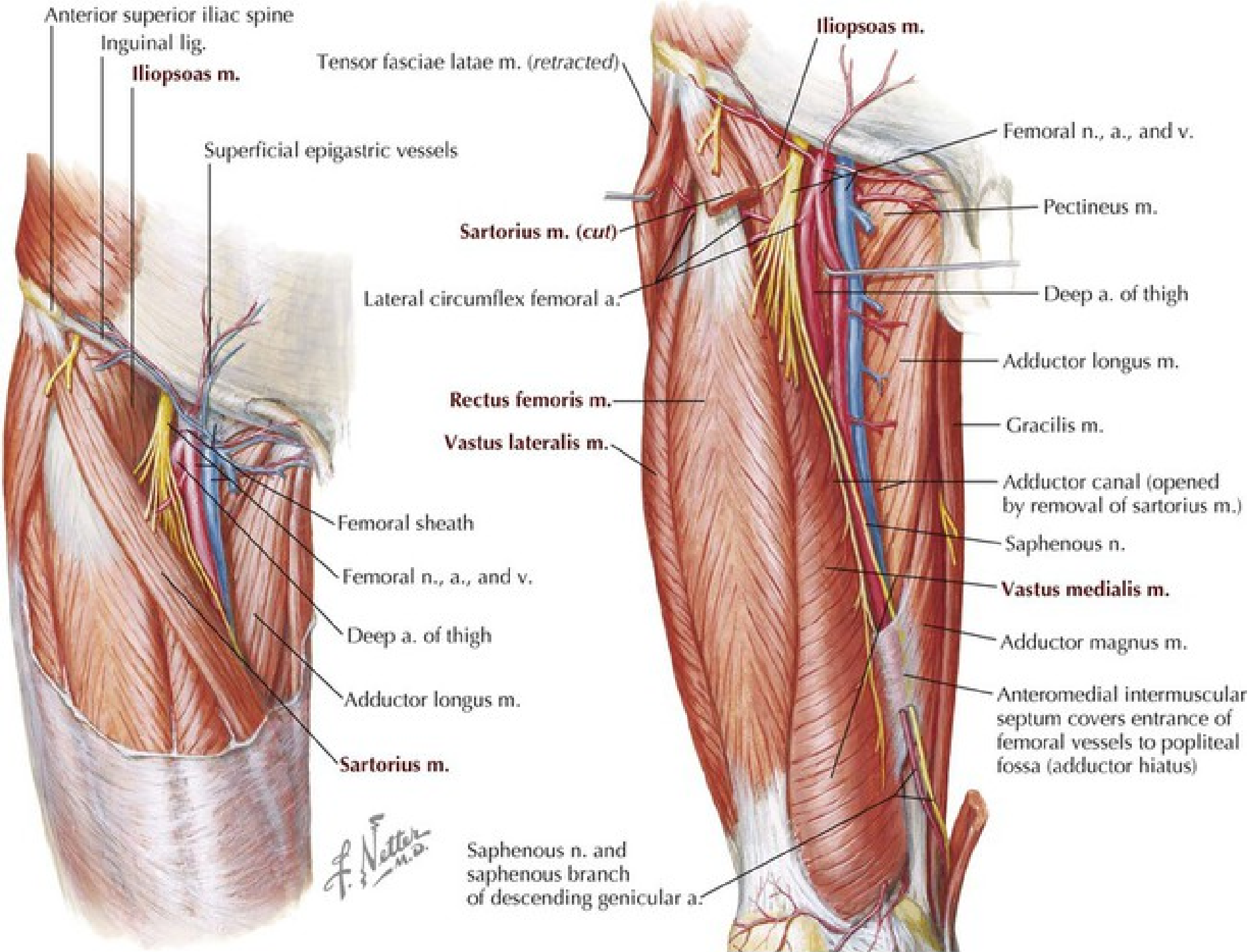


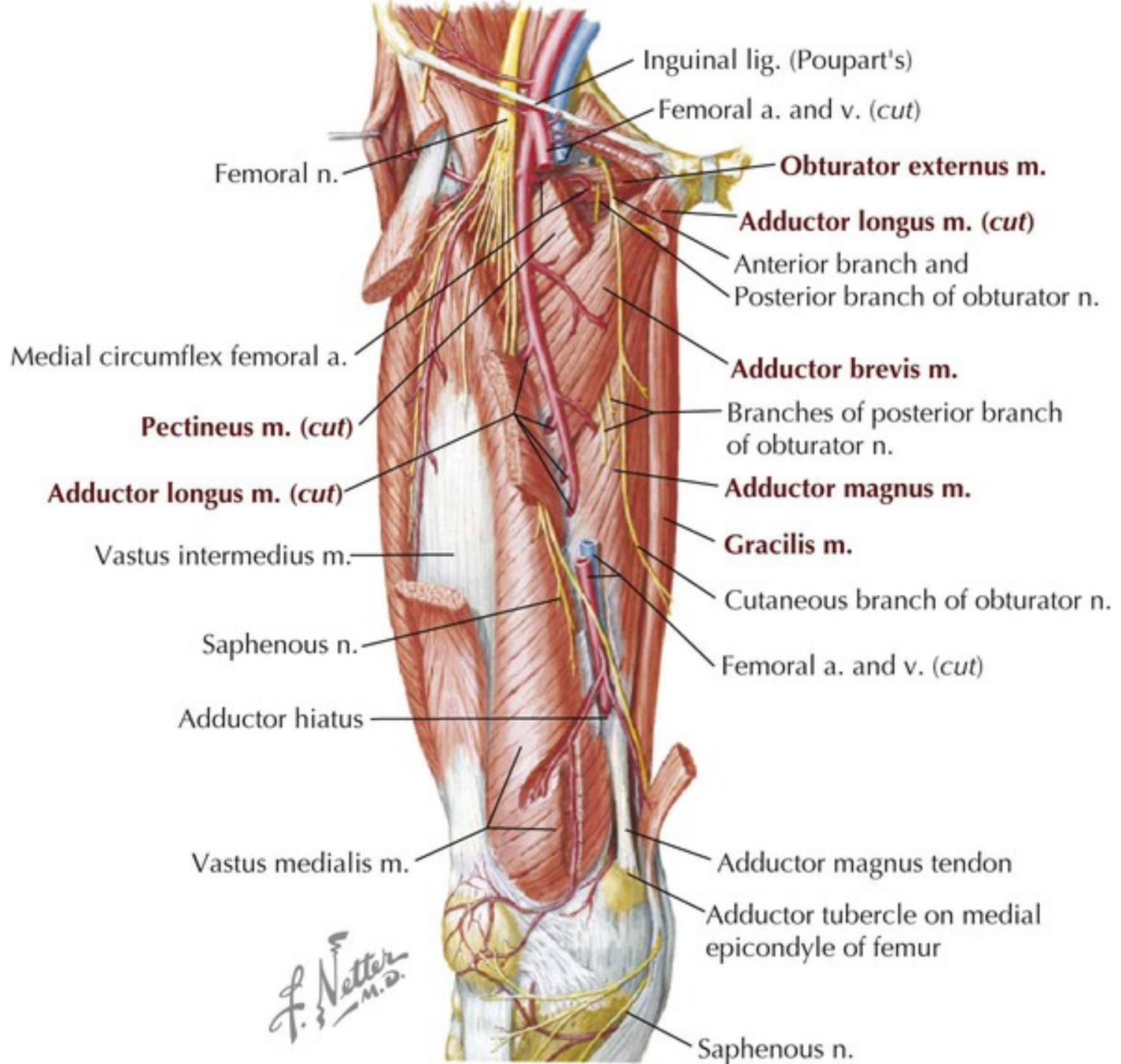


*Muscles of quadriceps femoris

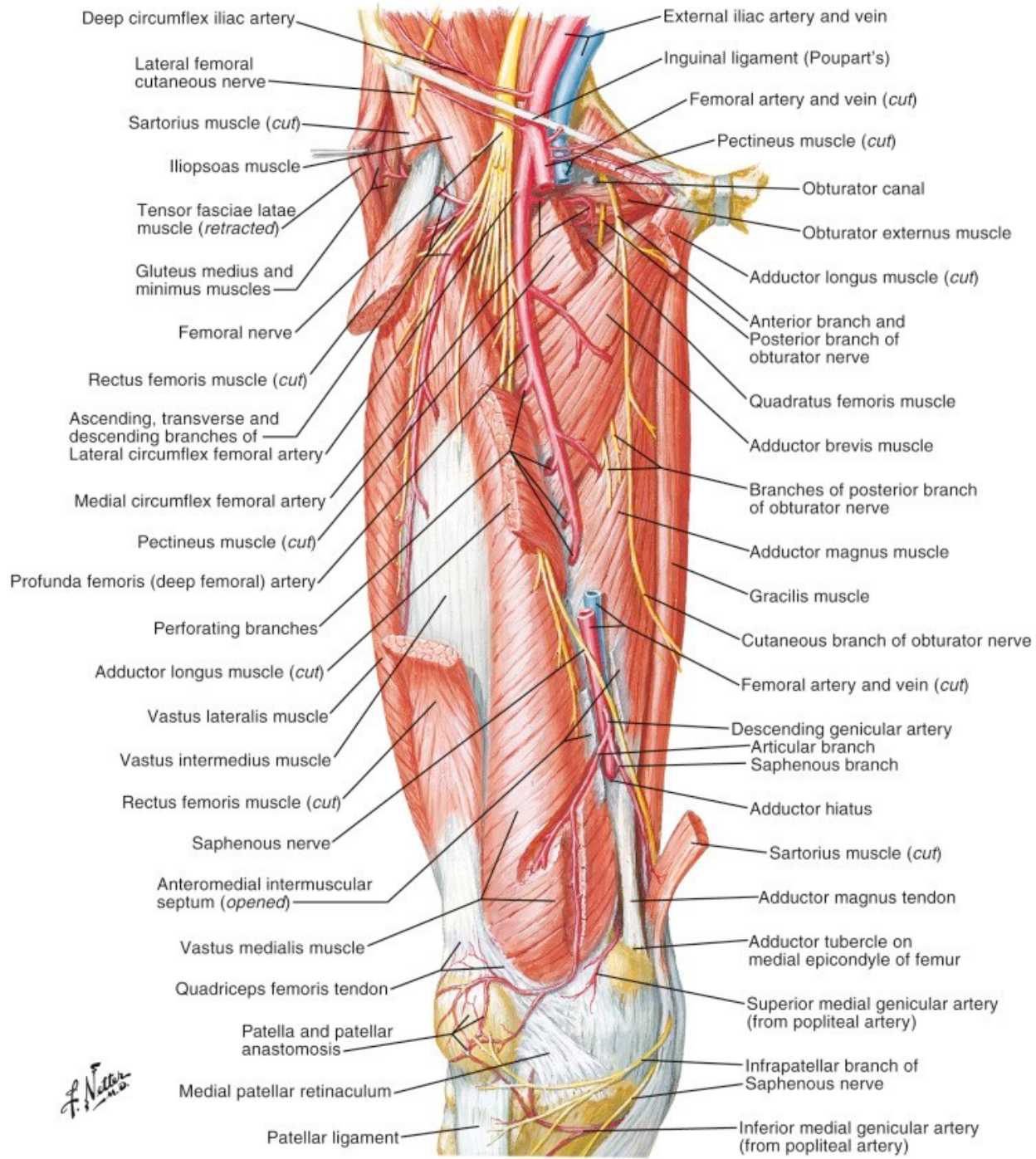
F. Netter M.D.





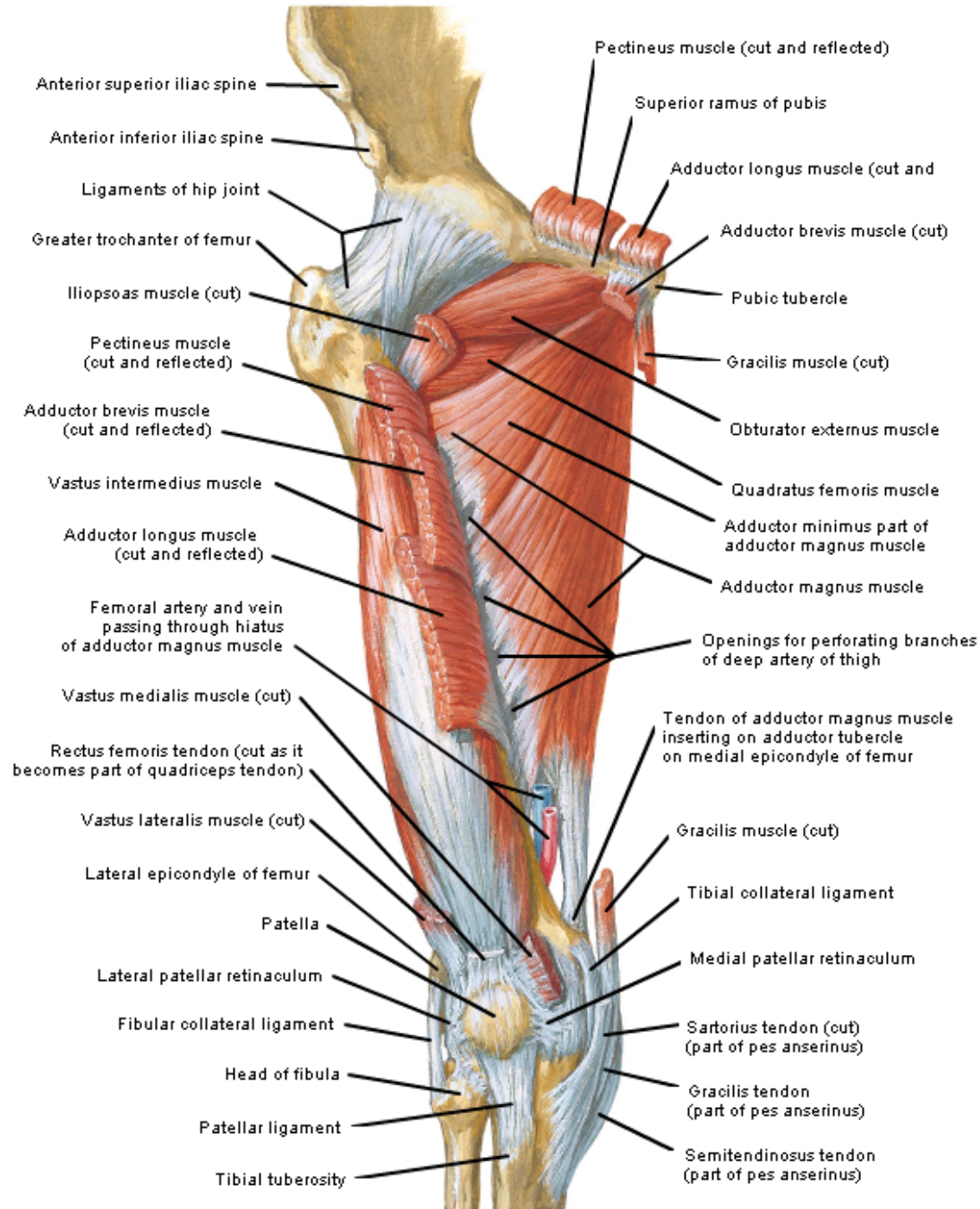


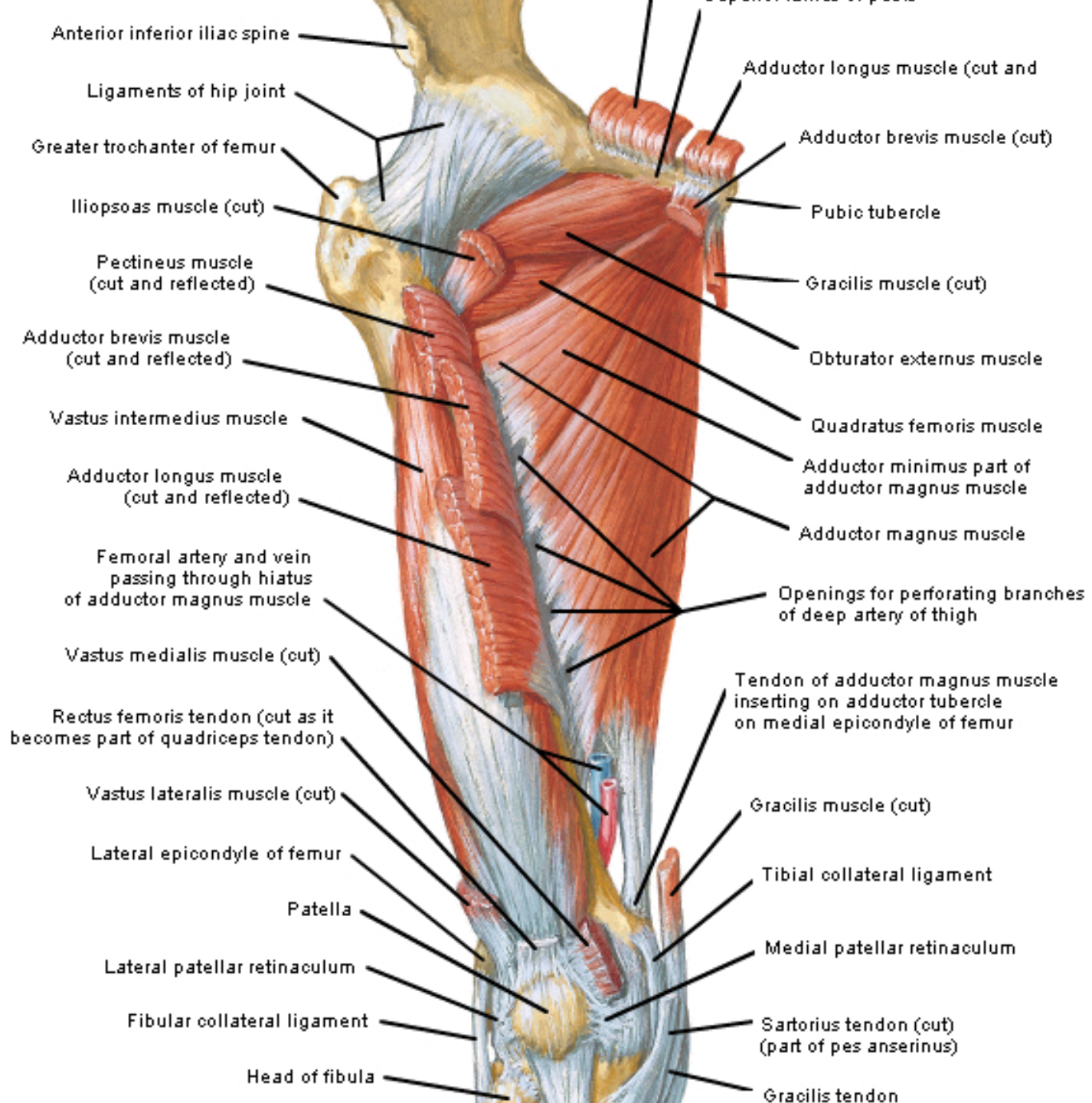
Deep dissection

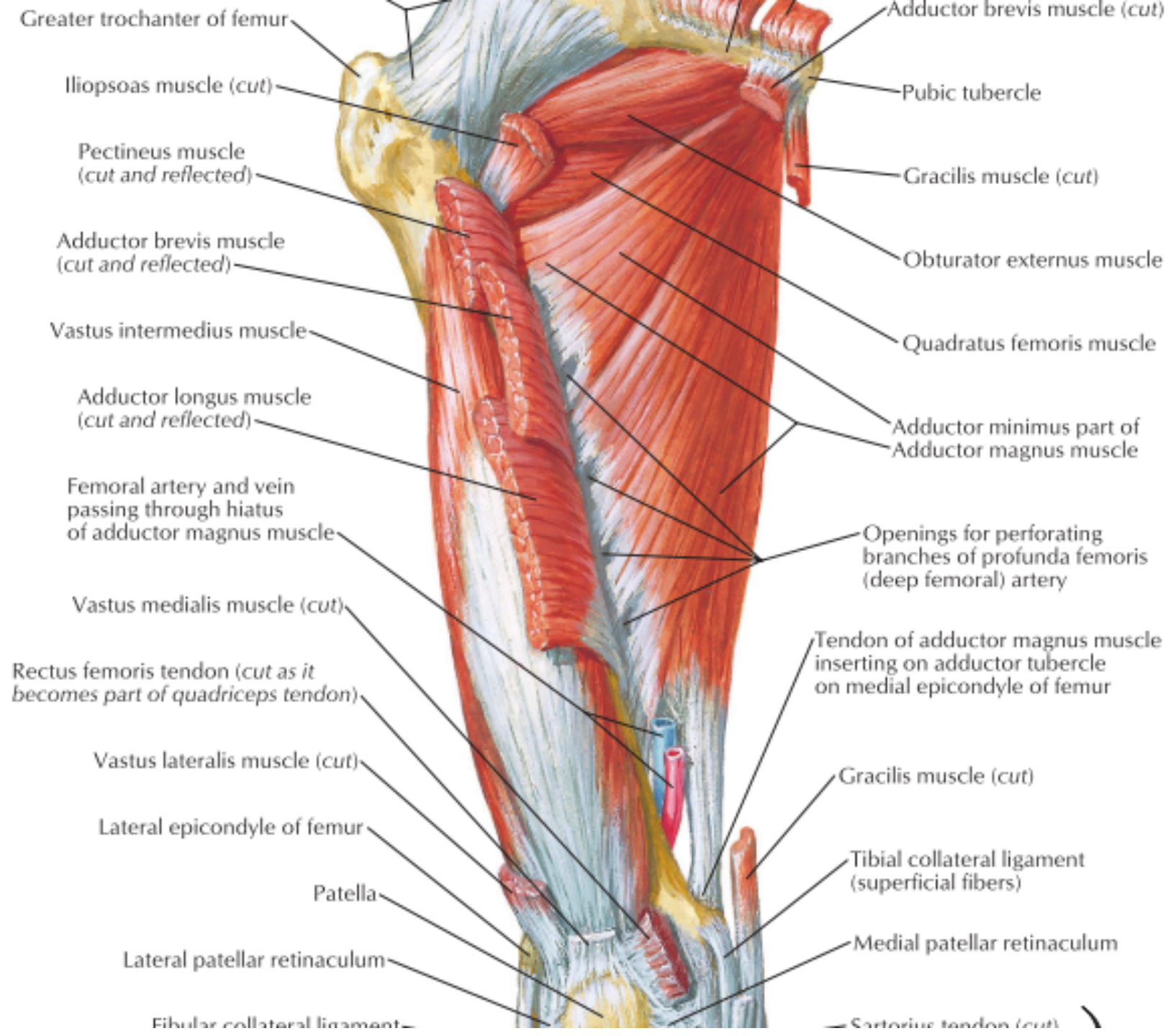


F. Netter M.D.

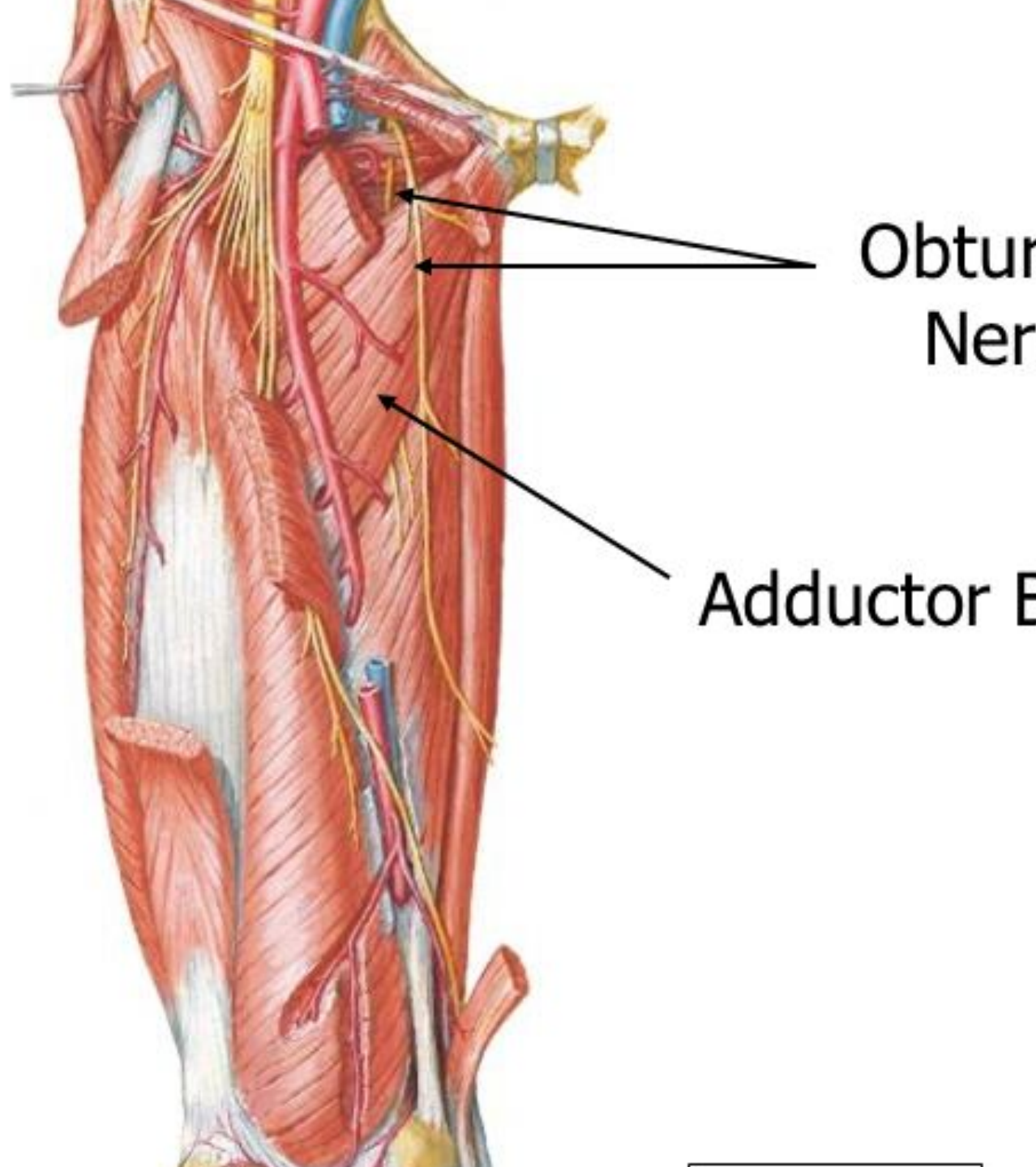
Muscles of Thigh: Anterior View - Deepest Dissection

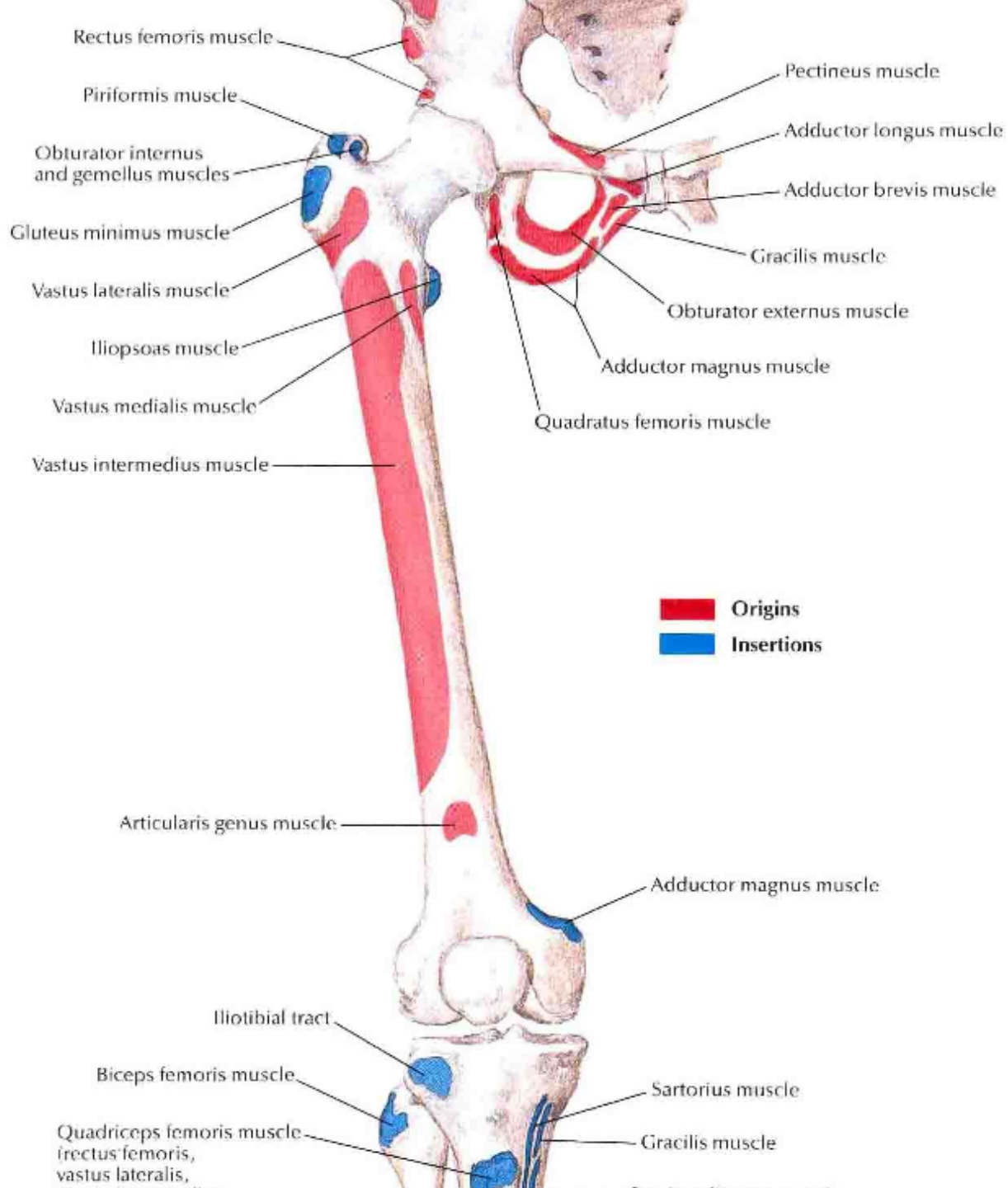


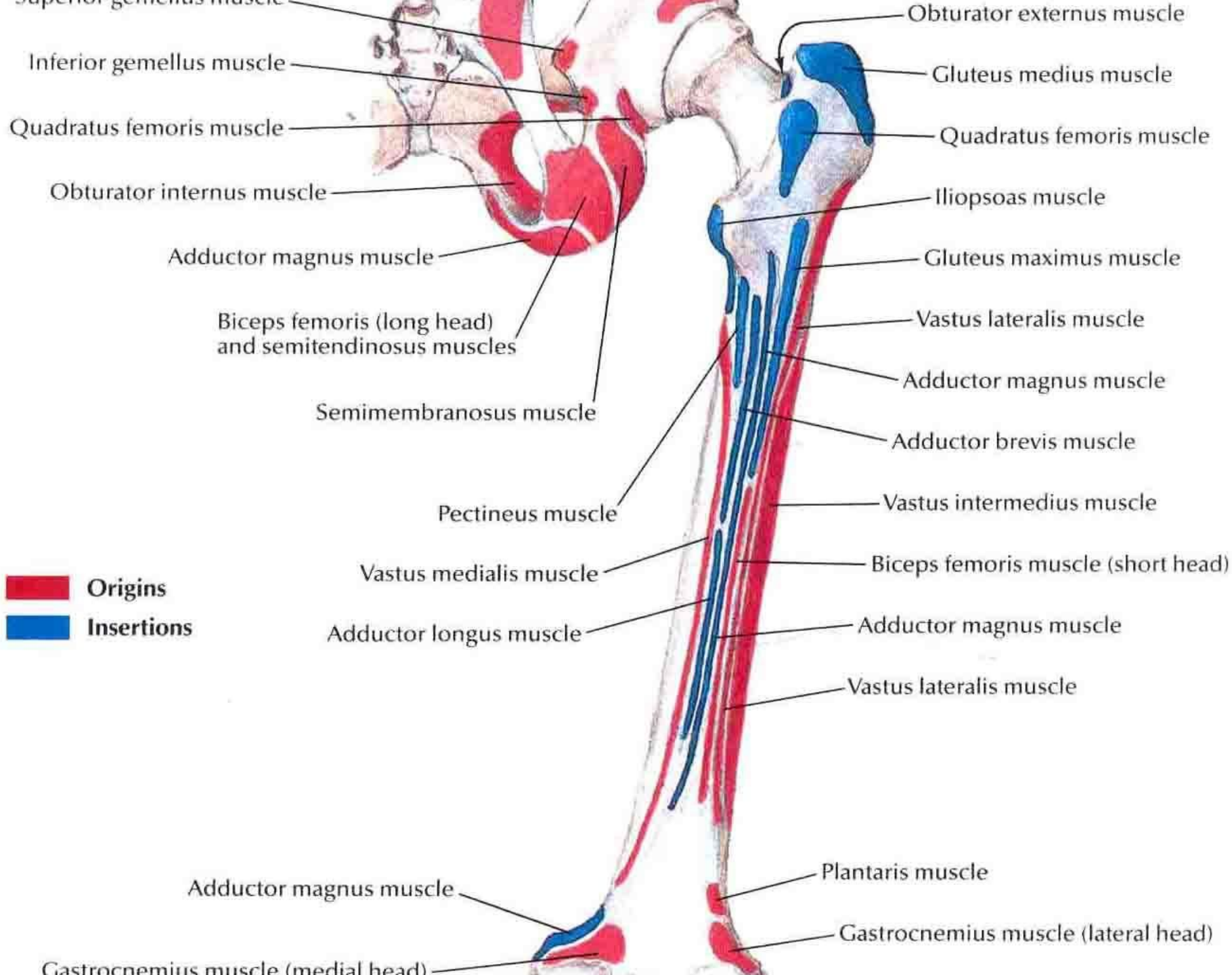




Identify
Anterior and
Posterior branches
of the Obturator
Nerve







Superior gemellus muscle
Inferior gemellus muscle
Quadratus femoris muscle
Obturator internus muscle

Adductor magnus muscle
Biceps femoris (long head) and semitendinosus muscles
Semimembranosus muscle

Pectineus muscle

Vastus medialis muscle
Adductor longus muscle

Adductor magnus muscle

Gastrocnemius muscle (medial head)

Obturator externus muscle
Gluteus medius muscle
Quadratus femoris muscle

Iliopsoas muscle
Gluteus maximus muscle

Vastus lateralis muscle
Adductor magnus muscle

Adductor brevis muscle

Vastus intermedius muscle

Biceps femoris muscle (short head)

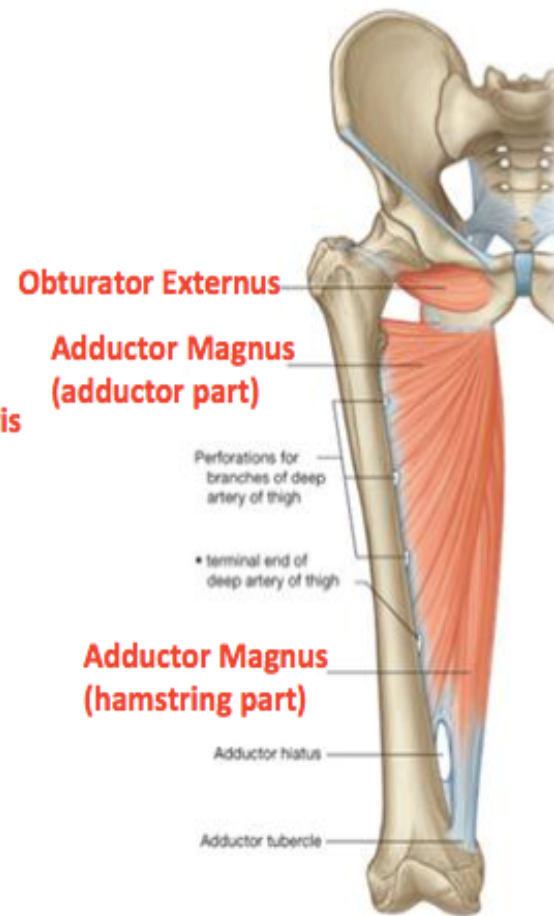
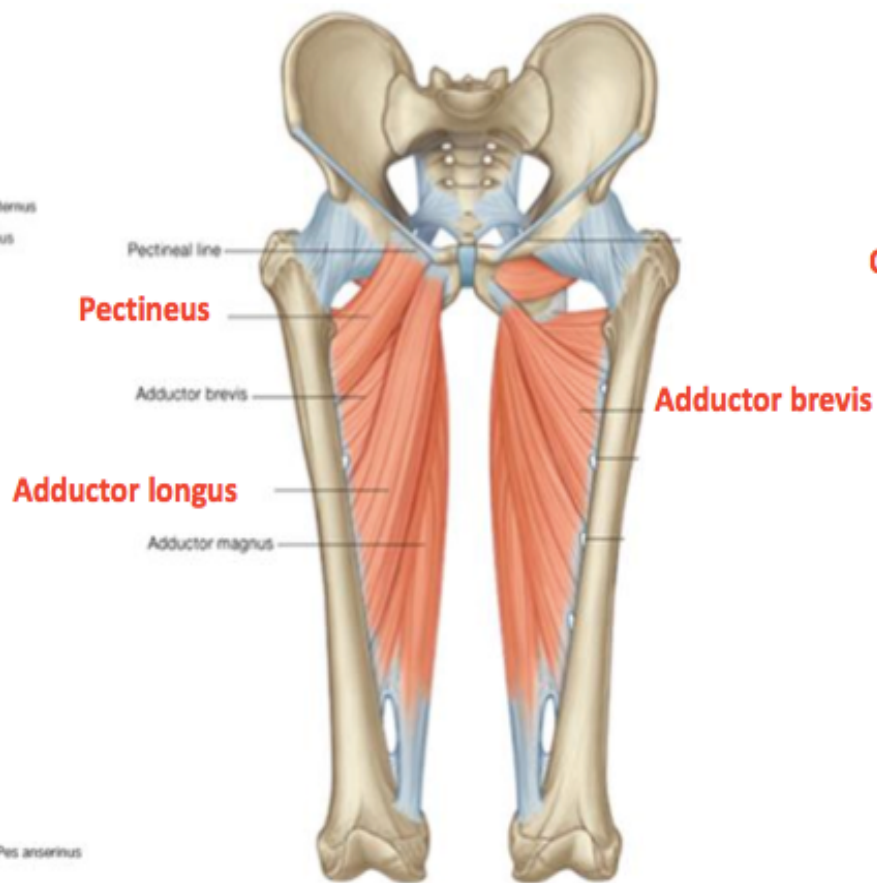
Adductor magnus muscle

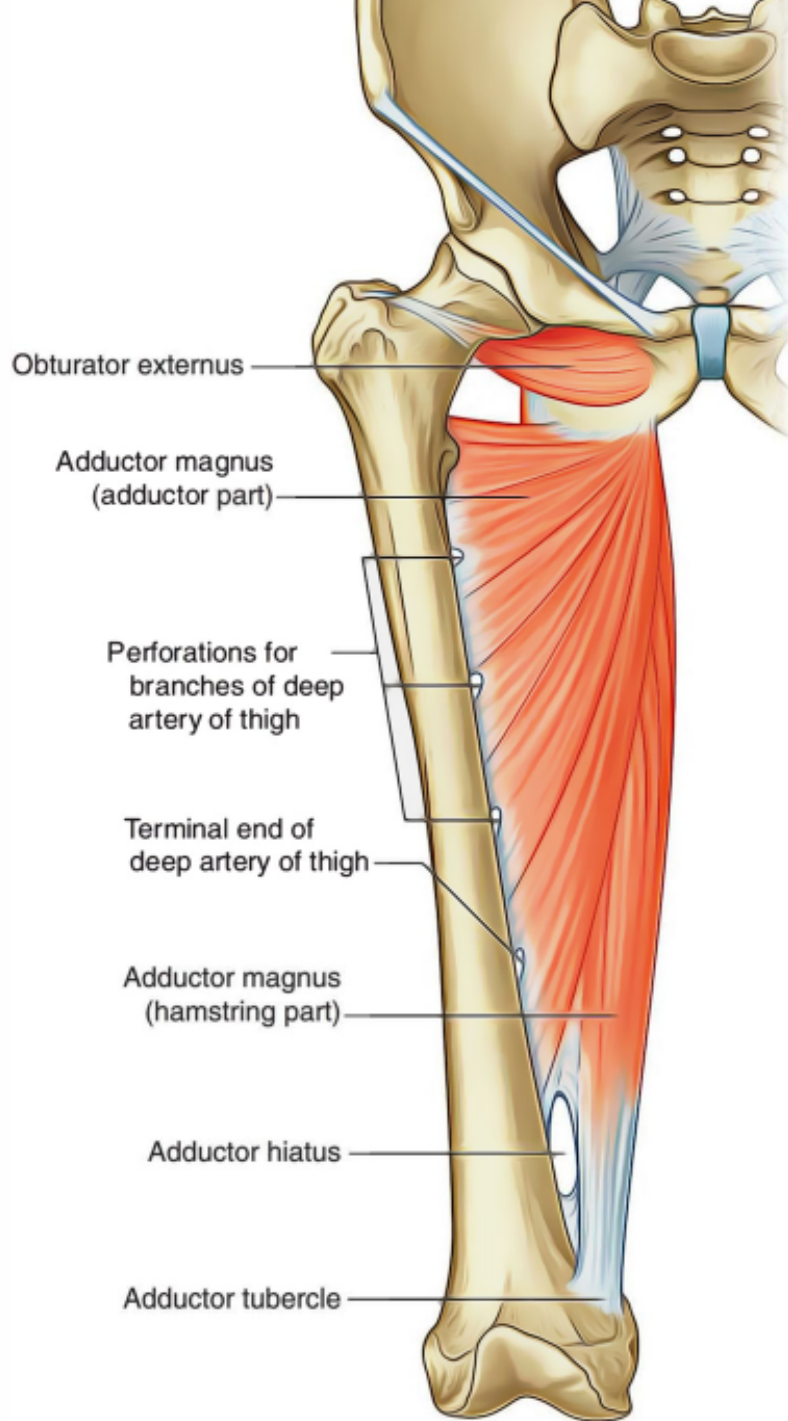
Vastus lateralis muscle

Plantaris muscle

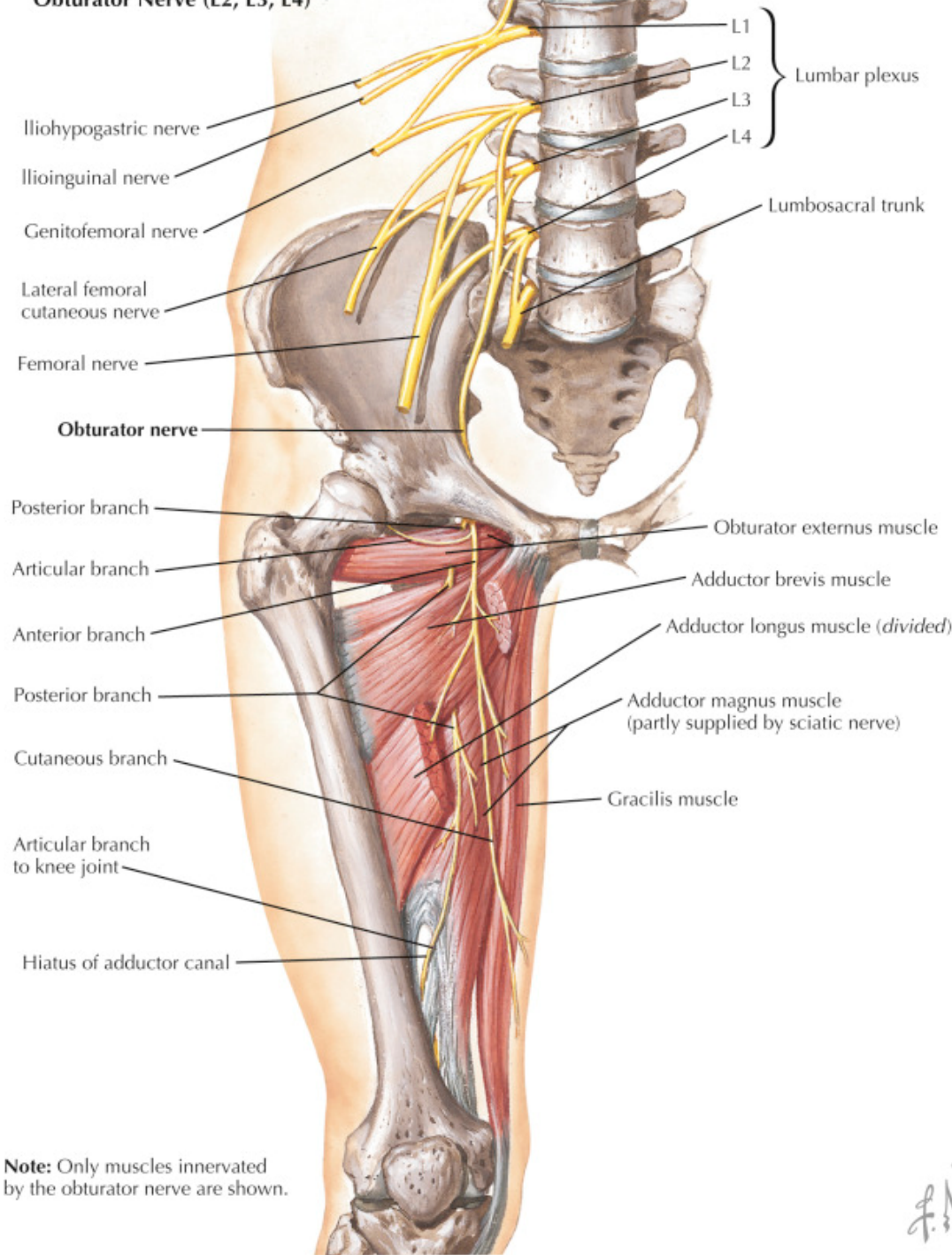
Gastrocnemius muscle (lateral head)

Origins
Insertions

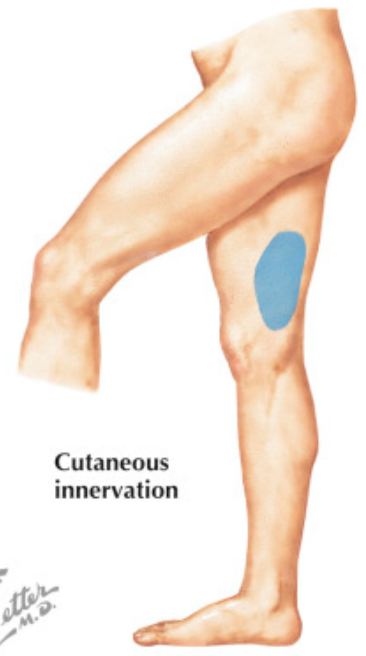




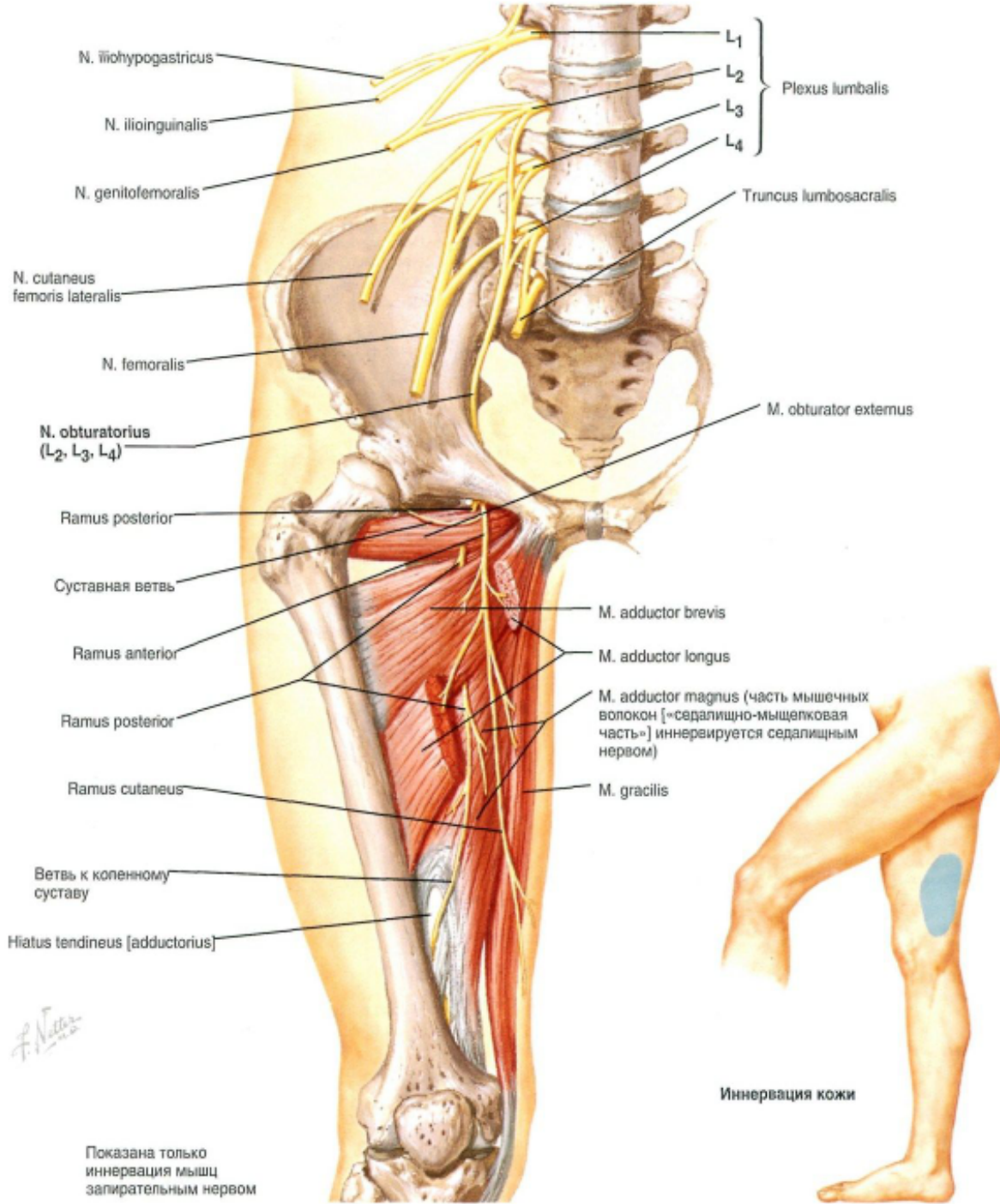
Obturator Nerve (L2, L3, L4)



Note: Only muscles innervated by the obturator nerve are shown.

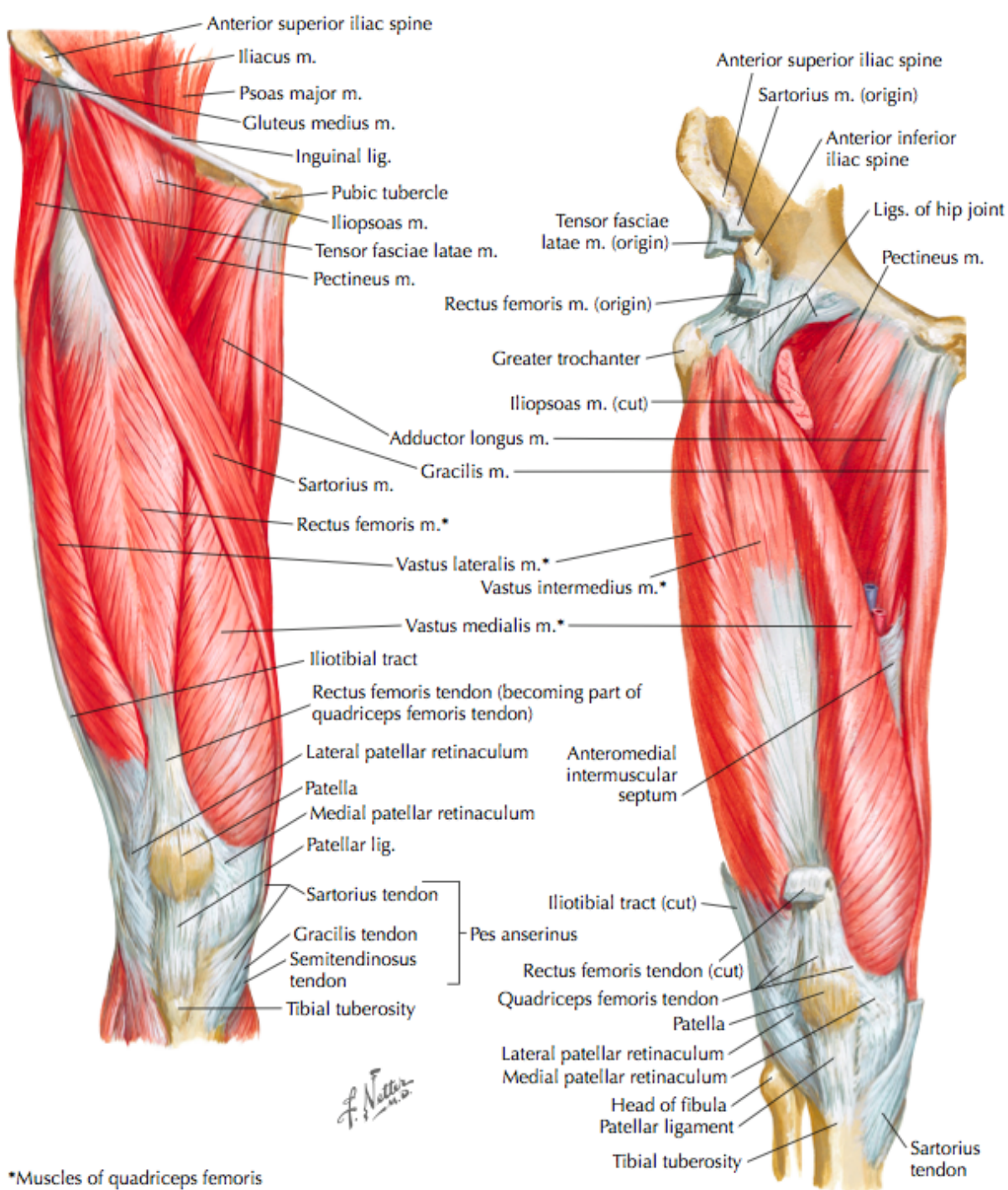


F. Netter M.D.



Показана только иннервация мышц запирательным нервом

Иннервация кожи



*Muscles of quadriceps femoris

F. Netter M.D.

Arteries and Nerves of Thigh

Deeper Anterior View - Superficial Dissections

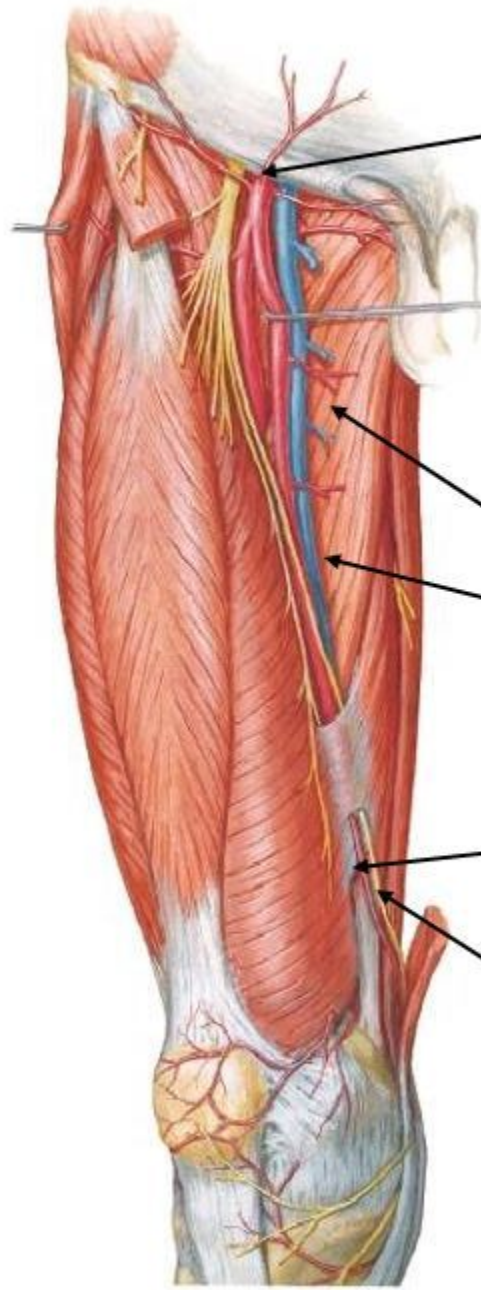
Plate 500B

Anterior Thigh

Femoral Nerve and Lateral Cutaneous Nerve of Thigh
Cutaneous Innervation



Saphenous Nerve



Femoral Nerve, Artery and Vein

Adductor Canal

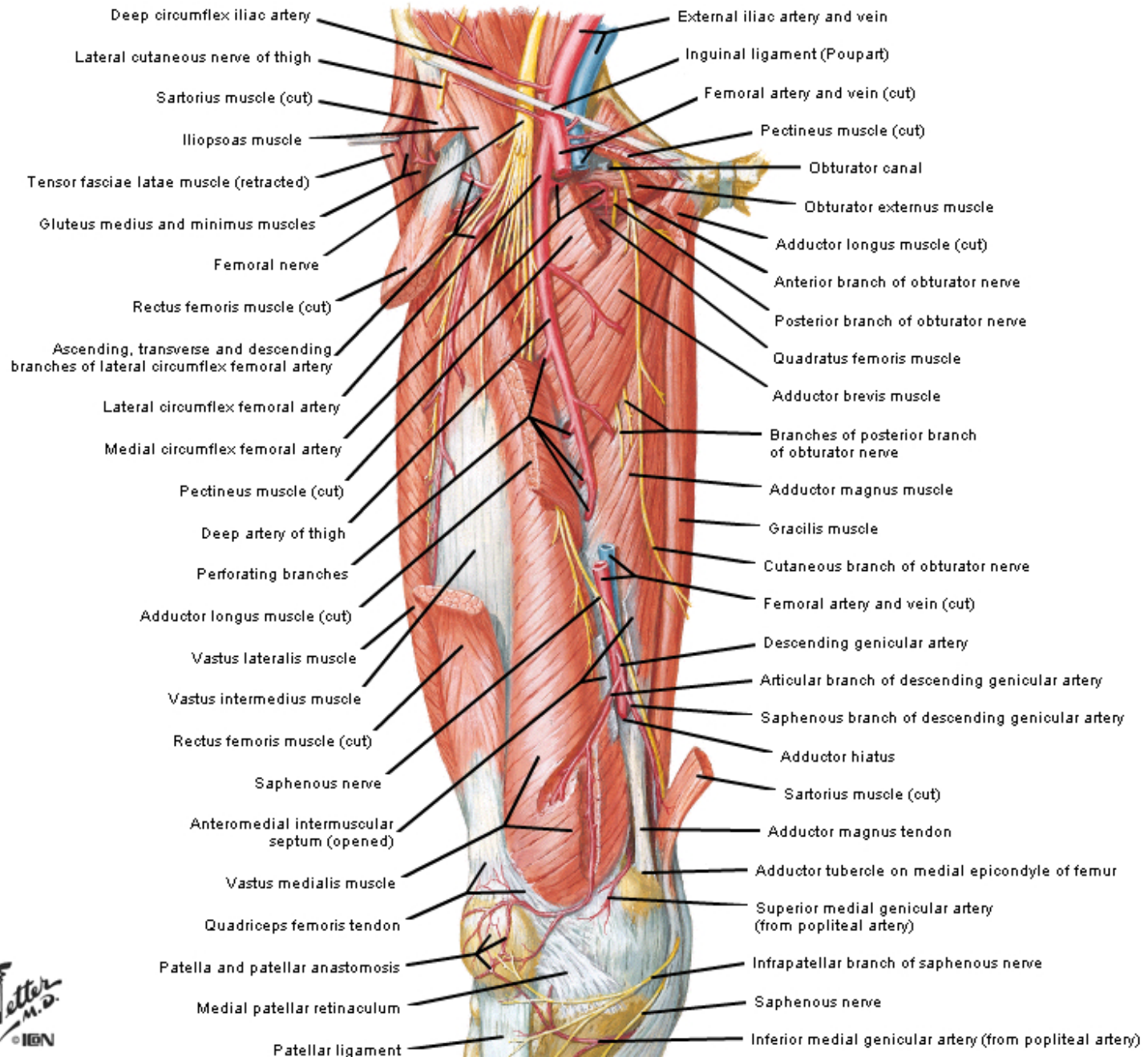
Adductor Hiatus

Note the Saphenous Nerve

Remove the Femoral Sheath and follow the Femoral Vessels into the Adductor Canal and through the Adductor Hiatus

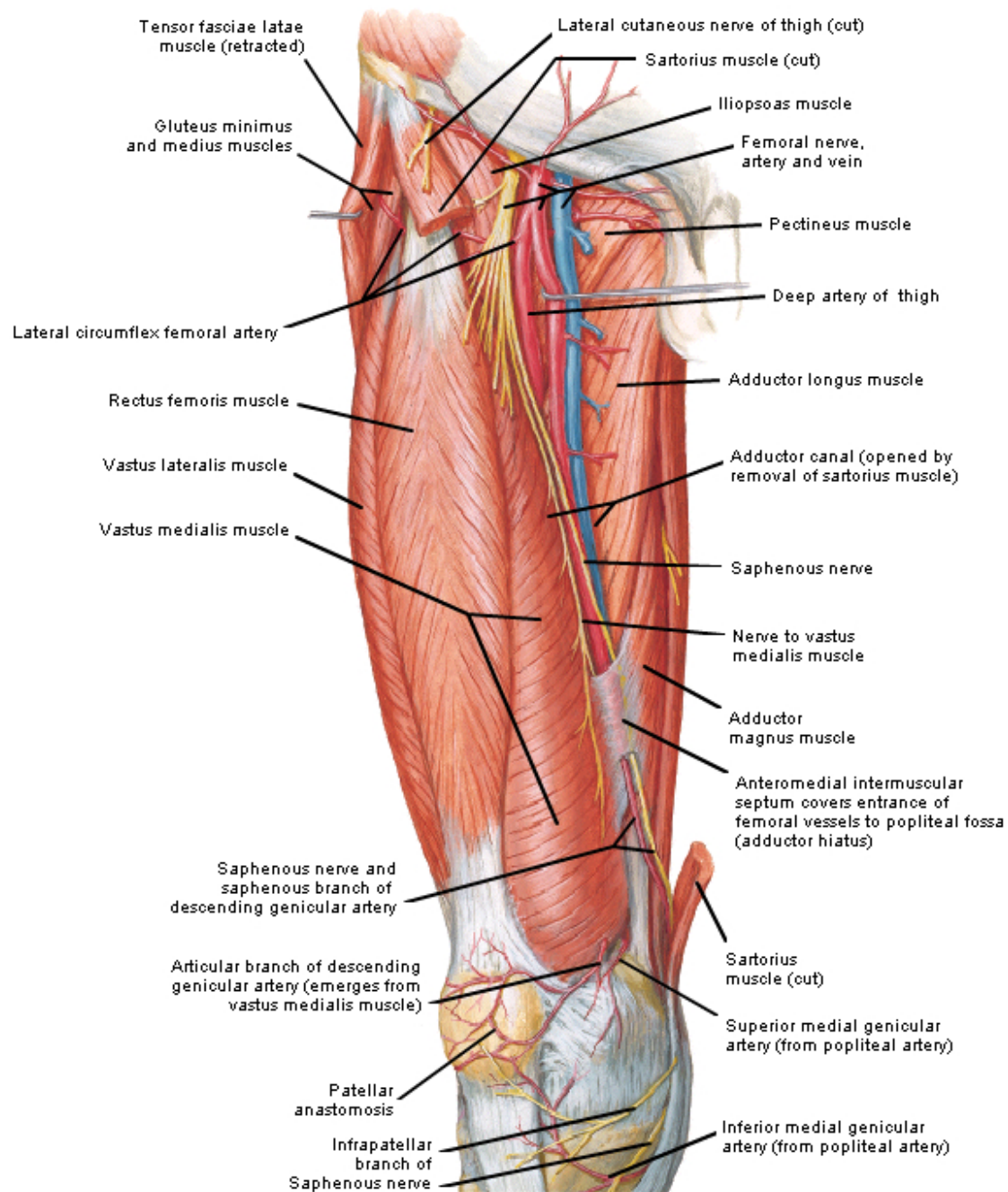
Arteries and Nerves of Thigh (Deep Dissection)

Anterior View



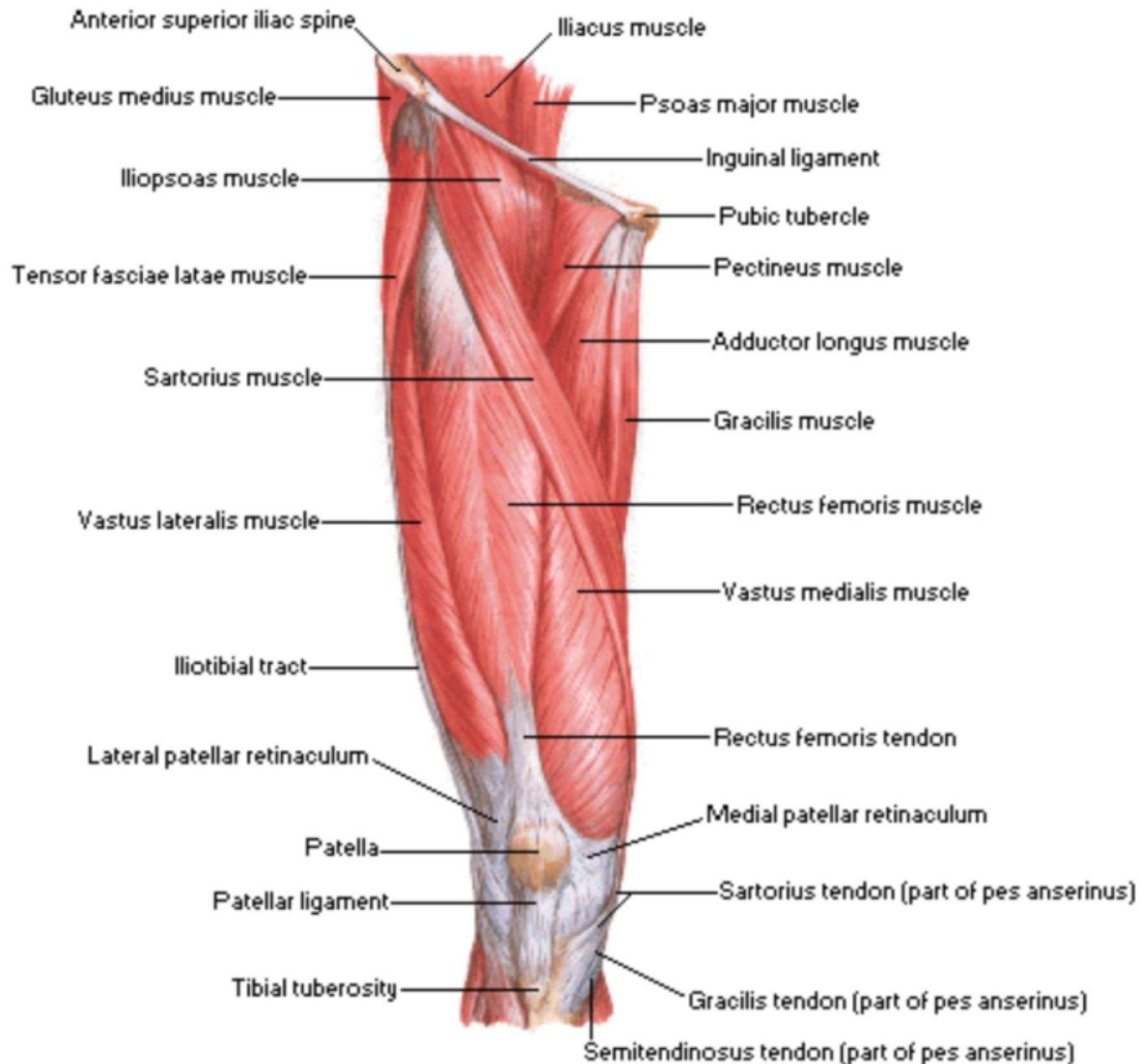
Arteries and Nerves of Thigh

Deeper Anterior View - Superficial Dissections

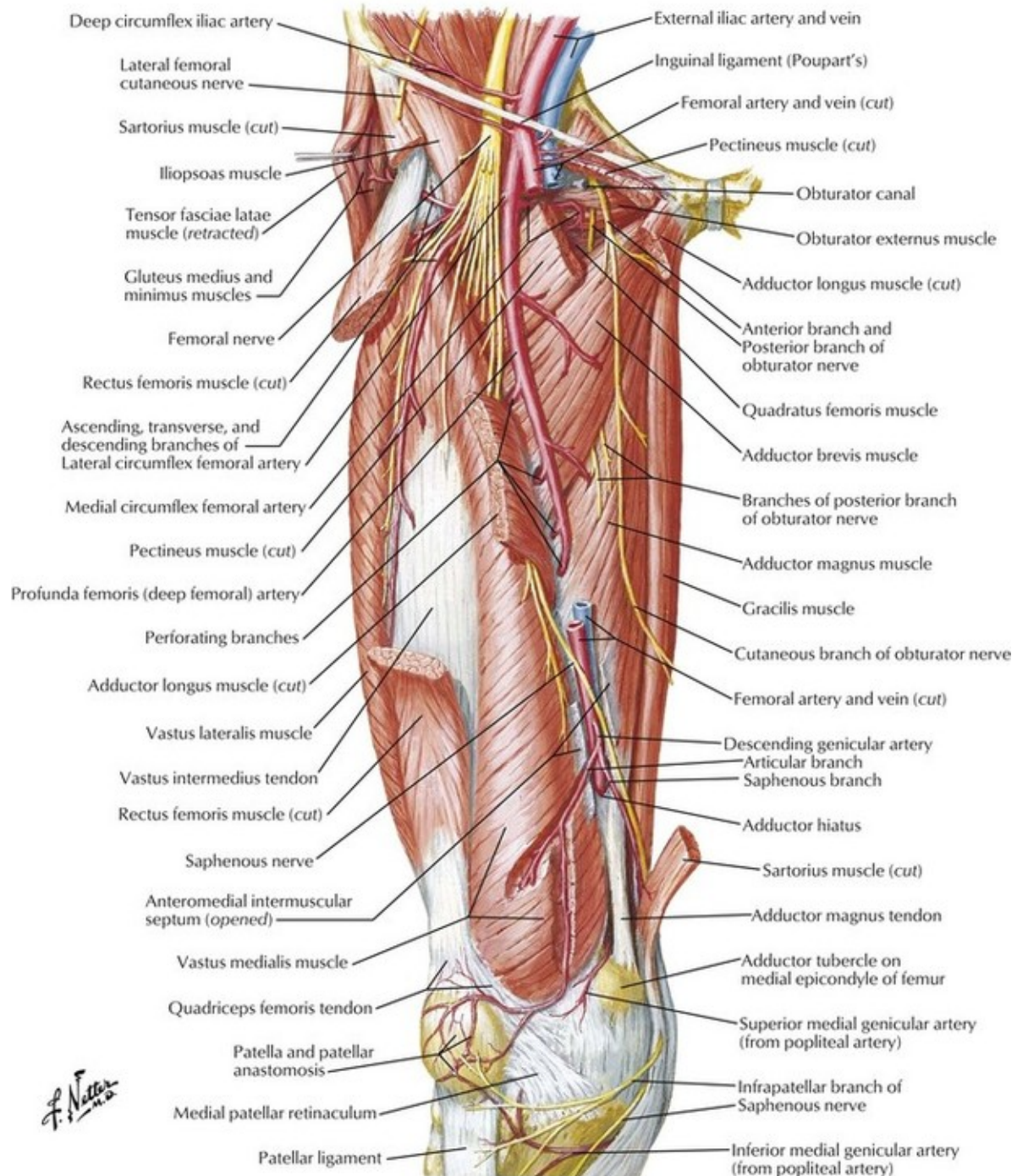


Muscles of Thigh

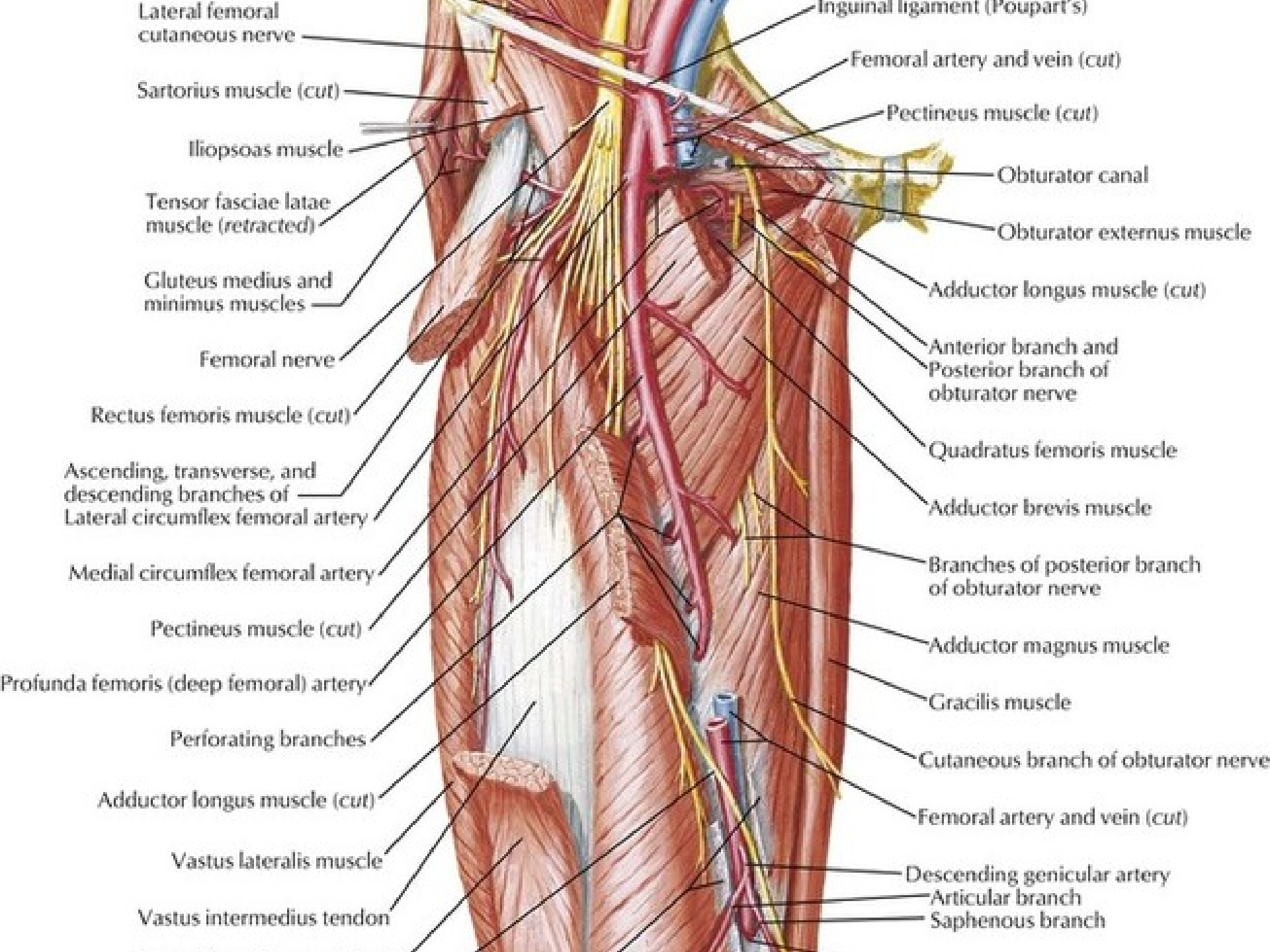
Anterior View - Superficial Dissection

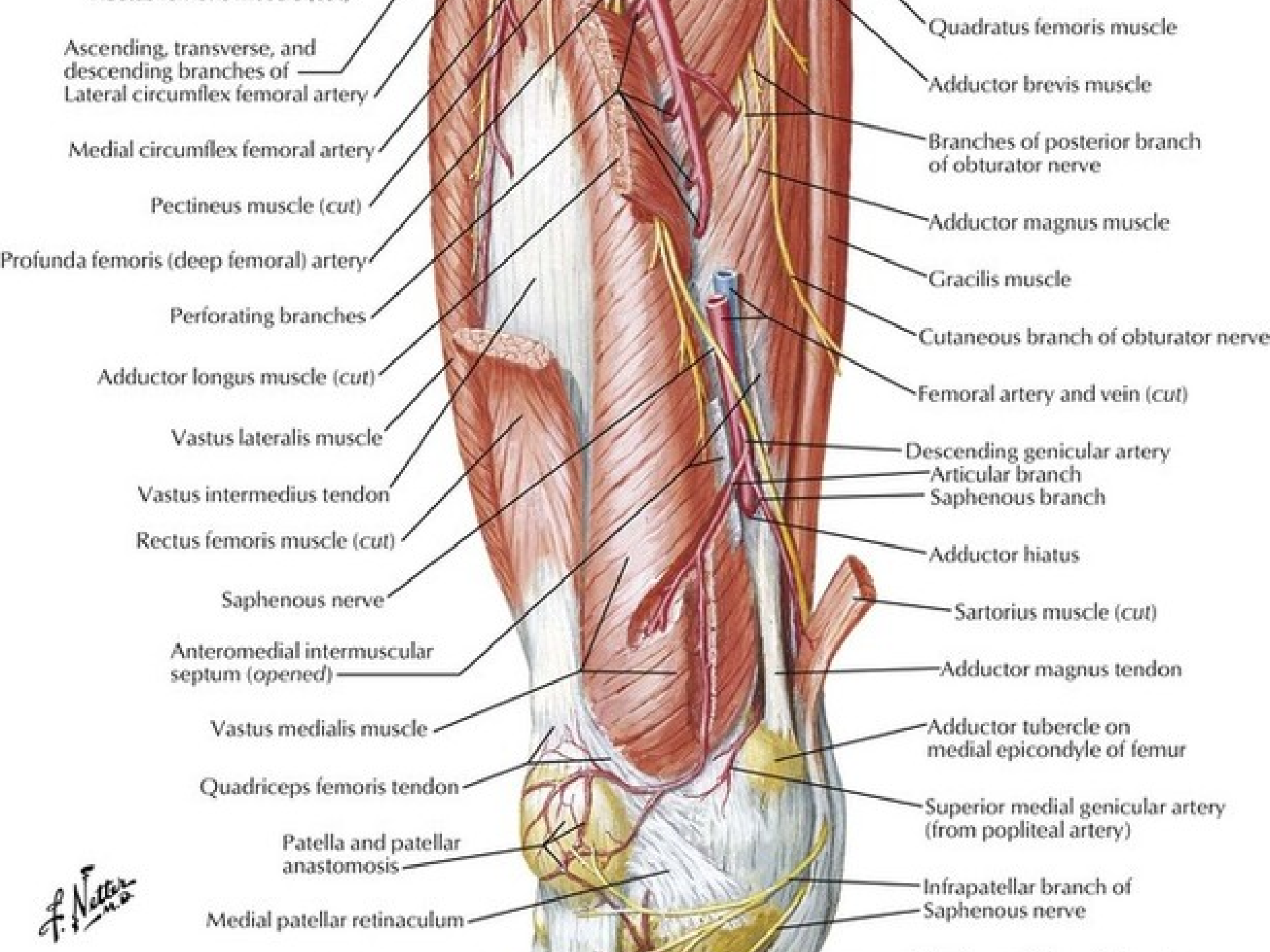


Deep dissection



F. Netter M.D.

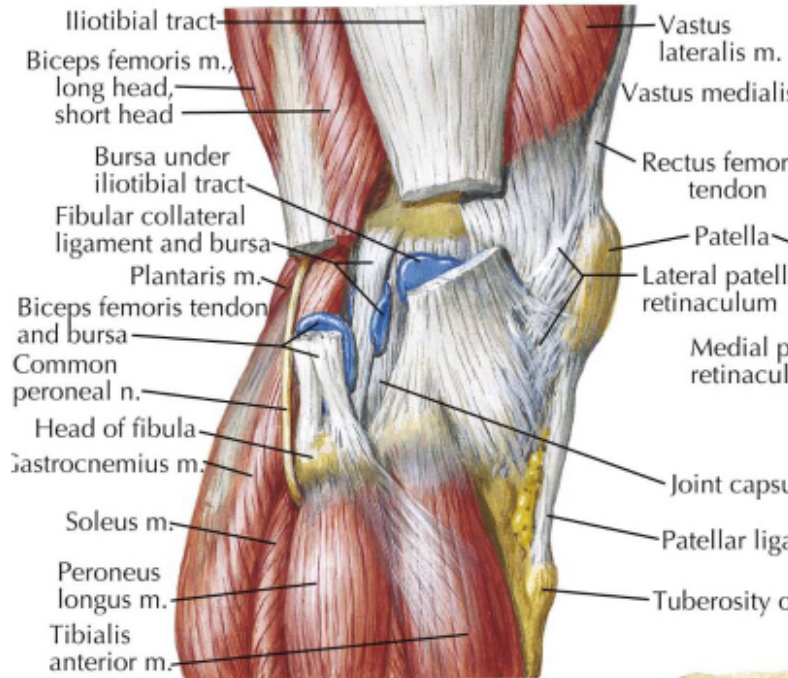




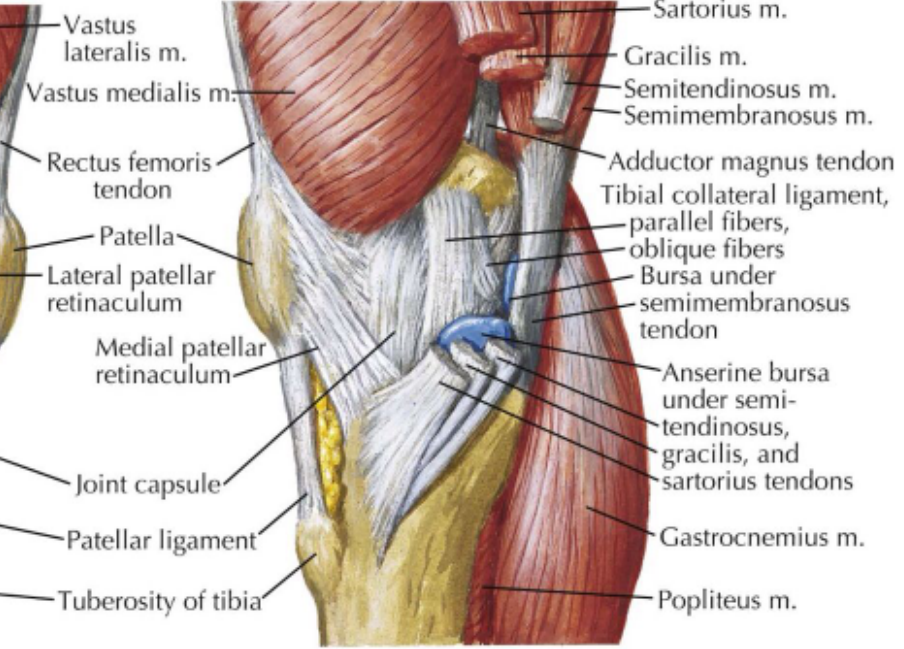
F. Netter M.D.

Knee Joint

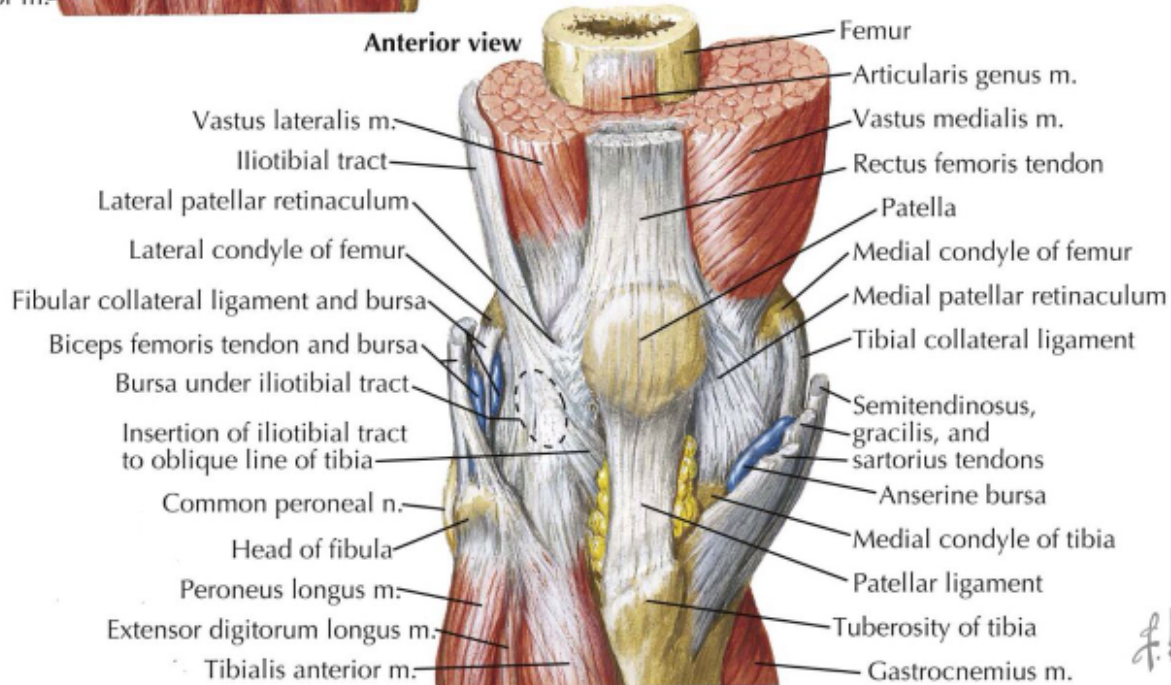
Lateral view



Medial view

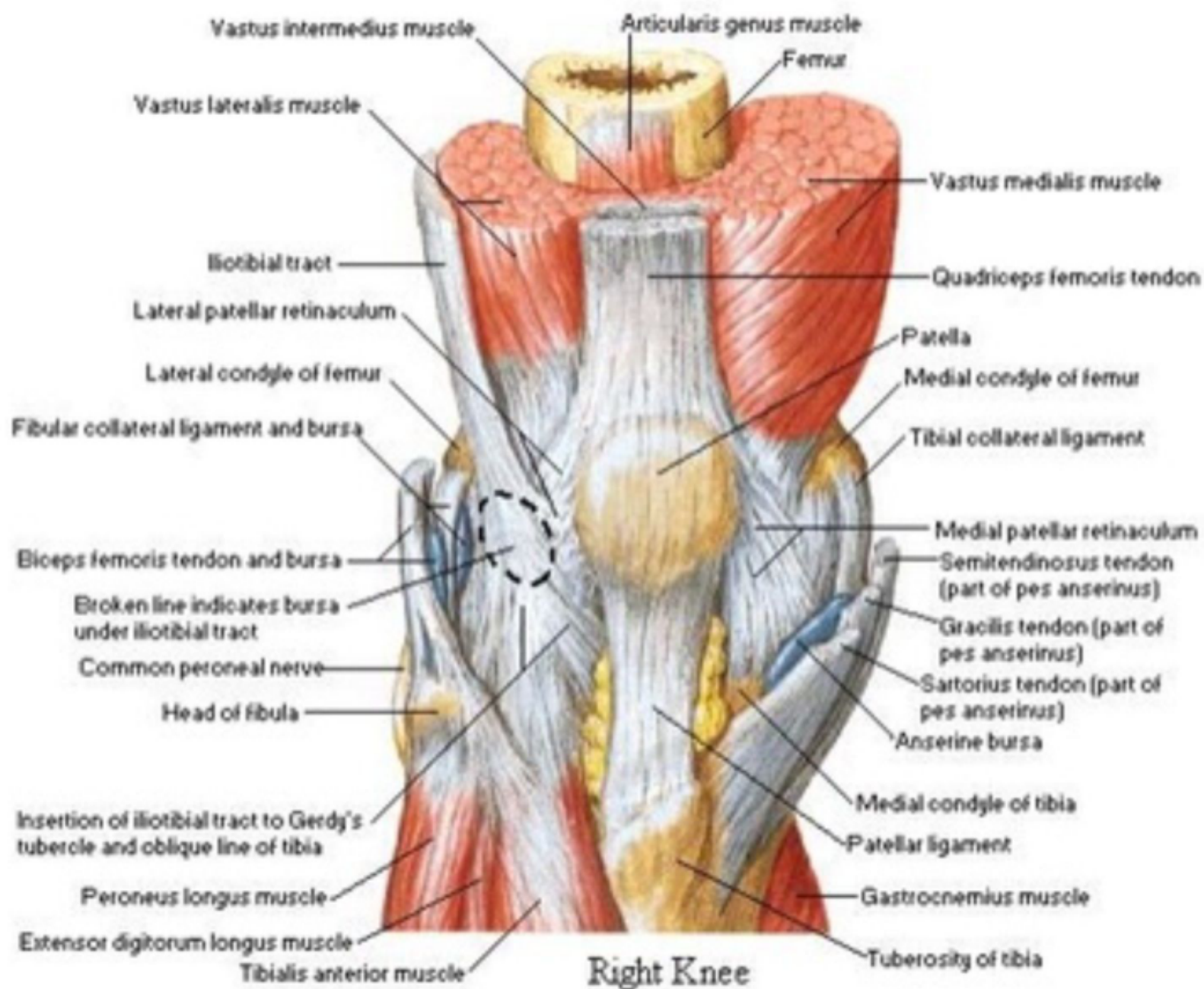


Anterior view

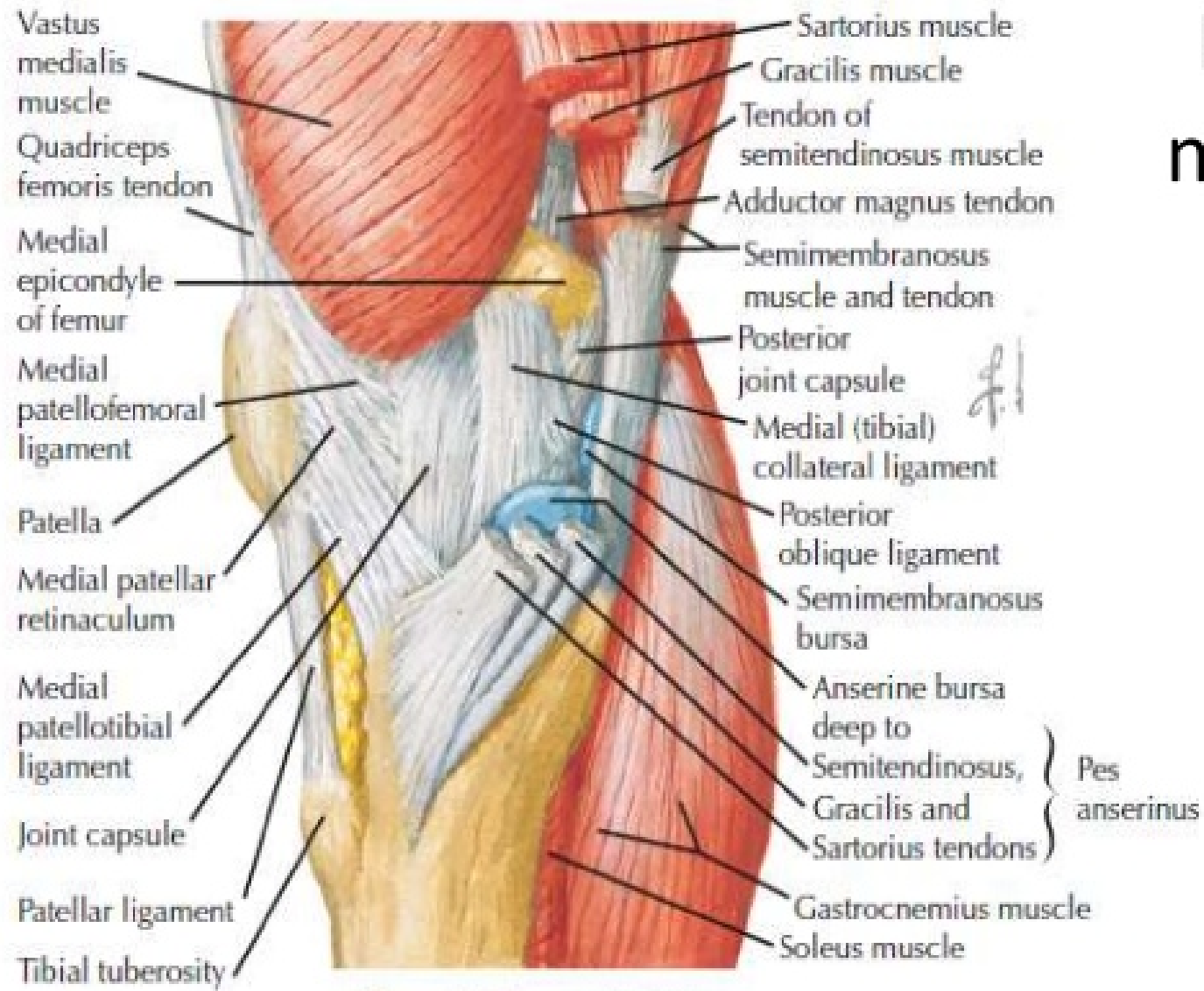


F. Netter M.D.

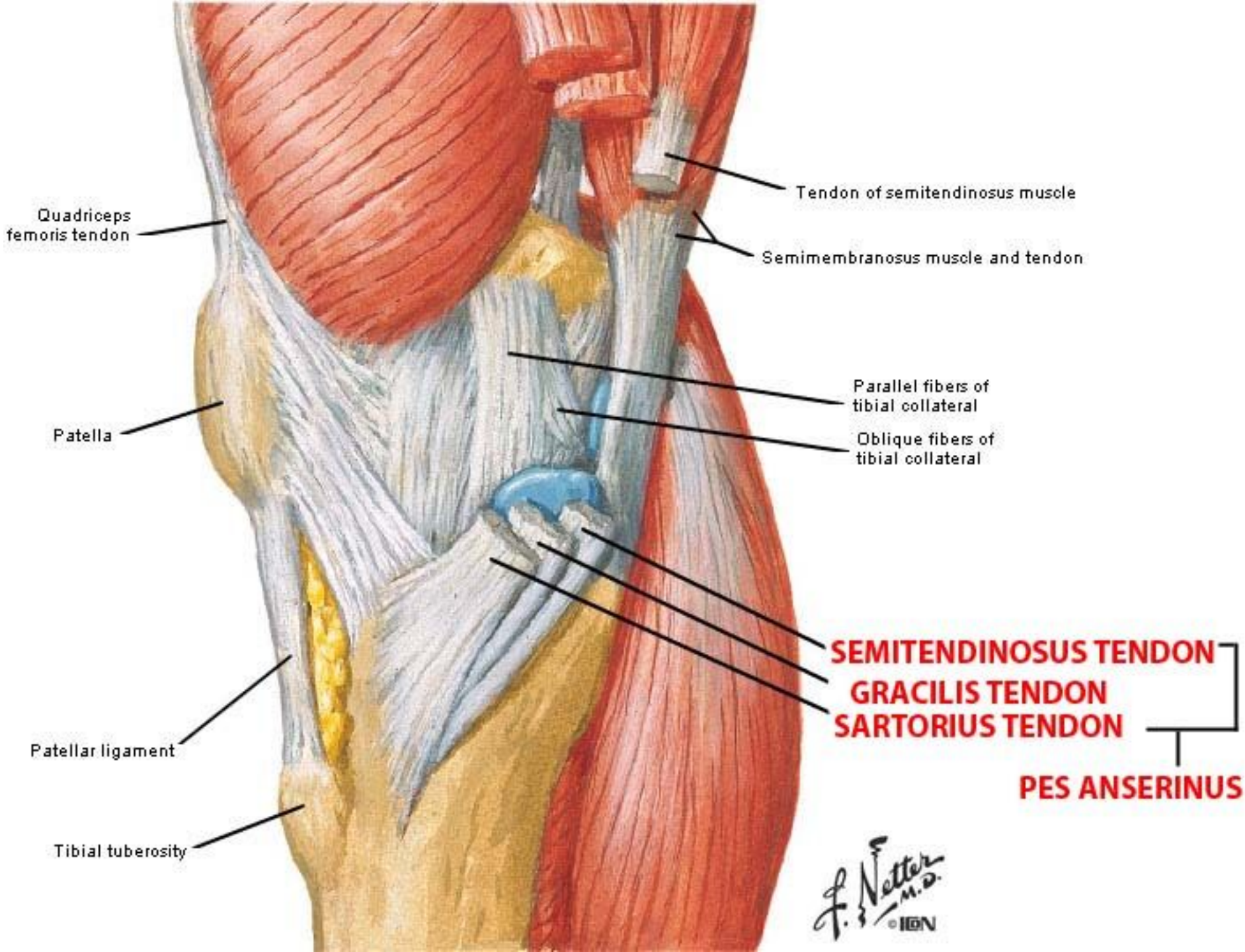
Anterior View



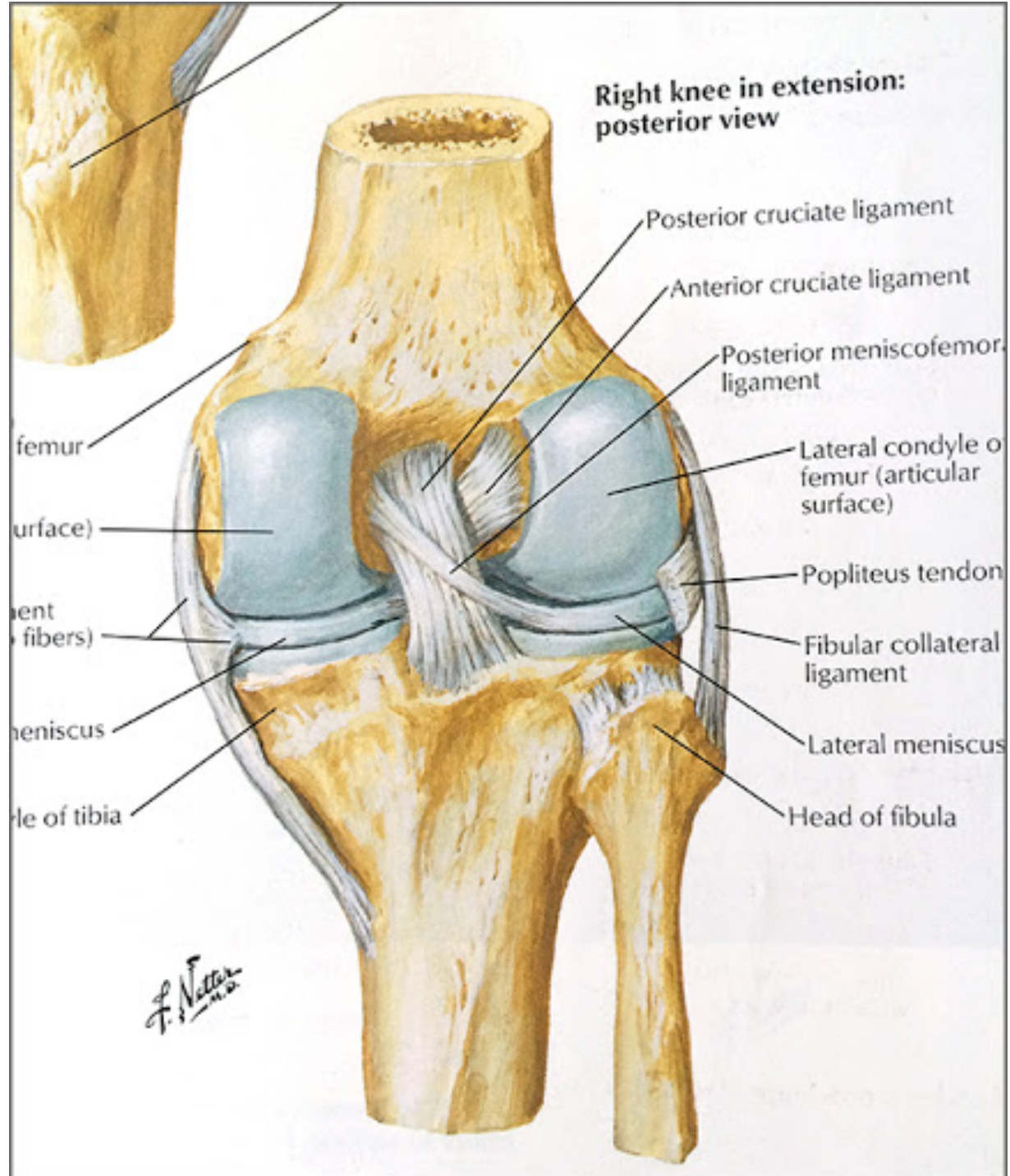
Knee Joint medial view

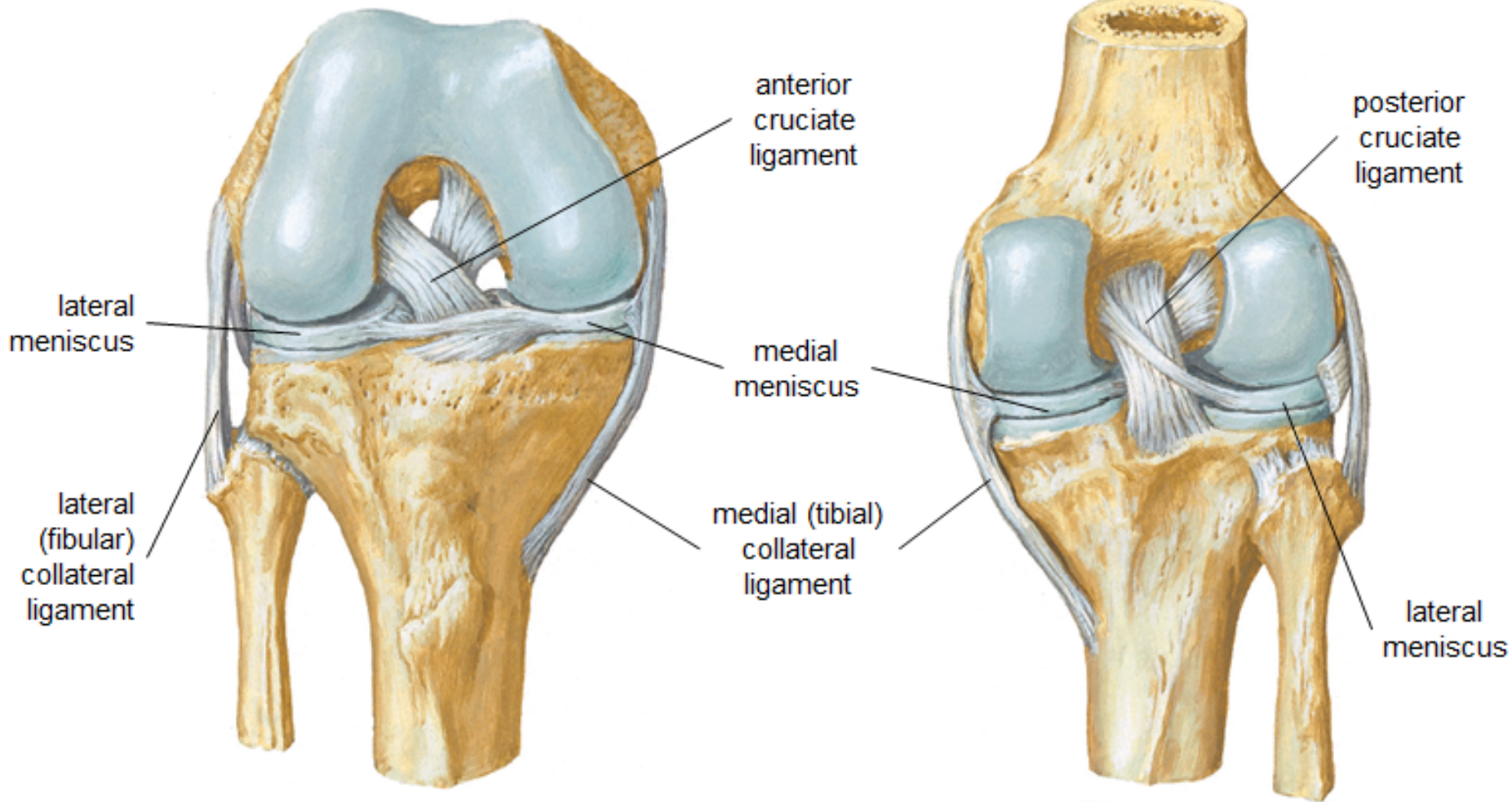


Knee joint: medial view

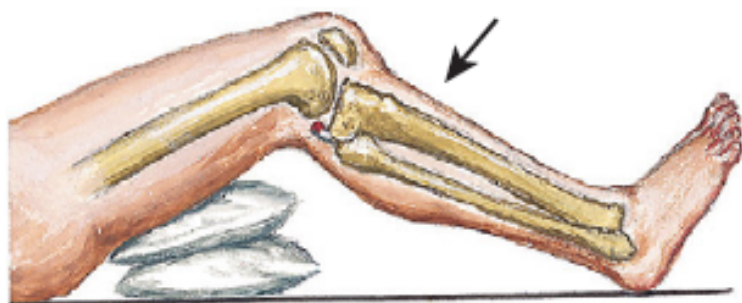


**Right knee in extension:
posterior view**

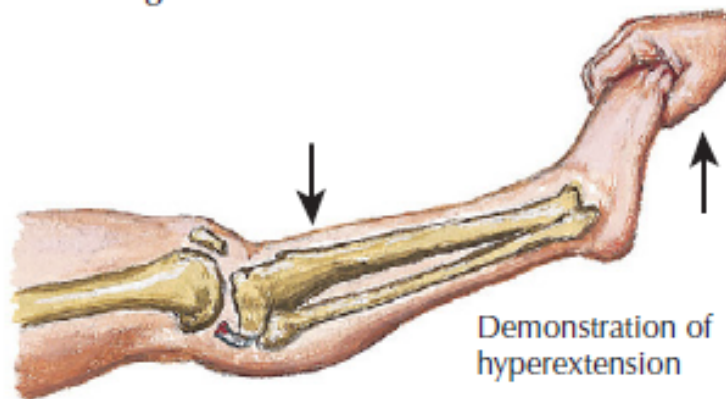




Rupture of posterior cruciate ligament



Posterior sag sign. Leg drops backward



Demonstration of hyperextension

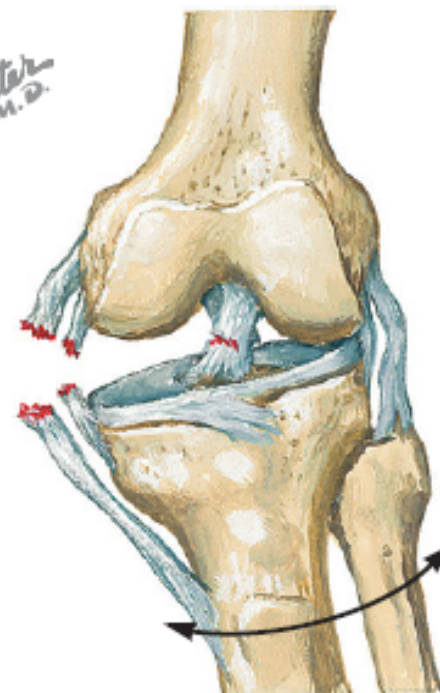
Collateral ligament injury



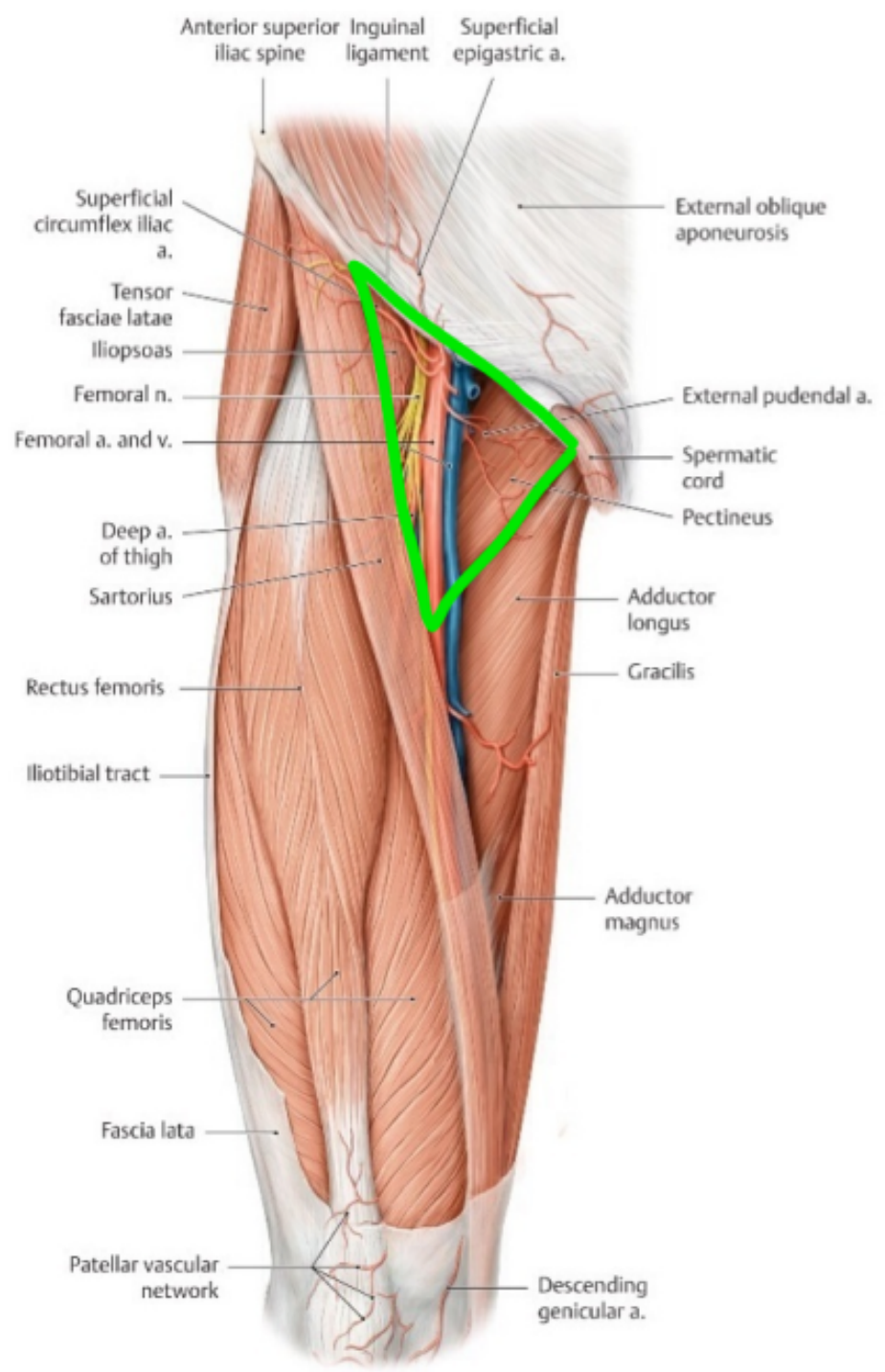
1st-degree sprain. Localized joint pain and tenderness but no joint laxity

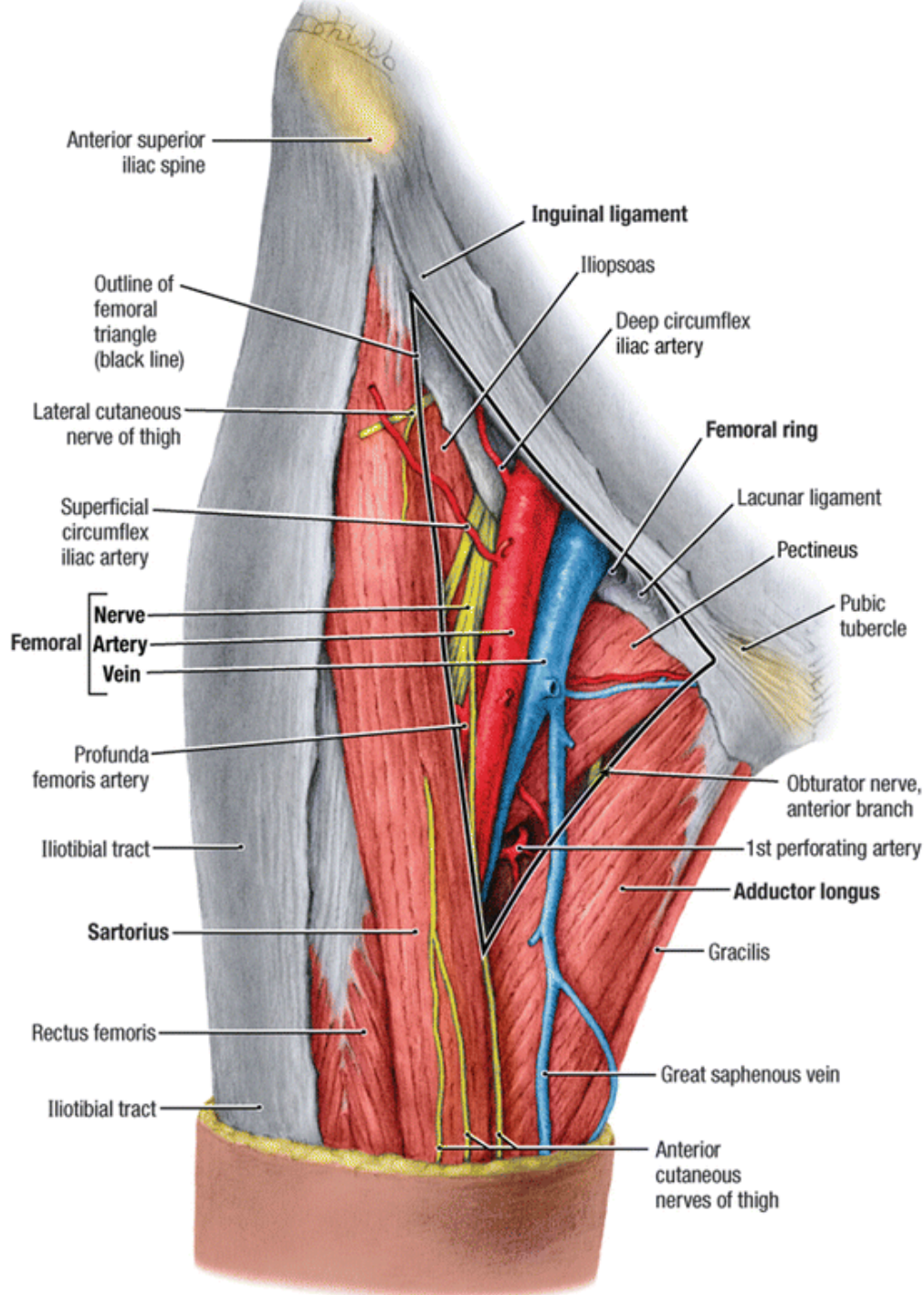


2nd-degree sprain. Detectable joint laxity with good end point plus localized pain and tenderness

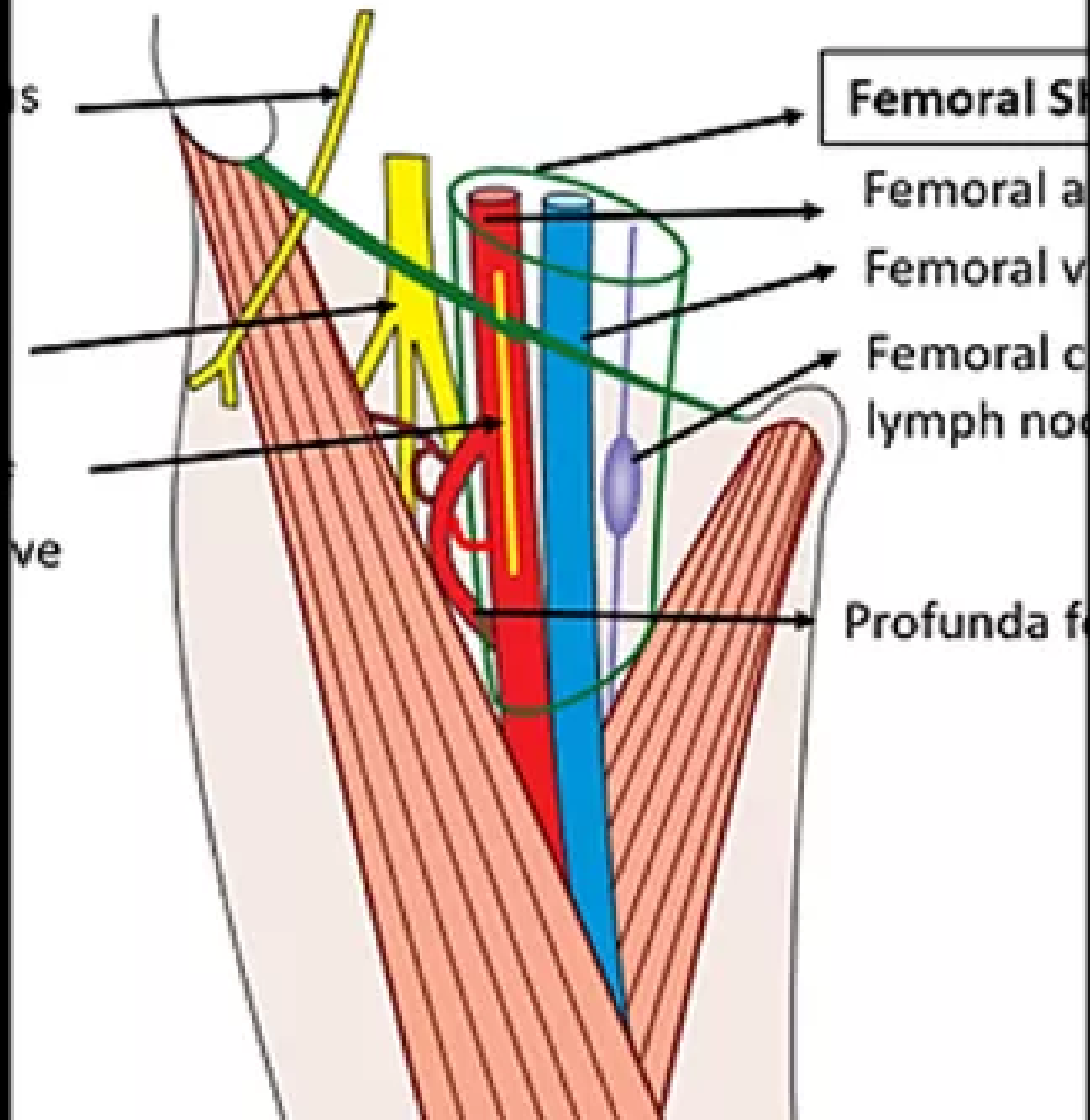


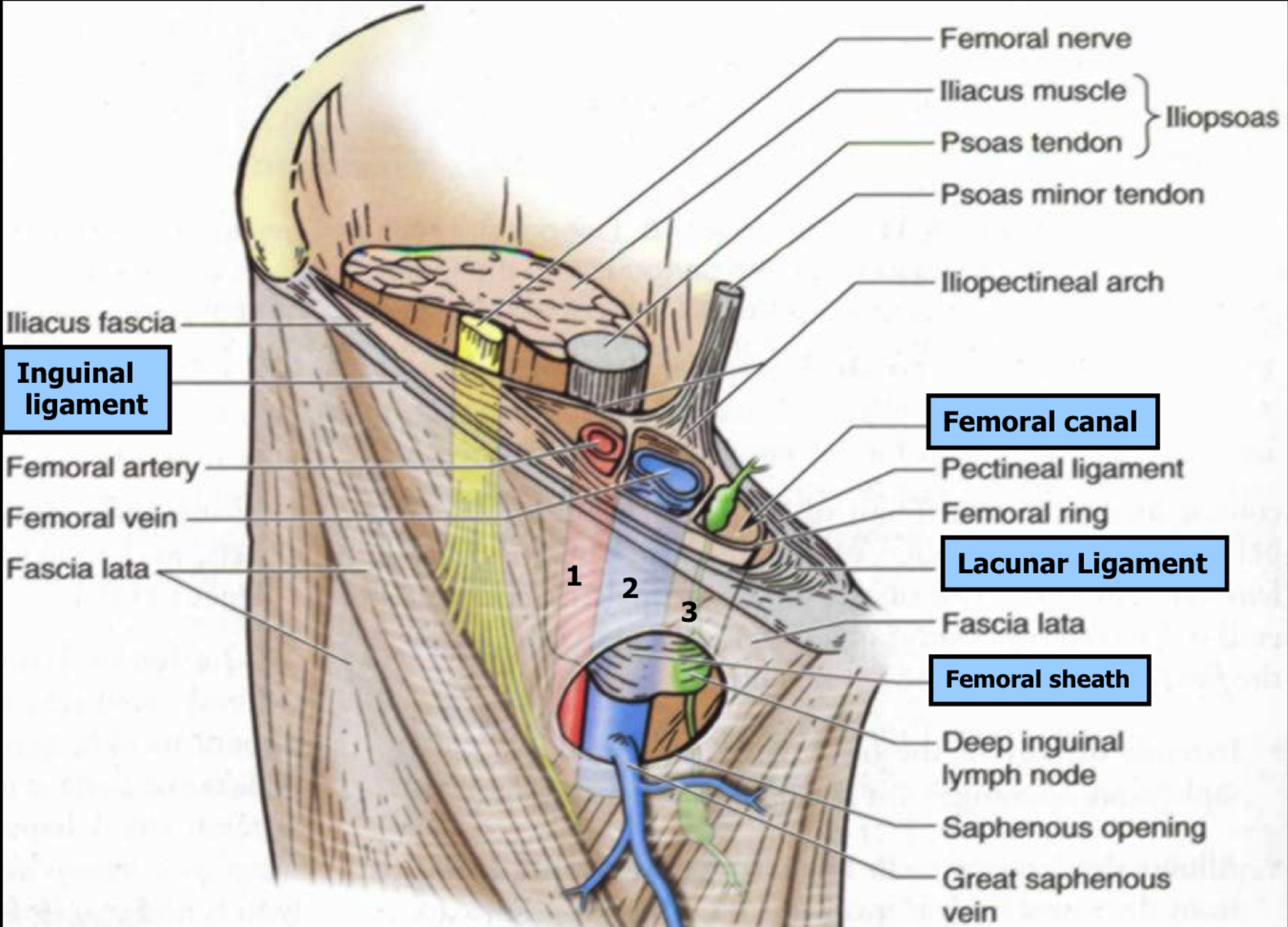
3rd-degree sprain. Complete disruption of ligaments and gross joint instability

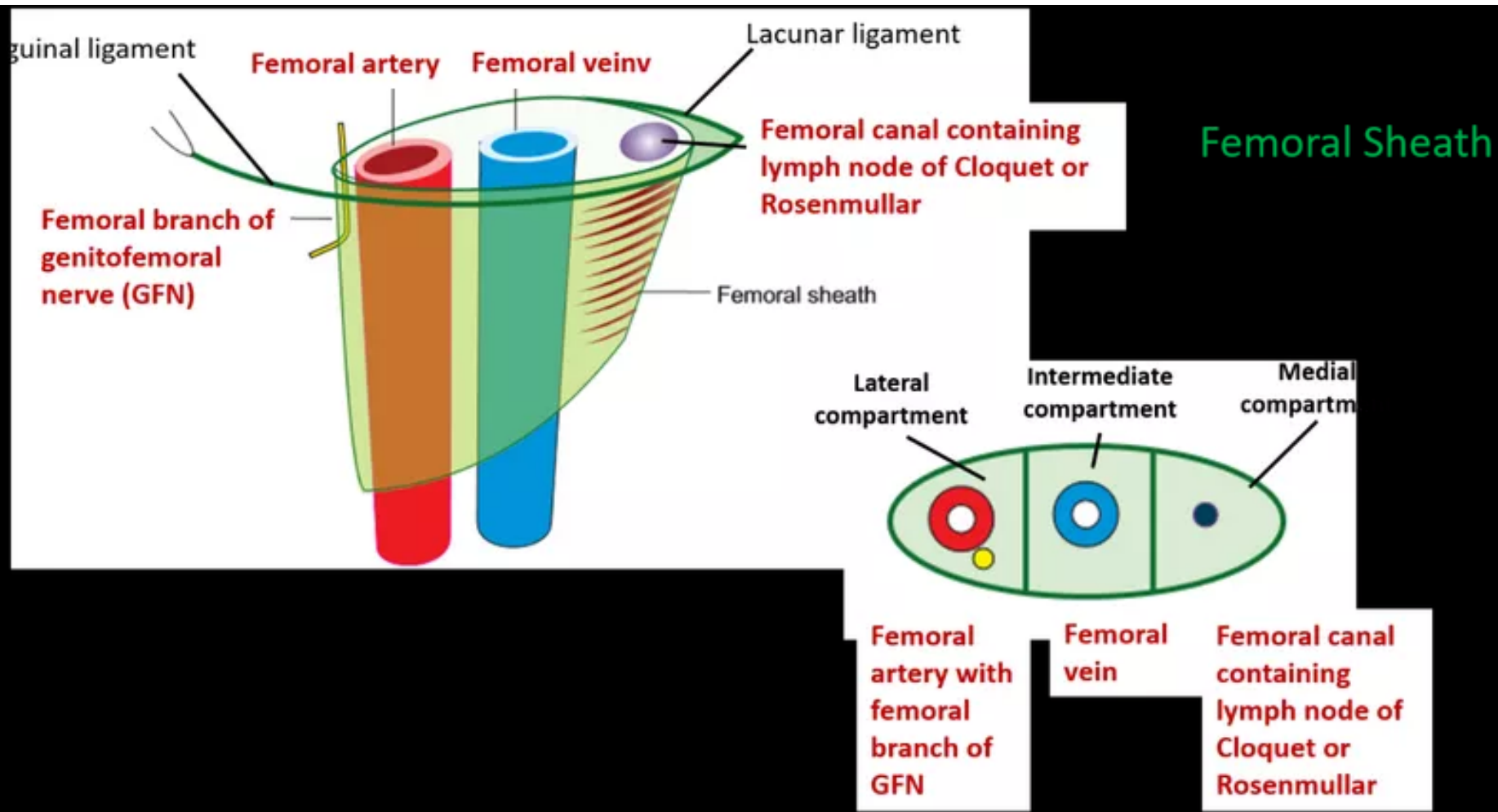




Contents of femoral Triangle







Inguinal ligament

Femoral artery

Femoral vein

Lacunar ligament

Femoral canal containing lymph node of Cloquet or Rosenmuller

Femoral branch of genitofemoral nerve (GFN)

Femoral sheath

Femoral Sheath

Lateral compartment

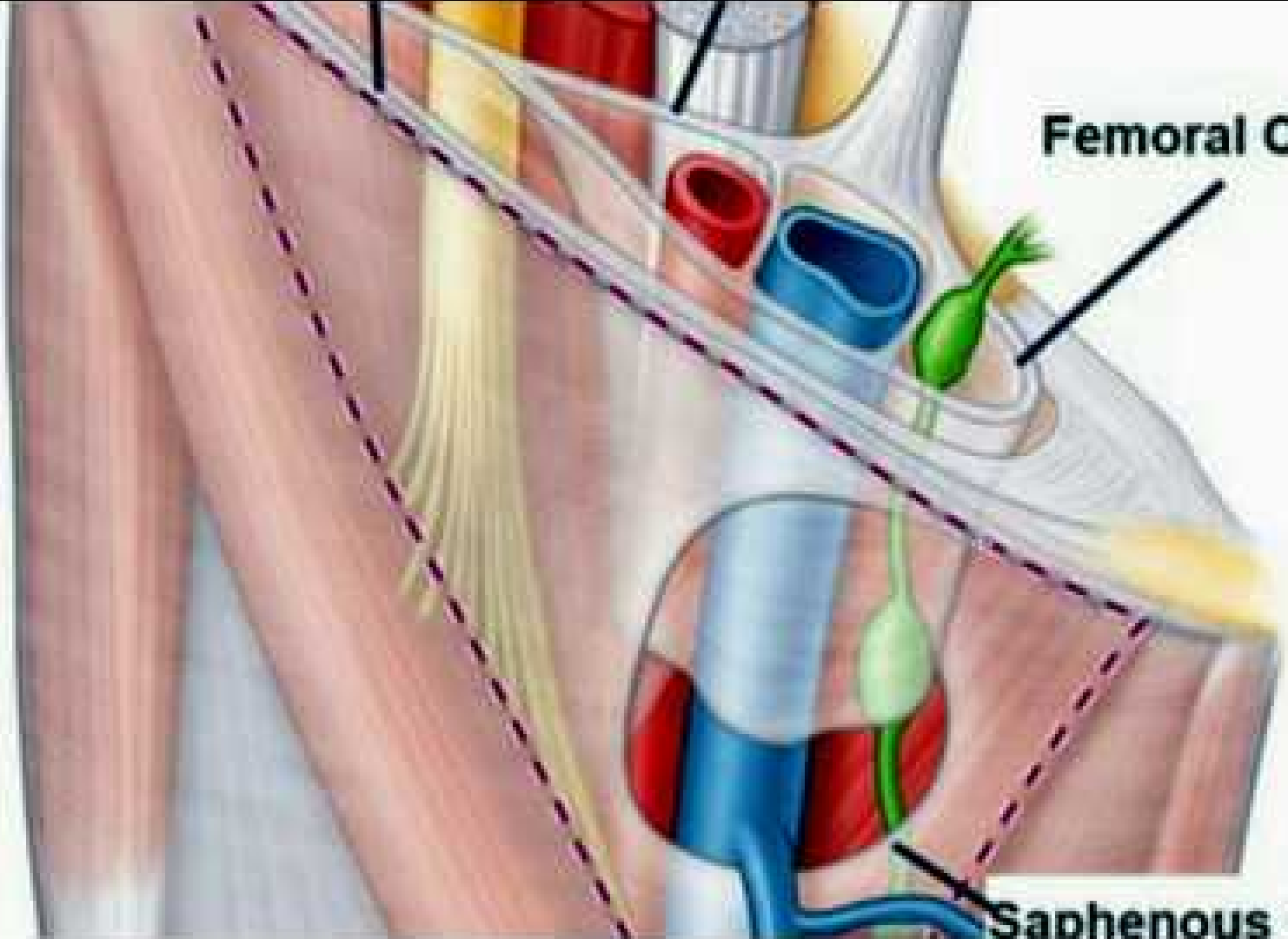
Intermediate compartment

Medial compartment

Femoral artery with femoral branch of GFN

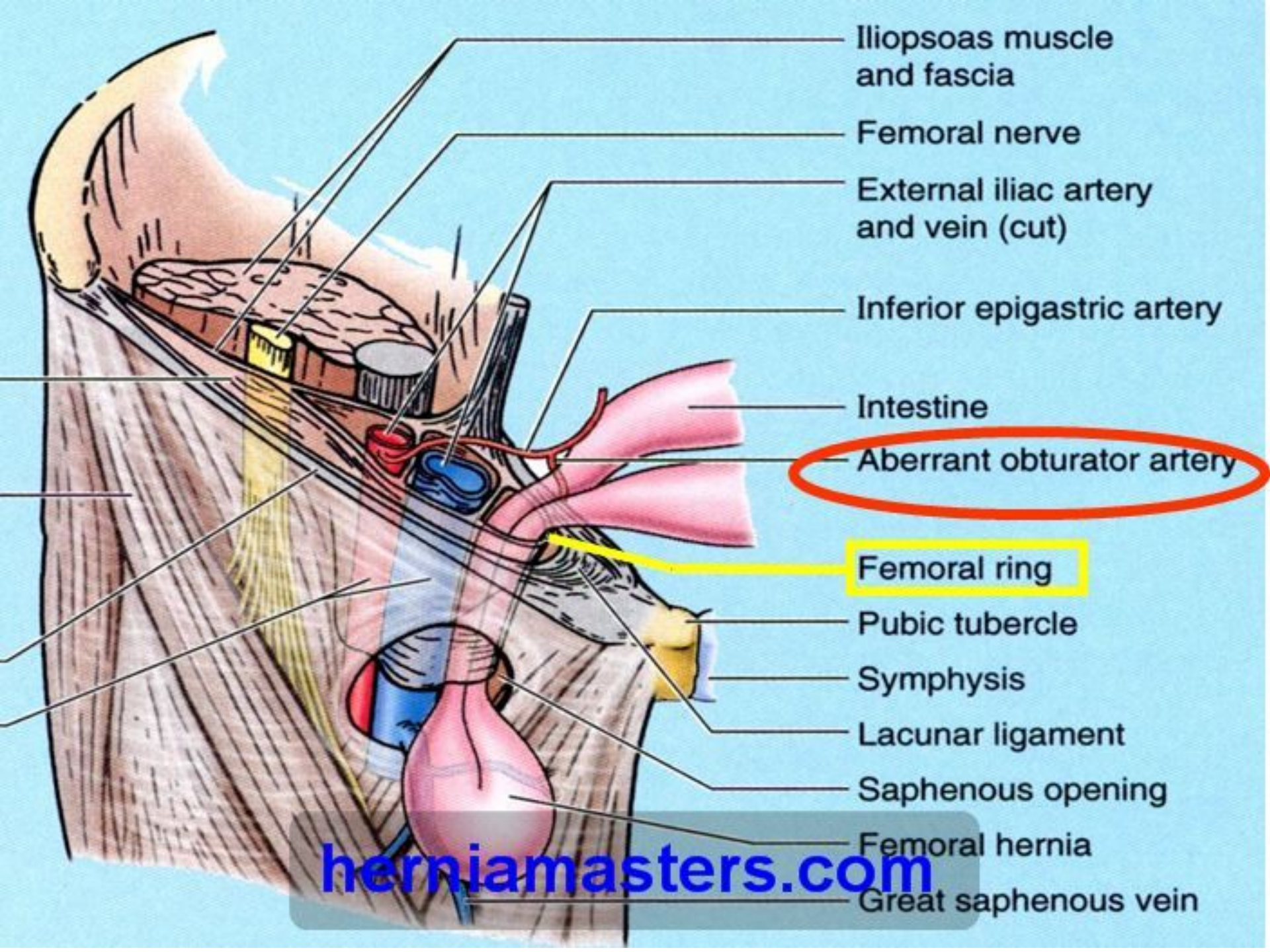
Femoral vein

Femoral canal containing lymph node of Cloquet or Rosenmuller



Femoral Canal

Saphenous V.



Iliopsoas muscle and fascia

Femoral nerve

External iliac artery and vein (cut)

Inferior epigastric artery

Intestine

Aberrant obturator artery

Femoral ring

Pubic tubercle

Symphysis

Lacunar ligament

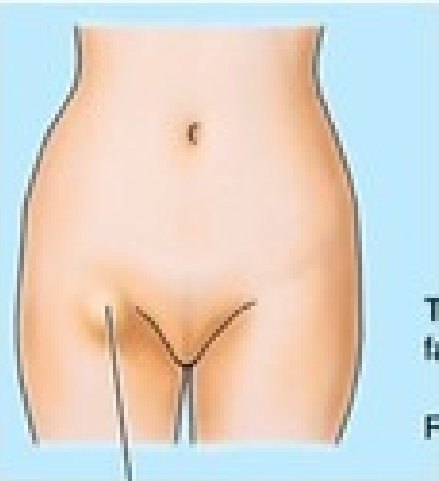
Saphenous opening

Femoral hernia

Great saphenous vein

herniamasters.com

Femoral Hernia



(A) Early stage

Transversalis fascia

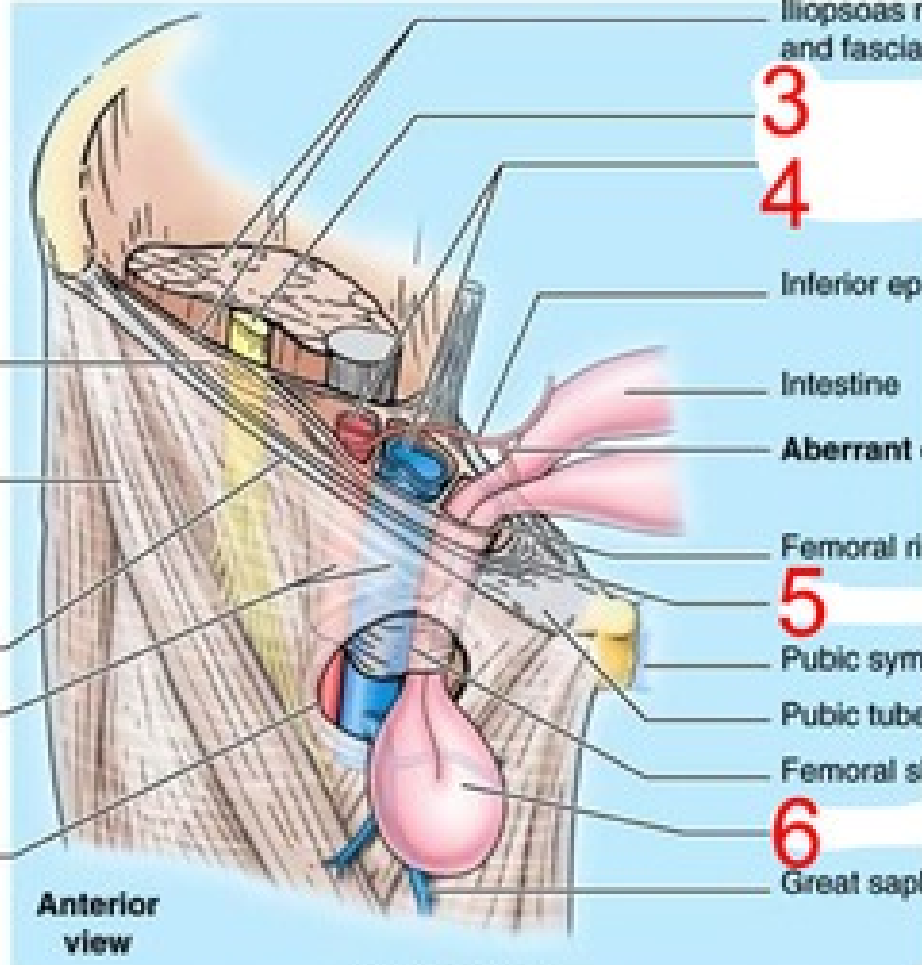
Fascia lata

Inguinal ligament

Femoral artery and vein

2

Anterior view



Iliopsoas muscle and fascia

3

4

Inferior epigastric artery

Intestine

Aberrant obturator artery

Femoral ring

5

Pubic symphysis

Pubic tubercle

Femoral sheath

6

Great saphenous vein

(B) Late stage

Femoral ring

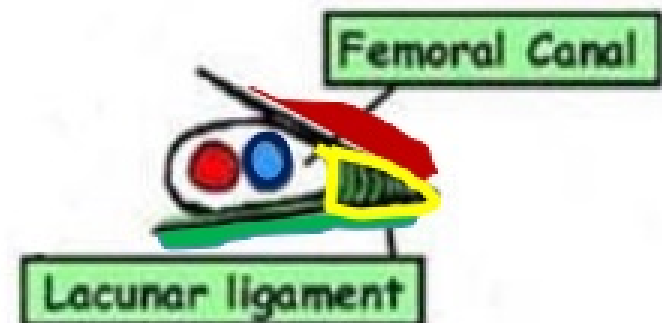
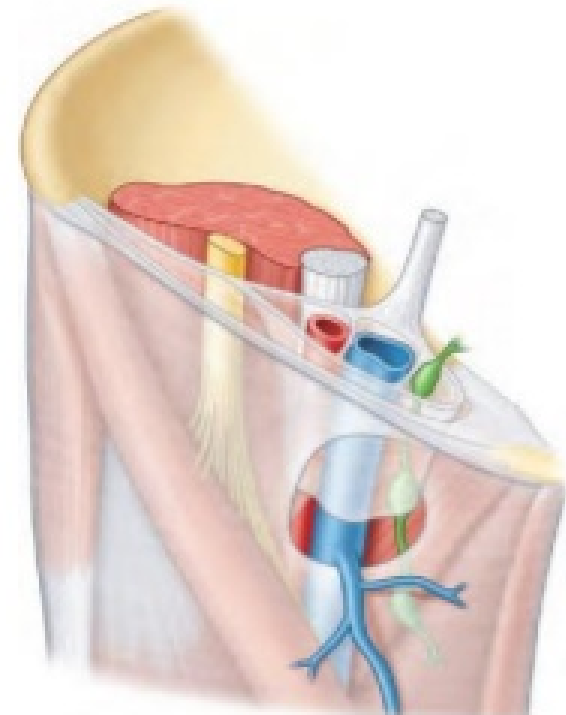
Boundaries:

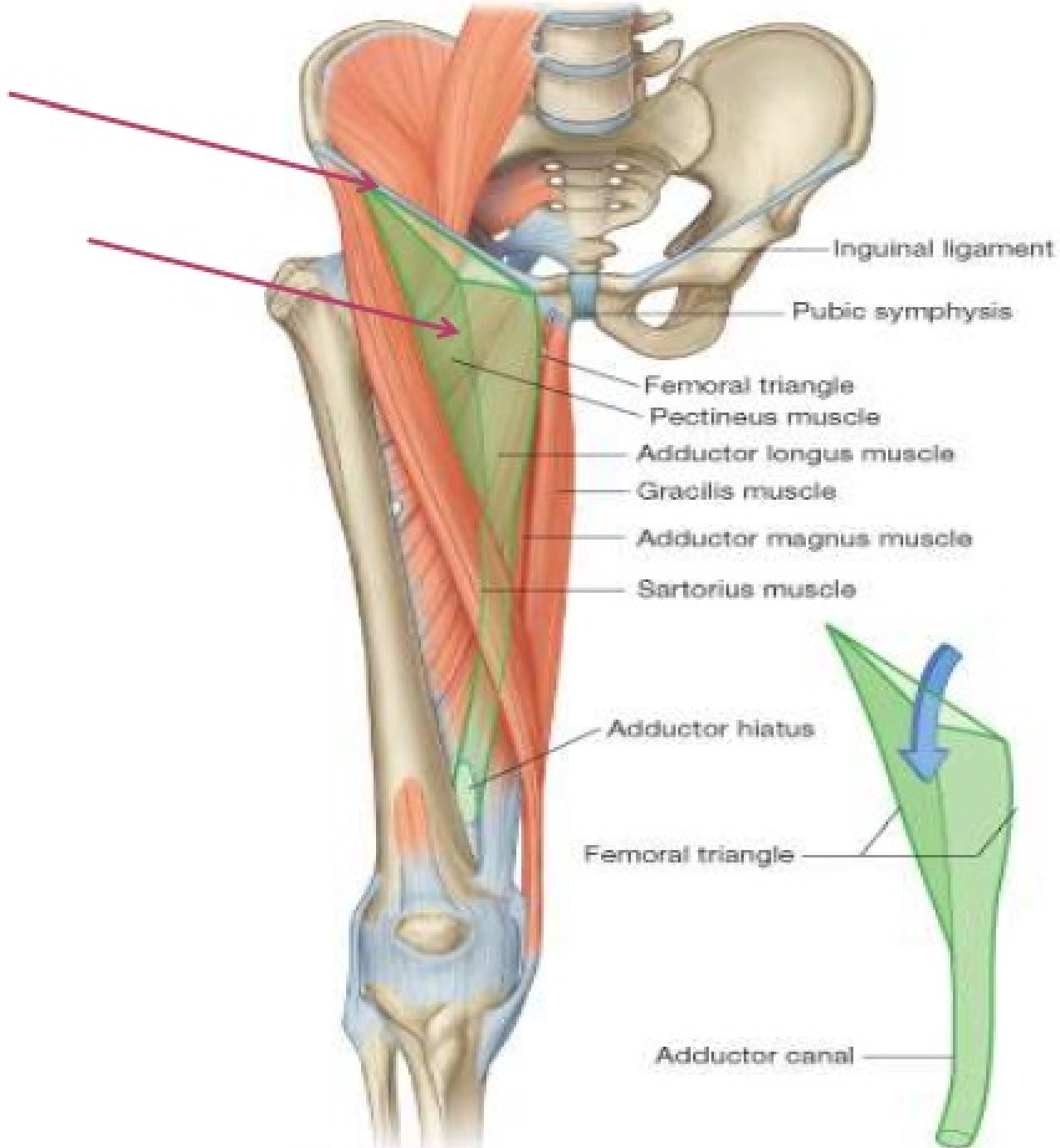
- Anterior-inguinal ligament
- Posterior-pectineus with its covering fascia.
- Medial- base of lacunar ligament.
- Lateral-femoral vein.

Structures related to femoral ring

- Spermatic cord (male) round ligament of the uterus (female) lie immediately above the anterior margin of the ring
- Inferior epigastric vessels are close to its upper and lateral angle

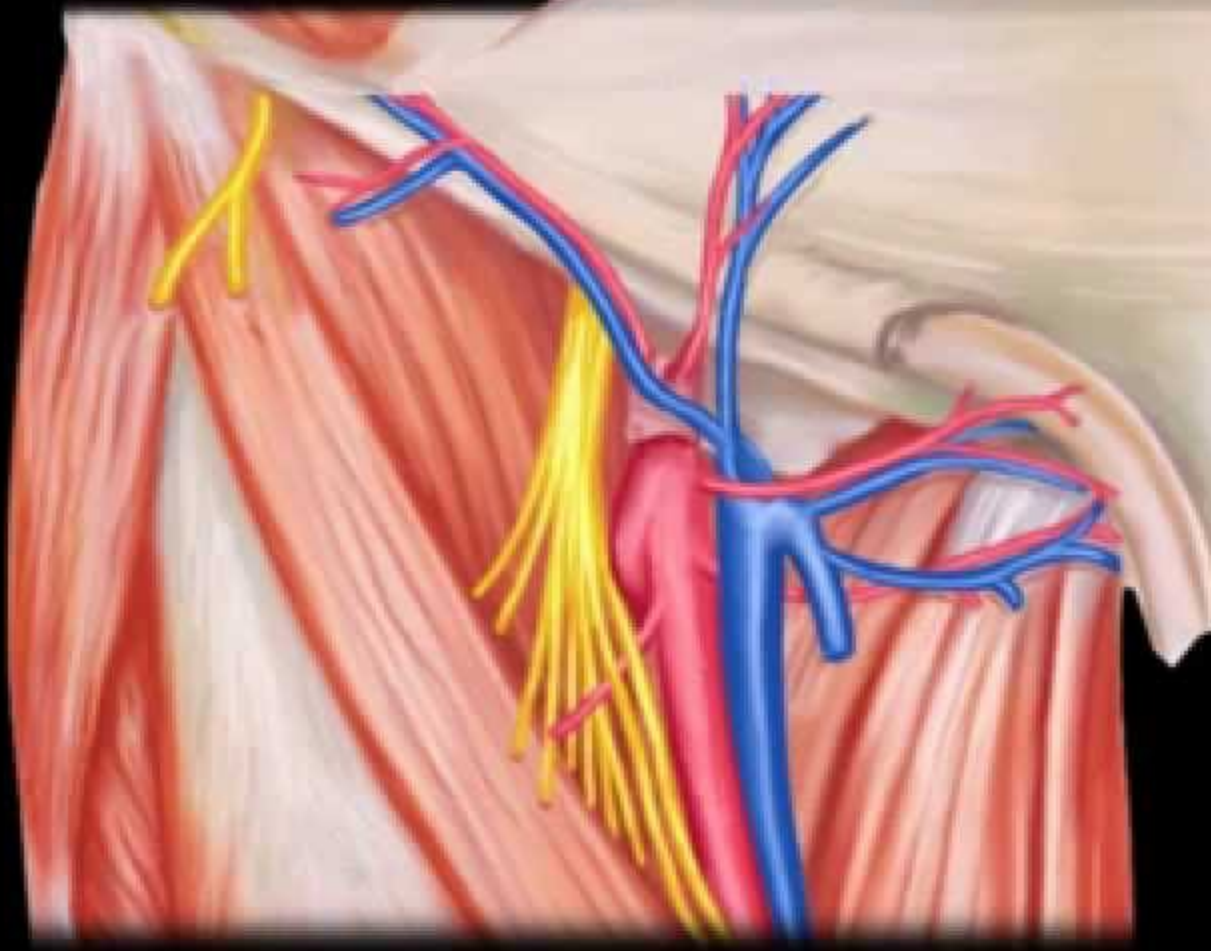
© Dr.N.Mugunthan





FEMORAL TRIANGLE

Contents of Femoral Triangle



ROOF

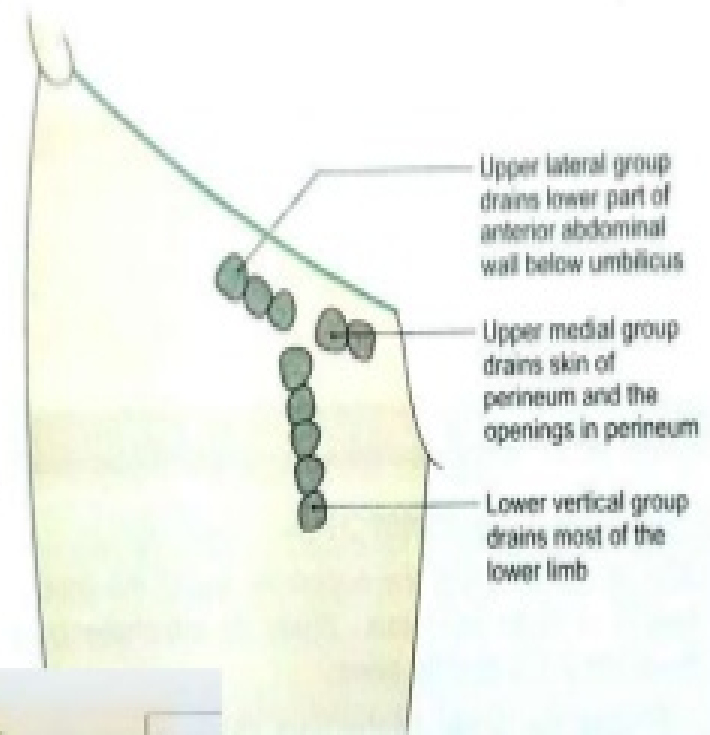
→ Skin

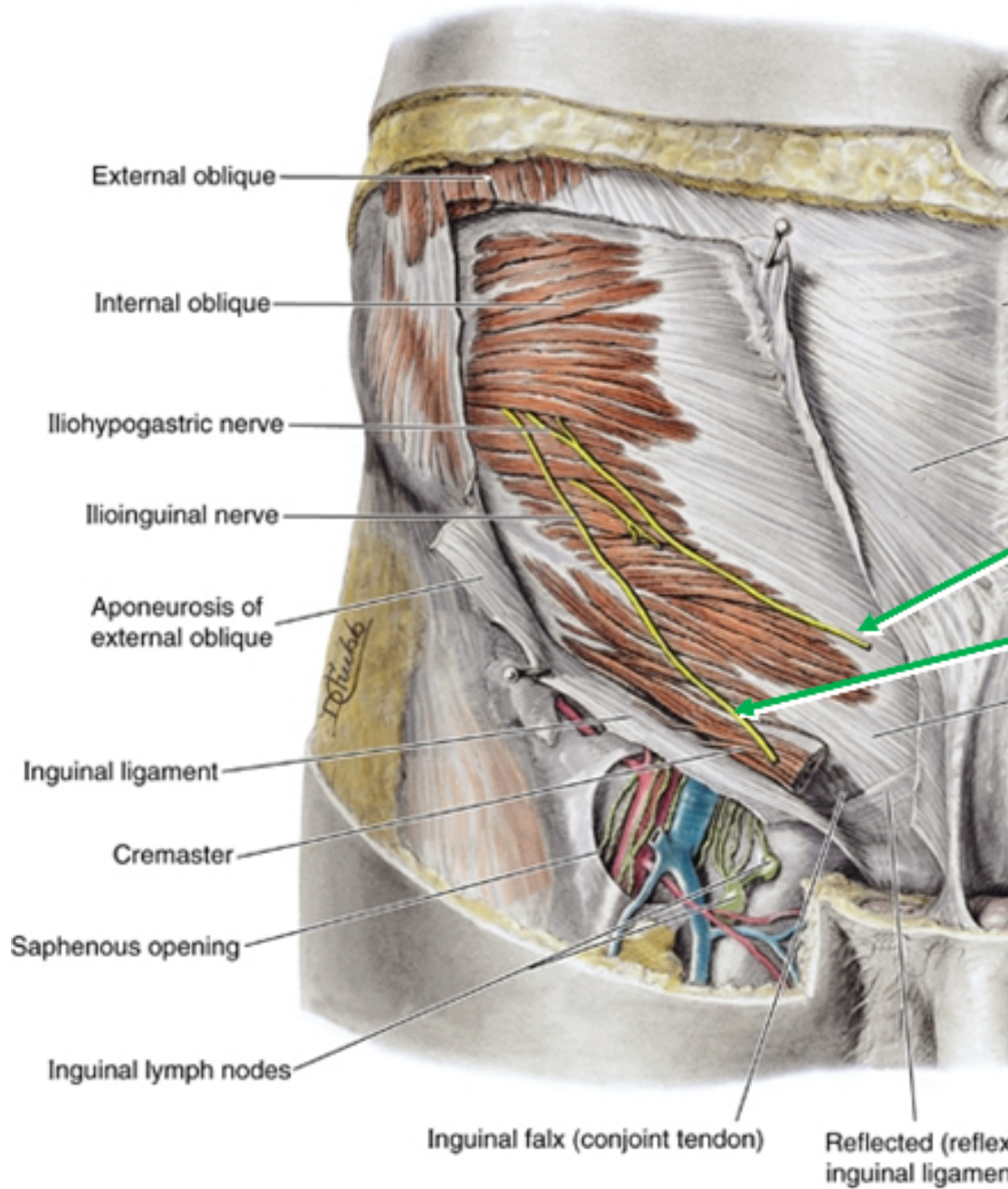
→ Superficial fascia

- Superficial inguinal lymph nodes
- Femoral branch of genitofemoral nerve
- Branches of ilioinguinal nerve
- Branches of femoral vessels
- Great saphenous vein.

→ Deep fascia

- Saphenous opening and
- Cribriform fascia.



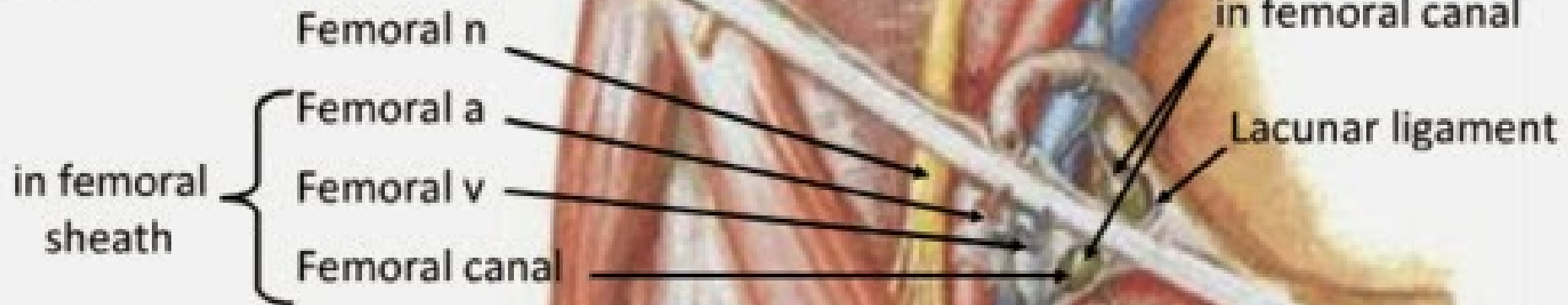


Iliohypogastric nerve

Ilioinguinal nerve

Contents of Femoral Triangle

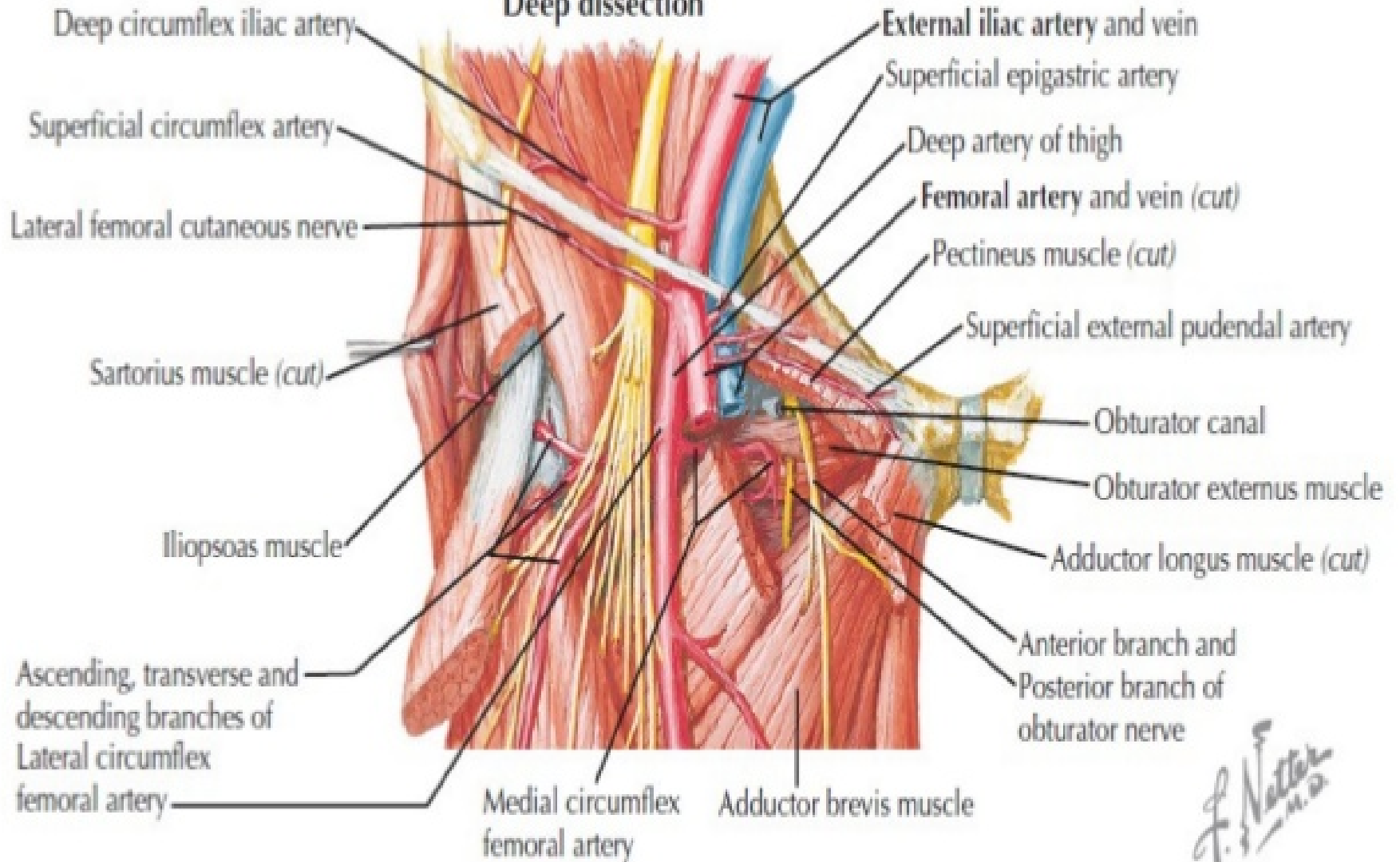
Femoral hernia enters the femoral canal which is in the medial part of the femoral sheath.



Nerve
Artery
Vein
Y fronts

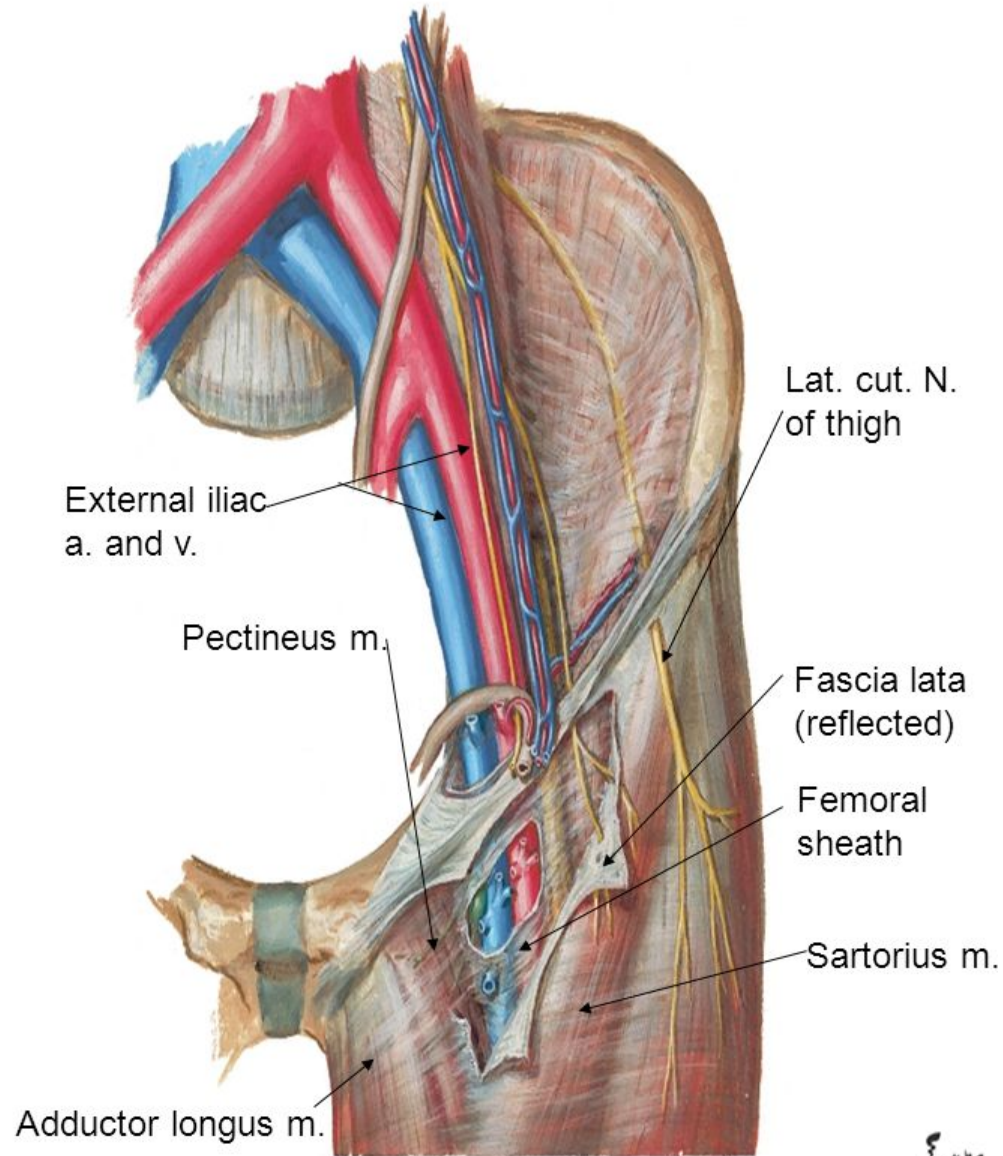
External Iliac

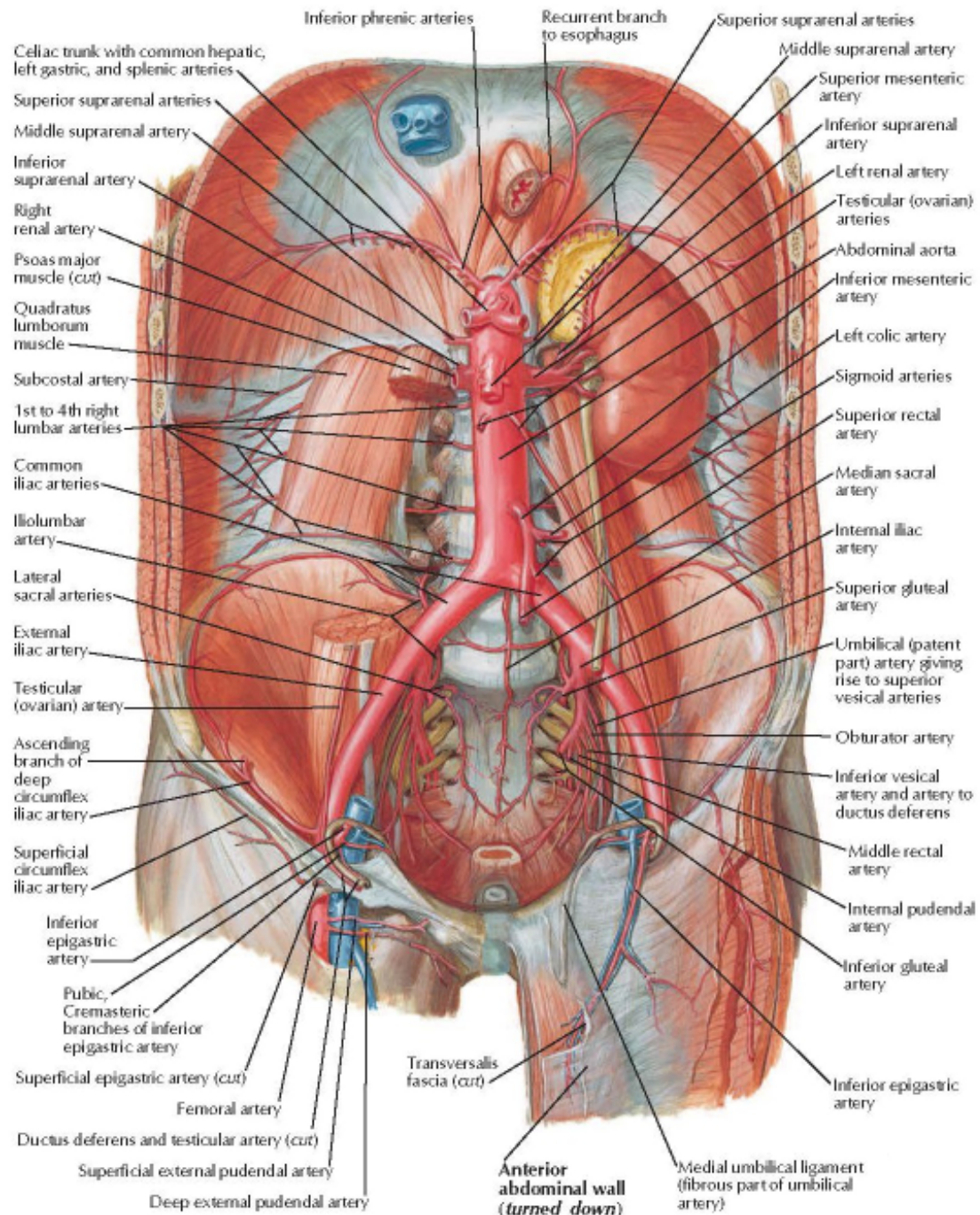
Deep dissection

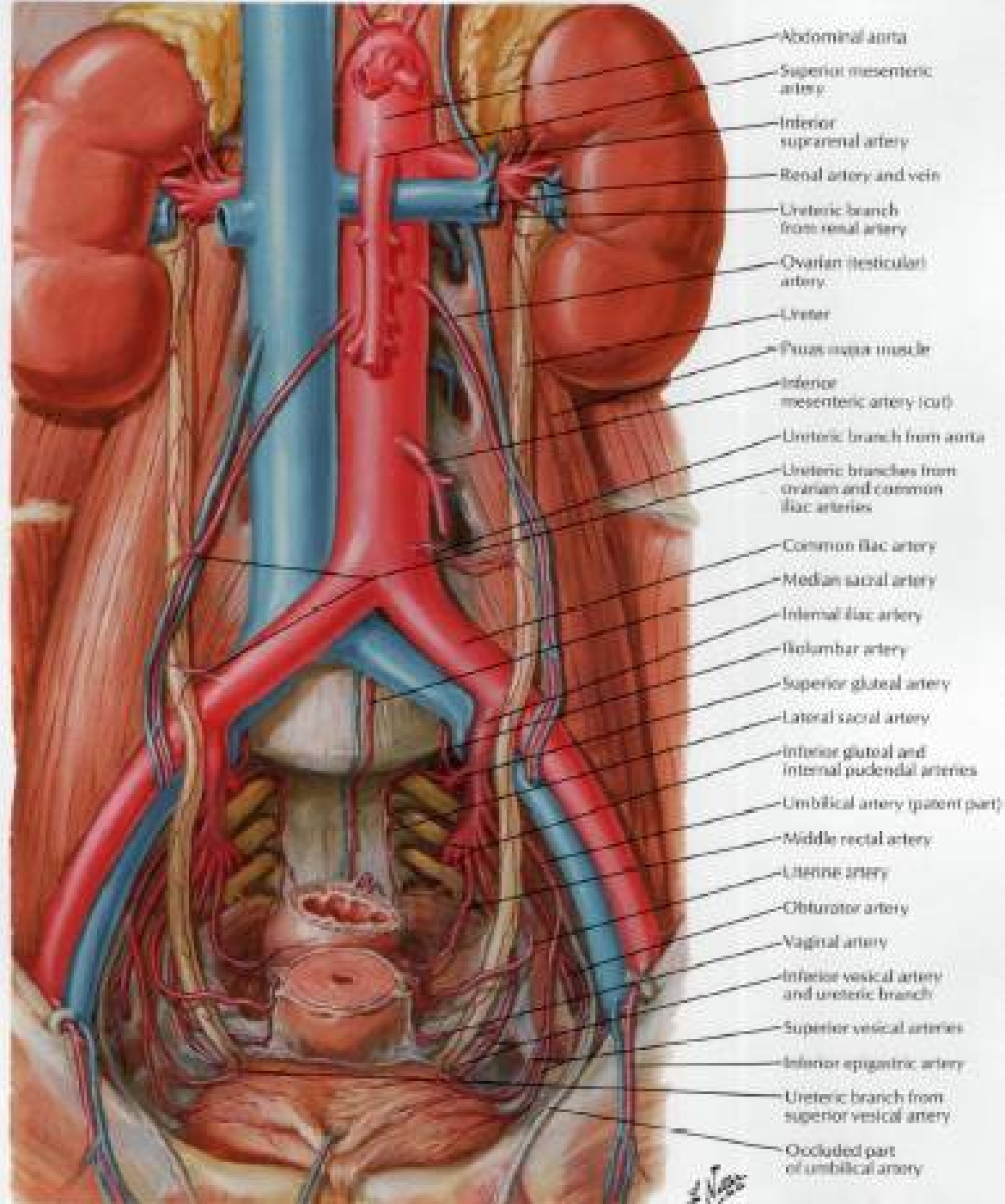


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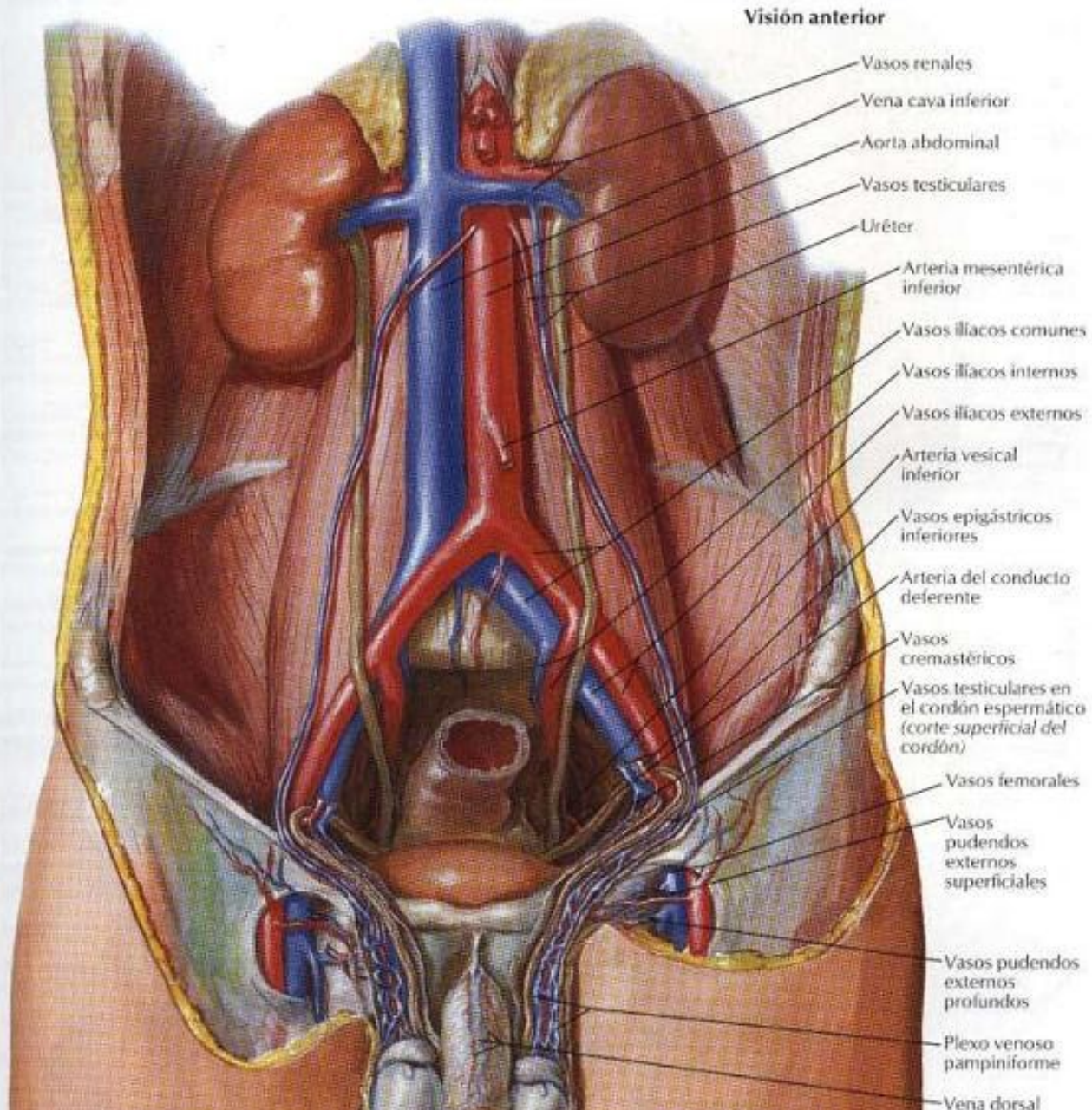
Femoral Sheath and Inguinal Canal

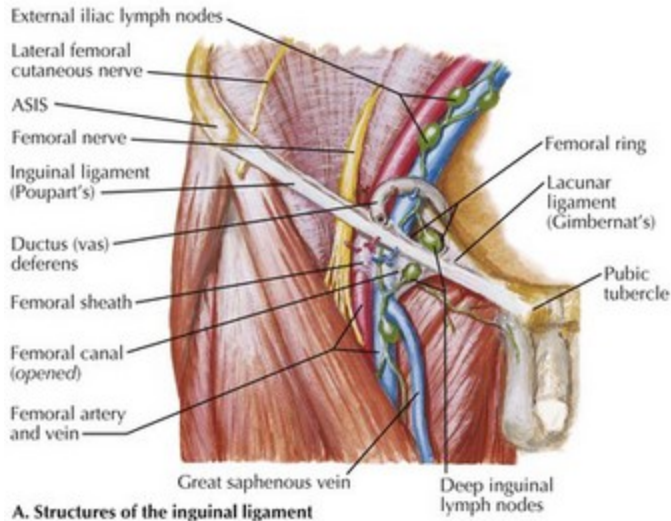




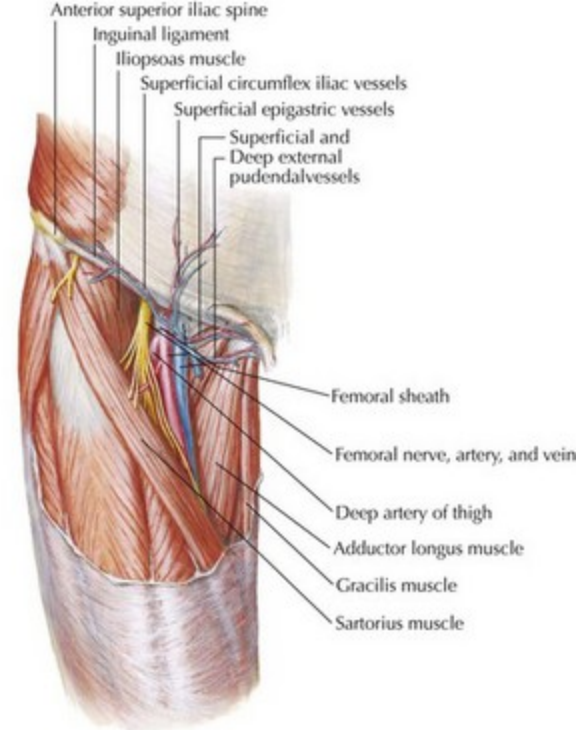


Arterias y venas del testículo

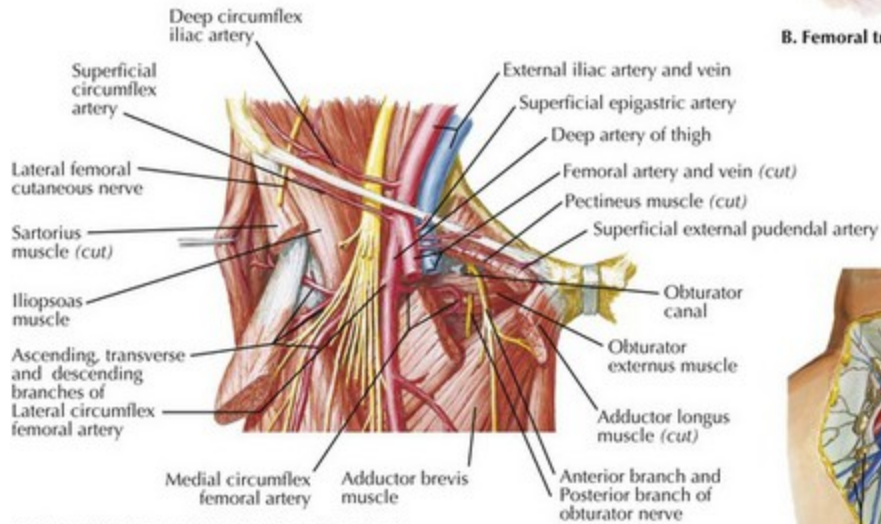




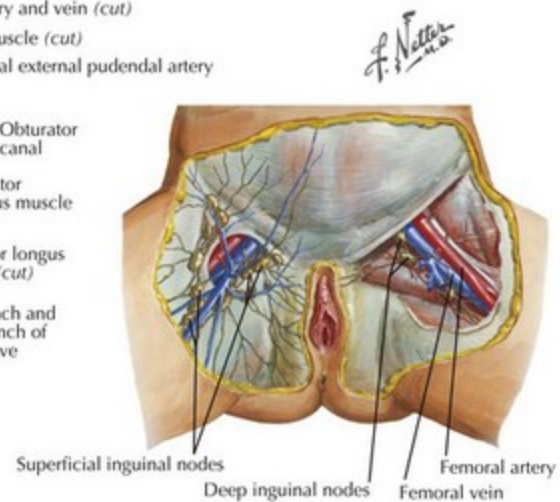
A. Structures of the inguinal ligament



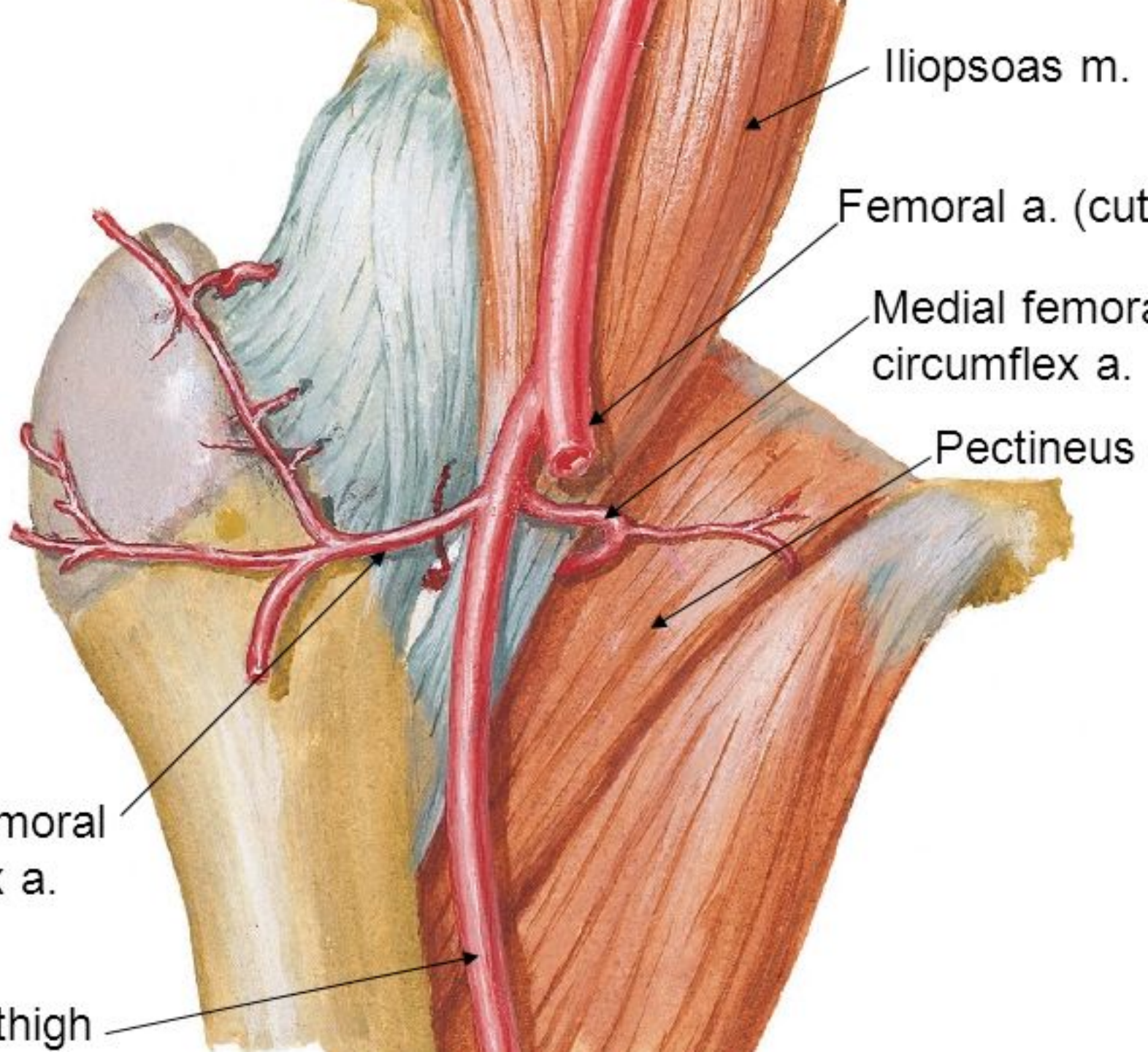
B. Femoral triangle



C. Floor of the femoral triangle (deep dissection)



D. Lymphatic chain and nodes of the inguinal region



Iliopsoas m.

Femoral a. (cut)

Medial femoral
circumflex a.

Pectineus

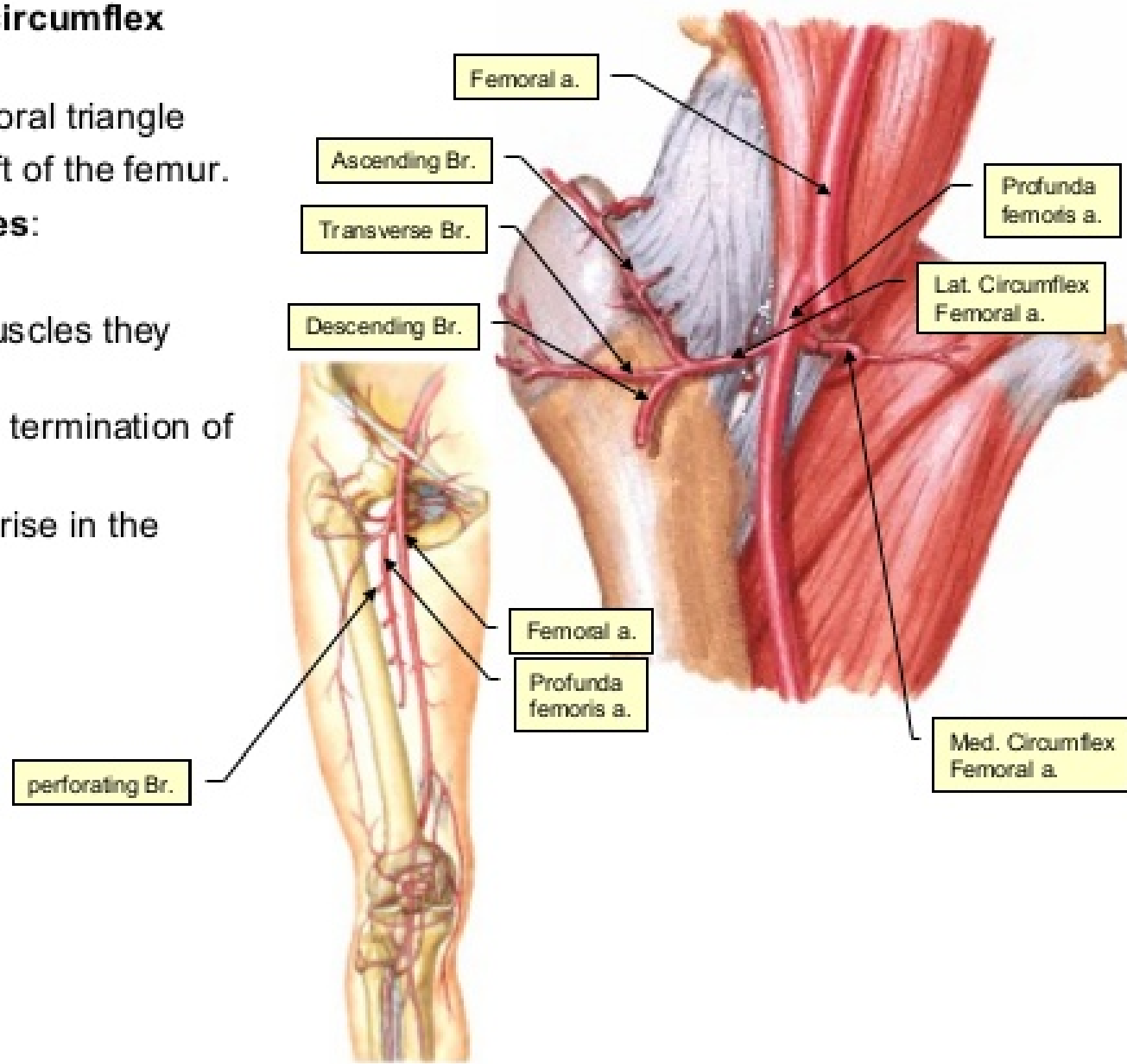
Lateral femoral
circumflex a.

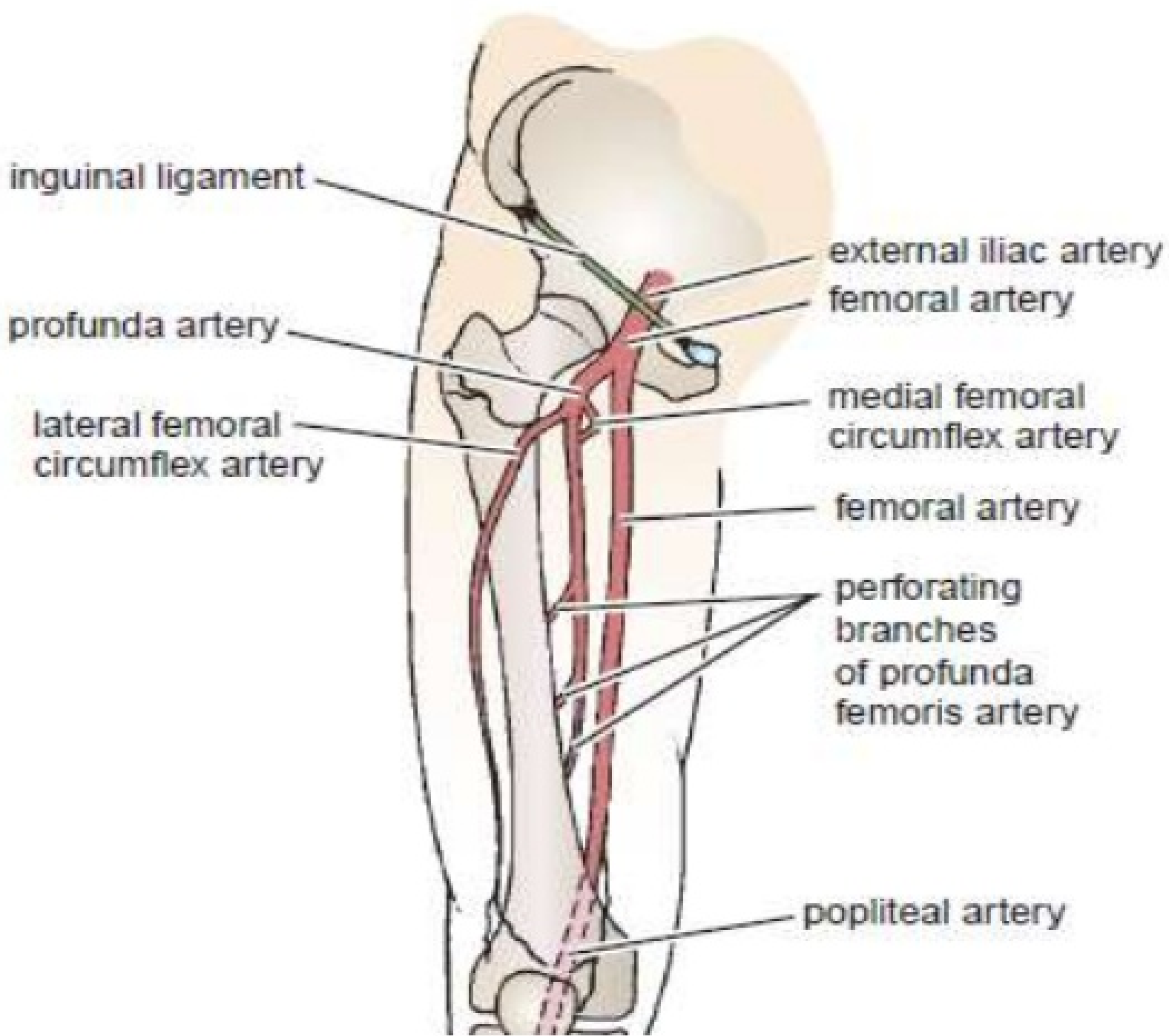
Deep a. of thigh

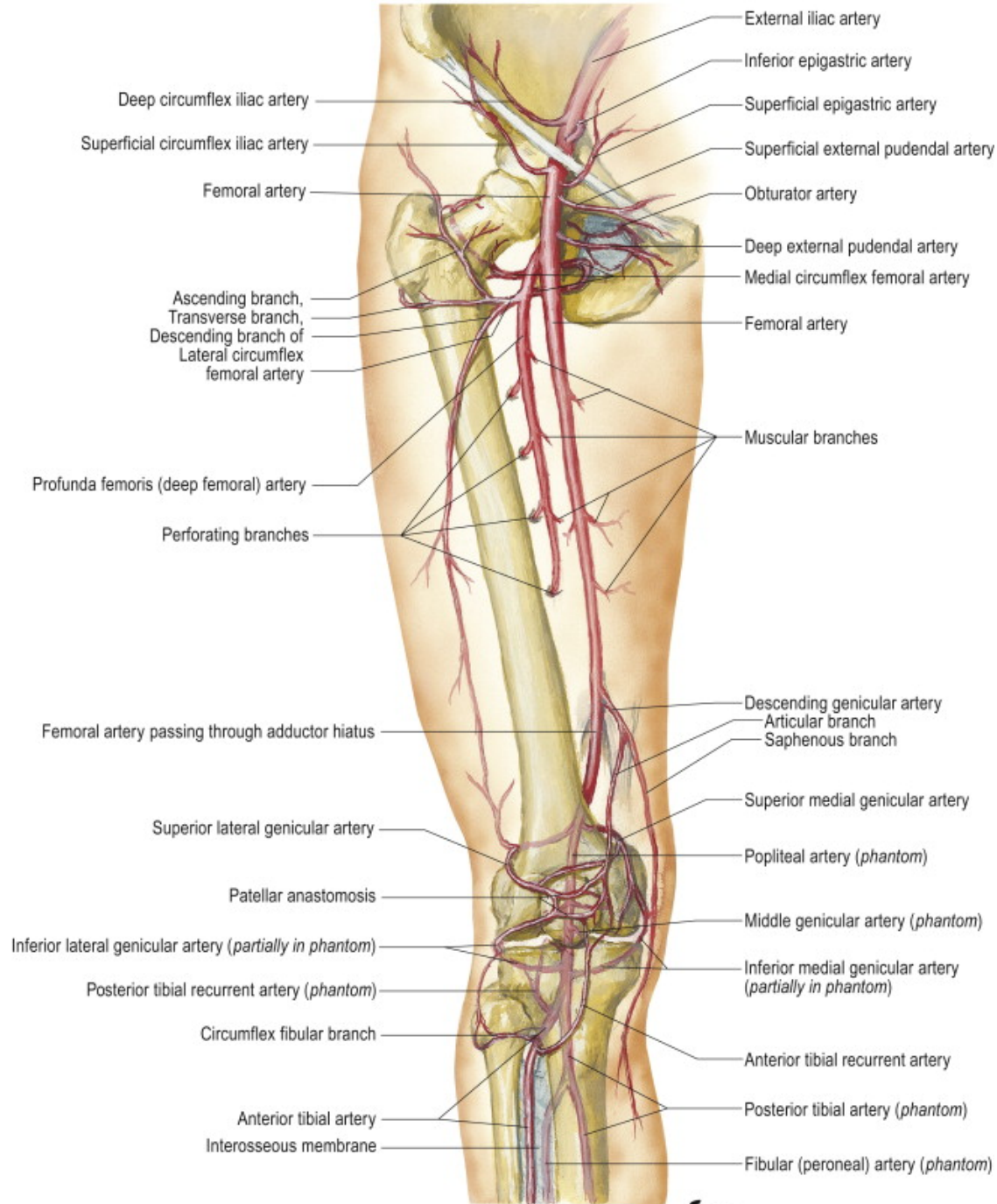
Branches of the profunda femoris artery



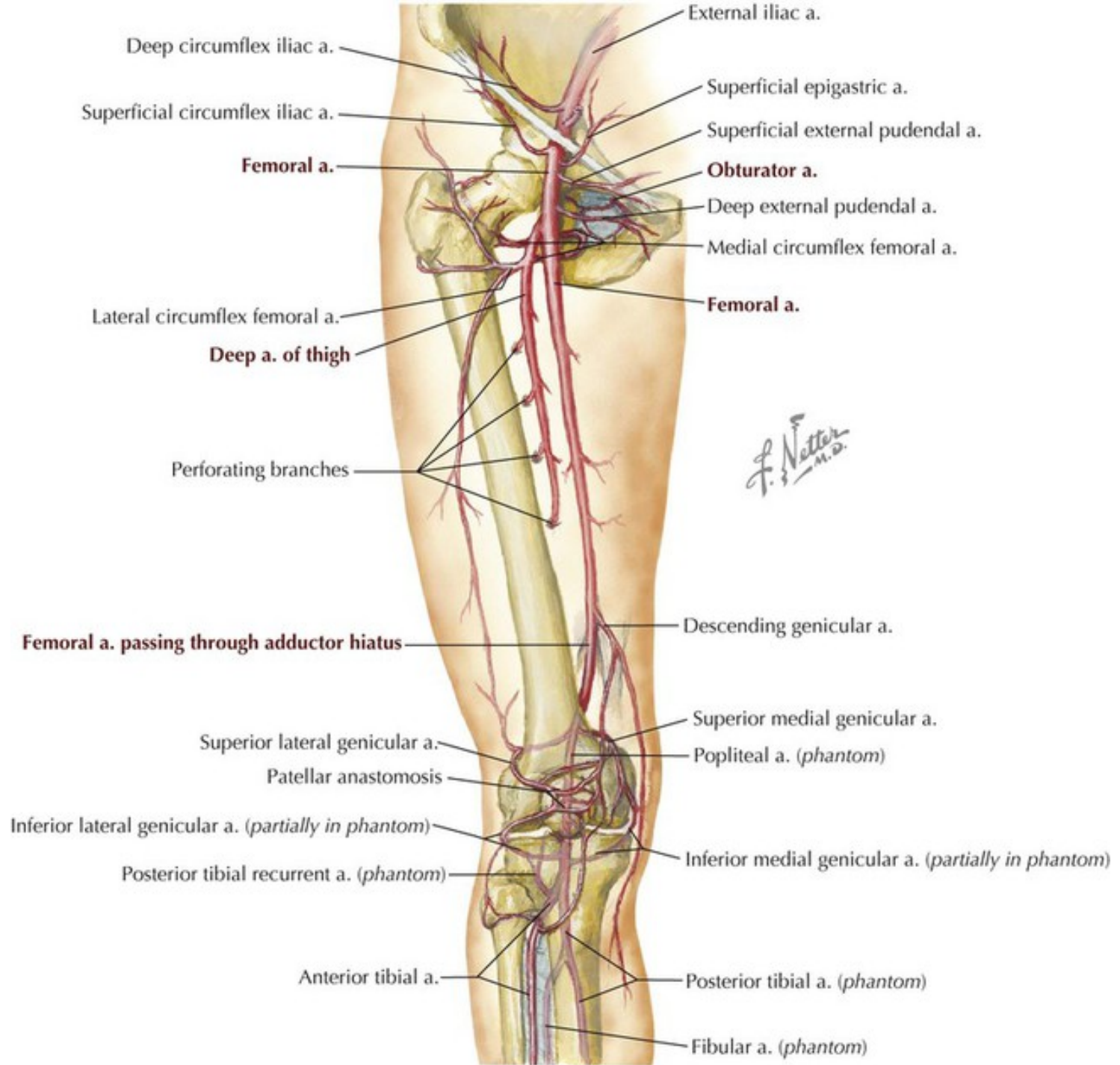
- **lateral and medial circumflex femoral arteries:**
 - given in the femoral triangle
 - encircle the shaft of the femur.
- **Perforating branches:**
 - Four.
 - Perforate the muscles they meet.
 - The fourth is the termination of the vessel.
 - The upper two arise in the femoral triangle

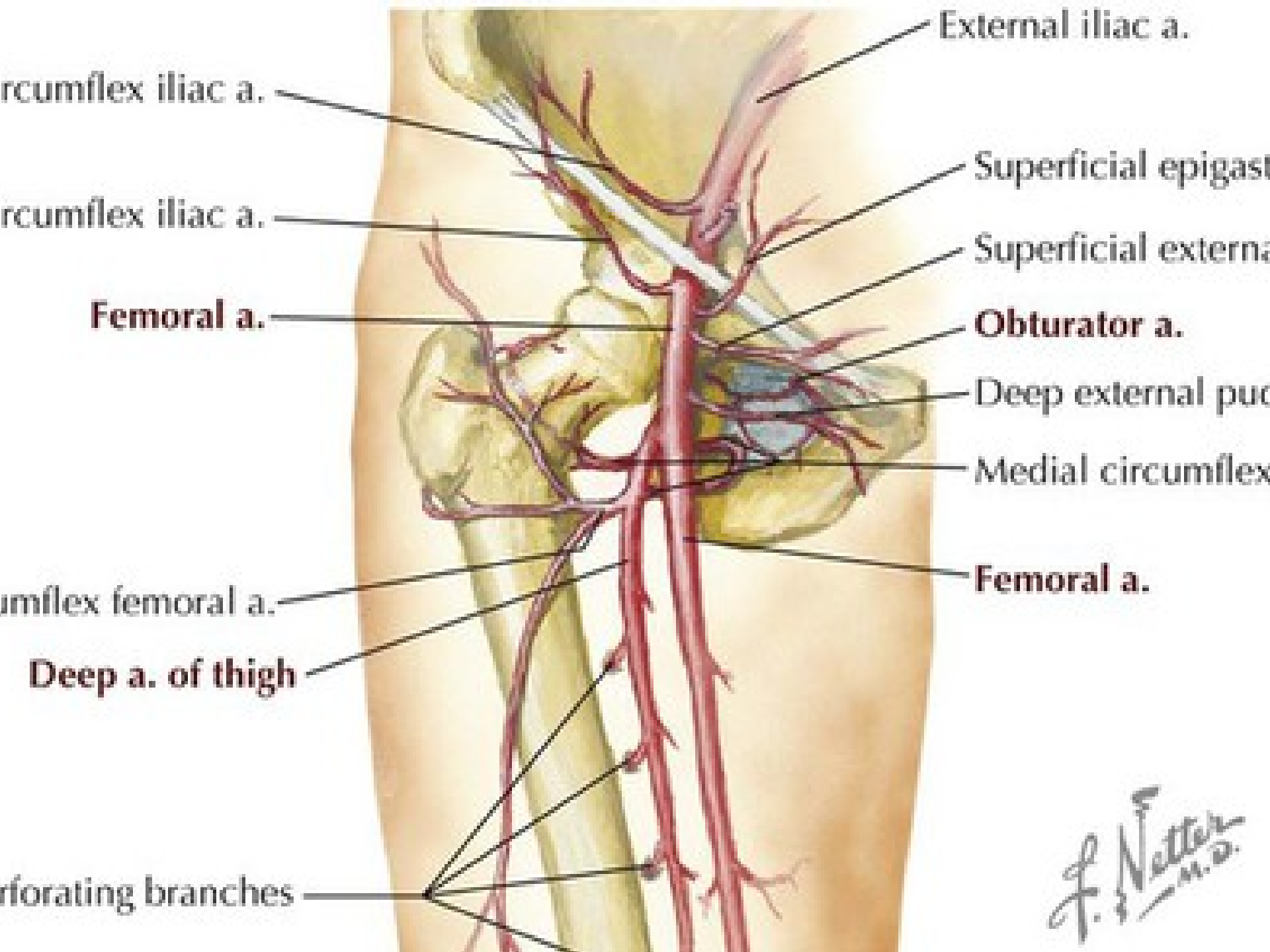






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External iliac a.

Circumflex iliac a.

Superficial epigastric a.

Circumflex iliac a.

Superficial external iliac a.

Femoral a.

Obturator a.

Deep external pudendal a.

Medial circumflex femoral a.

Circumflex femoral a.

Femoral a.

Deep a. of thigh

Perforating branches

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High adductor hiatus

Descending genicular a.

Superior lateral genicular a.

Superior medial genicular

Patellar anastomosis

Popliteal a. (*phantom*)

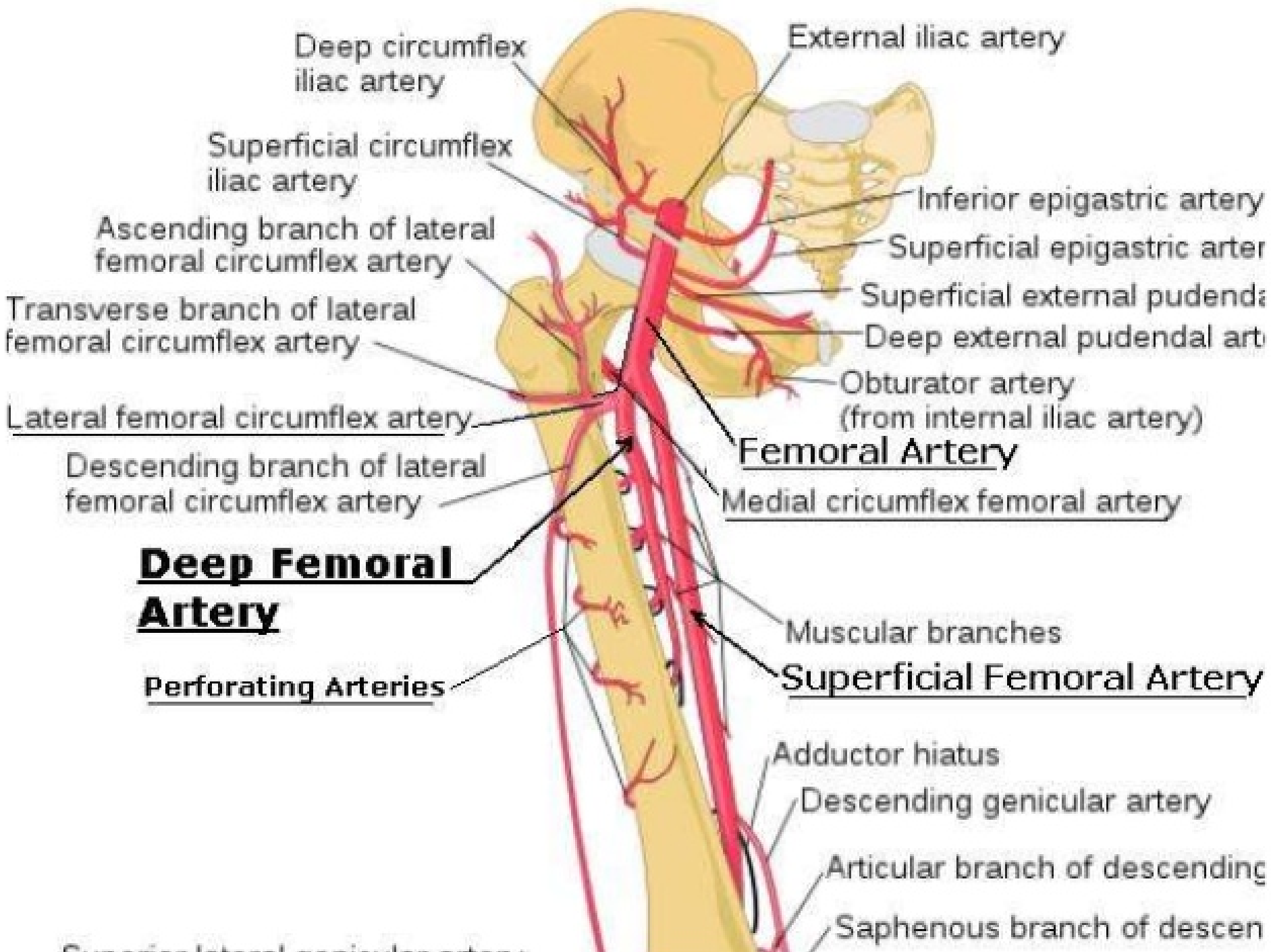
. (*partially in phantom*)

Inferior medial genicular

al recurrent a. (*phantom*)

Anterior tibial a.

Posterior tibial a. (*phantom*)



Deep circumflex iliac artery

External iliac artery

Superficial circumflex iliac artery

Inferior epigastric artery

Ascending branch of lateral femoral circumflex artery

Superficial epigastric artery

Transverse branch of lateral femoral circumflex artery

Superficial external pudendal artery

Deep external pudendal artery

Obturator artery (from internal iliac artery)

Lateral femoral circumflex artery

Femoral Artery

Descending branch of lateral femoral circumflex artery

Medial circumflex femoral artery

Deep Femoral Artery

Muscular branches

Perforating Arteries

Superficial Femoral Artery

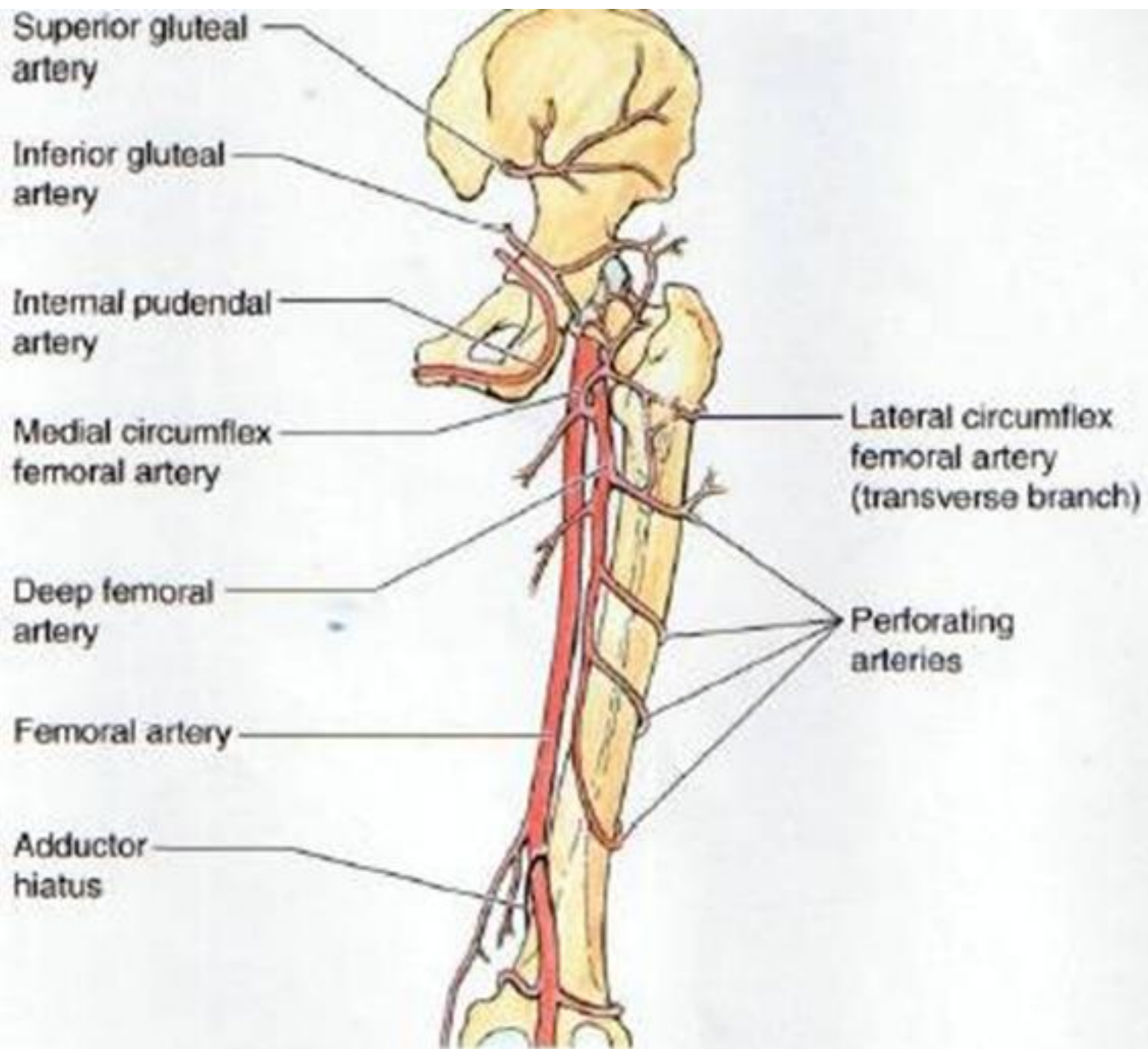
Adductor hiatus

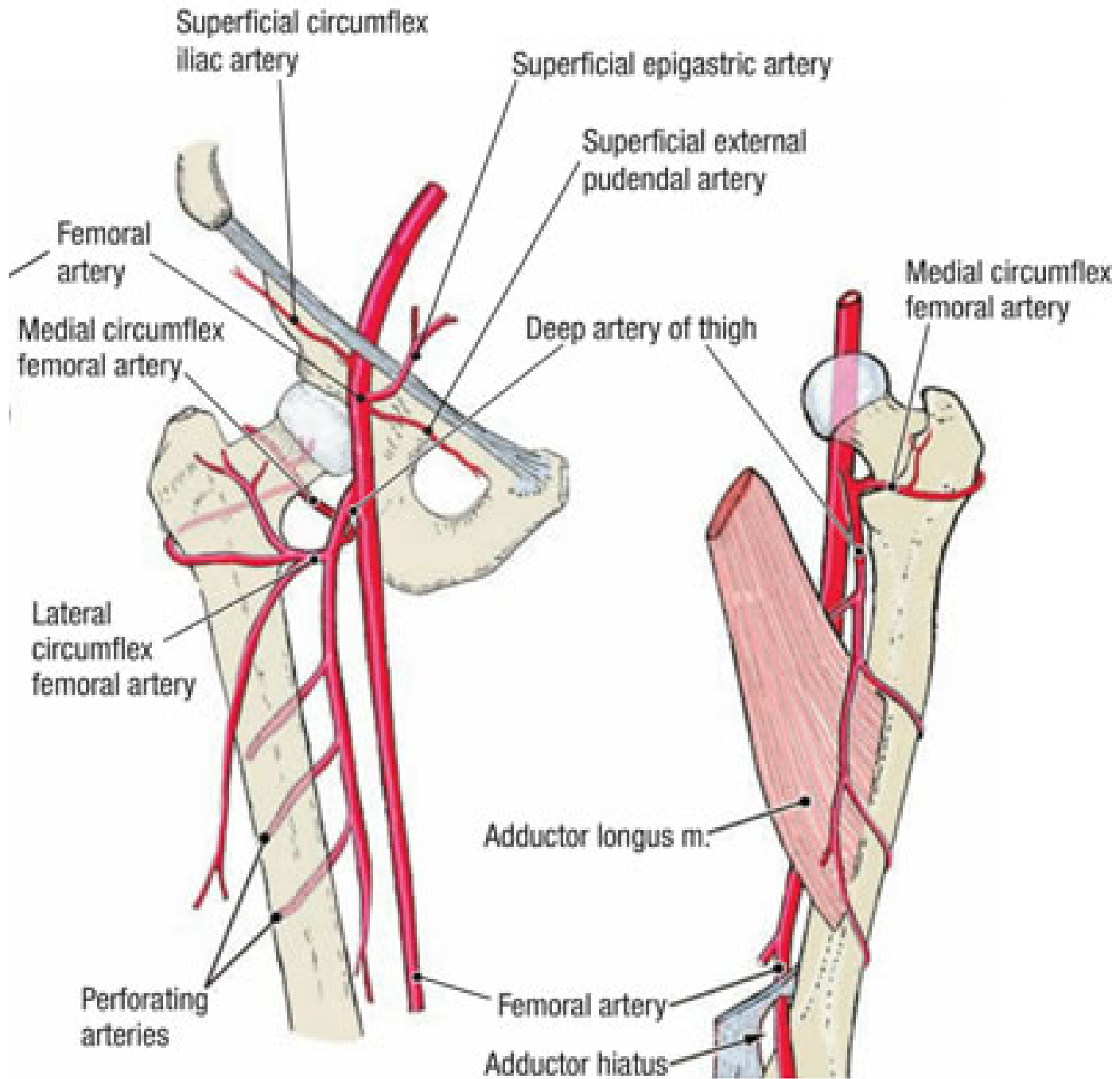
Descending genicular artery

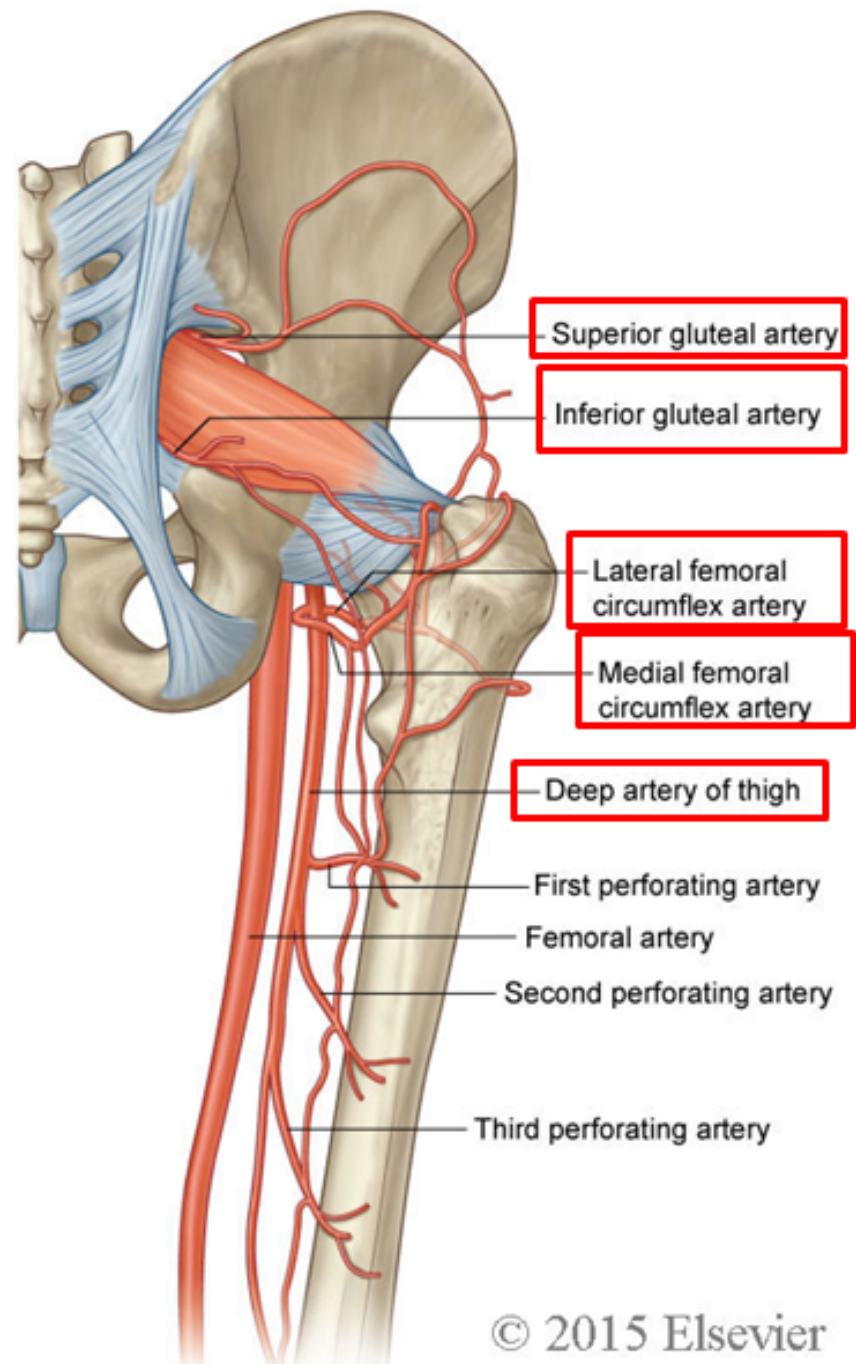
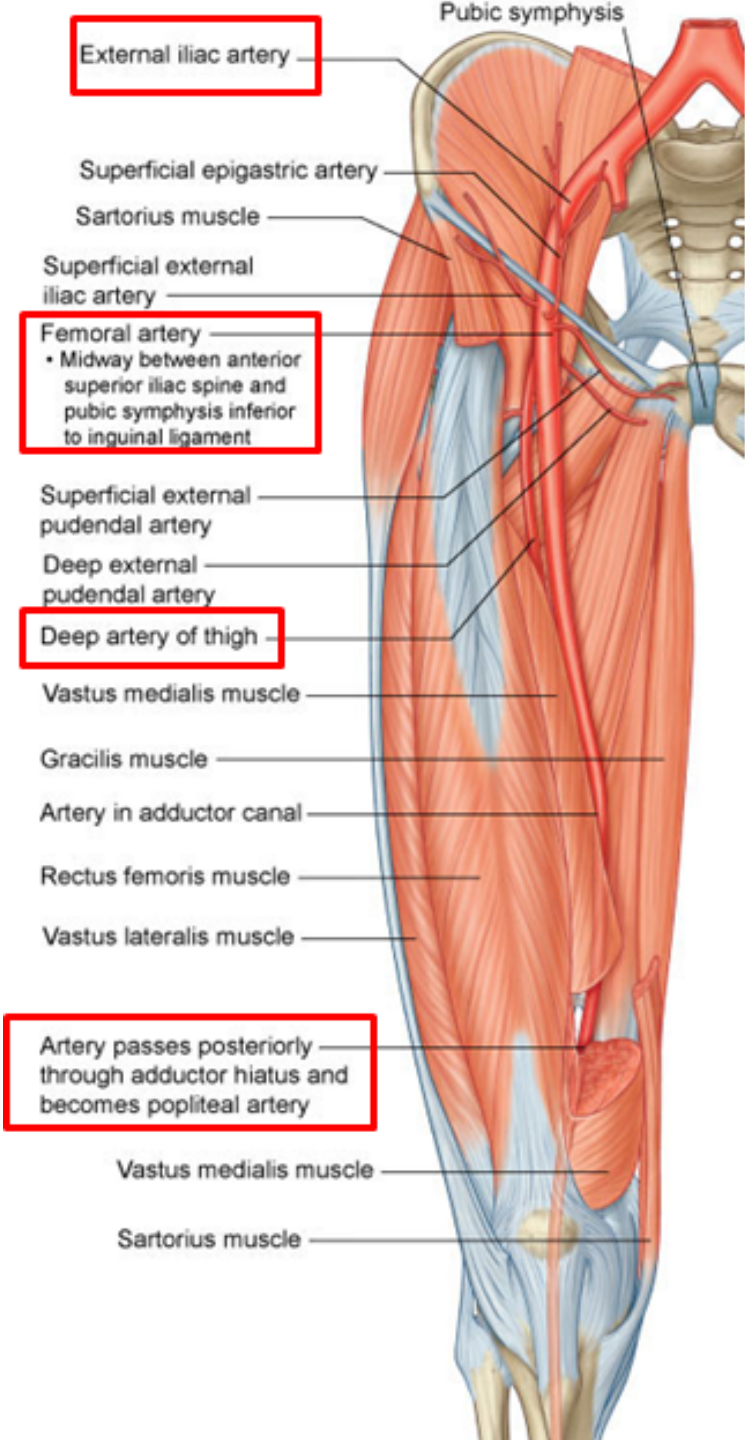
Articular branch of descending genicular artery

Saphenous branch of descending genicular artery

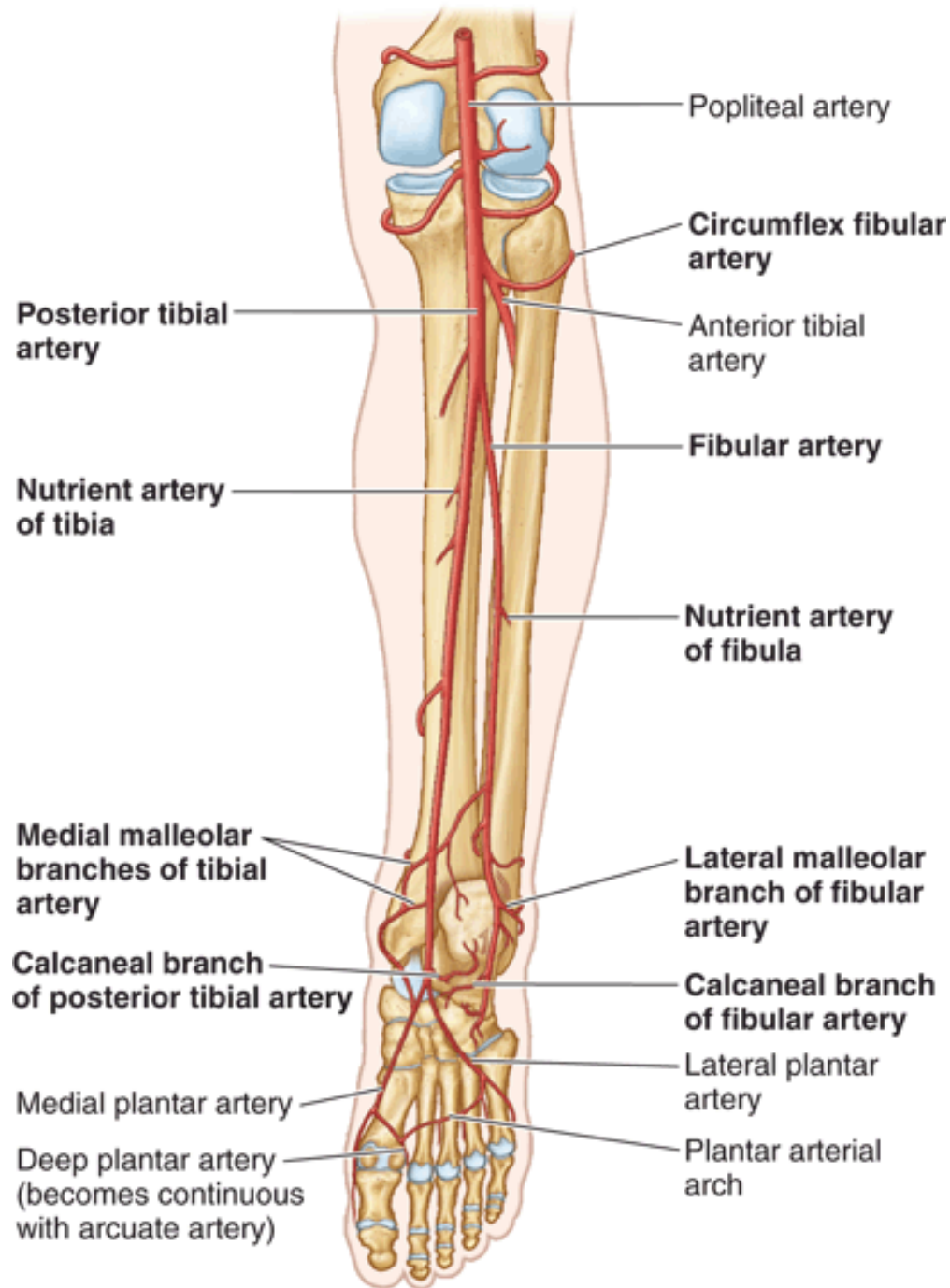
Superior lateral genicular artery



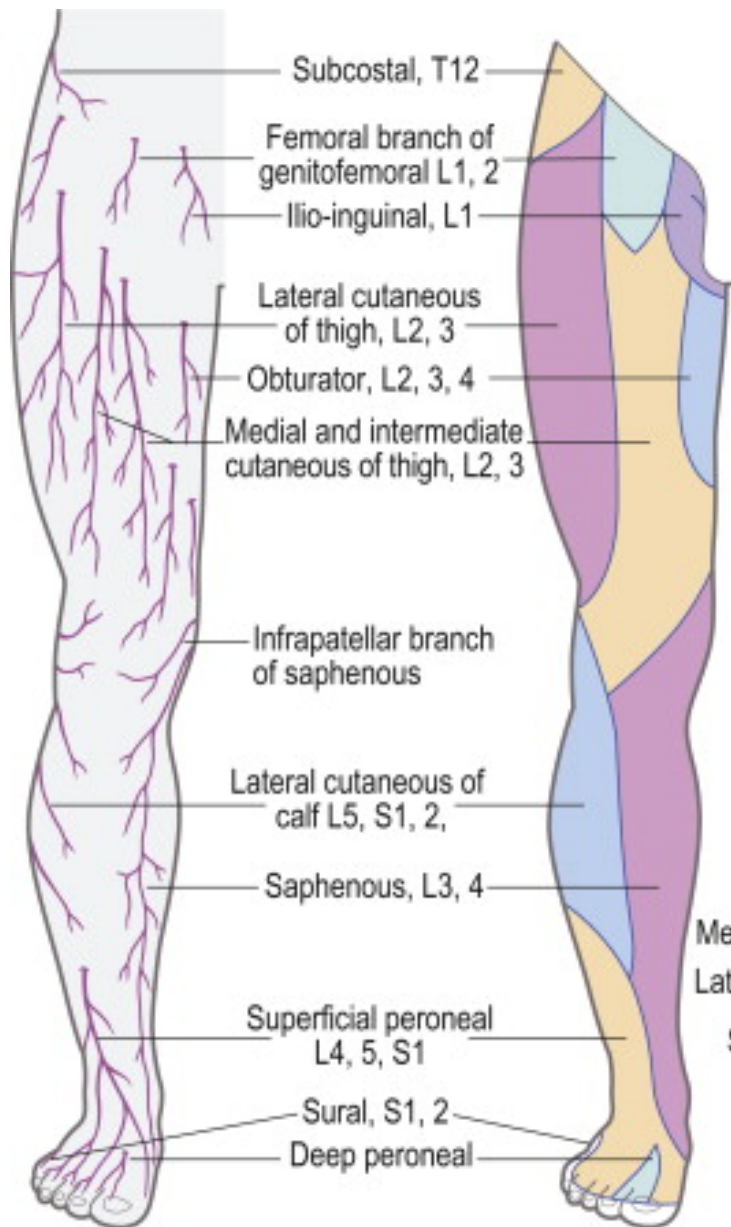




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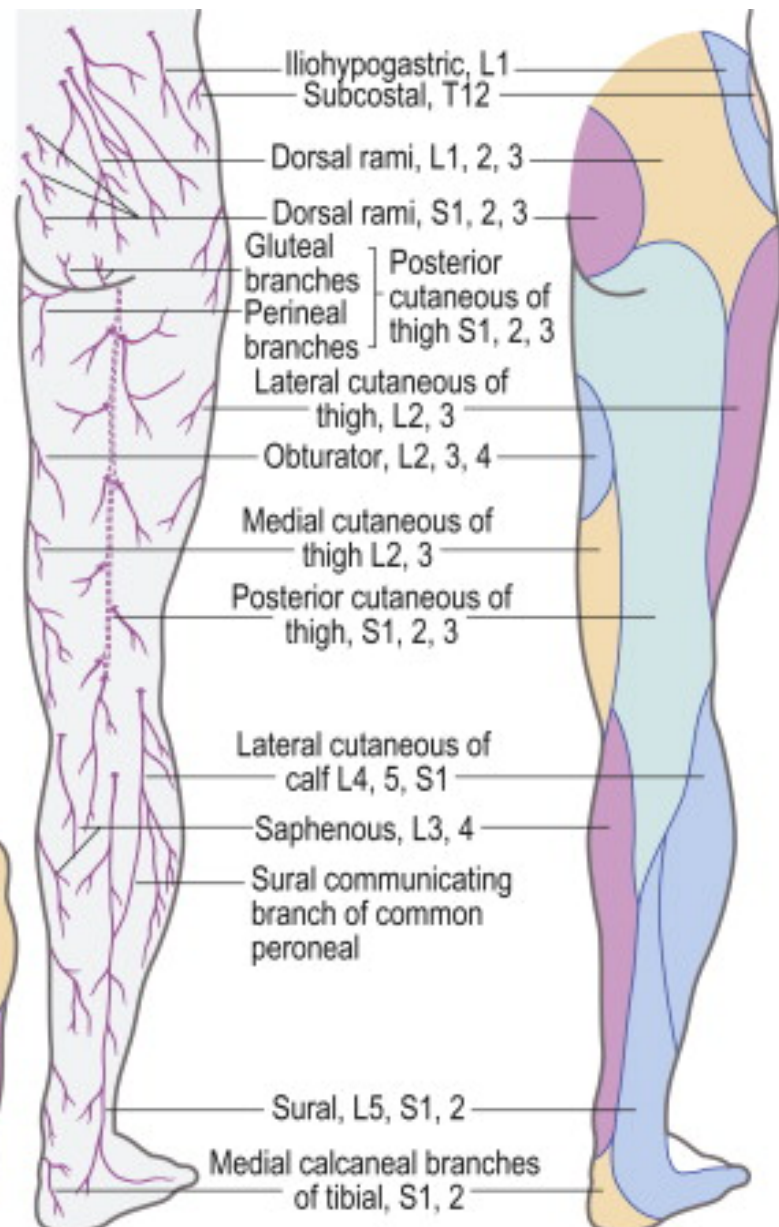
Posterior view with foot plantar flexed



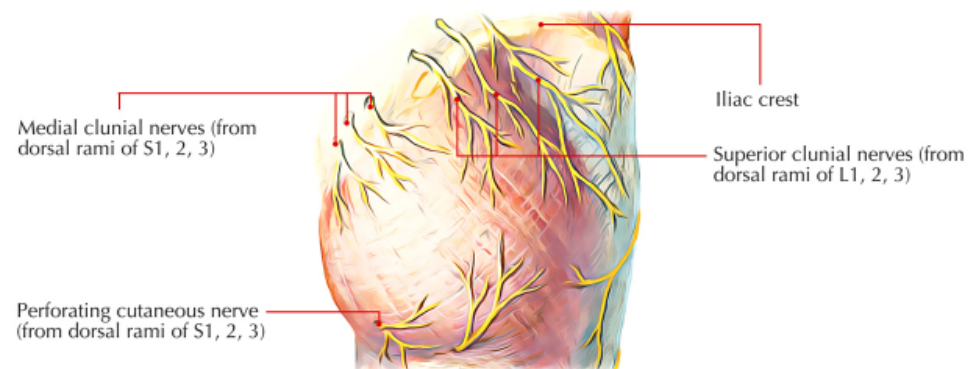
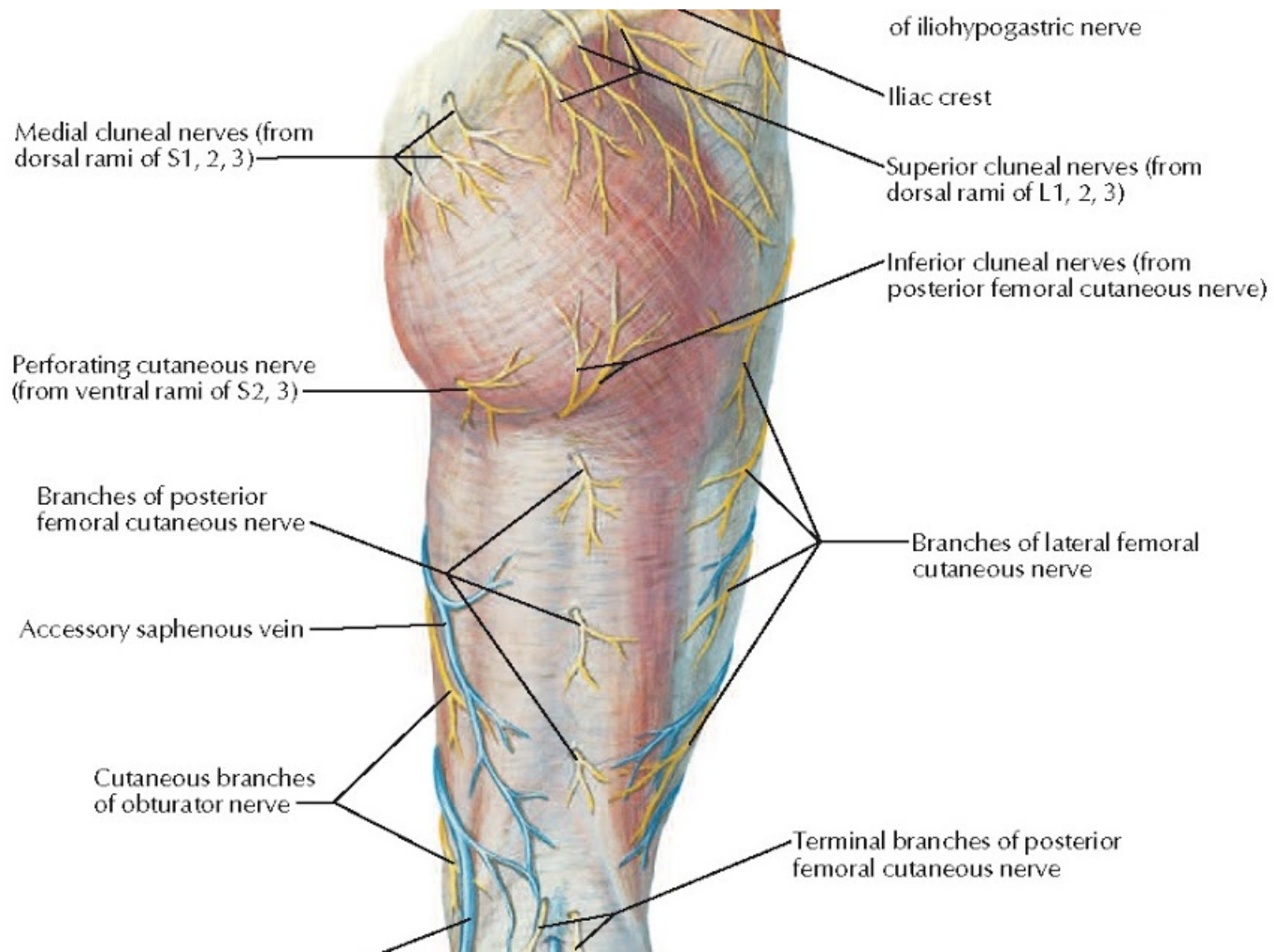
A

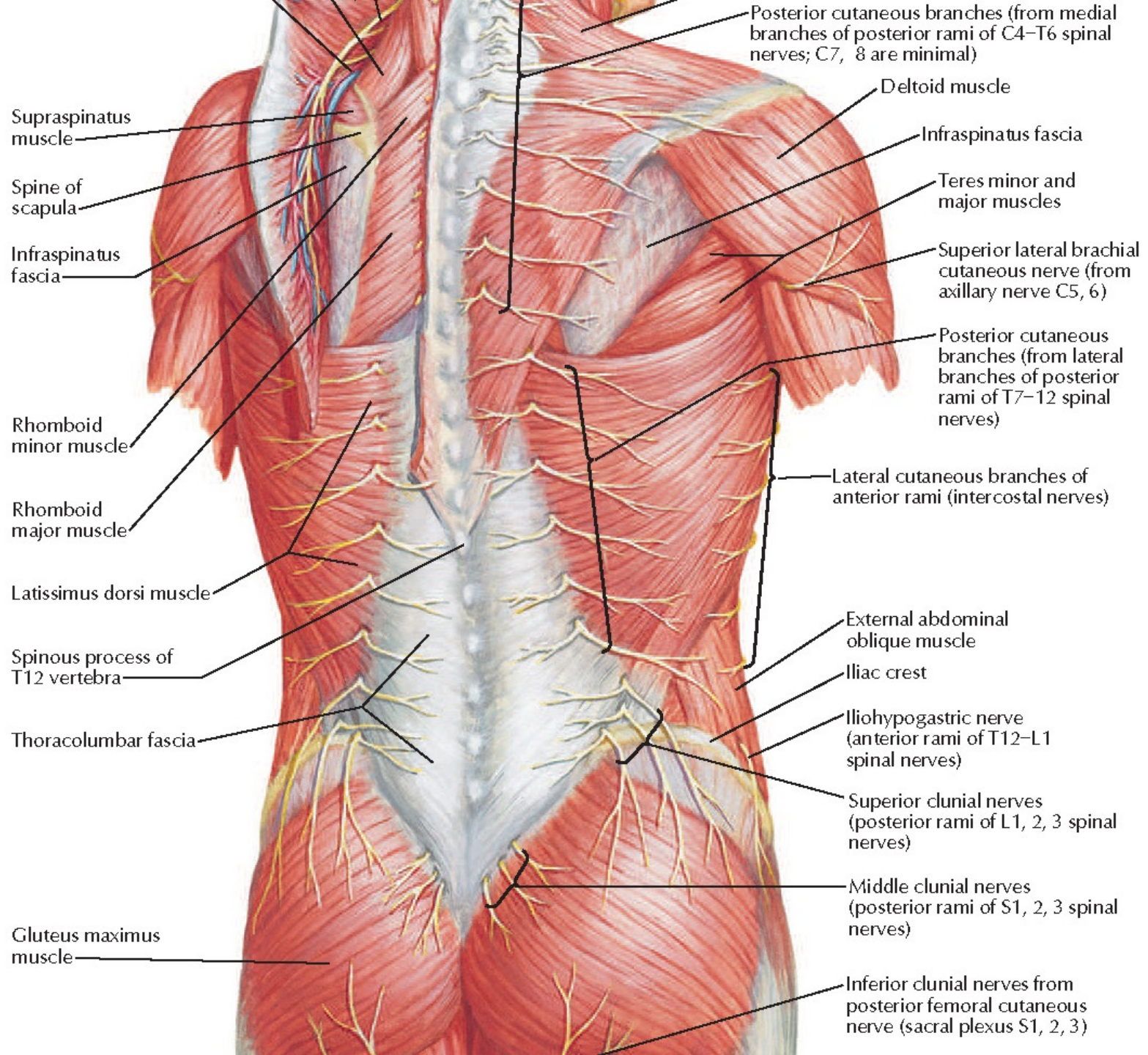


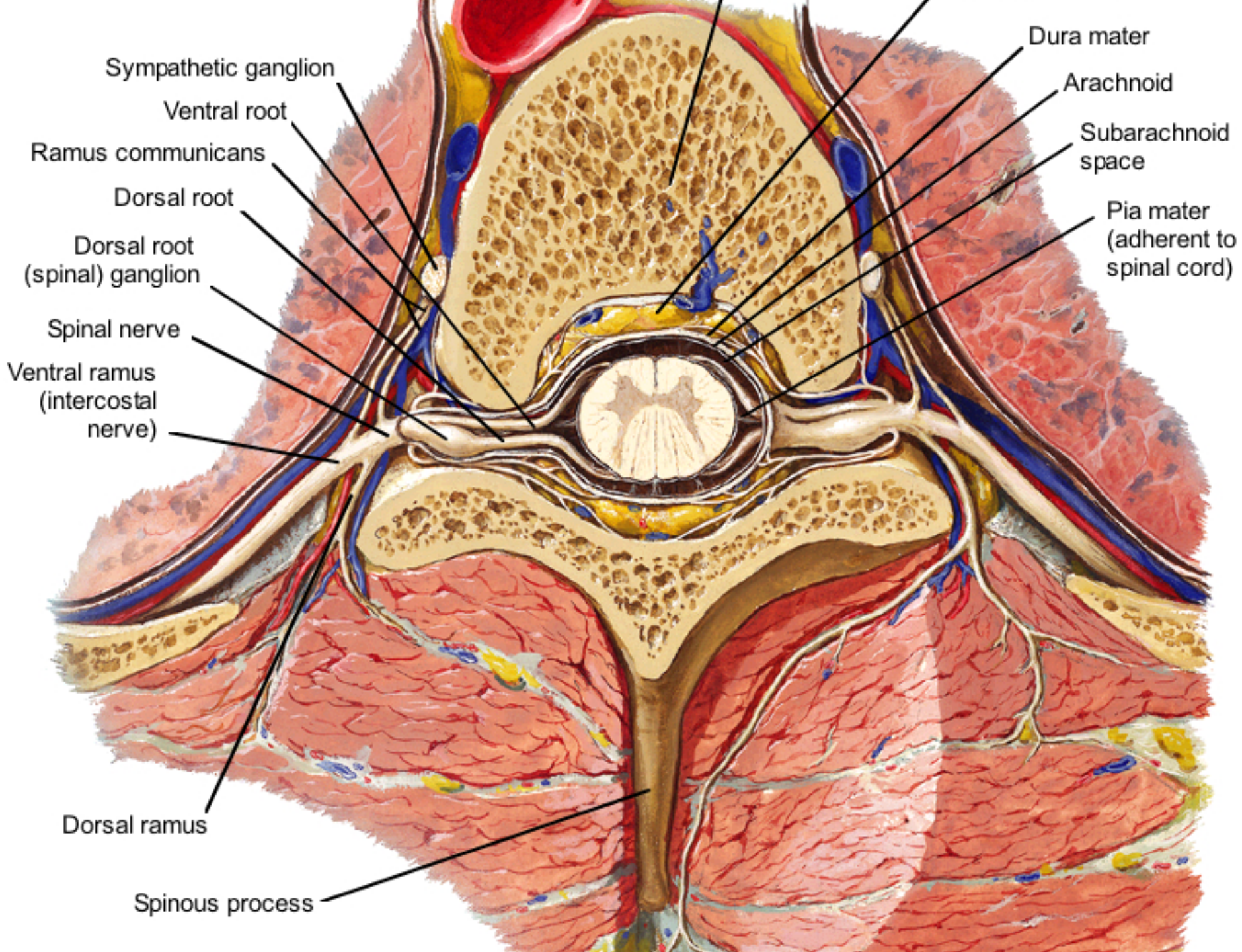
B

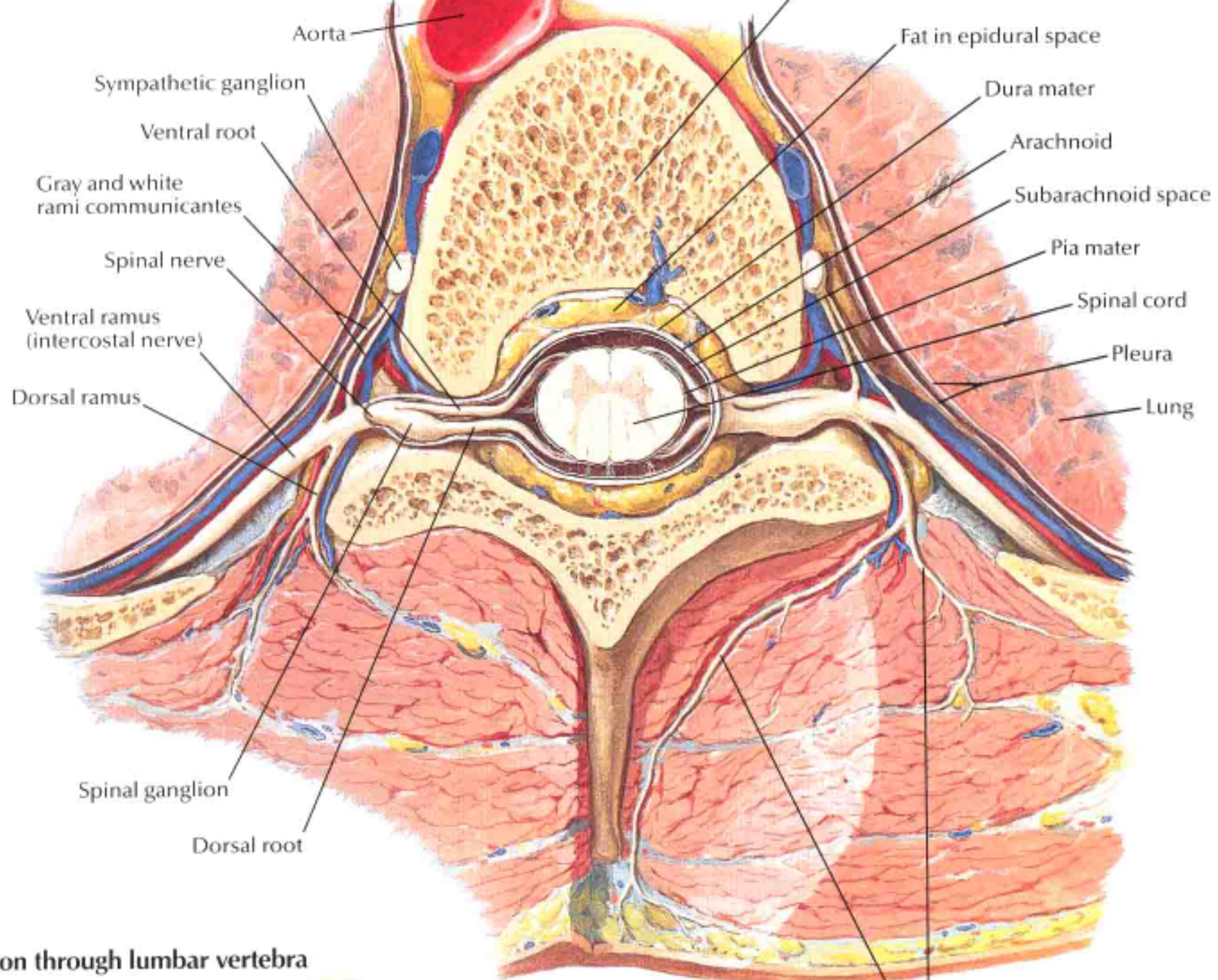


C

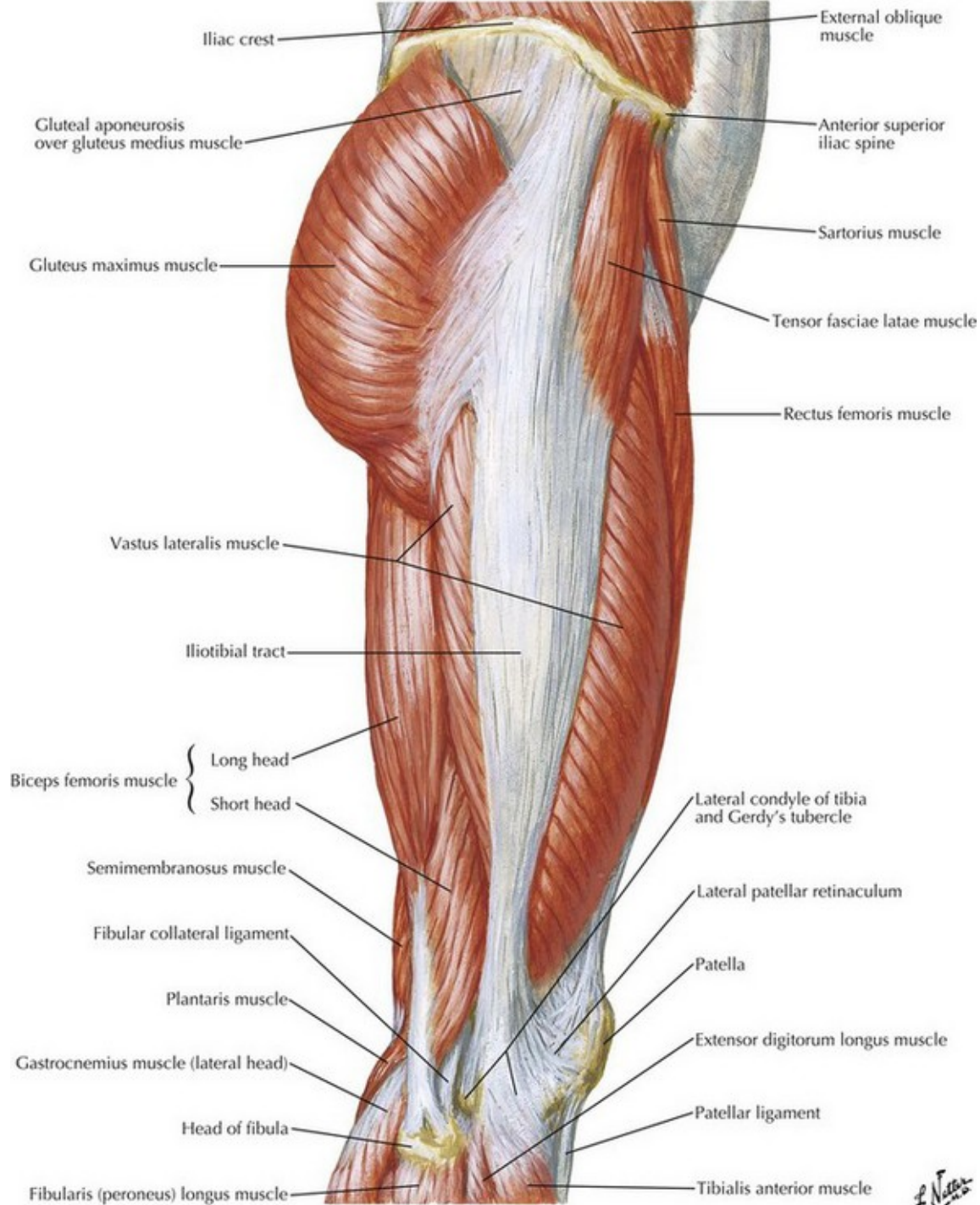




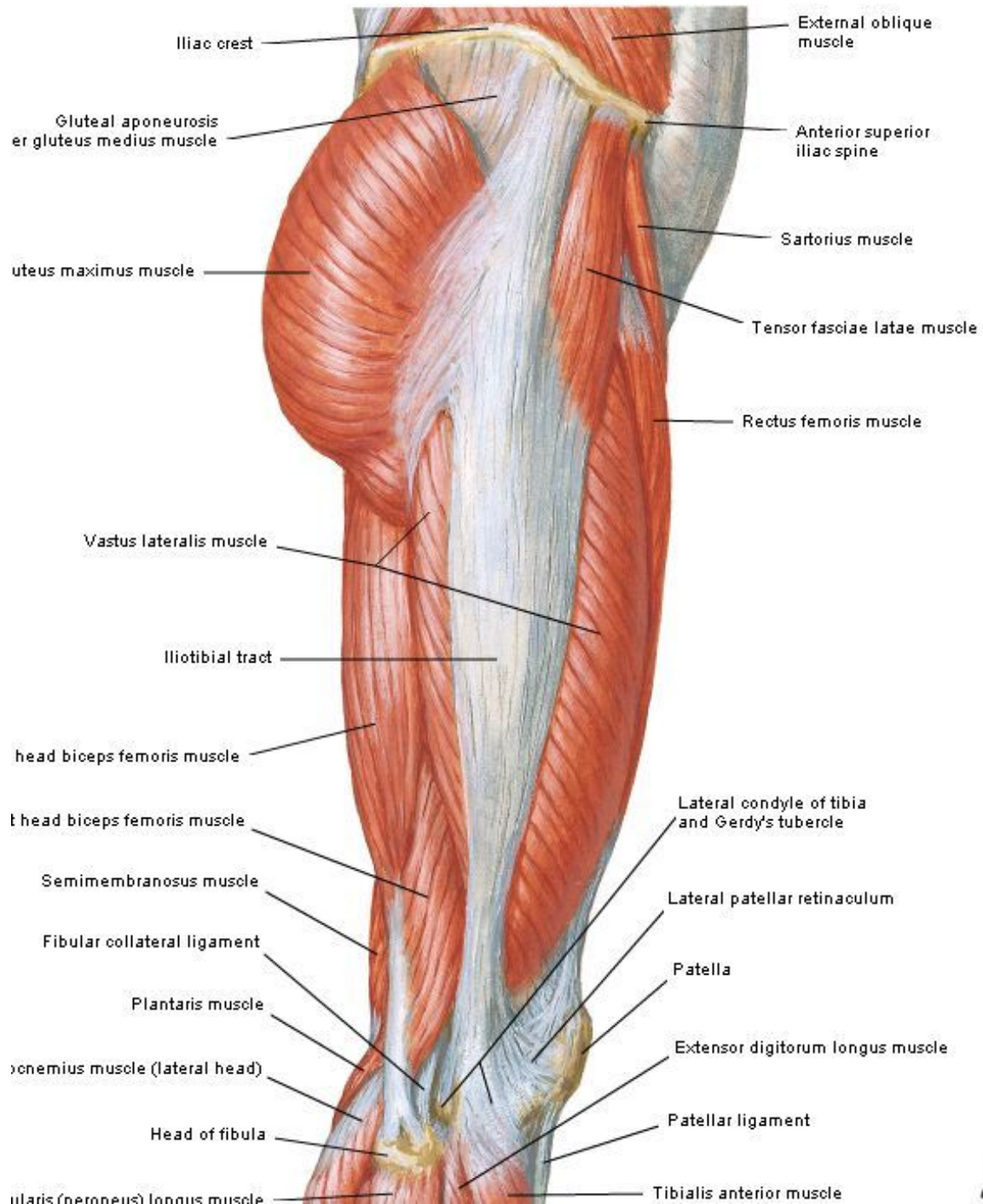




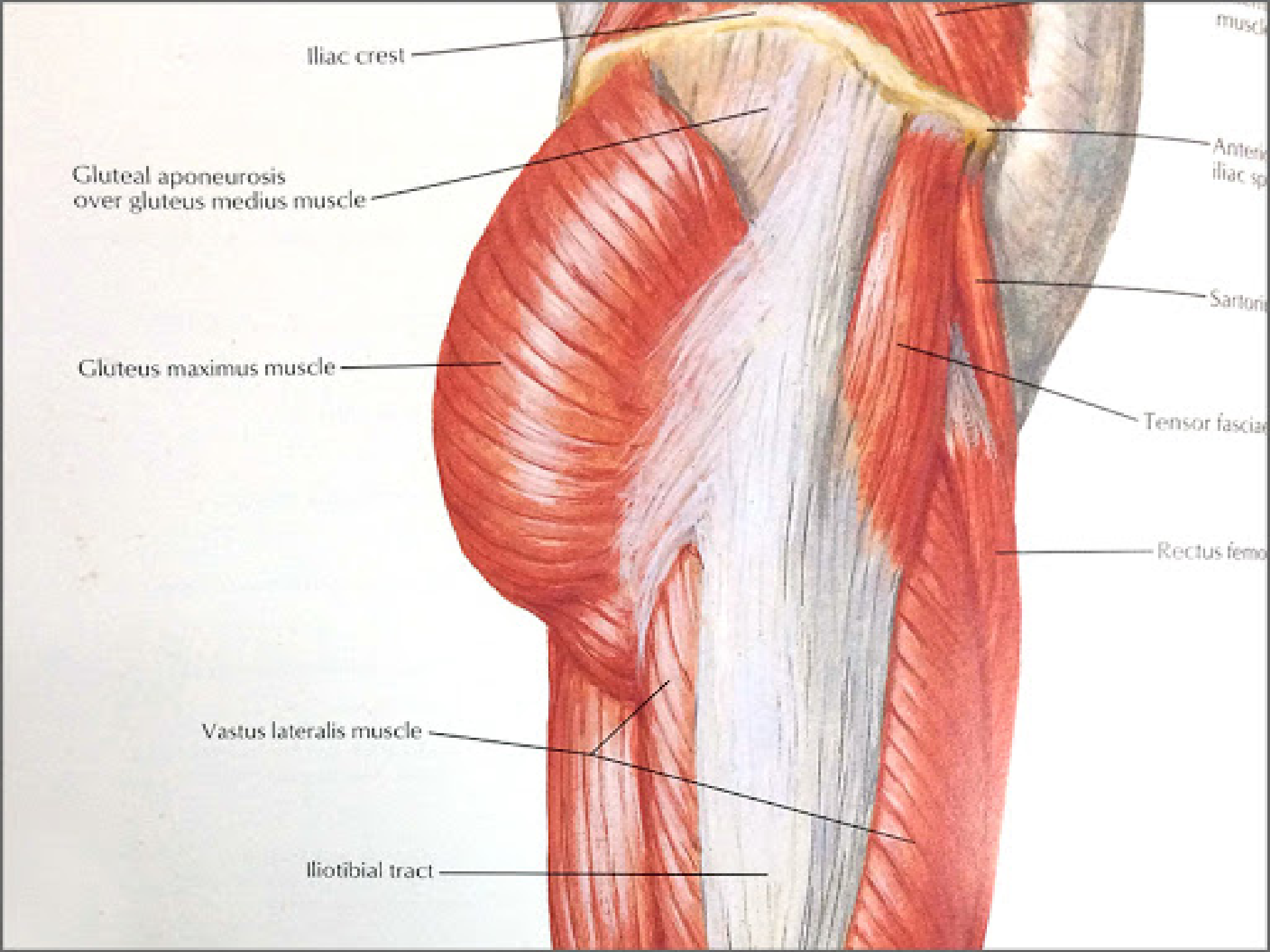
Section through lumbar vertebra



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J.



Iliac crest

Gluteal aponeurosis
over gluteus medius muscle

Gluteus maximus muscle

Vastus lateralis muscle

Iliotibial tract

Anterior
iliac spine

Sartorius

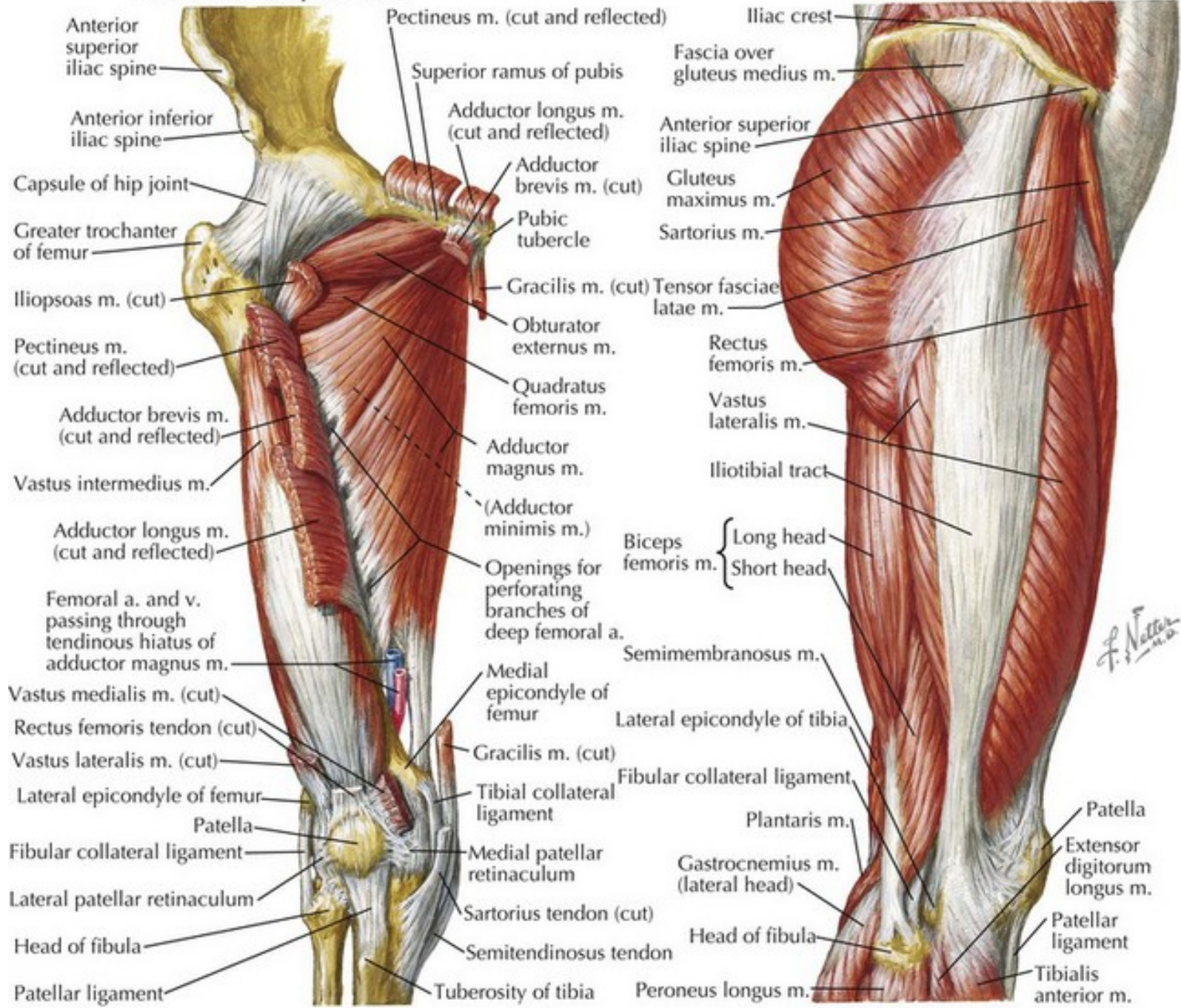
Tensor fasciae
latae

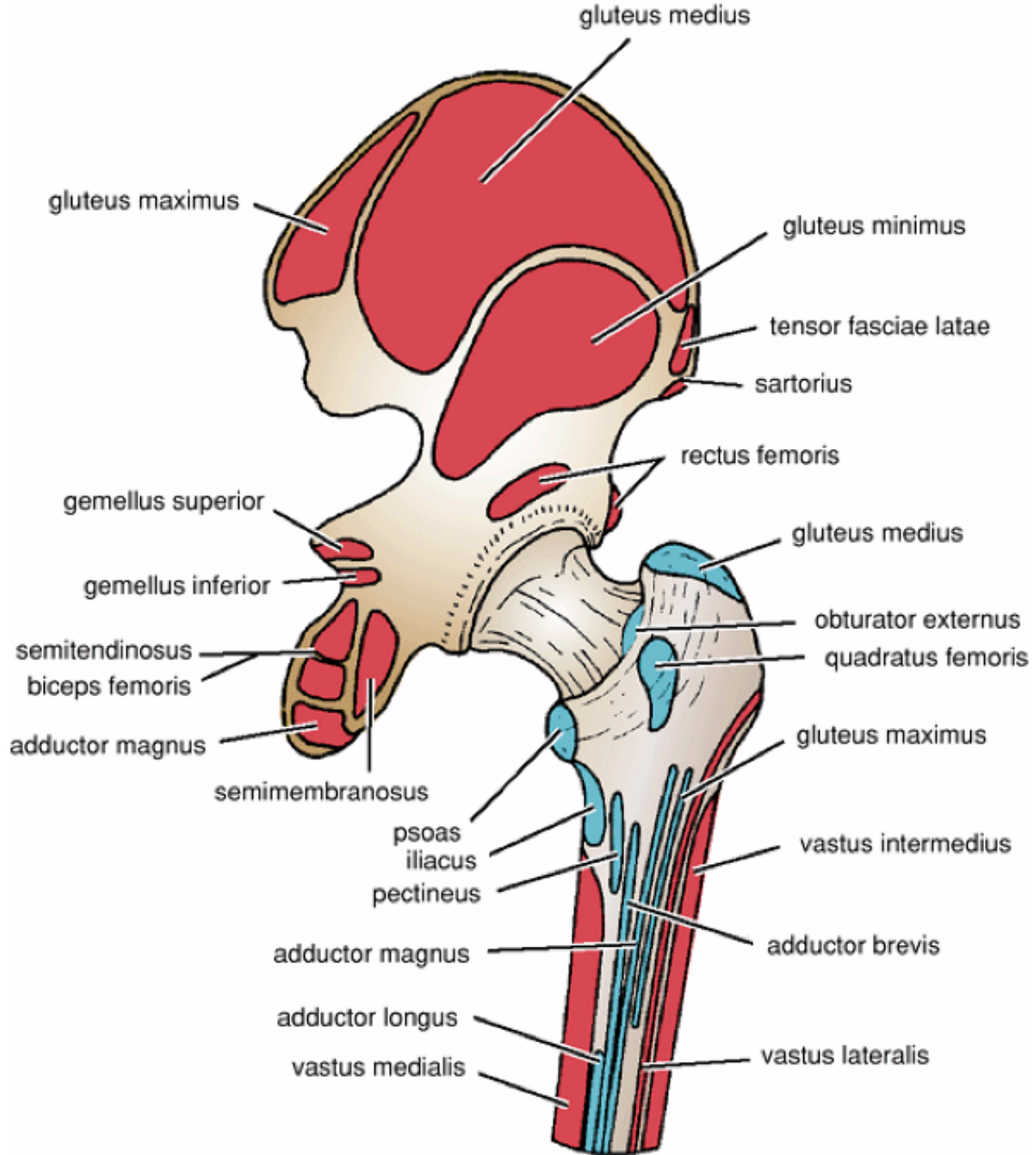
Rectus femoris

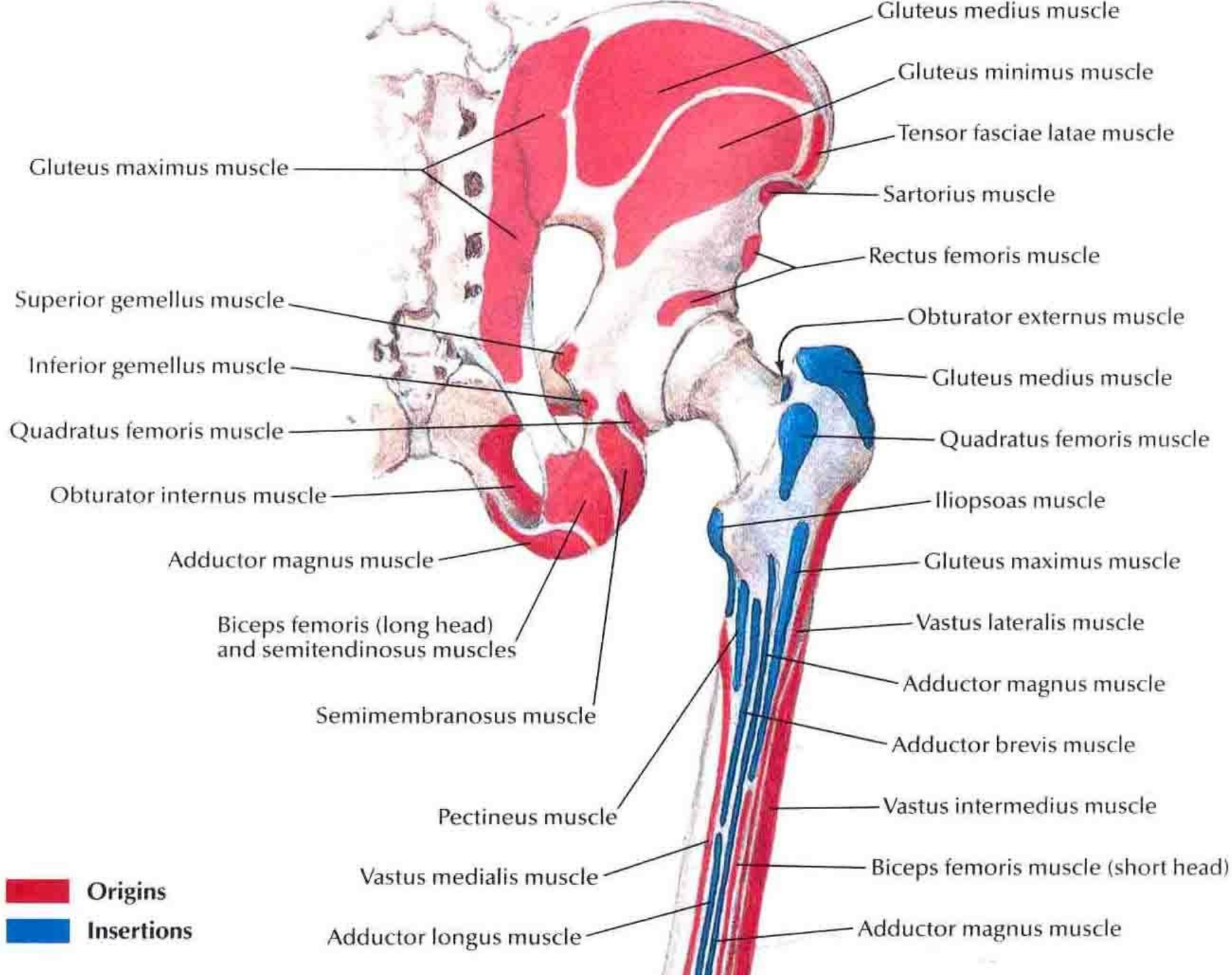
Muscles of Hip and Thigh

Anterior view: deep dissection

Lateral view: superficial dissection







Gluteus maximus muscle

Superior gemellus muscle

Inferior gemellus muscle

Quadratus femoris muscle

Obturator internus muscle

Adductor magnus muscle

Biceps femoris (long head) and semitendinosus muscles

Semimembranosus muscle

Pectineus muscle

Vastus medialis muscle

Adductor longus muscle

Gluteus medius muscle

Gluteus minimus muscle

Tensor fasciae latae muscle

Sartorius muscle

Rectus femoris muscle

Obturator externus muscle

Gluteus medius muscle

Quadratus femoris muscle

Iliopsoas muscle

Gluteus maximus muscle

Vastus lateralis muscle

Adductor magnus muscle

Adductor brevis muscle

Vastus intermedius muscle

Biceps femoris muscle (short head)

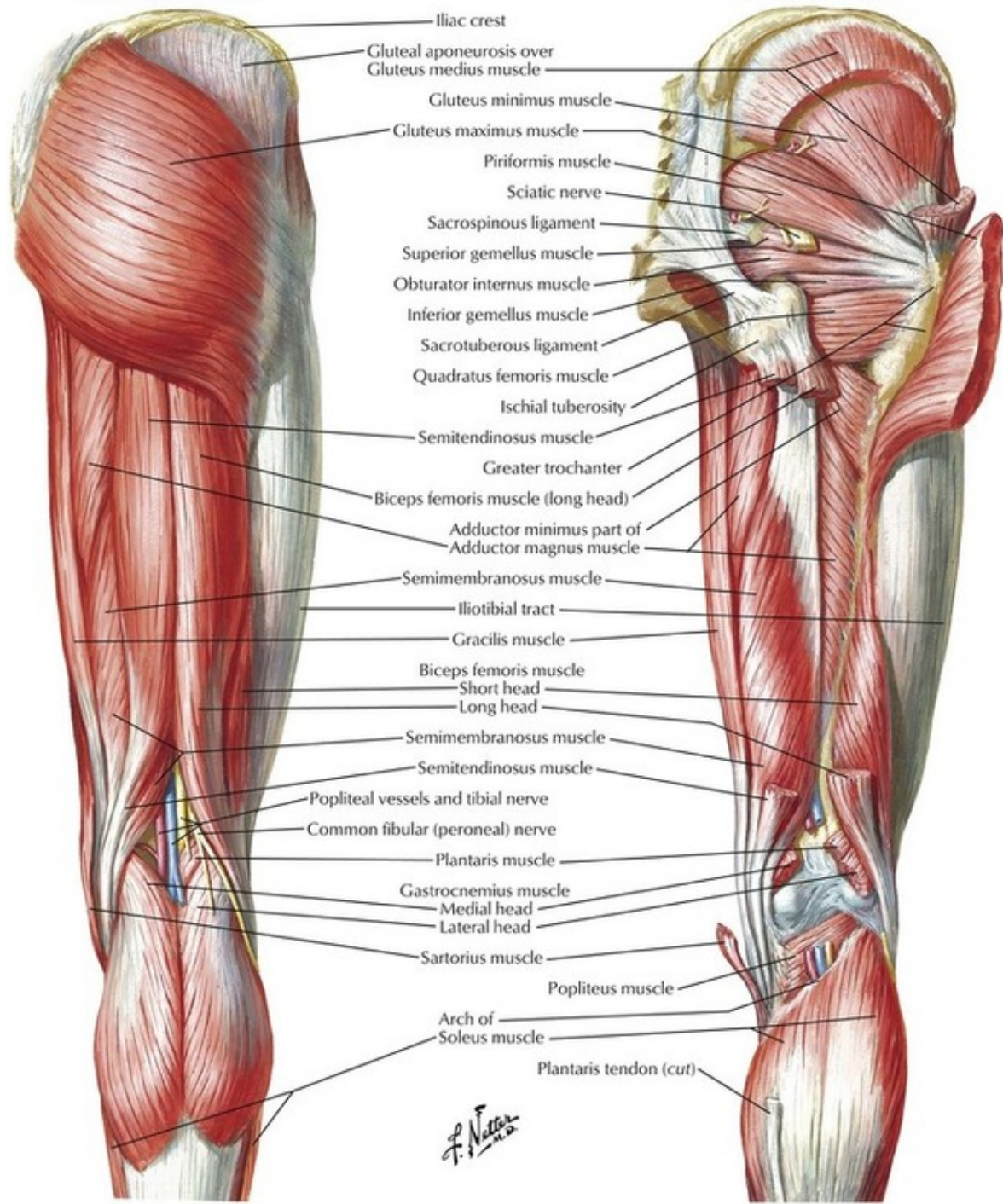
Adductor magnus muscle

Origins

Insertions

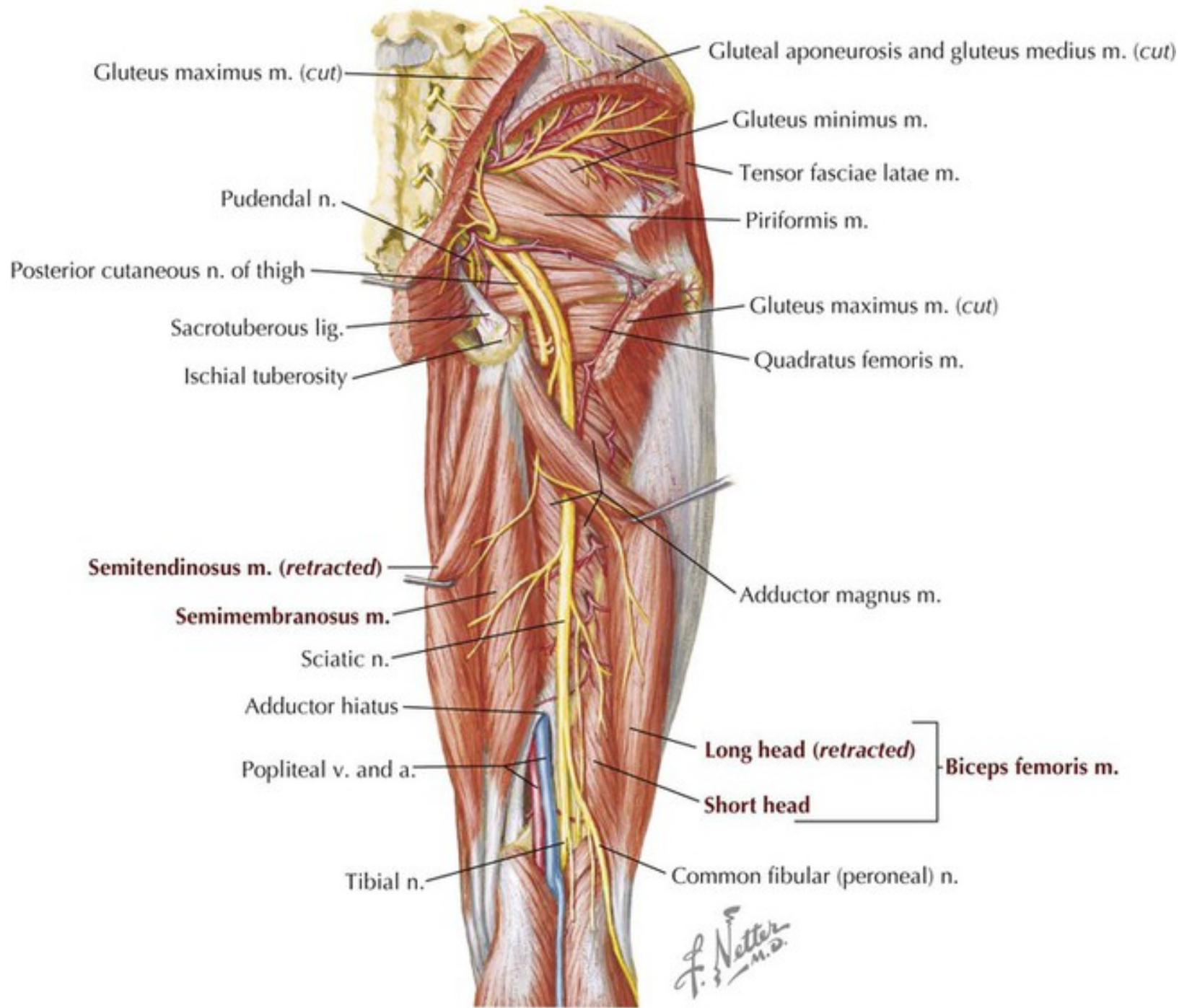
Superficial dissection

Deeper dissection

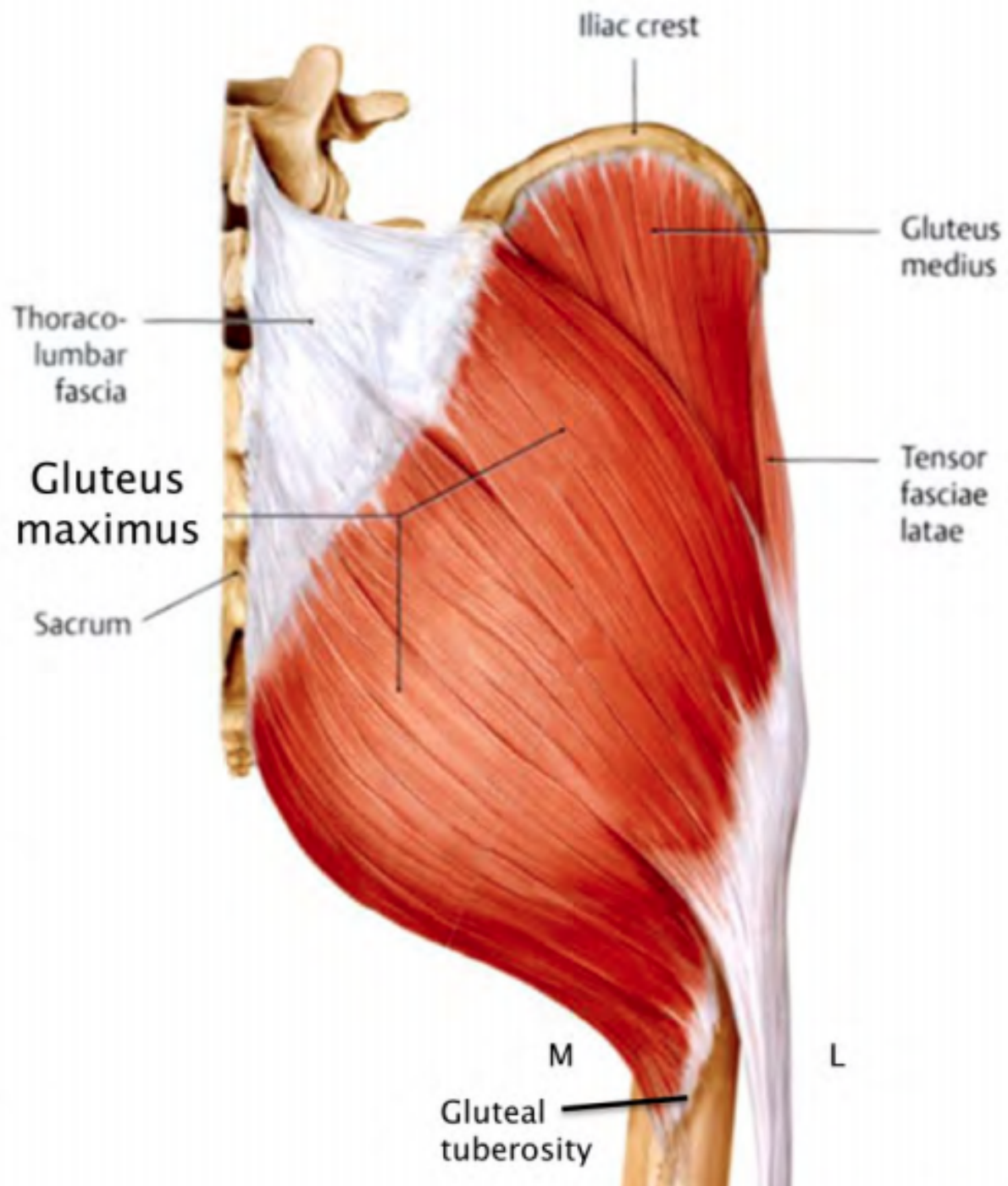


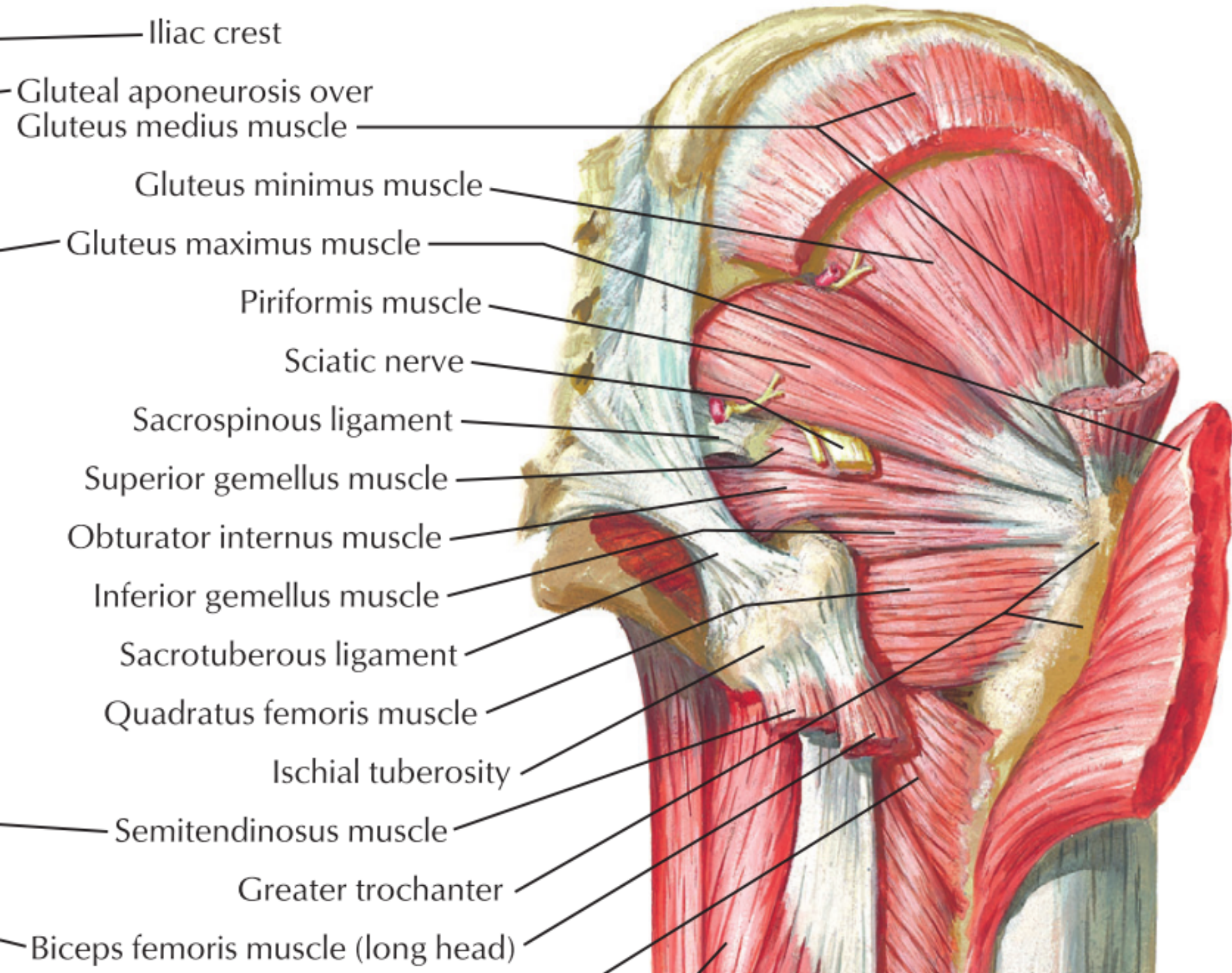
- Iliac crest
- Gluteal aponeurosis over Gluteus medius muscle
- Gluteus minimus muscle
- Gluteus maximus muscle
- Piriformis muscle
- Sciatic nerve
- Sacrospinous ligament
- Superior gemellus muscle
- Obturator internus muscle
- Inferior gemellus muscle
- Sacrospinous ligament
- Sacrospinous ligament
- Quadratus femoris muscle
- Ischial tuberosity
- Semitendinosus muscle
- Greater trochanter
- Biceps femoris muscle (long head)
- Adductor minimus part of Adductor magnus muscle
- Semimembranosus muscle
- Iliotibial tract
- Gracilis muscle
- Biceps femoris muscle Short head
- Biceps femoris muscle Long head
- Semimembranosus muscle
- Semitendinosus muscle
- Popliteal vessels and tibial nerve
- Common fibular (peroneal) nerve
- Plantaris muscle
- Gastrocnemius muscle Medial head
- Gastrocnemius muscle Lateral head
- Sartorius muscle
- Popliteus muscle
- Arch of Soleus muscle
- Plantaris tendon (cut)

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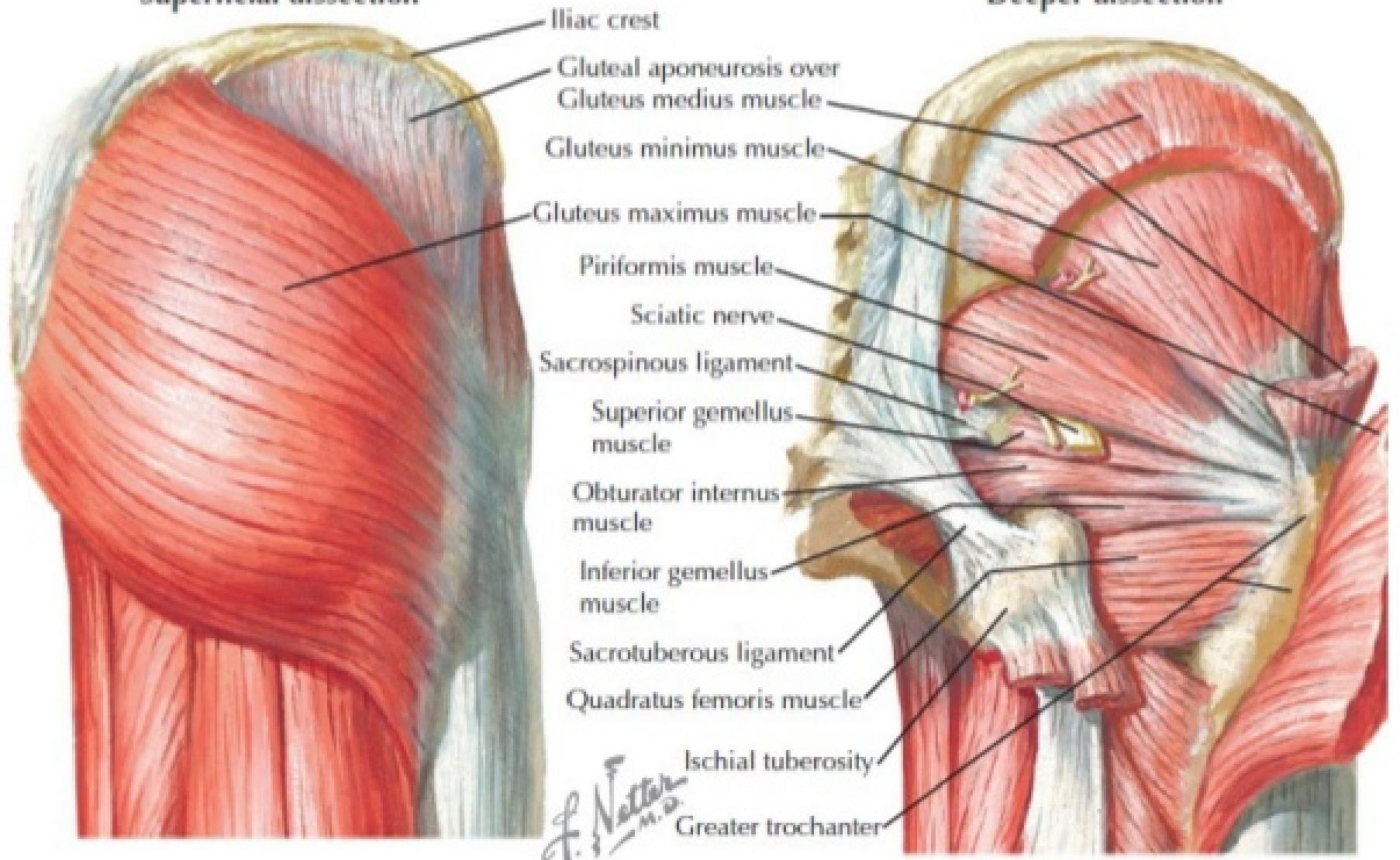




Gluteal Muscles

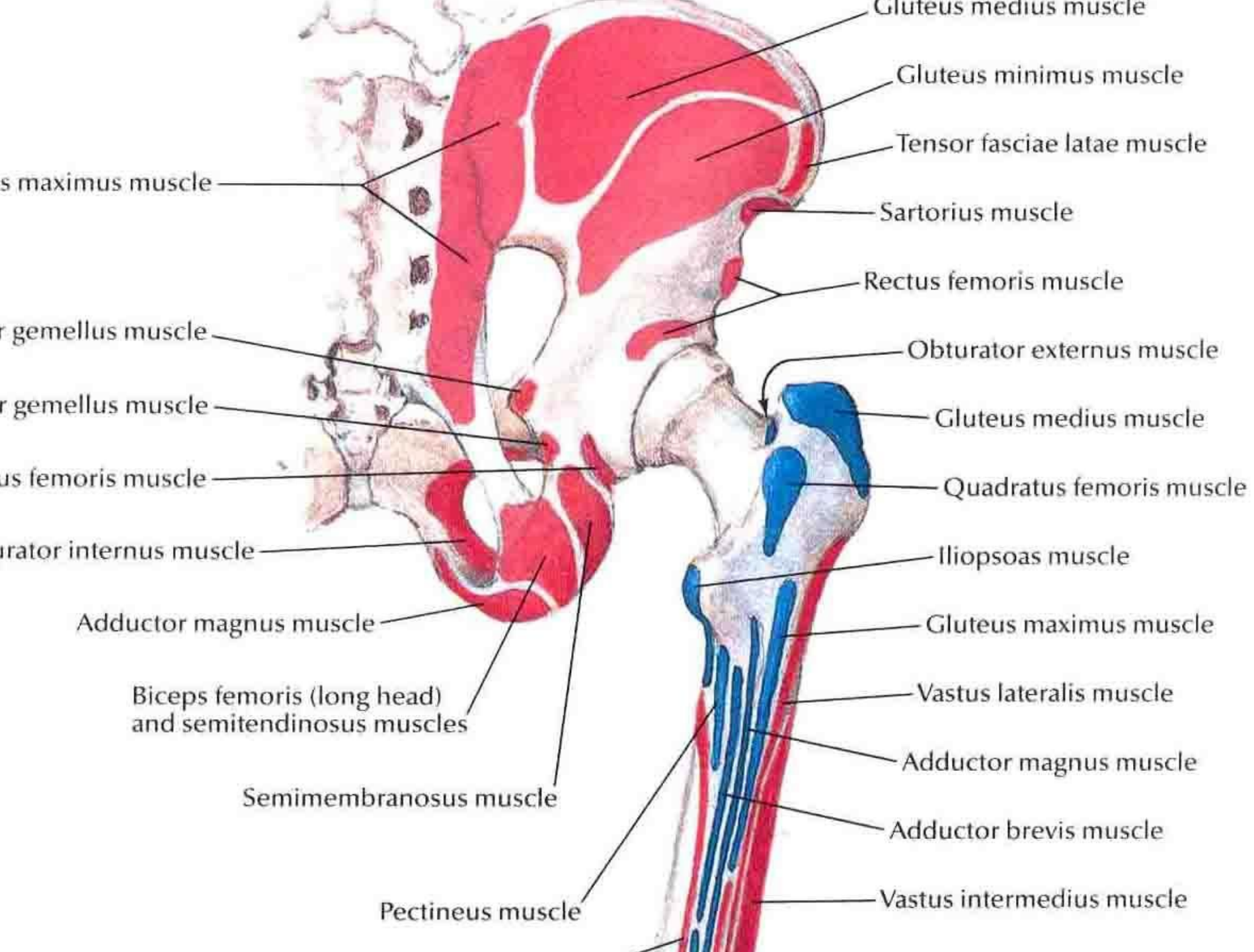
Superficial dissection

Deeper dissection

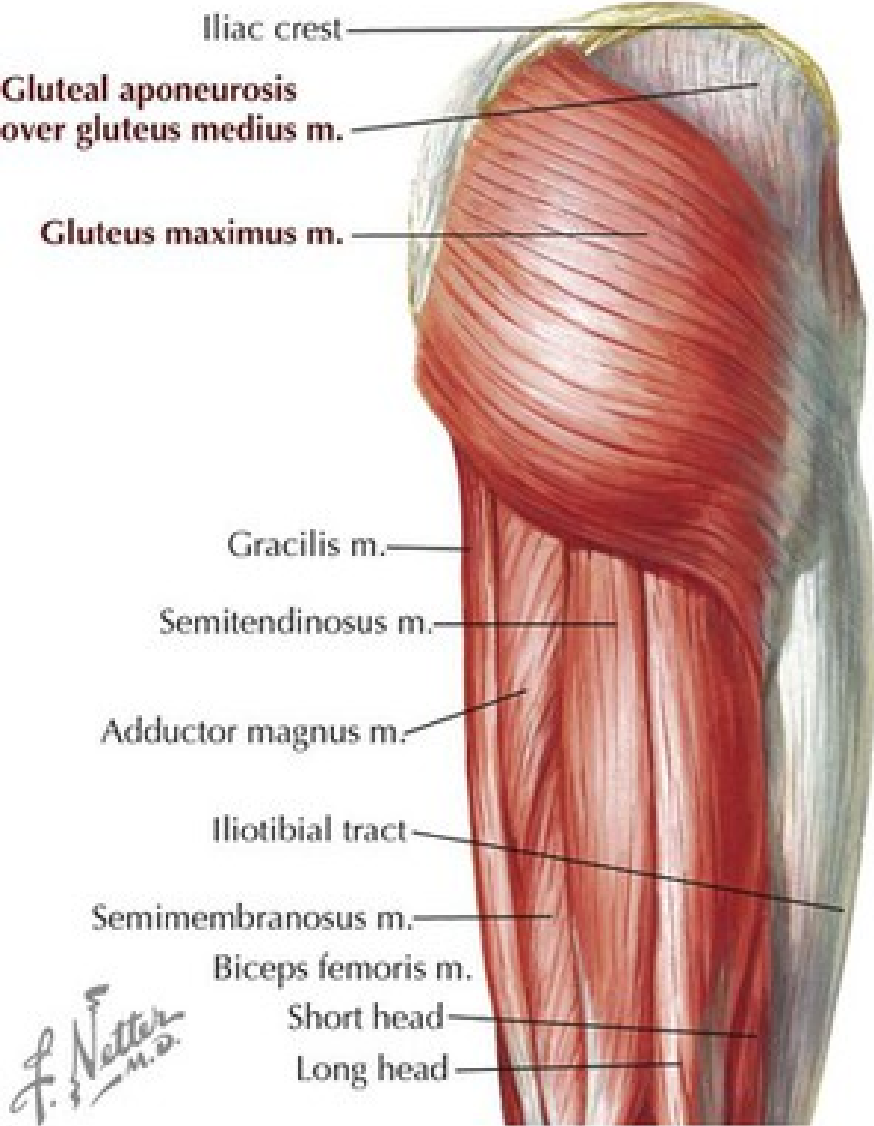


- Iliac crest
- Gluteal aponeurosis over Gluteus medius muscle
- Gluteus minimus muscle
- Gluteus maximus muscle
- Piriformis muscle
- Sciatic nerve
- Sacrospinous ligament
- Superior gemellus muscle
- Obturator internus muscle
- Inferior gemellus muscle
- Sacrospinous ligament
- Quadratus femoris muscle
- Ischial tuberosity
- Greater trochanter

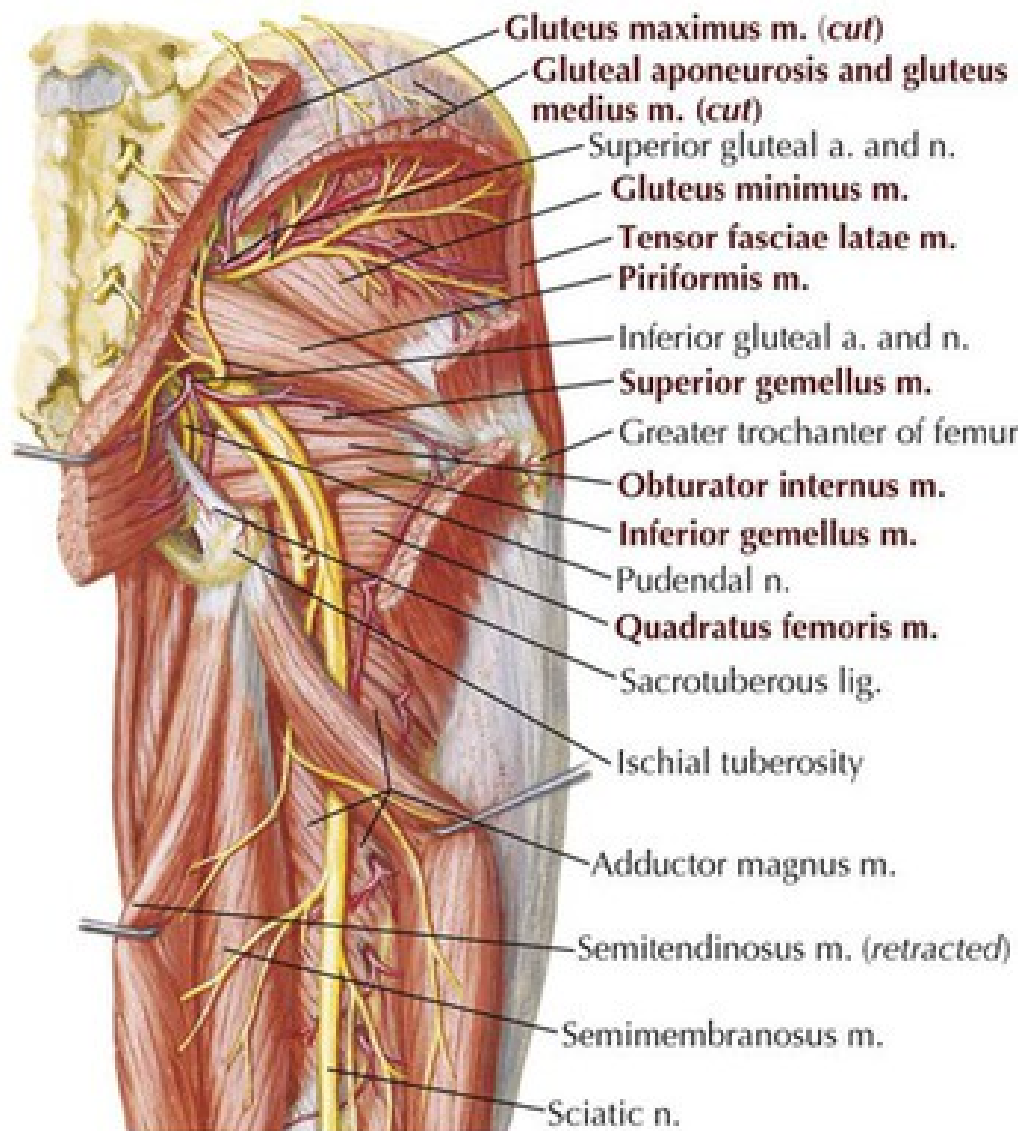
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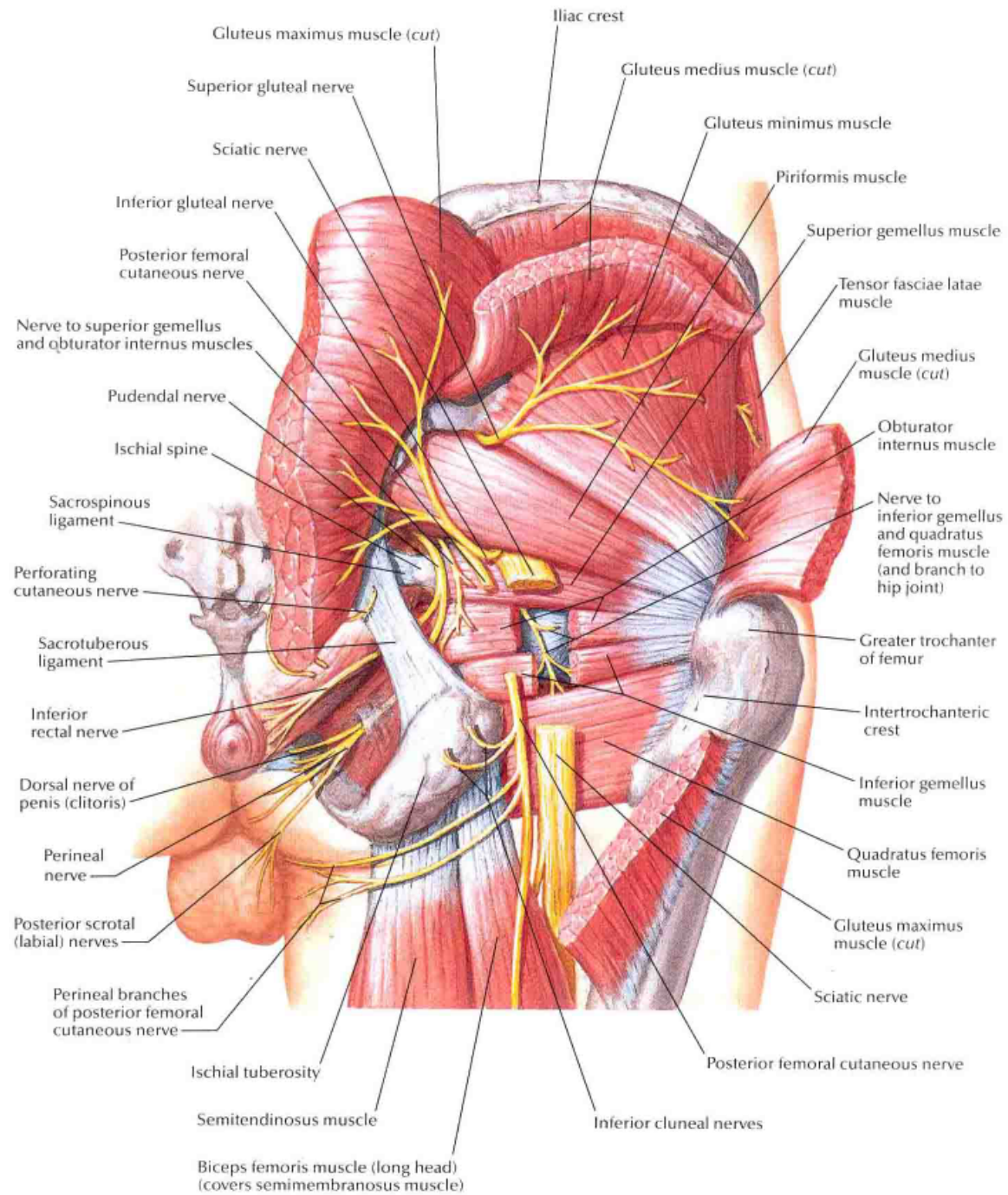


Superficial dissection

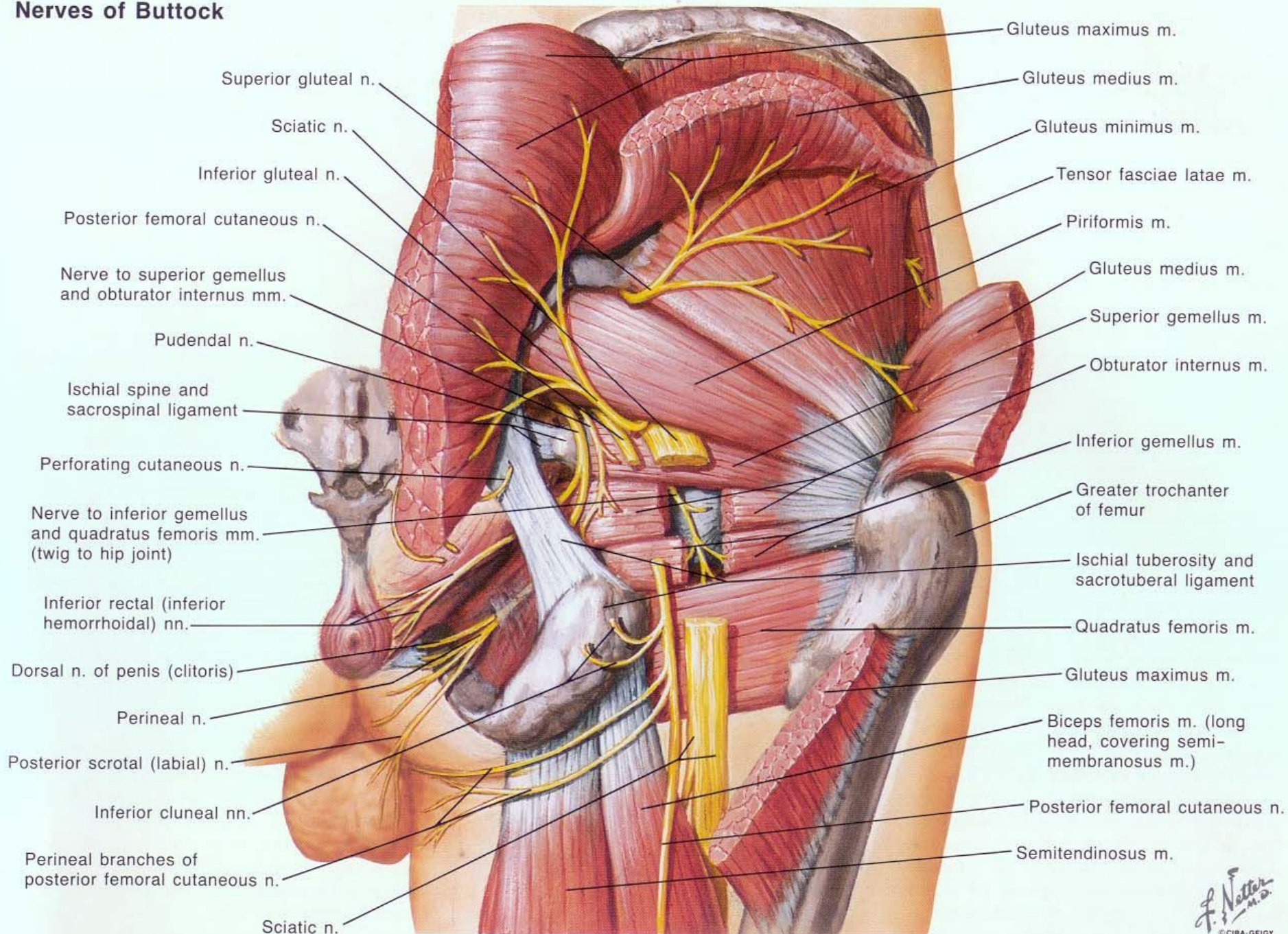


Deep dissection

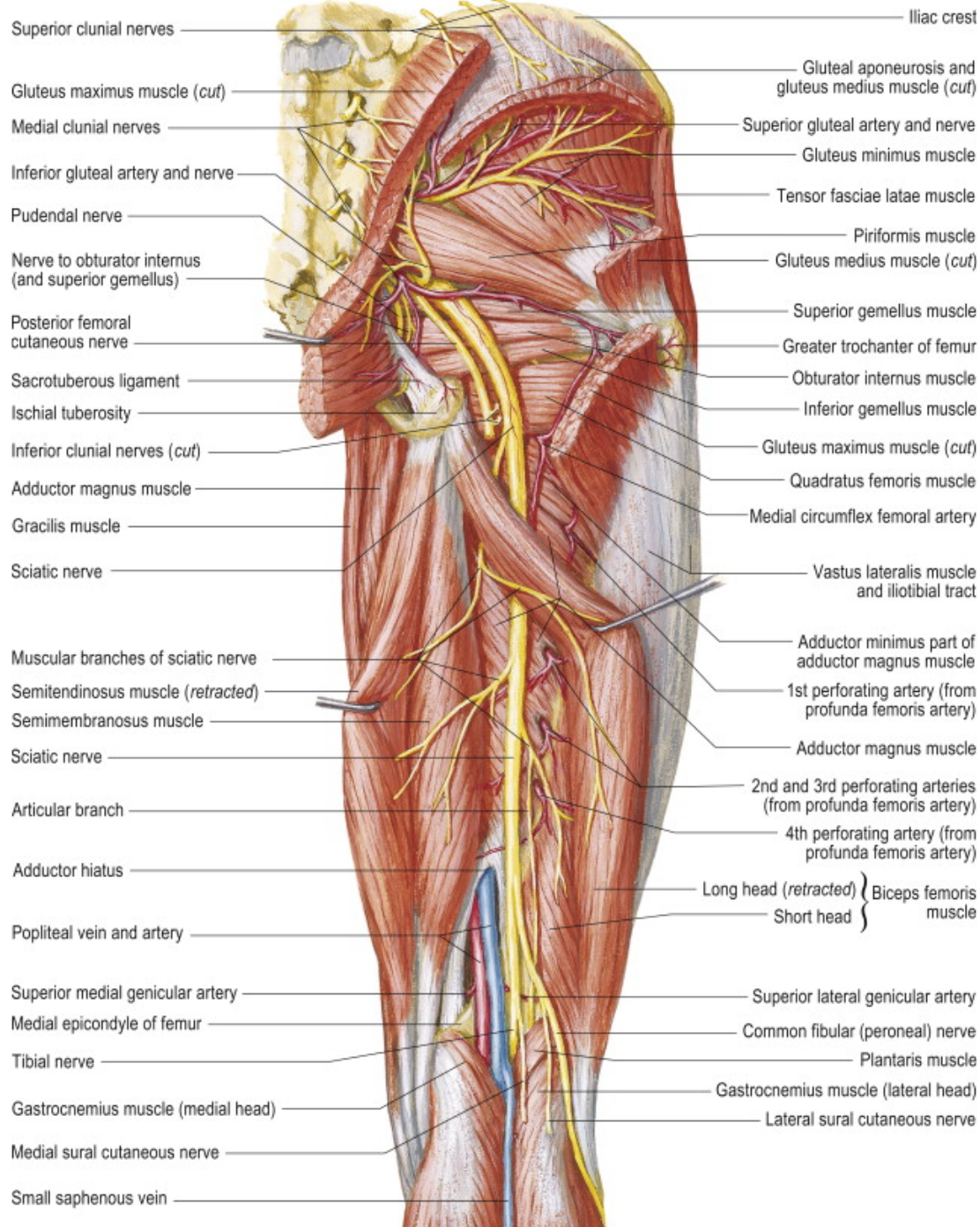




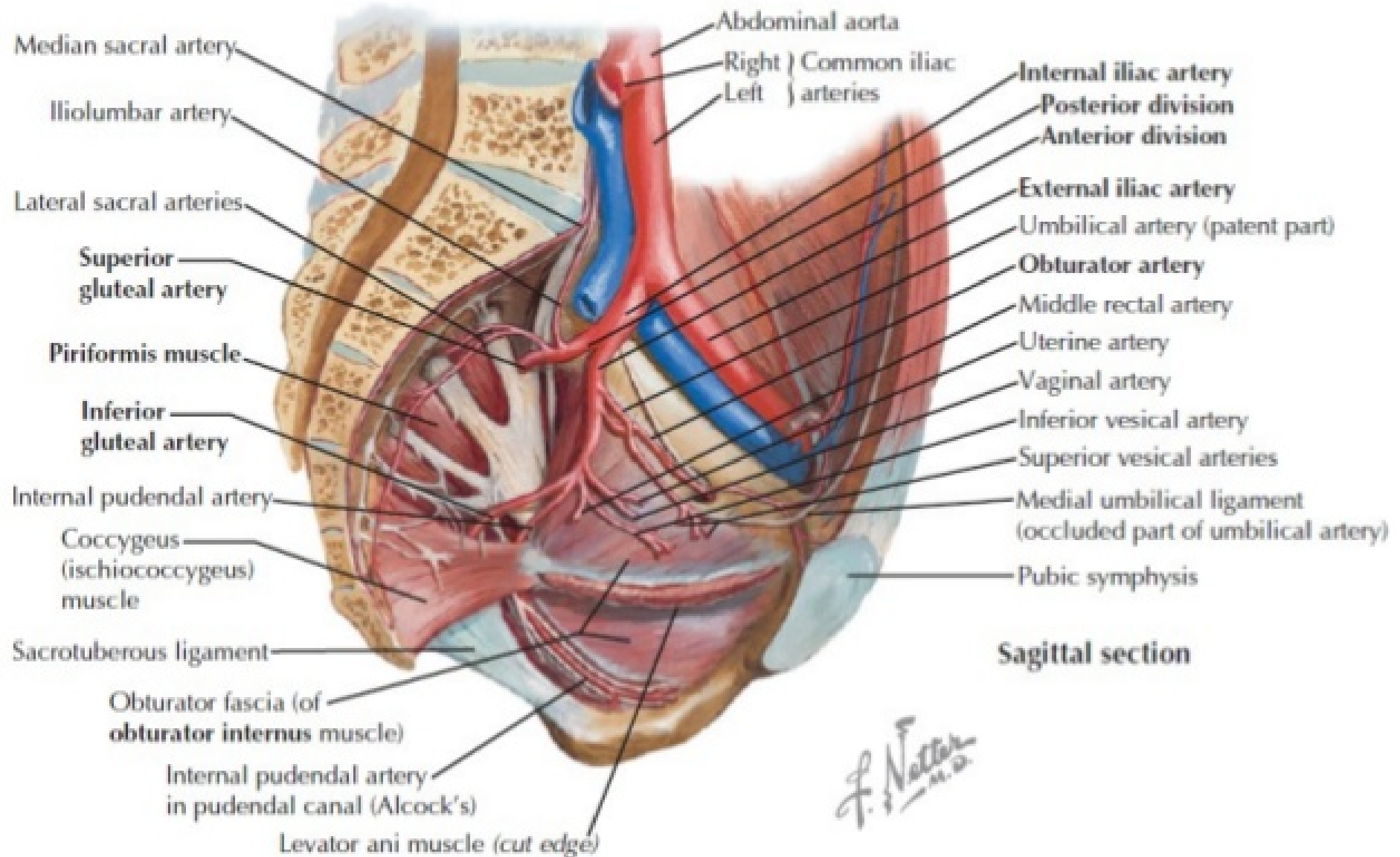
Nerves of Buttock



Deep dissection



Internal Iliac



Arteries of the pelvis

Common iliac artery ●

External iliac artery ●

-Some internal supply

inferior epigastric a. ←

Accessory obturator a. ←

-Becomes **femoral artery** as it passes under the inguinal ligament

Internal iliac artery ●

-mixed internal/external supply

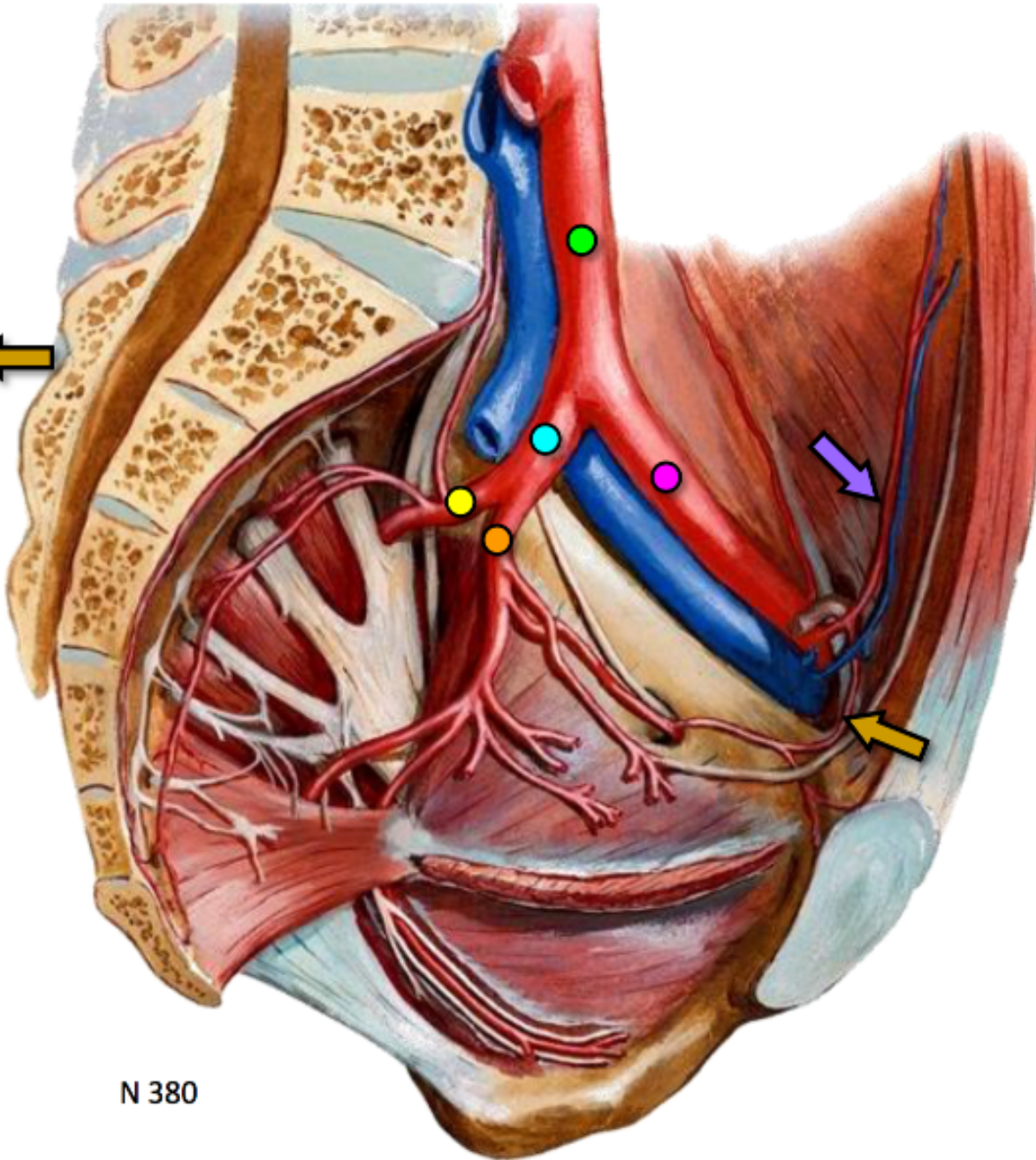
Anterior division ●

viscera of pelvis & perineum

Posterior division ●

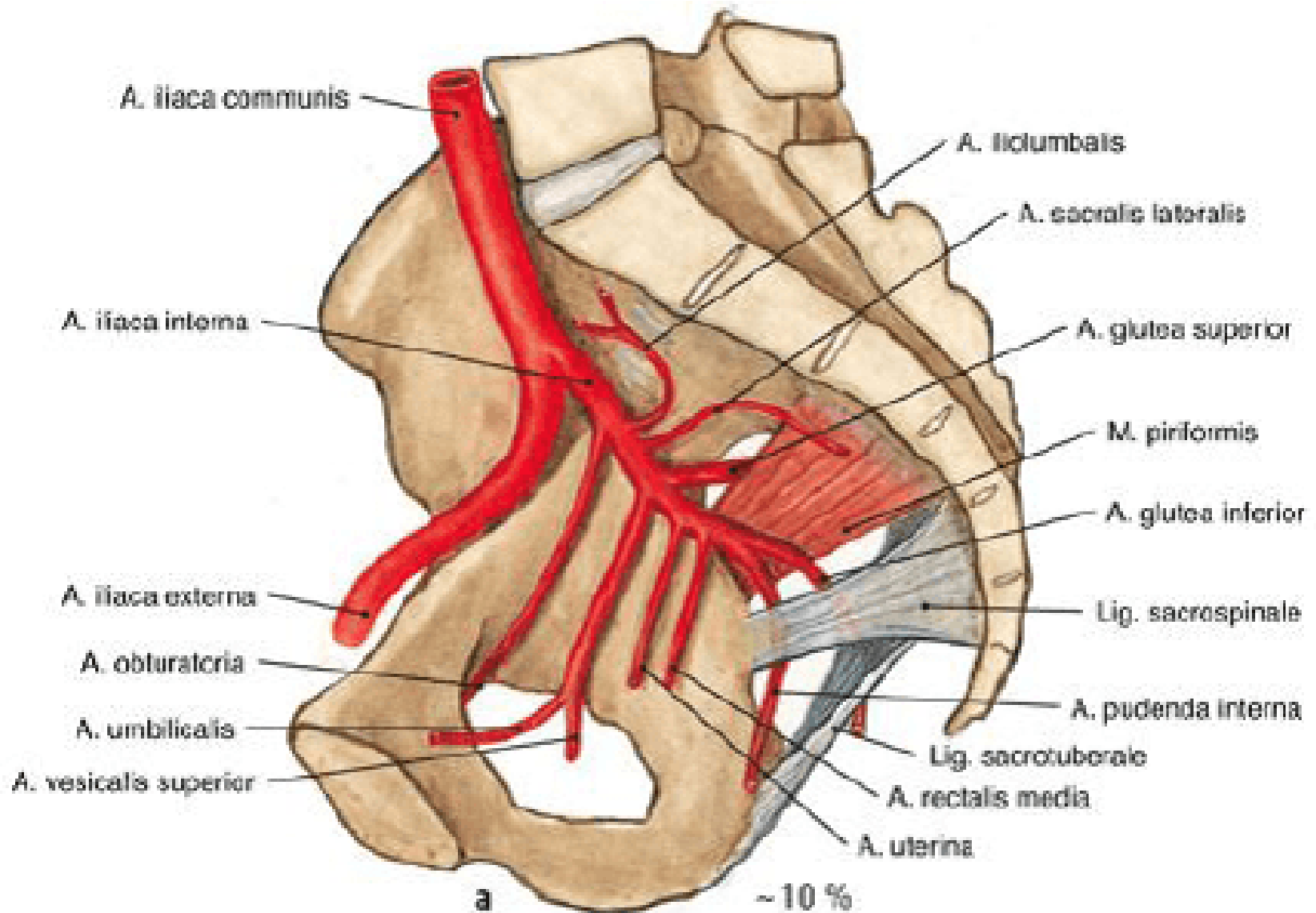
posterior wall, gluteal

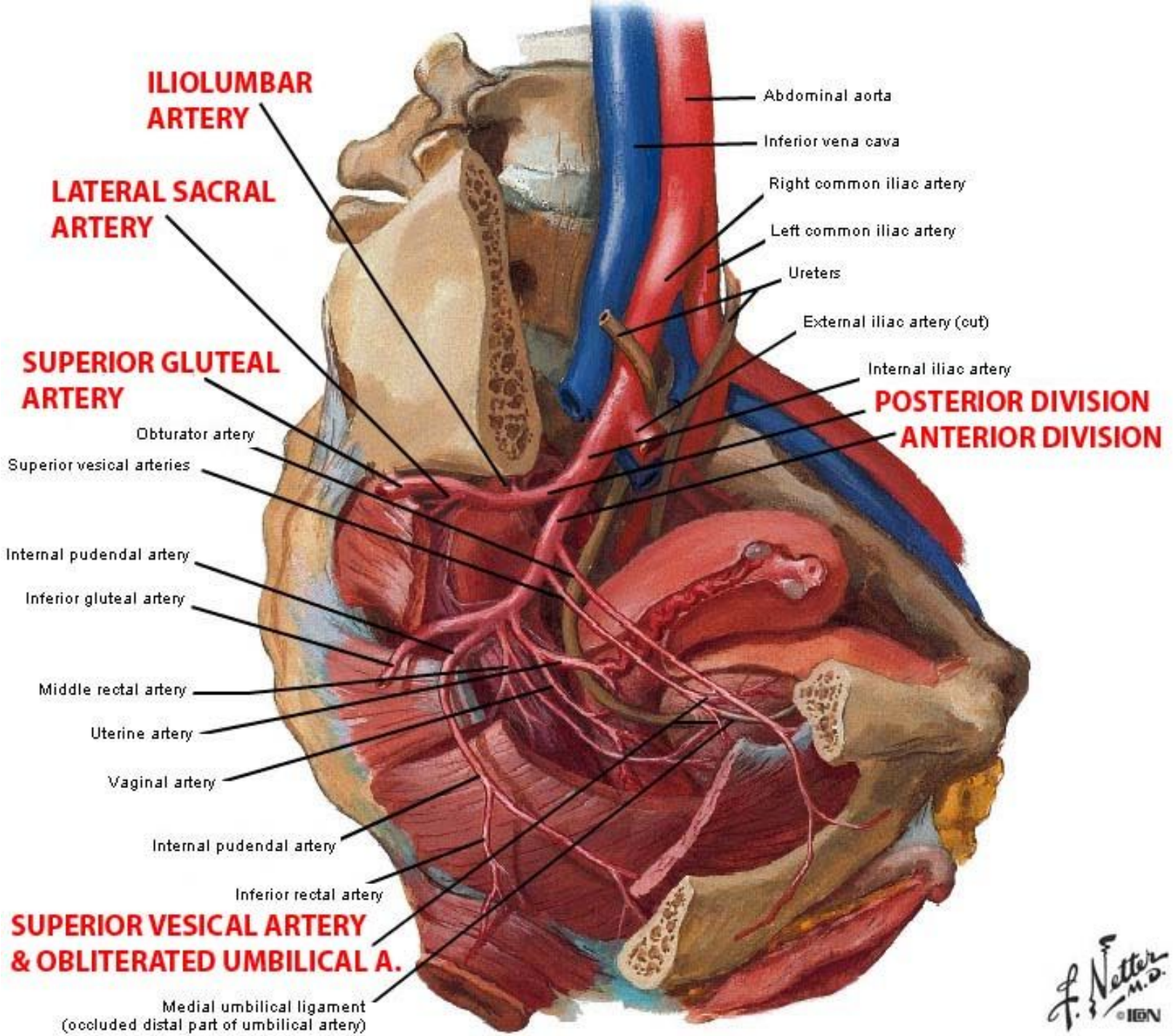
region



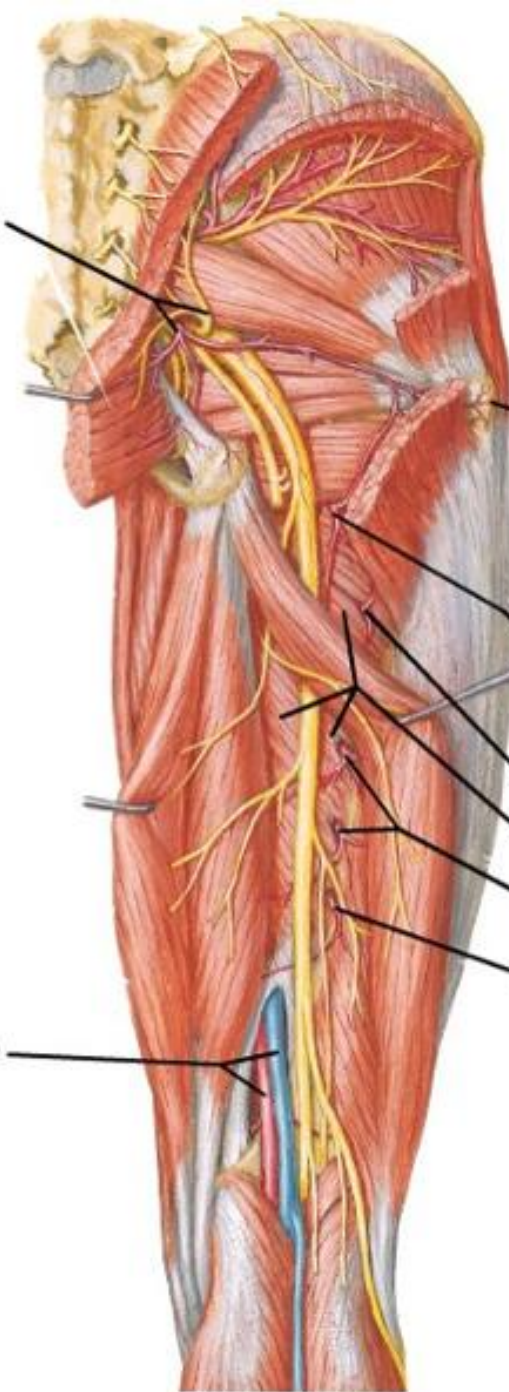
N 380

Variation common; look for where the artery is going in addition to where it is from





Inferior gluteal artery and nerve



Greater trochanter of femur

Medial circumflex femoral artery

1st perforating artery (from deep artery of thigh)

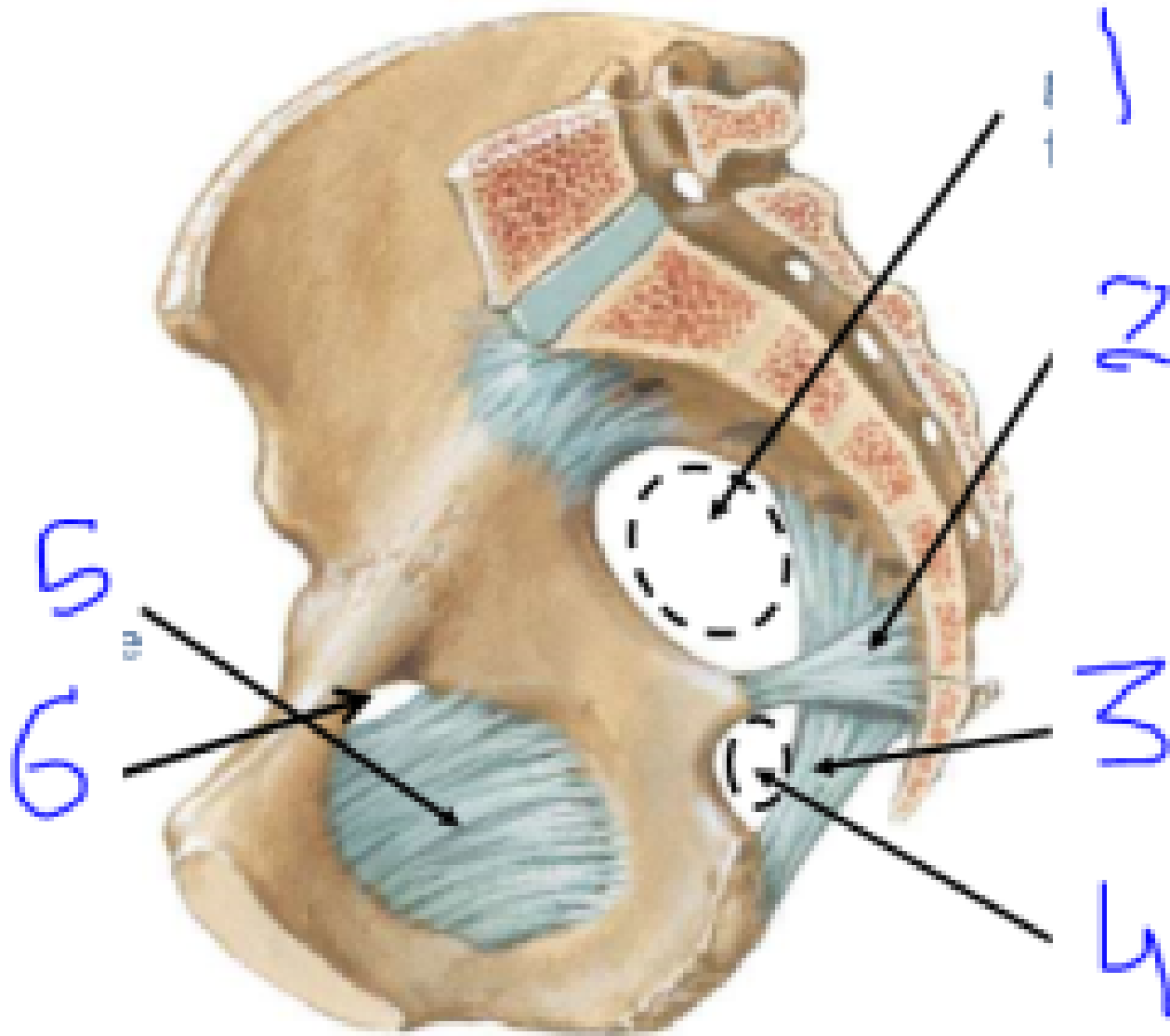
Adductor magnus muscle

2nd and 3rd perforating arteries
(from deep artery of thigh)

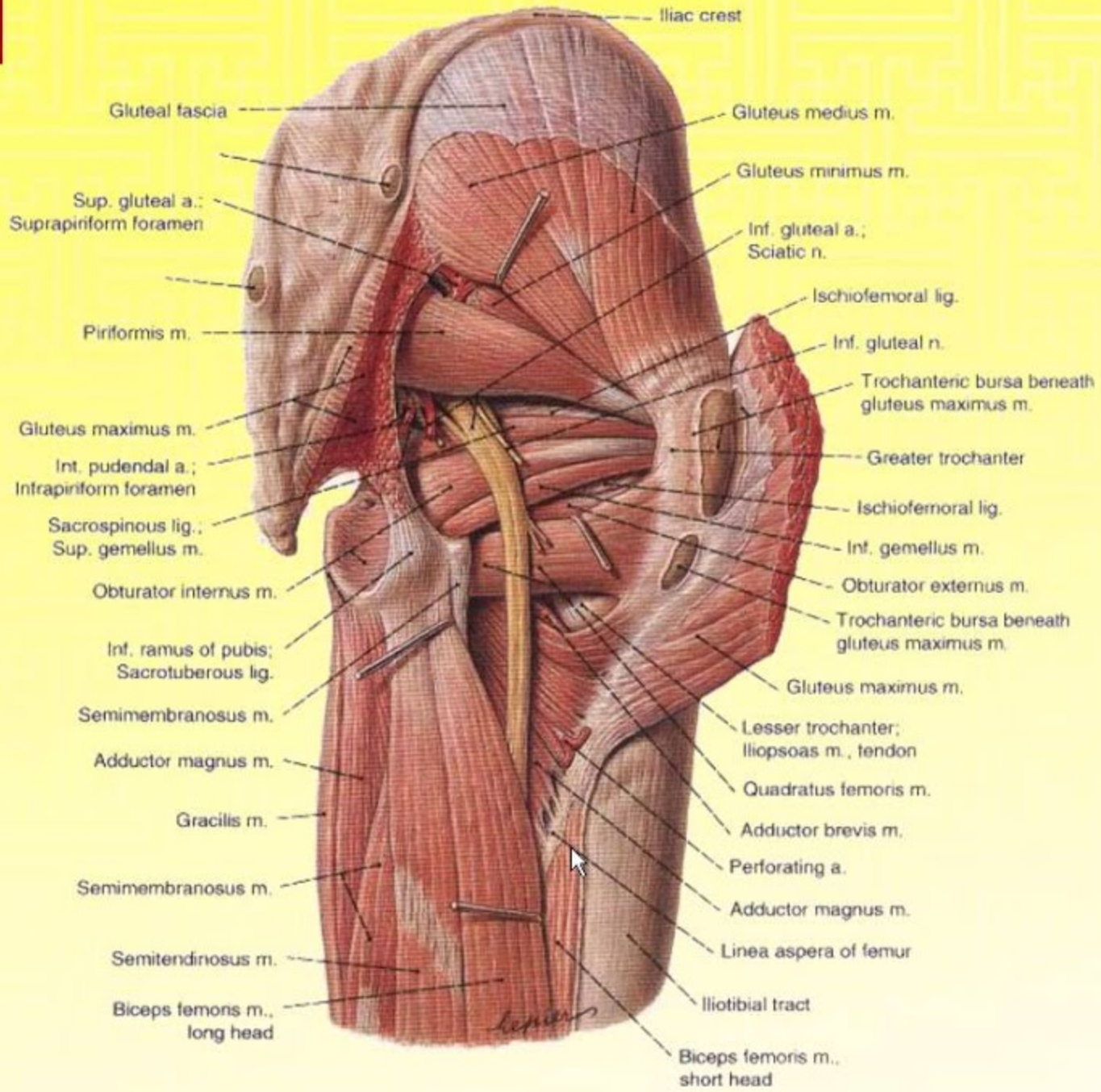
4th perforating artery
(termination of deep artery of thigh)

Popliteal vein and artery

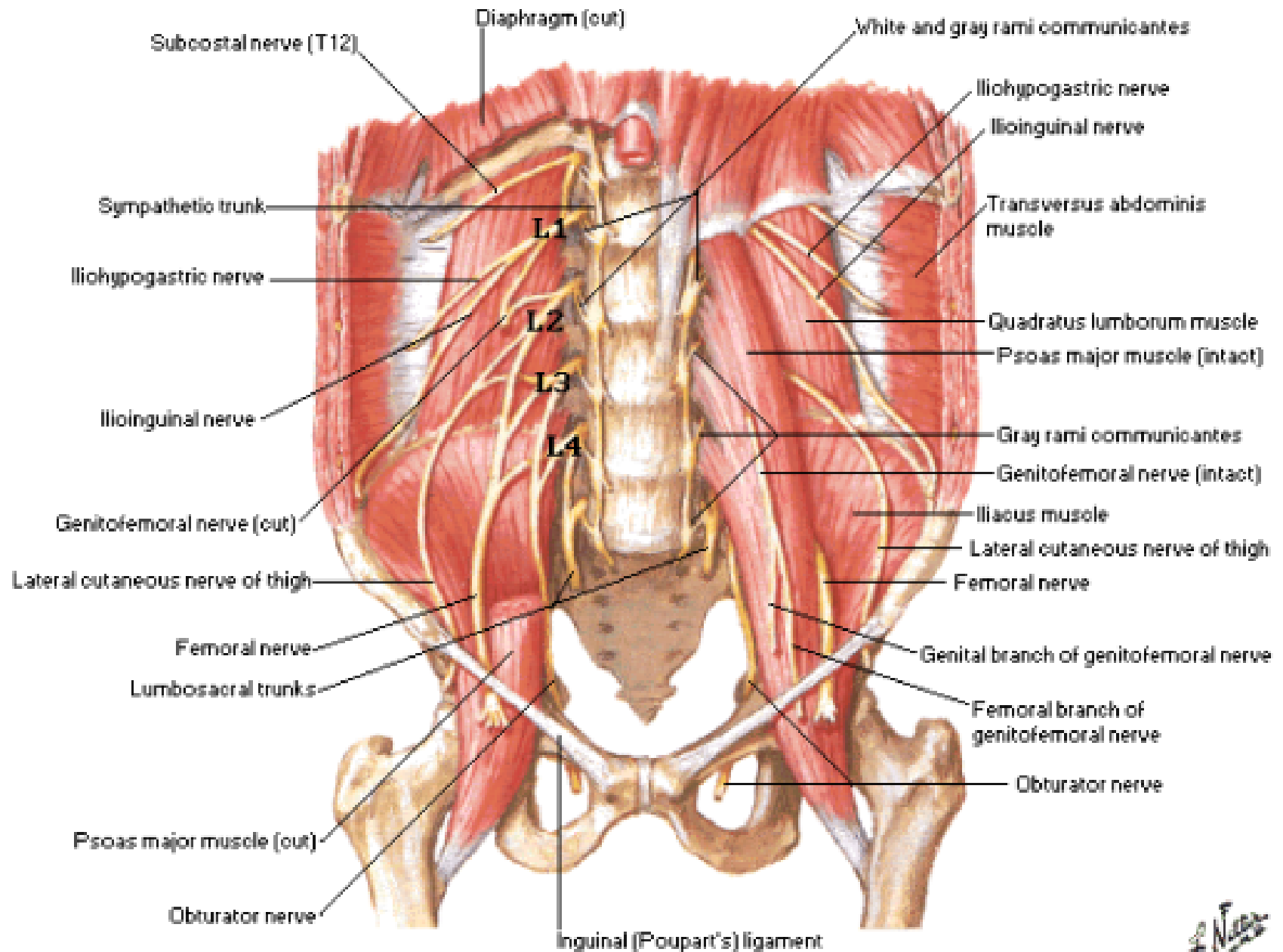
Pelvic ligaments

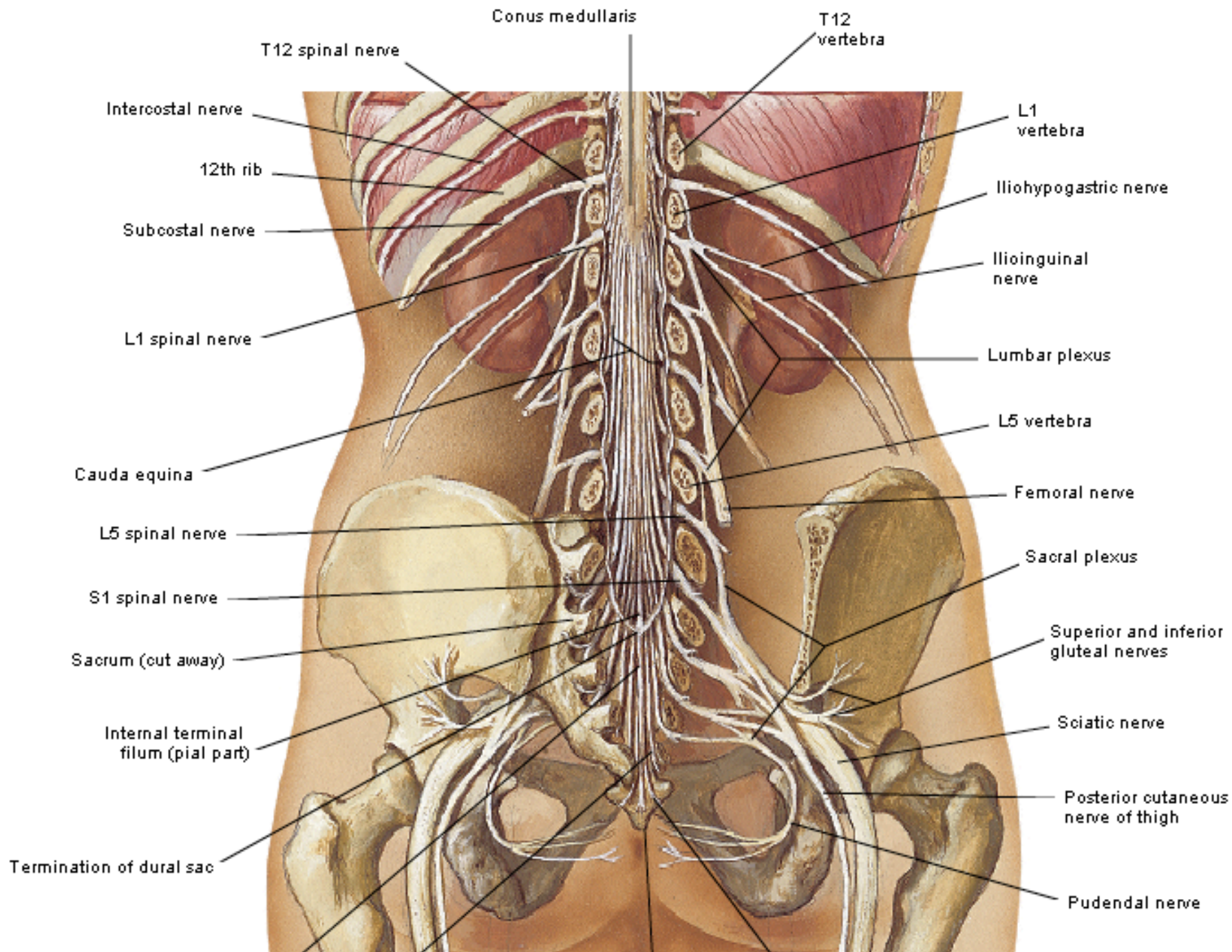


Relations



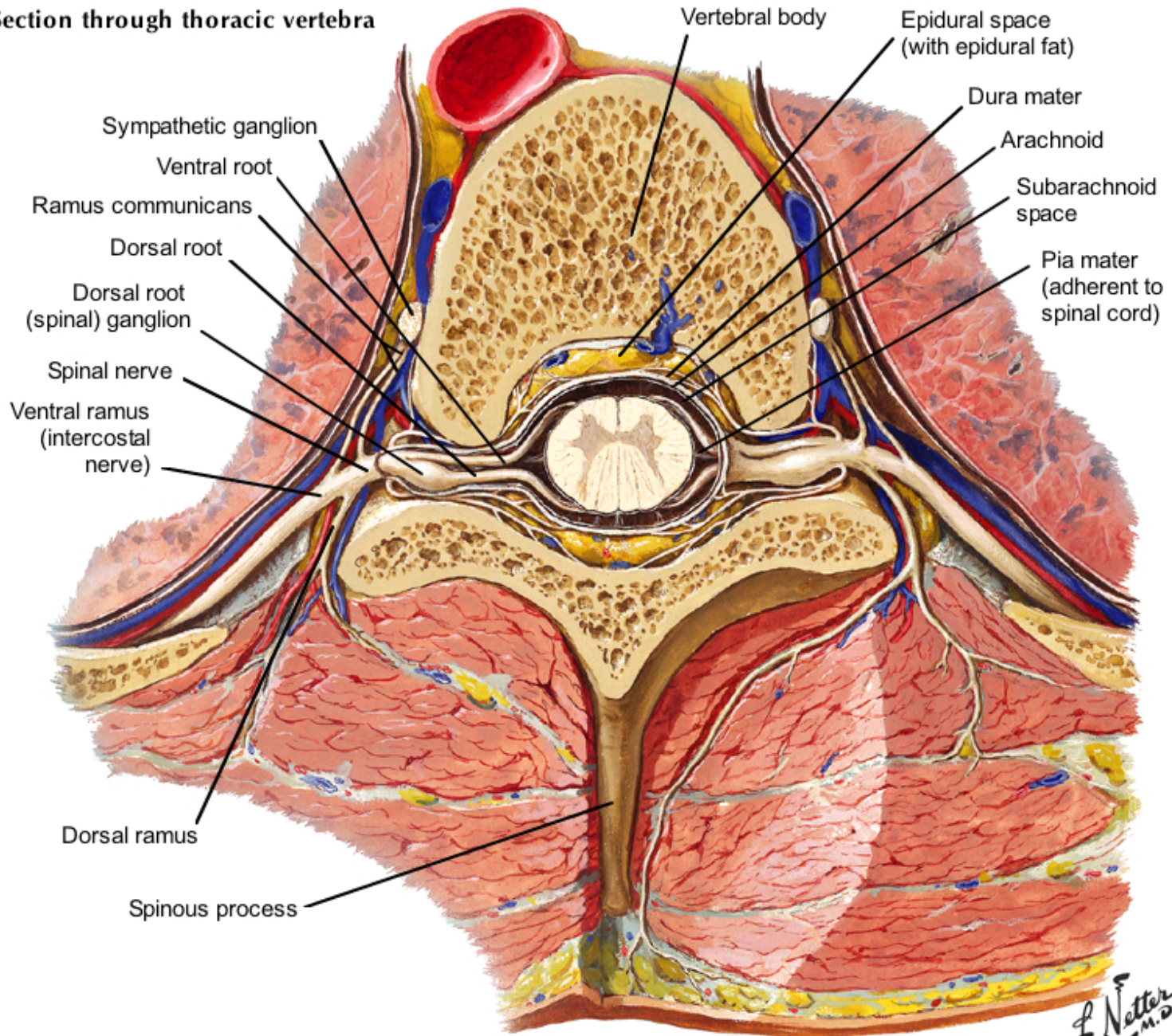
Lumbar Plexus in Situ



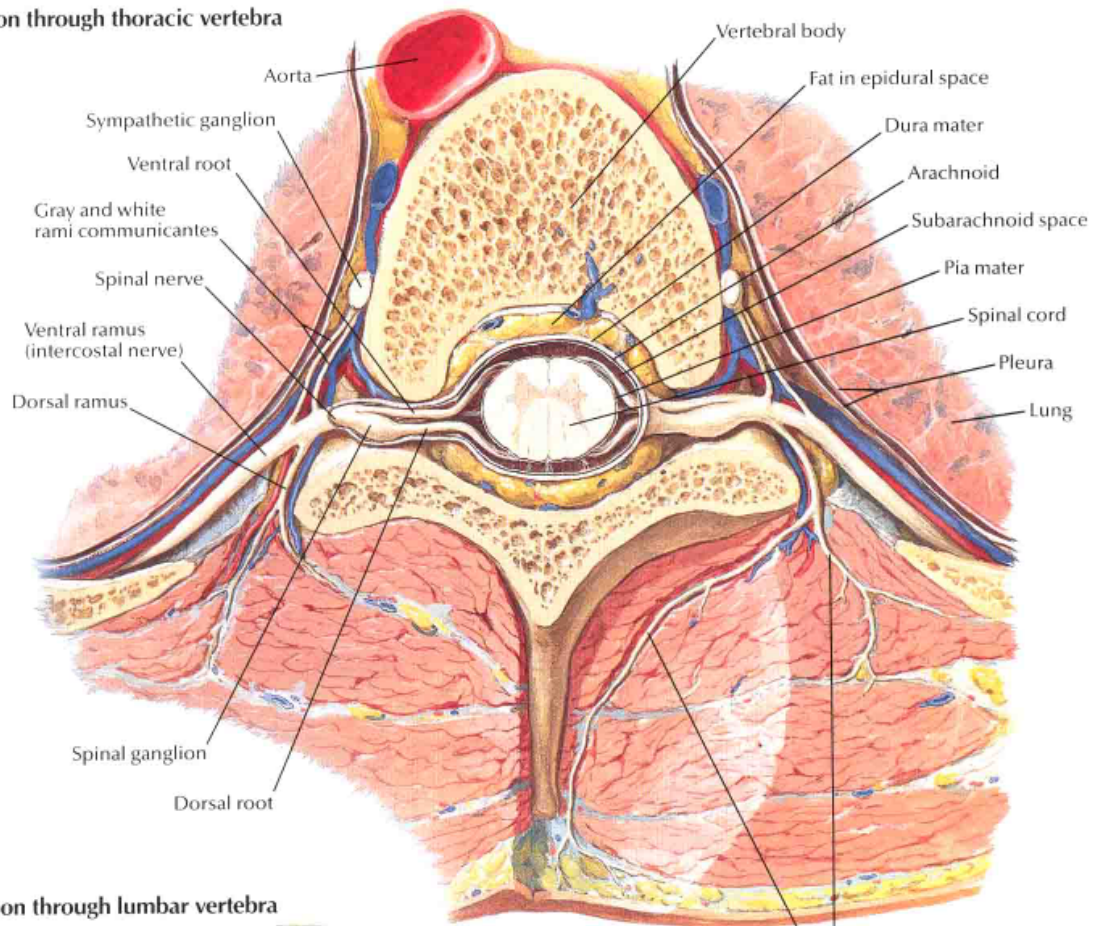


Spinal Cord: Cross-sectional Anatomy In Situ

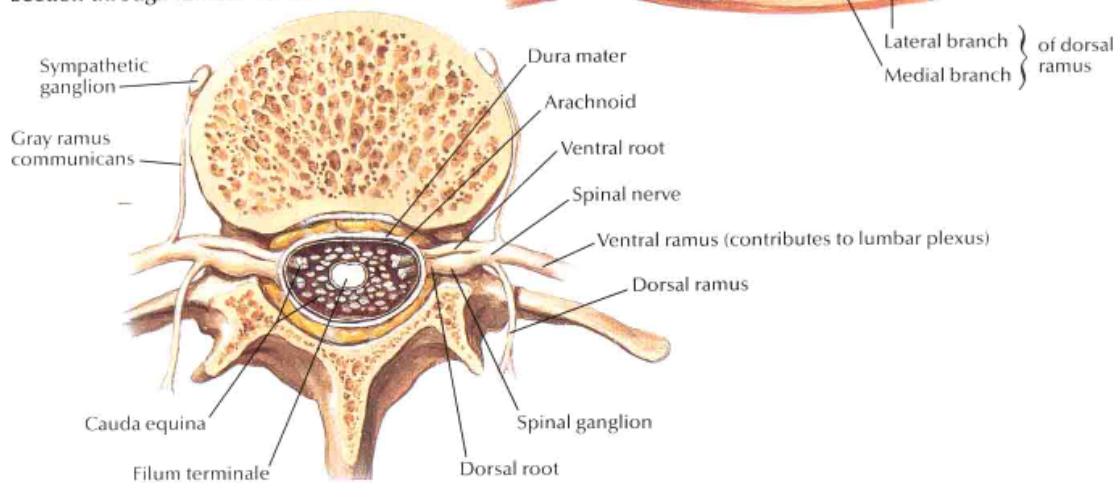
Section through thoracic vertebra

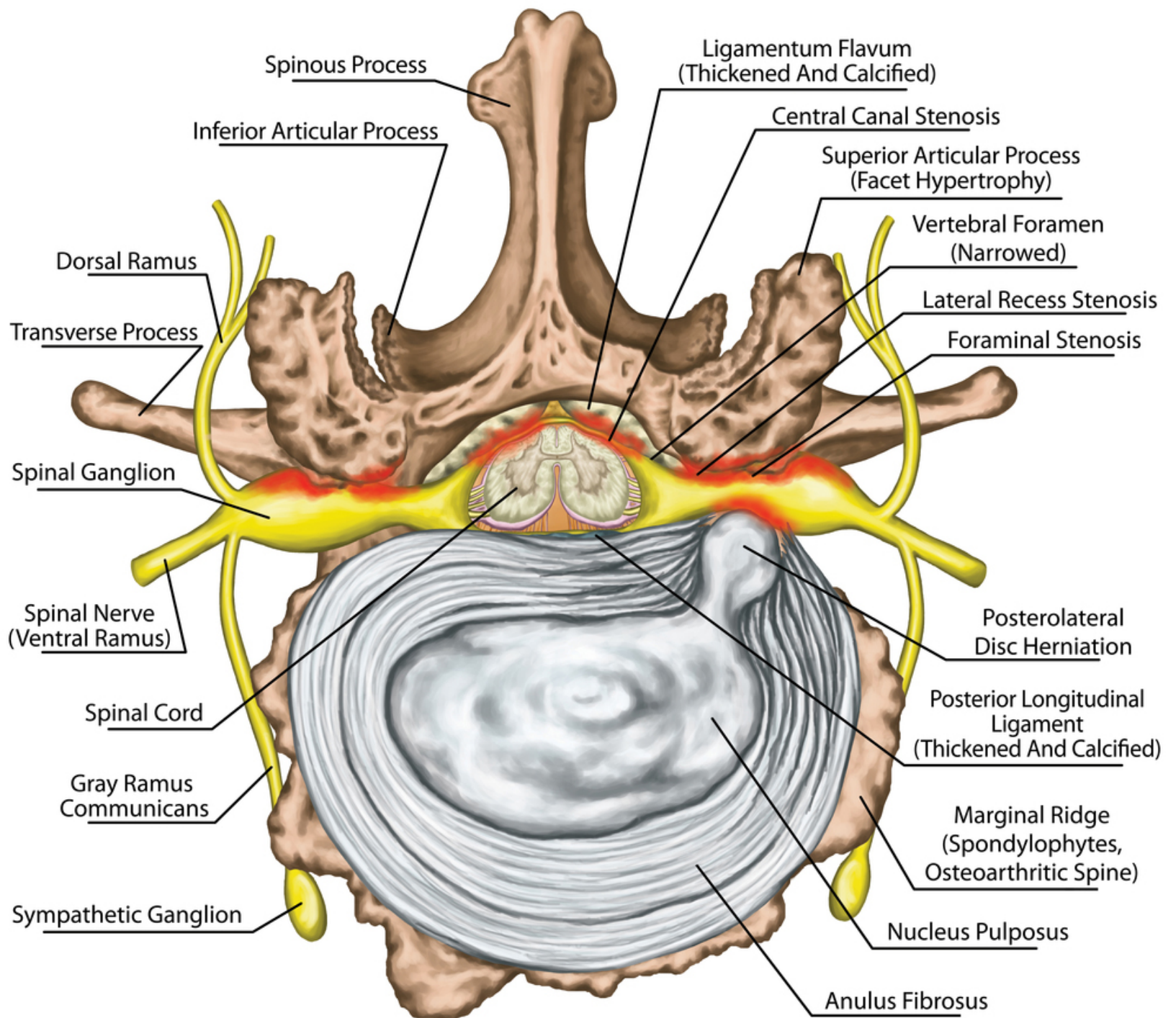


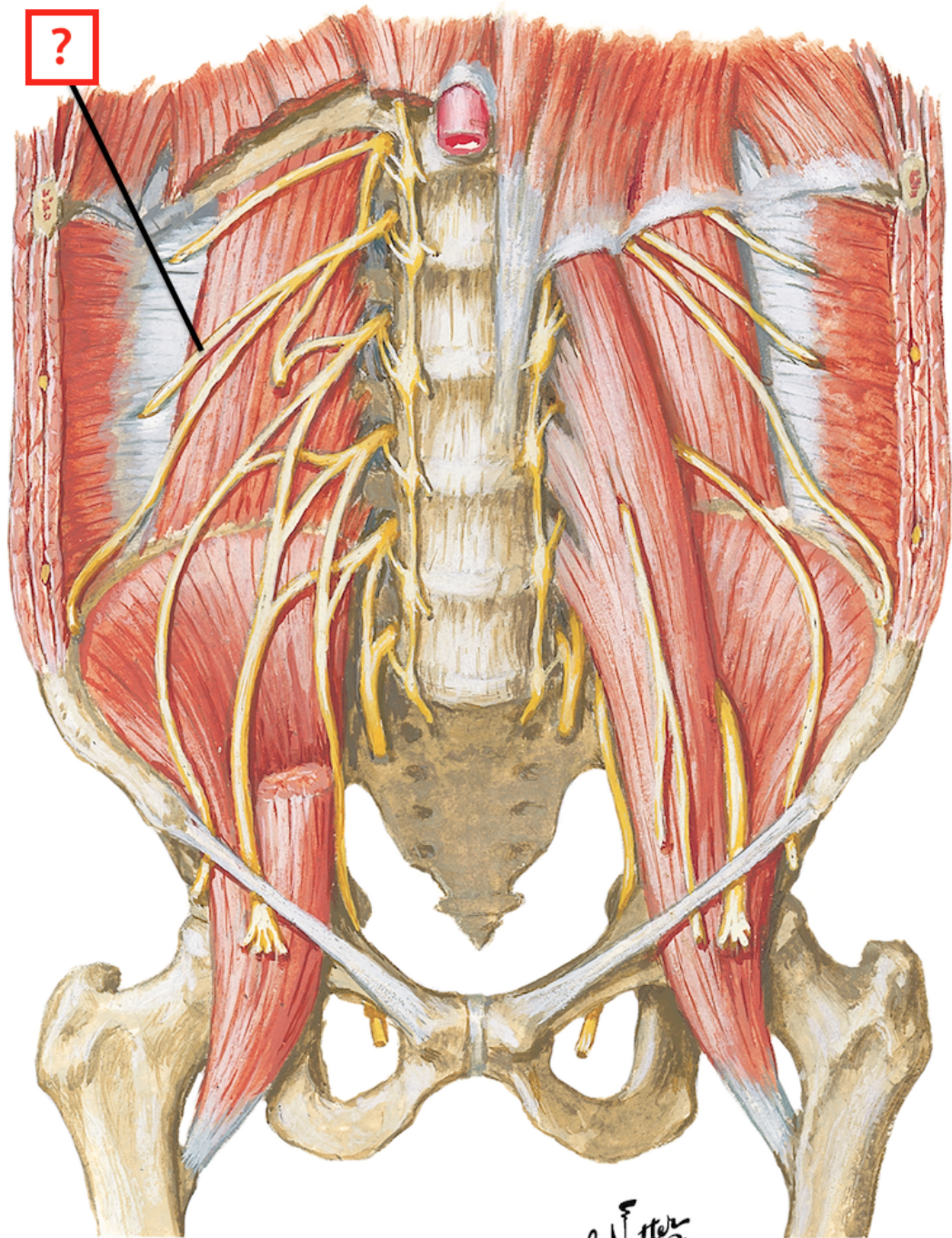
Section through thoracic vertebra



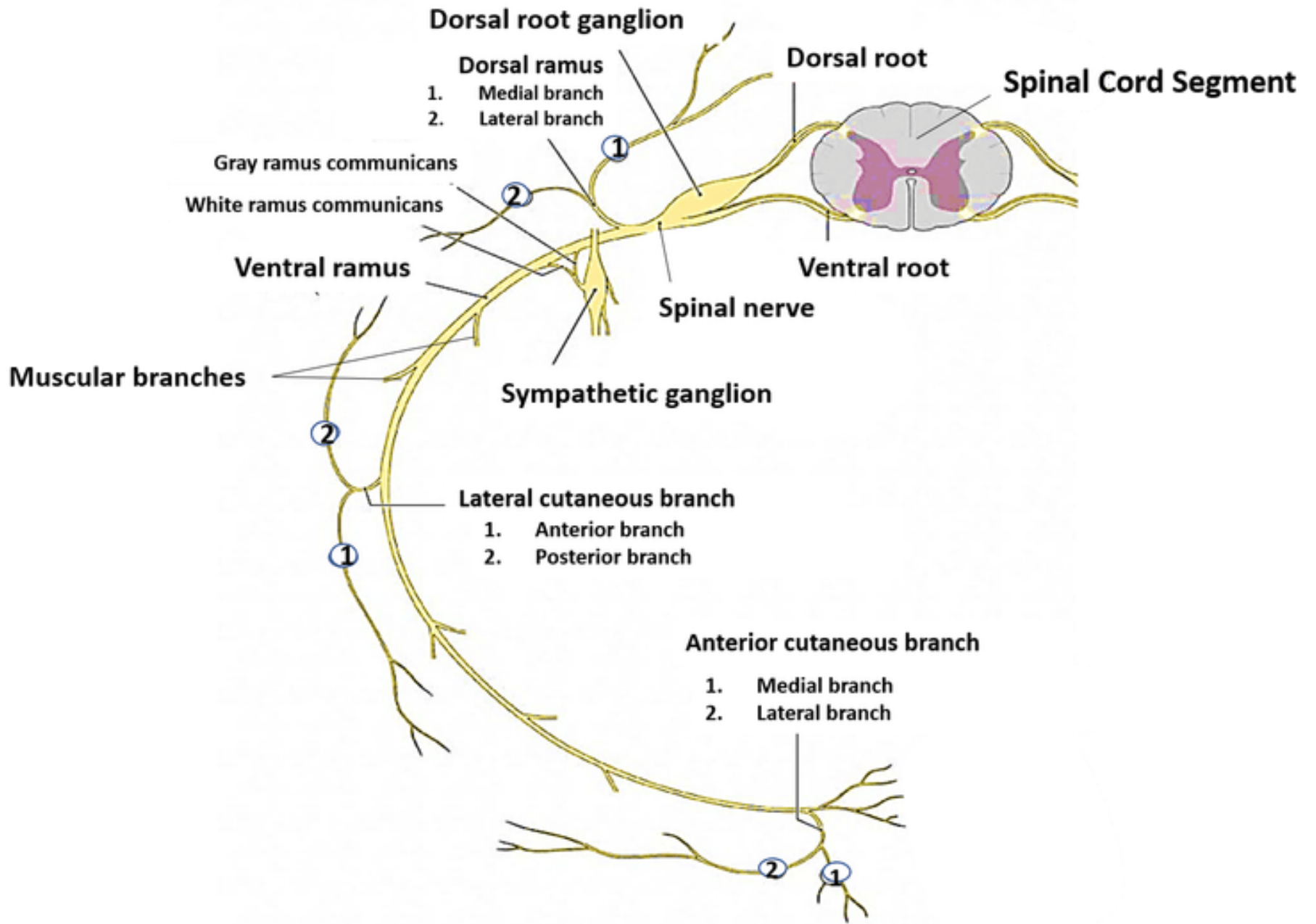
Section through lumbar vertebra

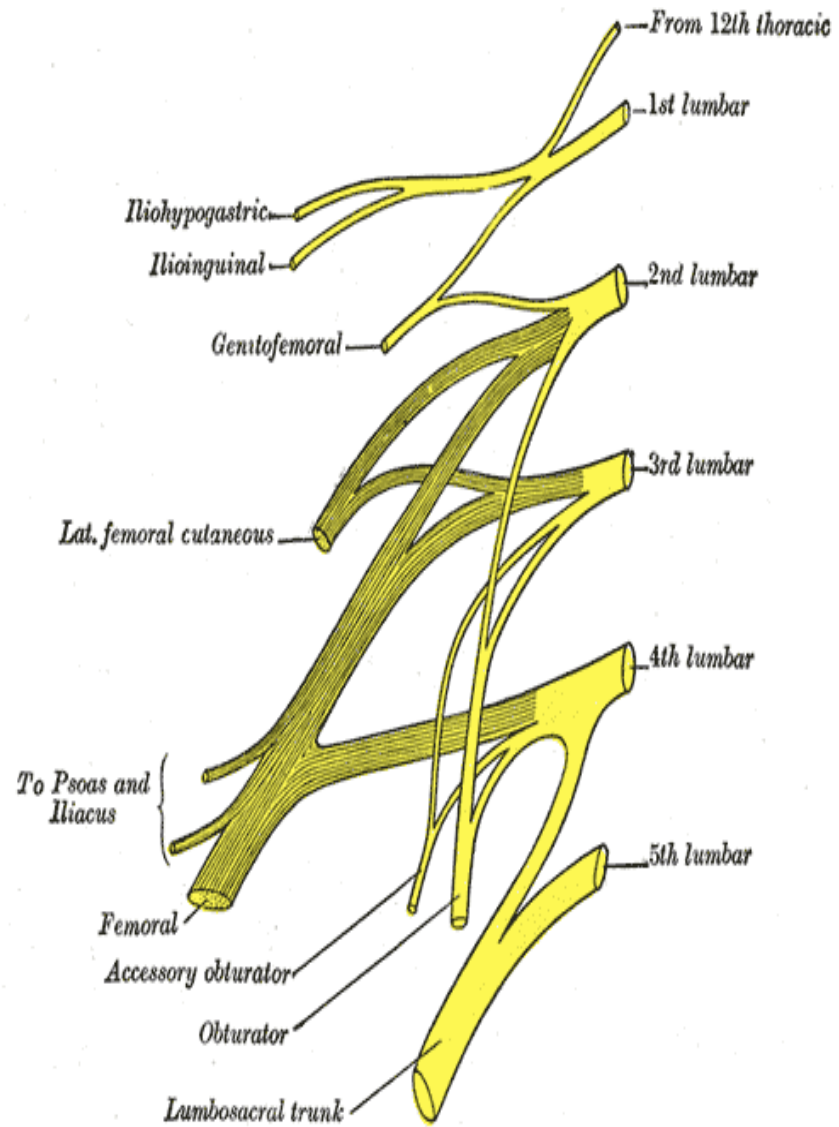
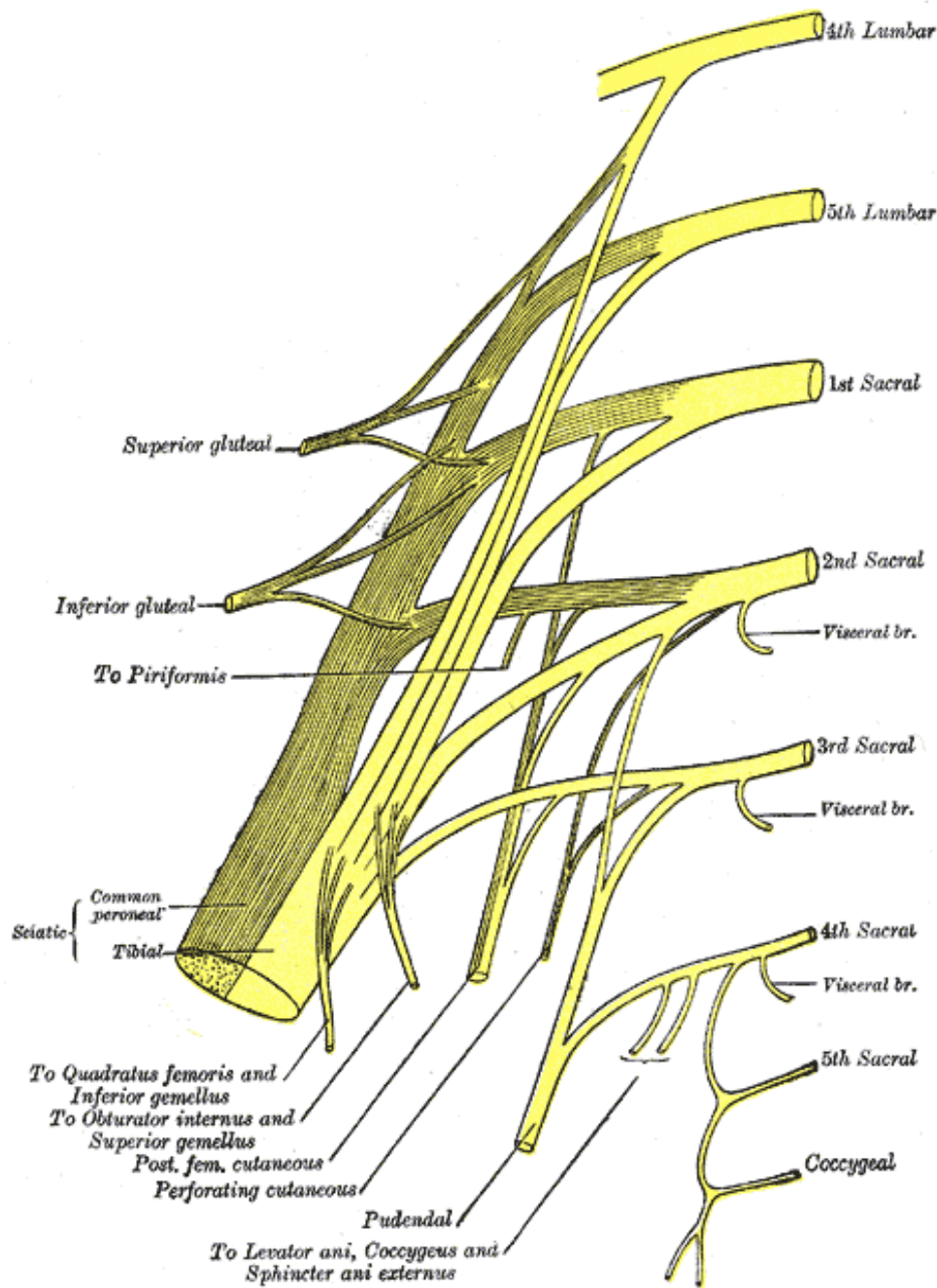


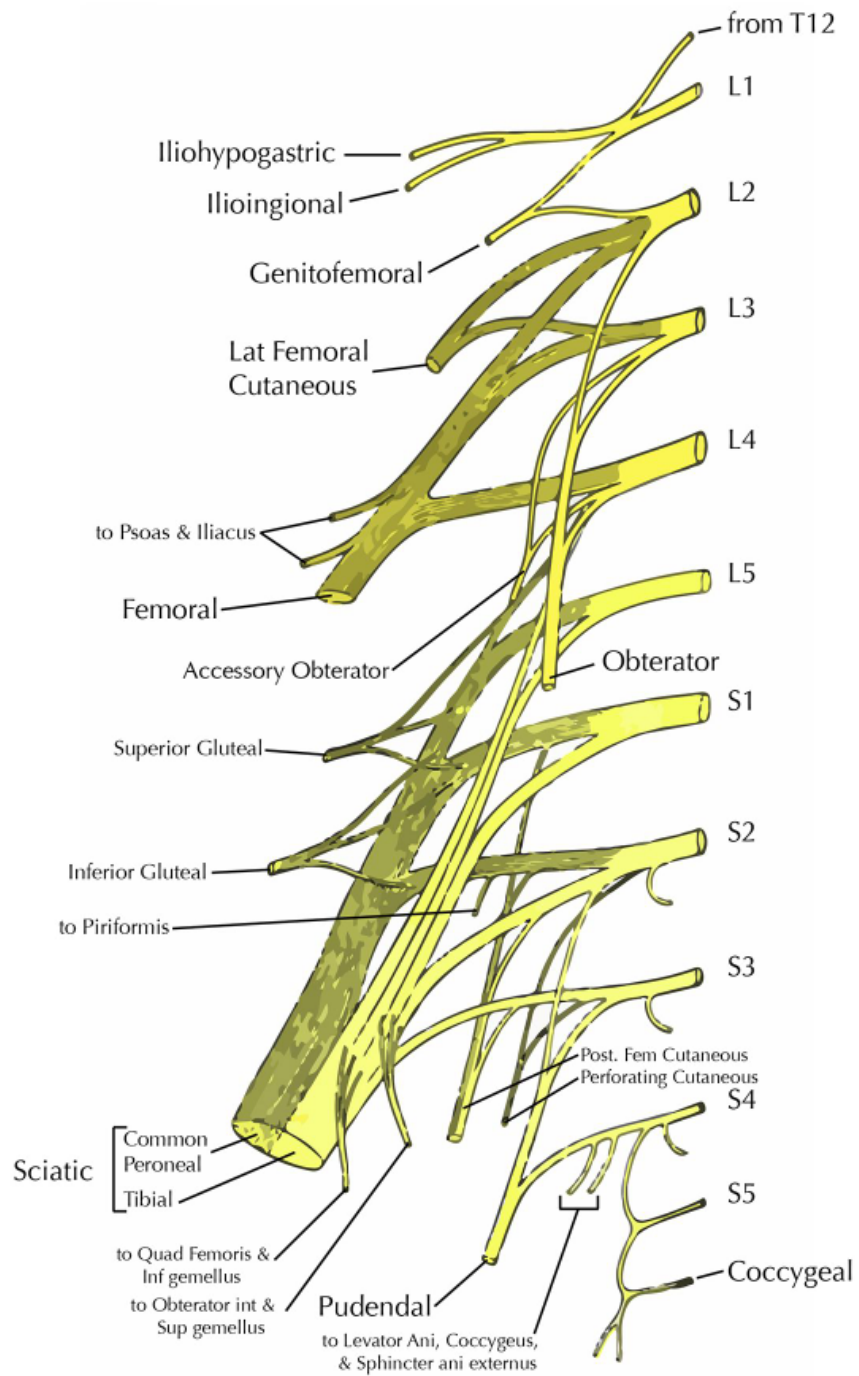


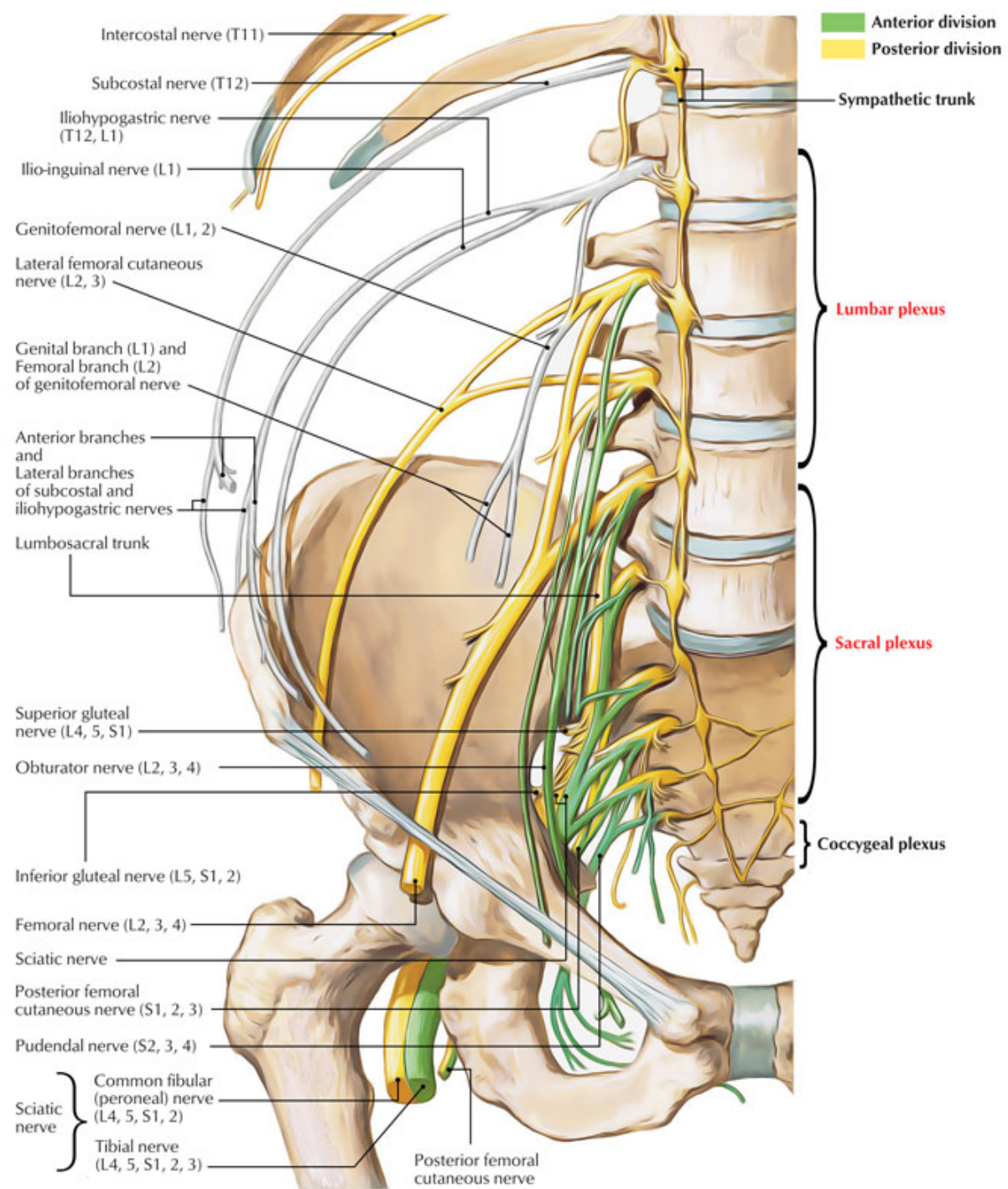


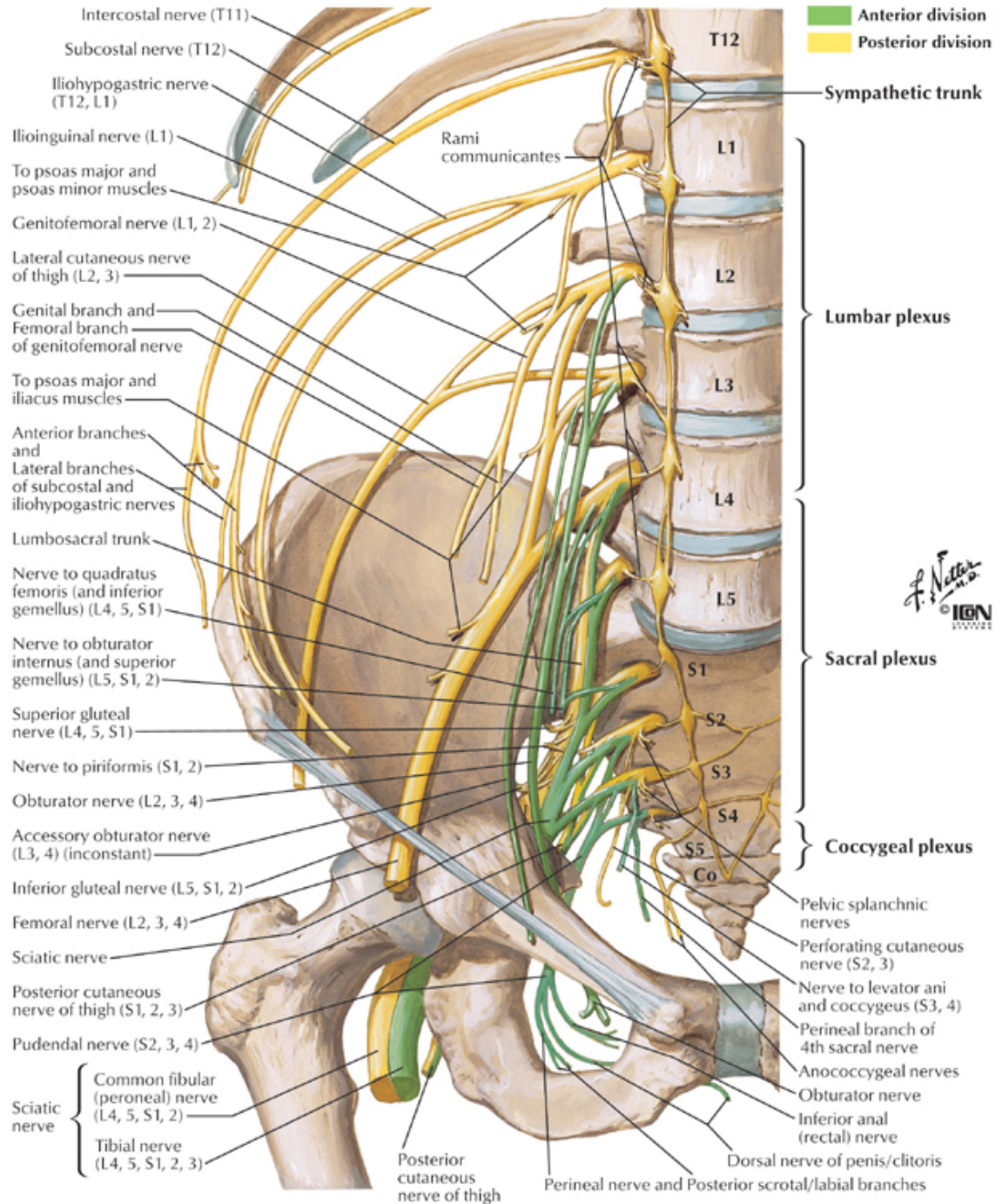
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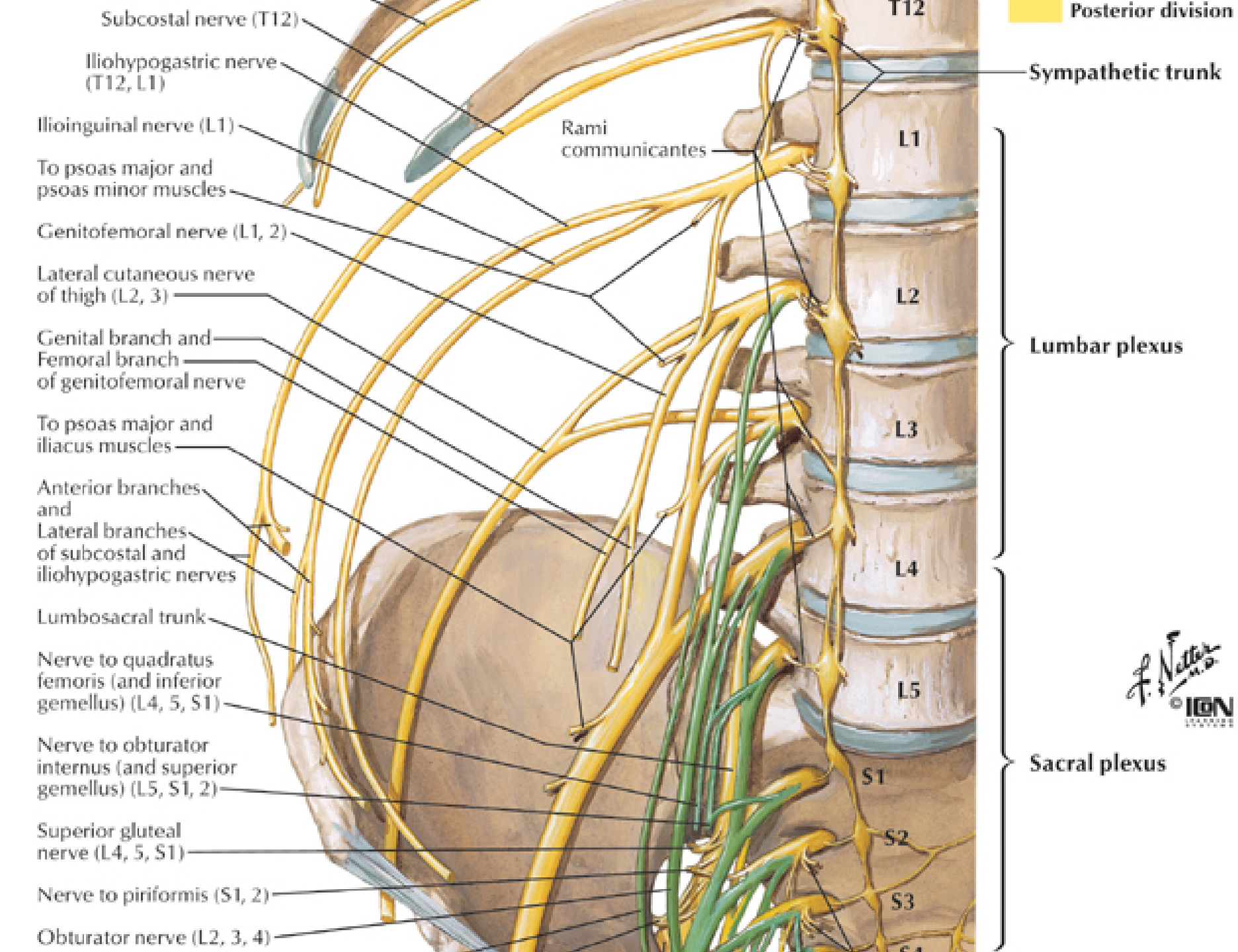


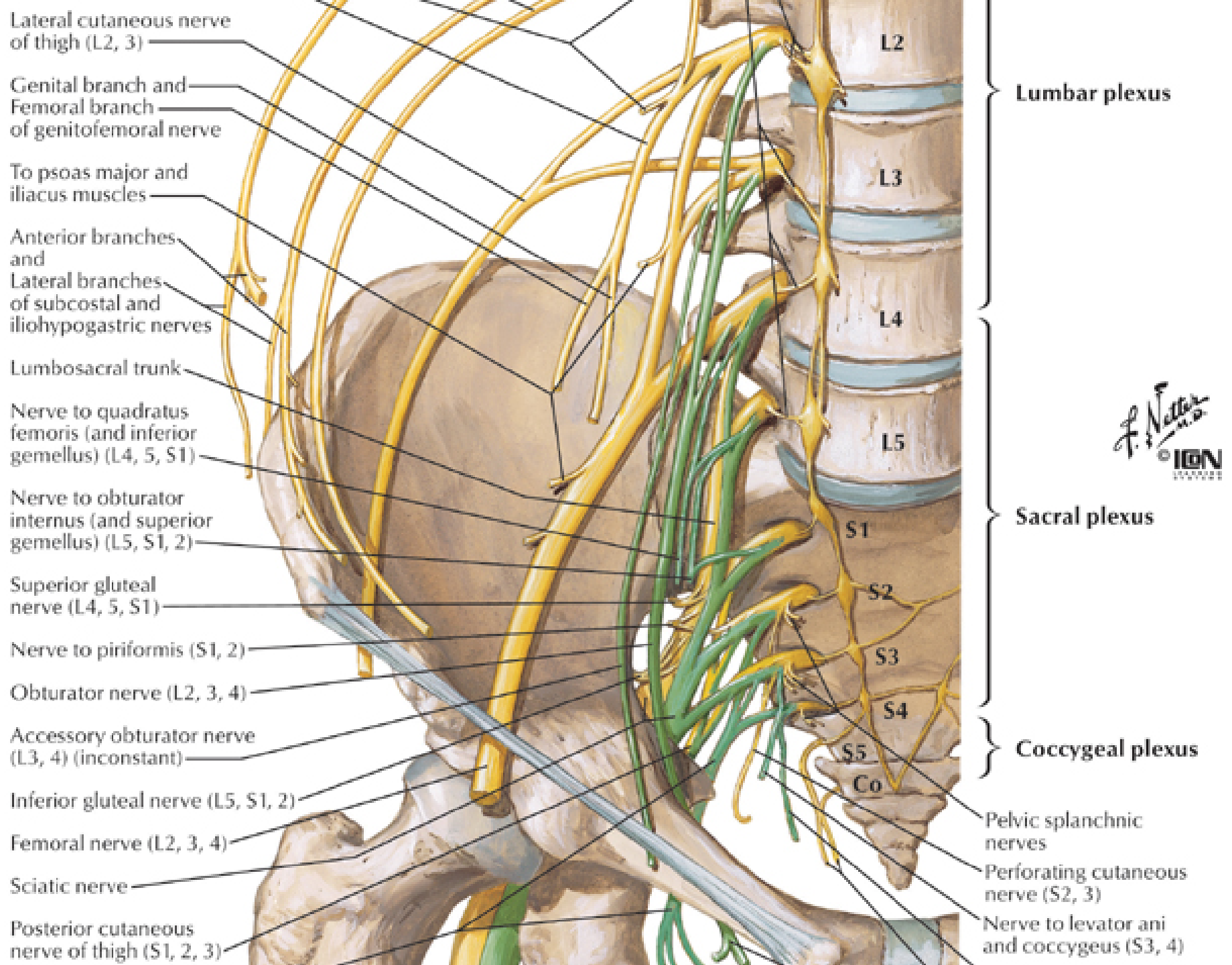


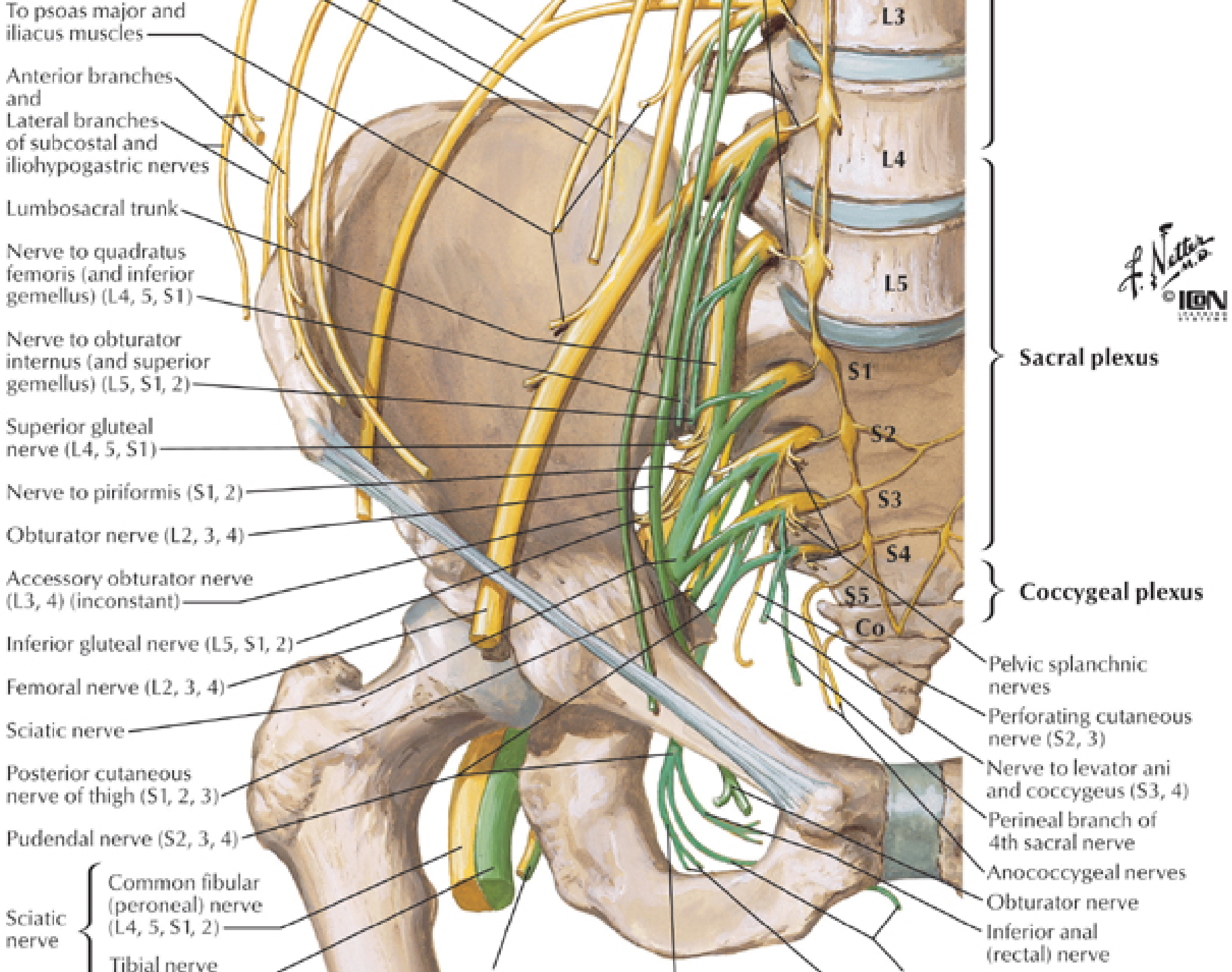












To psoas major and iliacus muscles

Anterior branches and lateral branches of subcostal and iliohypogastric nerves

Lumbosacral trunk

Nerve to quadratus femoris (and inferior gemellus) (L4, 5, S1)

Nerve to obturator internus (and superior gemellus) (L5, S1, 2)

Superior gluteal nerve (L4, 5, S1)

Nerve to piriformis (S1, 2)

Obturator nerve (L2, 3, 4)

Accessory obturator nerve (L3, 4) (inconstant)

Inferior gluteal nerve (L5, S1, 2)

Femoral nerve (L2, 3, 4)

Sciatic nerve

Posterior cutaneous nerve of thigh (S1, 2, 3)

Pudendal nerve (S2, 3, 4)

Sciatic nerve

Common fibular (peroneal) nerve (L4, 5, S1, 2)

Tibial nerve

L3

L4

L5

S1

S2

S3

S4

S5

Co

Sacral plexus

Coccygeal plexus

Pelvic splanchnic nerves

Perforating cutaneous nerve (S2, 3)

Nerve to levator ani and coccygeus (S3, 4)

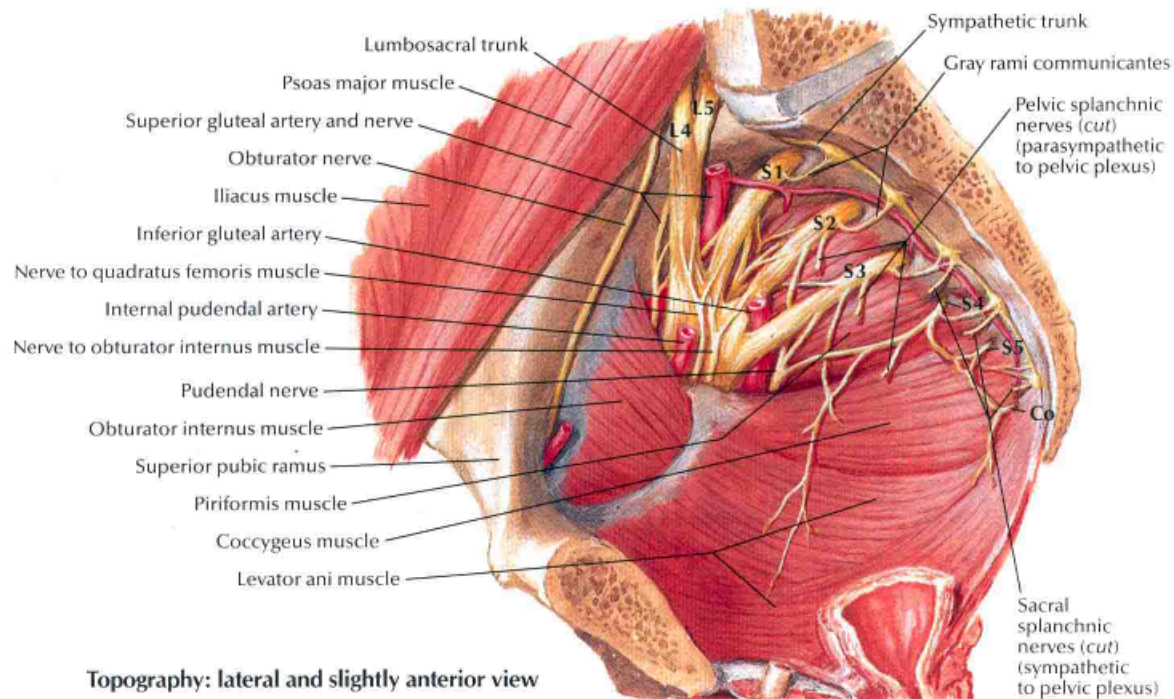
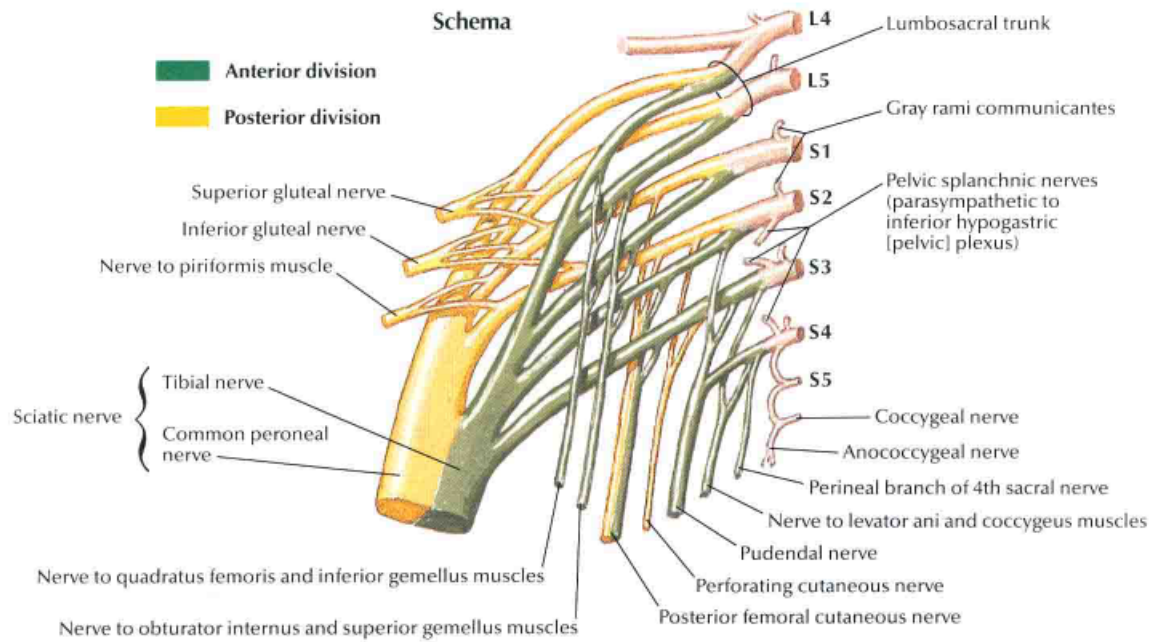
Perineal branch of 4th sacral nerve

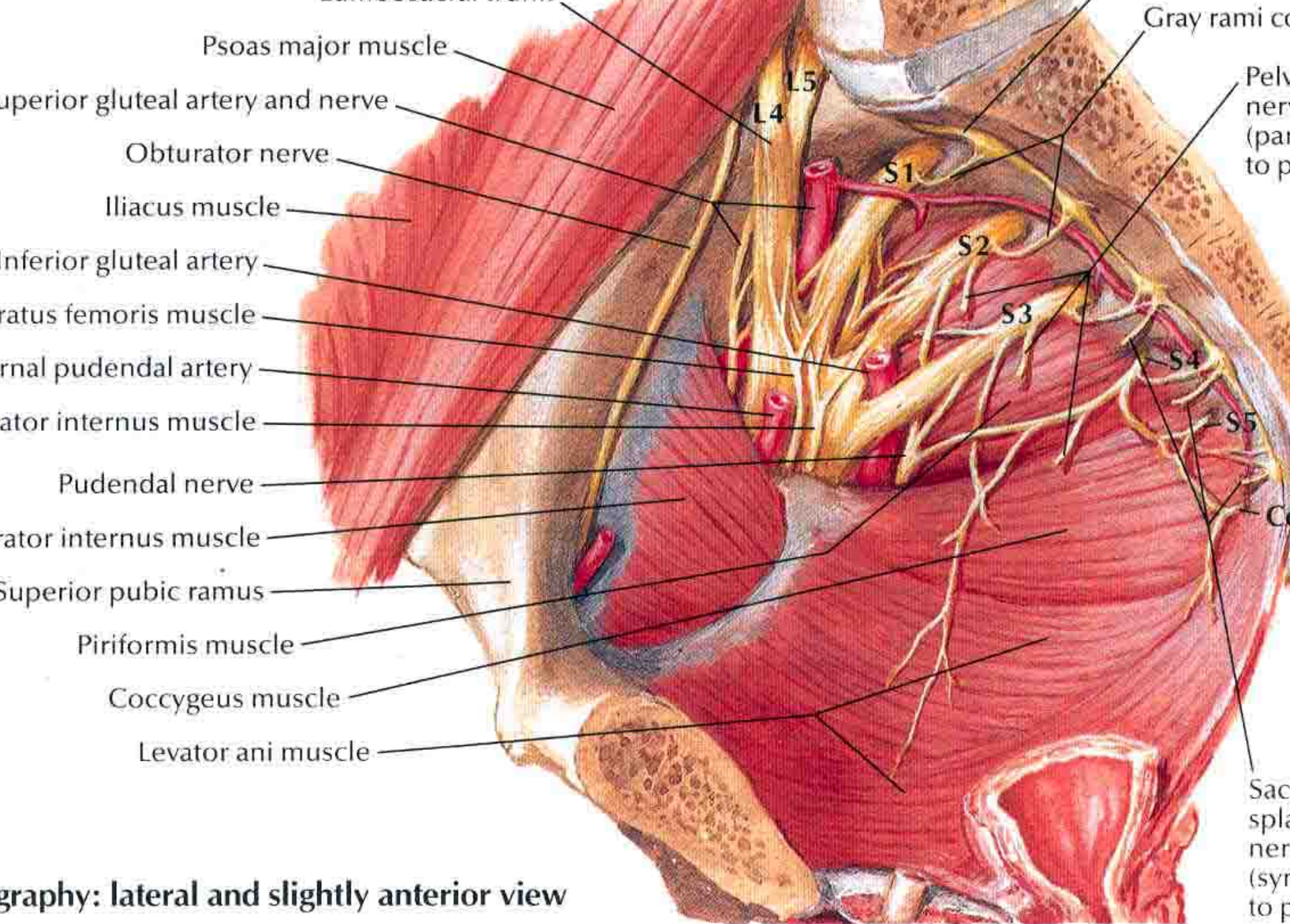
Anococcygeal nerves

Obturator nerve

Inferior anal (rectal) nerve



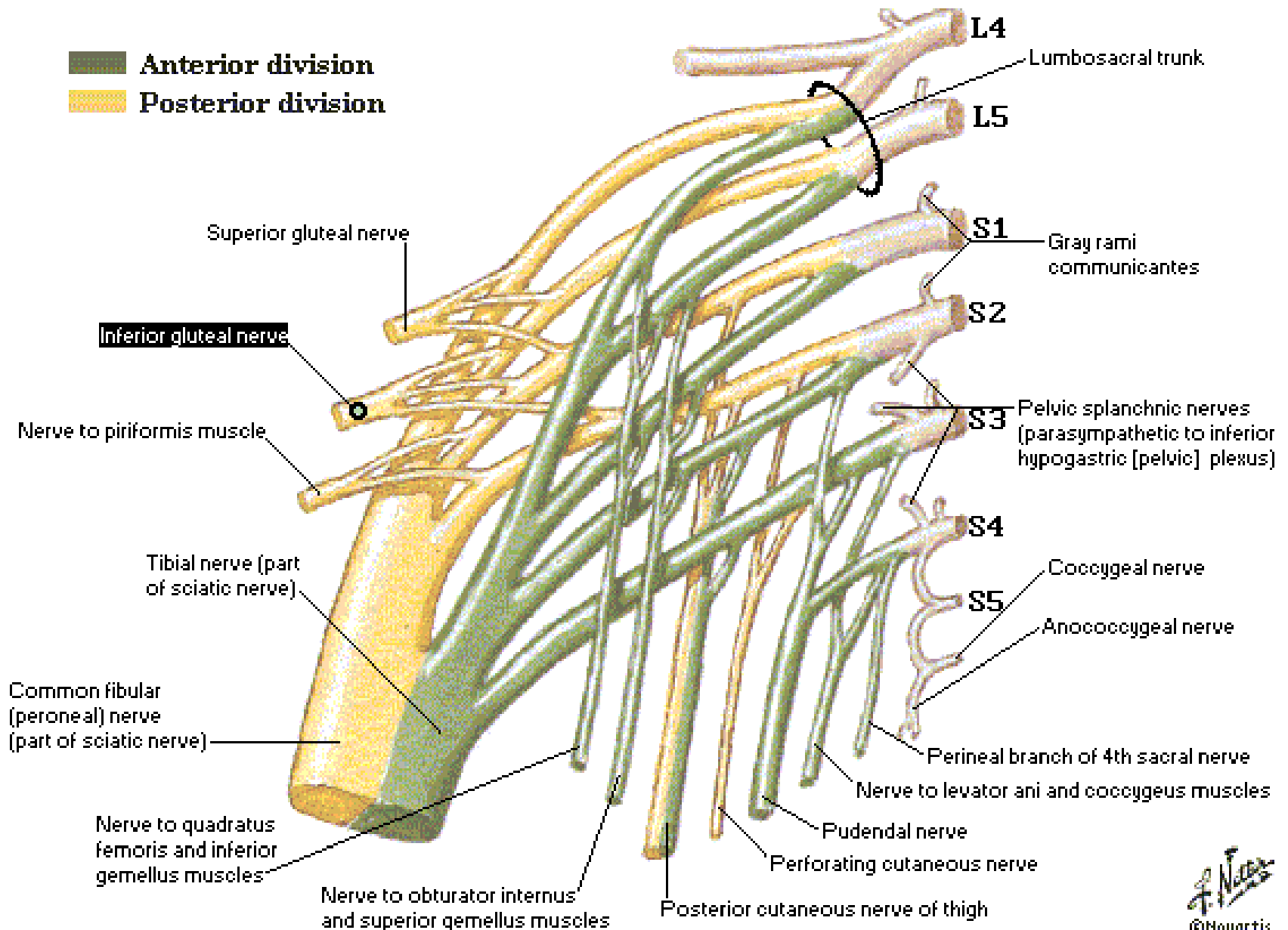




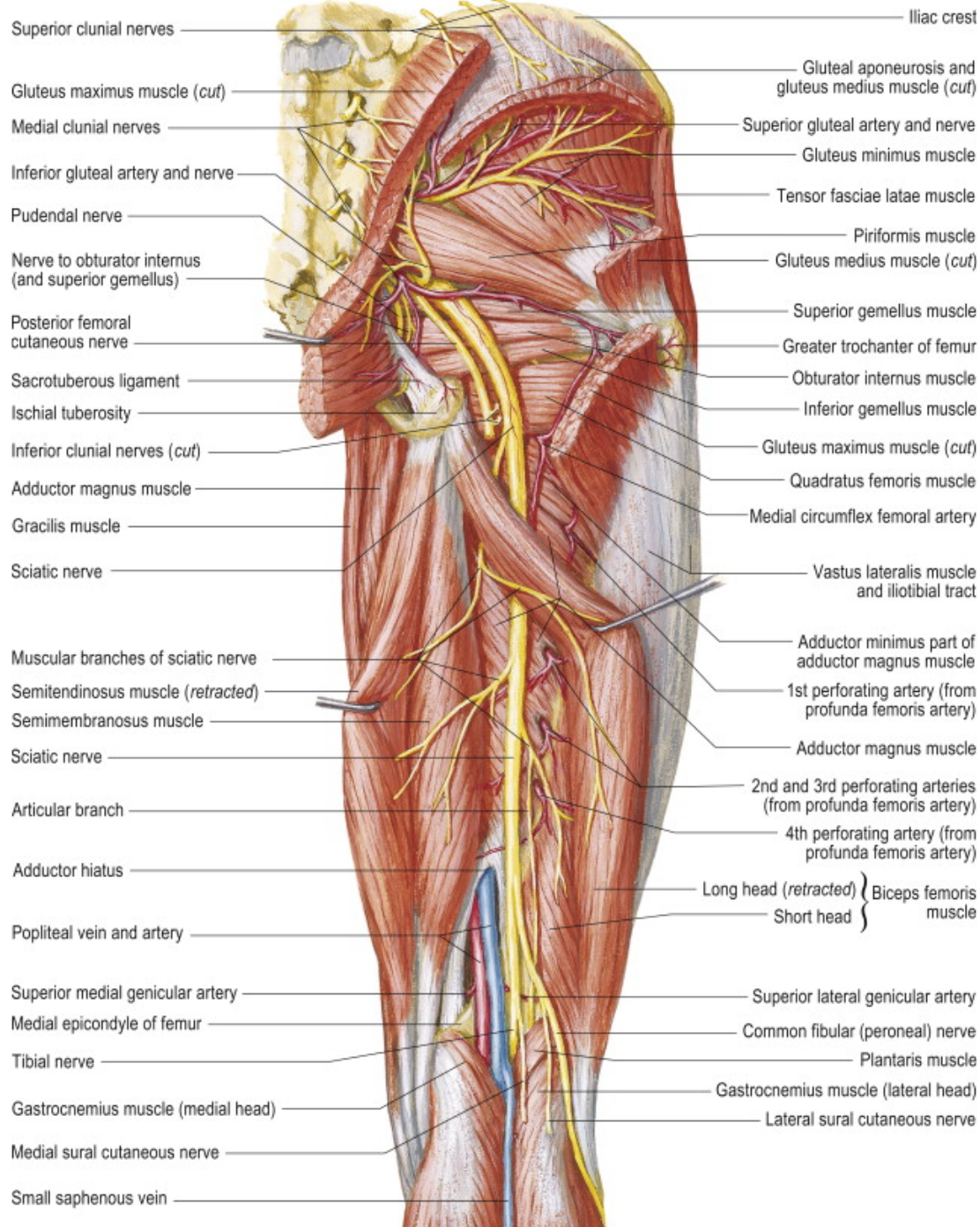
Imaging: lateral and slightly anterior view

Sacral and Coccygeal Plexuses

Schema

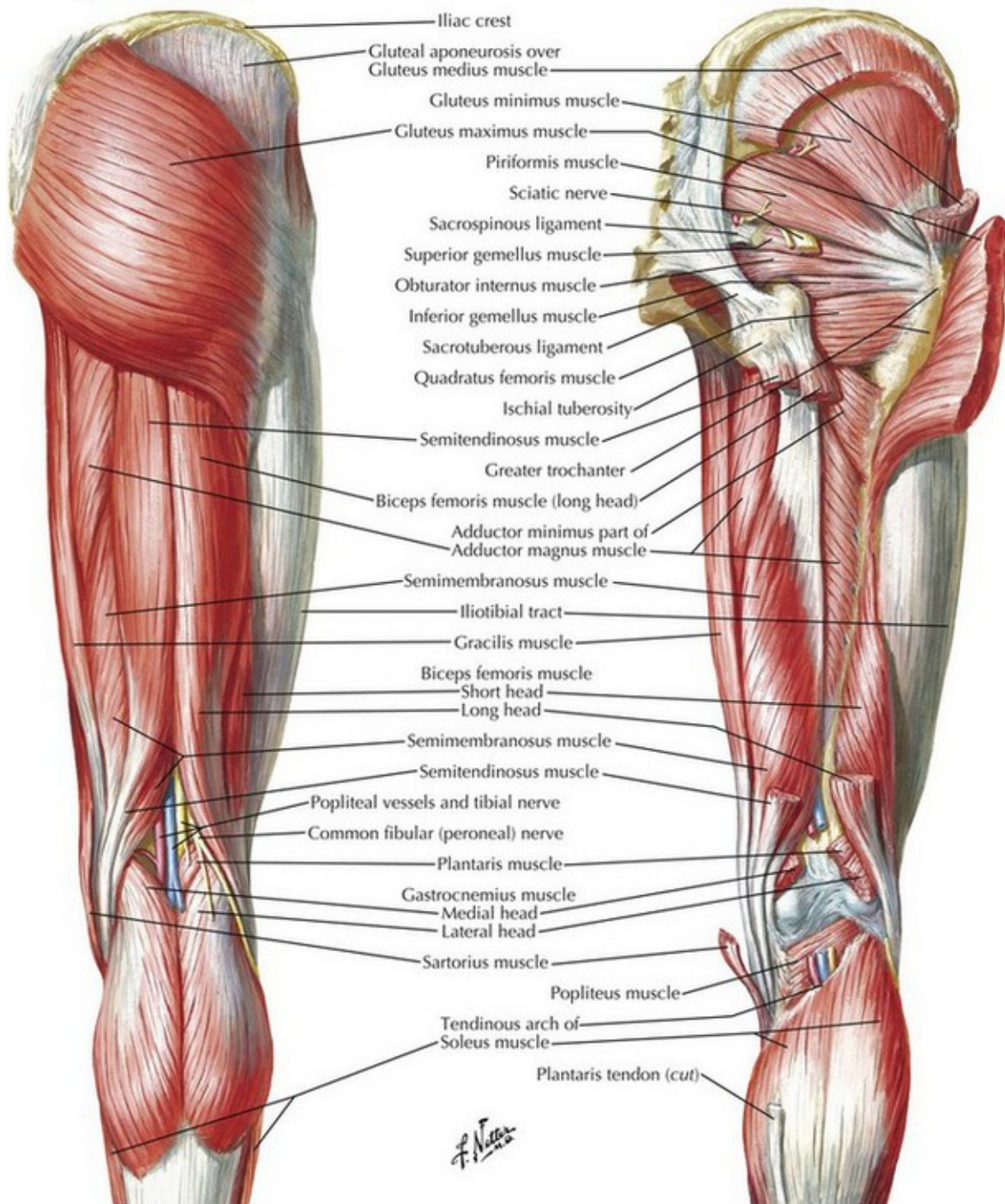


Deep dissection



Superficial dissection

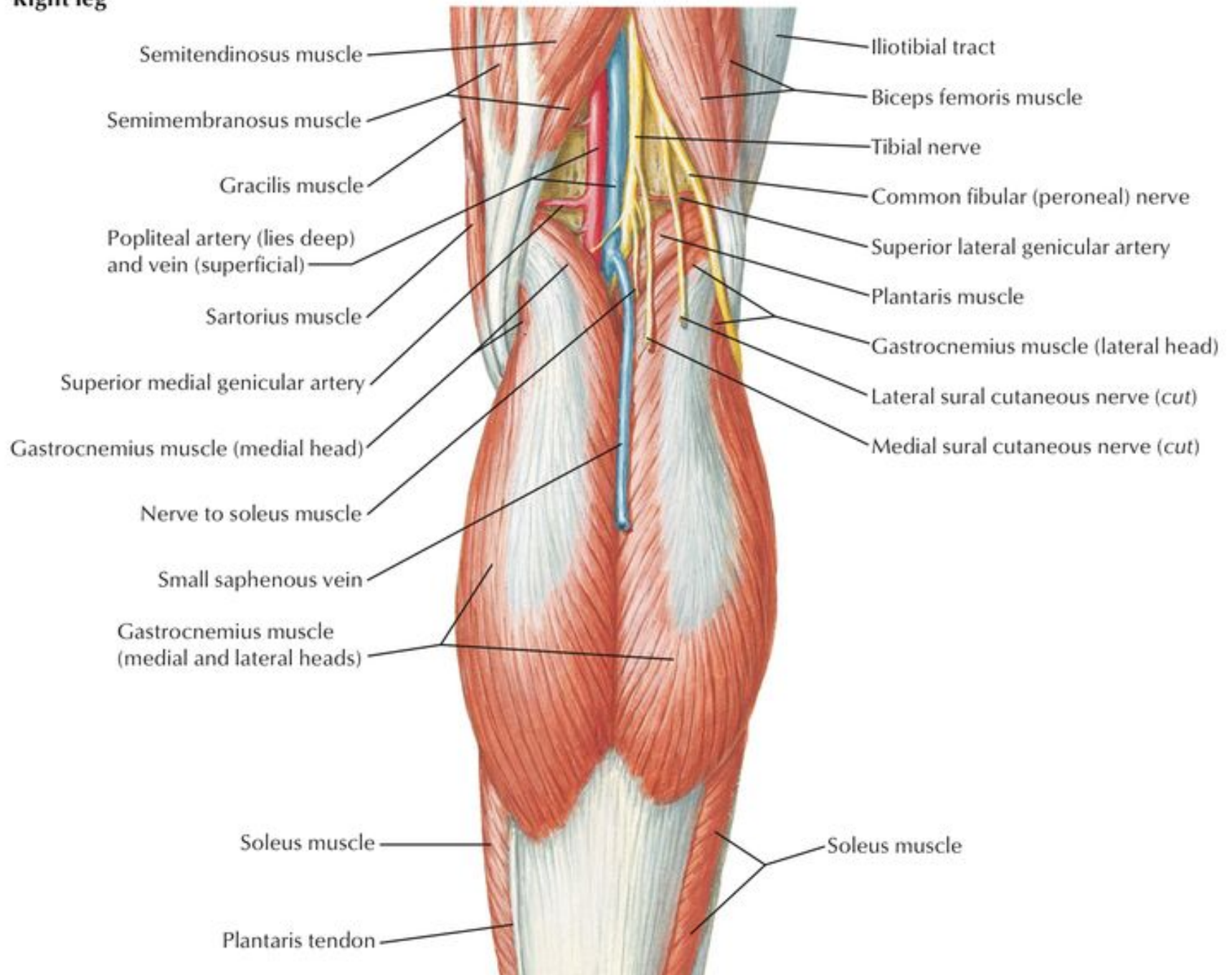
Deeper dissection

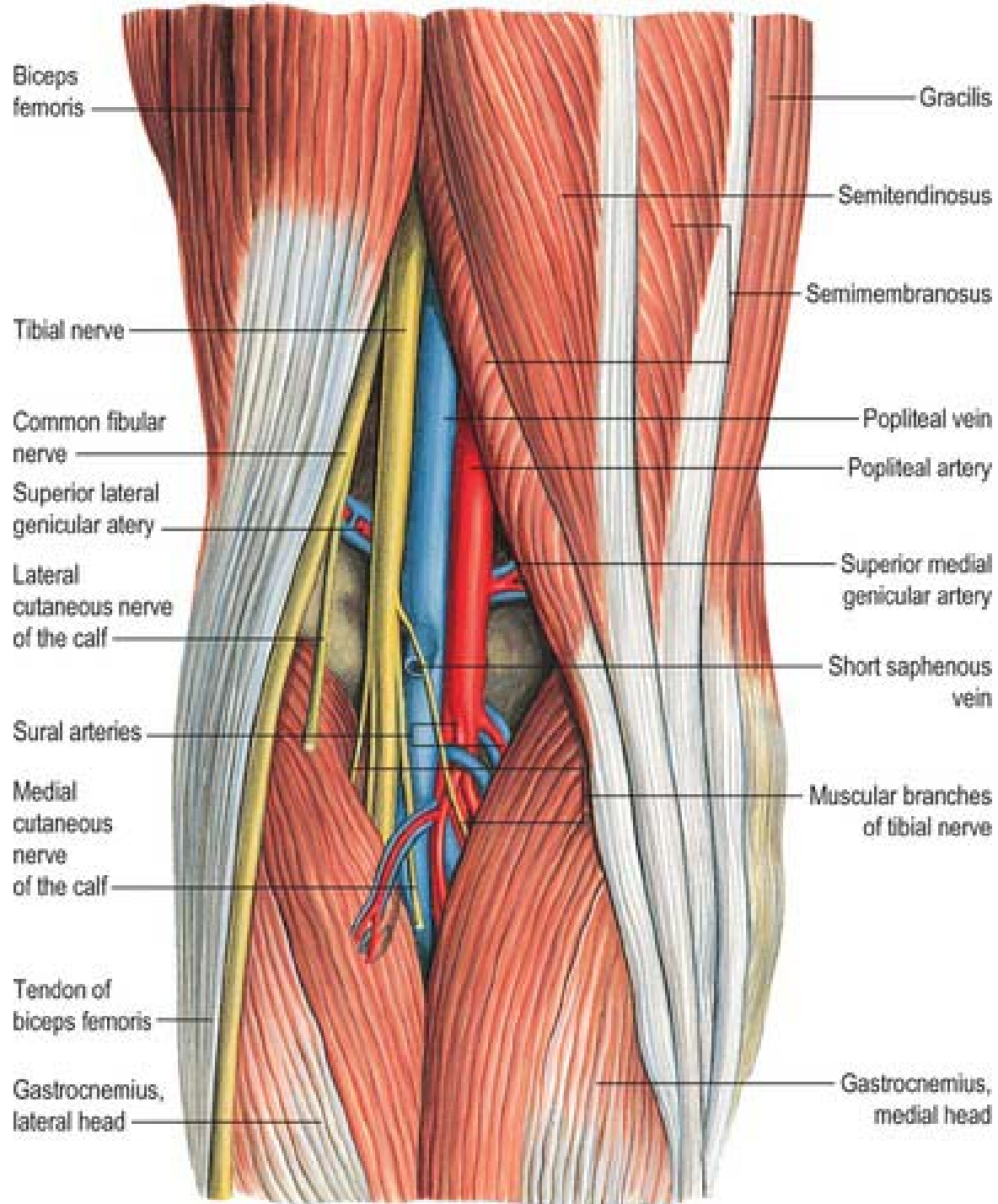


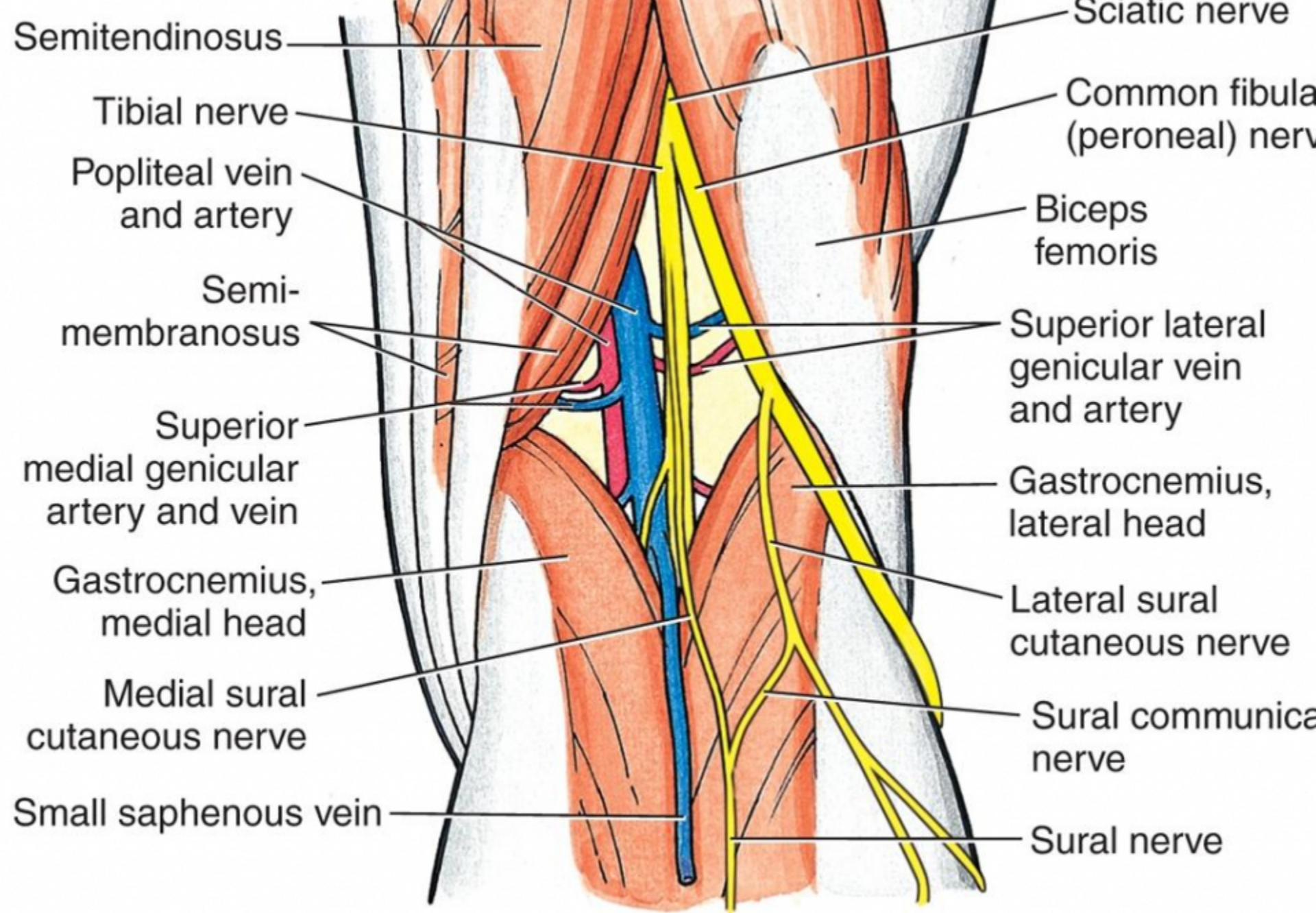
- Iliac crest
- Gluteal aponeurosis over Gluteus medius muscle
- Gluteus minimus muscle
- Gluteus maximus muscle
- Piriformis muscle
- Sciatic nerve
- Sacrospinous ligament
- Superior gemellus muscle
- Obturator internus muscle
- Inferior gemellus muscle
- Sacrospinous ligament
- Sacrospinous ligament
- Quadratus femoris muscle
- Ischial tuberosity
- Semitendinosus muscle
- Greater trochanter
- Biceps femoris muscle (long head)
- Adductor minimus part of Adductor magnus muscle
- Semimembranosus muscle
- Iliotibial tract
- Gracilis muscle
- Biceps femoris muscle Short head
- Biceps femoris muscle Long head
- Semimembranosus muscle
- Semitendinosus muscle
- Popliteal vessels and tibial nerve
- Common fibular (peroneal) nerve
- Plantaris muscle
- Gastrocnemius muscle Medial head
- Gastrocnemius muscle Lateral head
- Sartorius muscle
- Popliteus muscle
- Tendinous arch of Soleus muscle
- Plantaris tendon (cut)

F. Netter

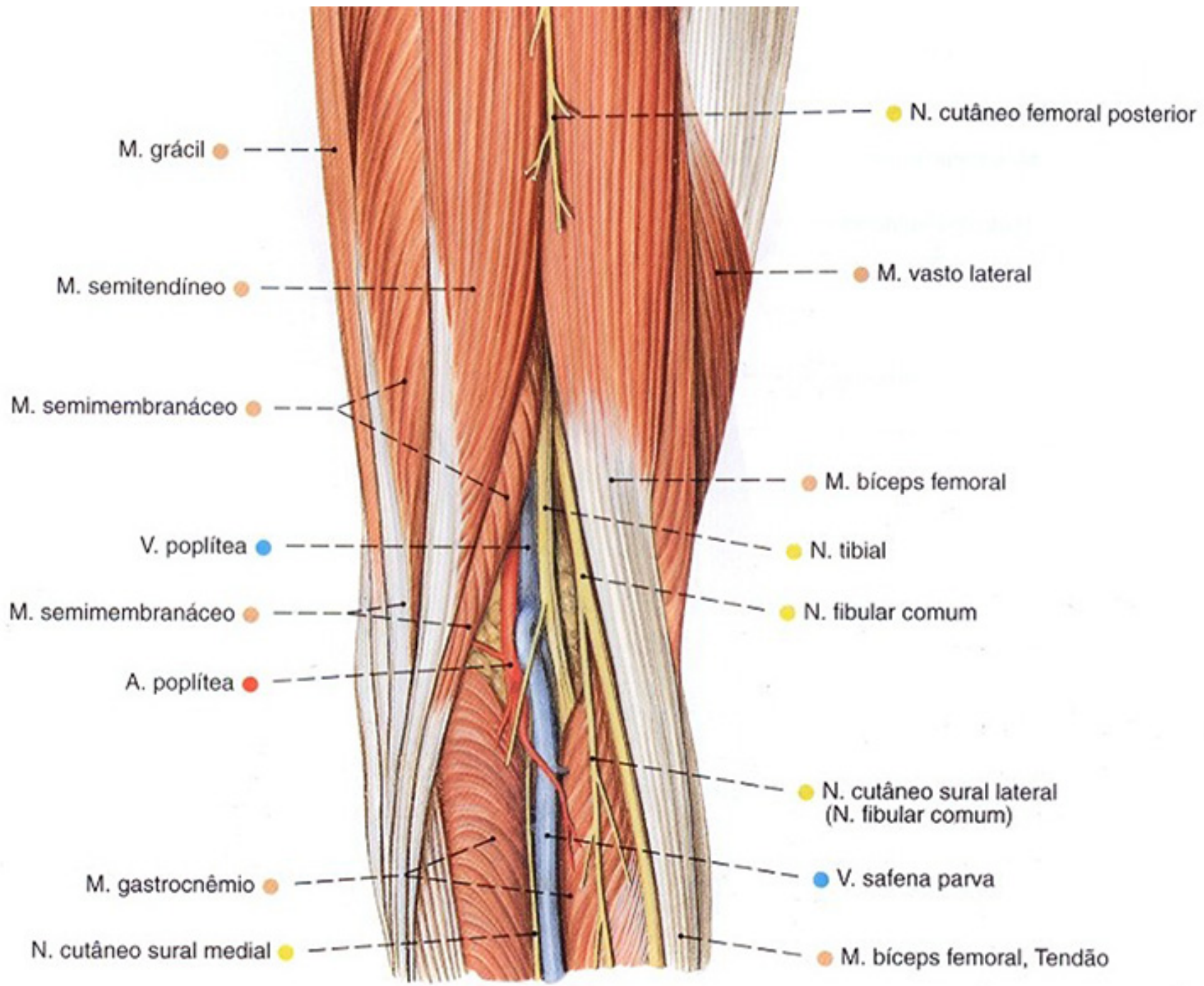
Right leg

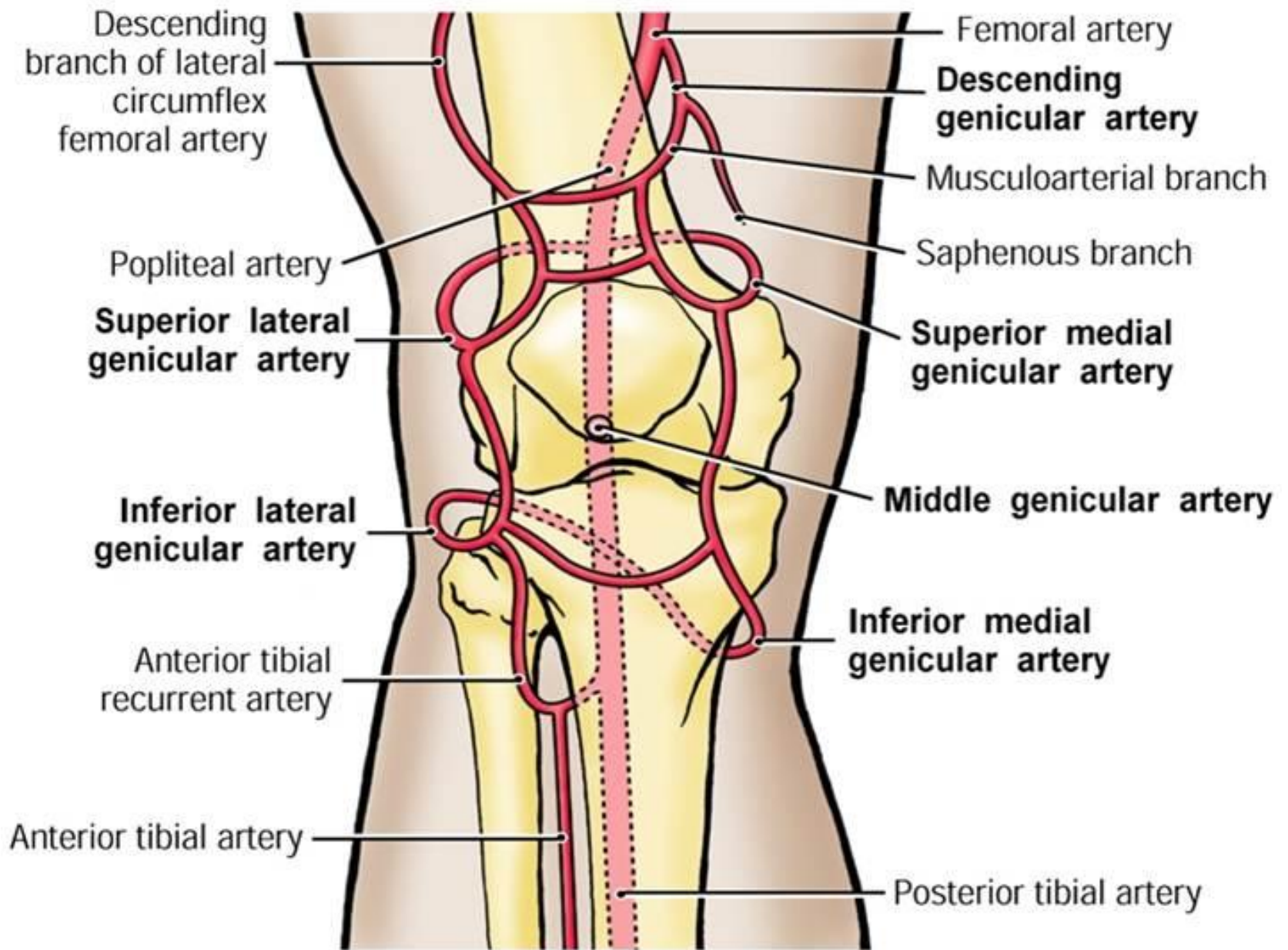




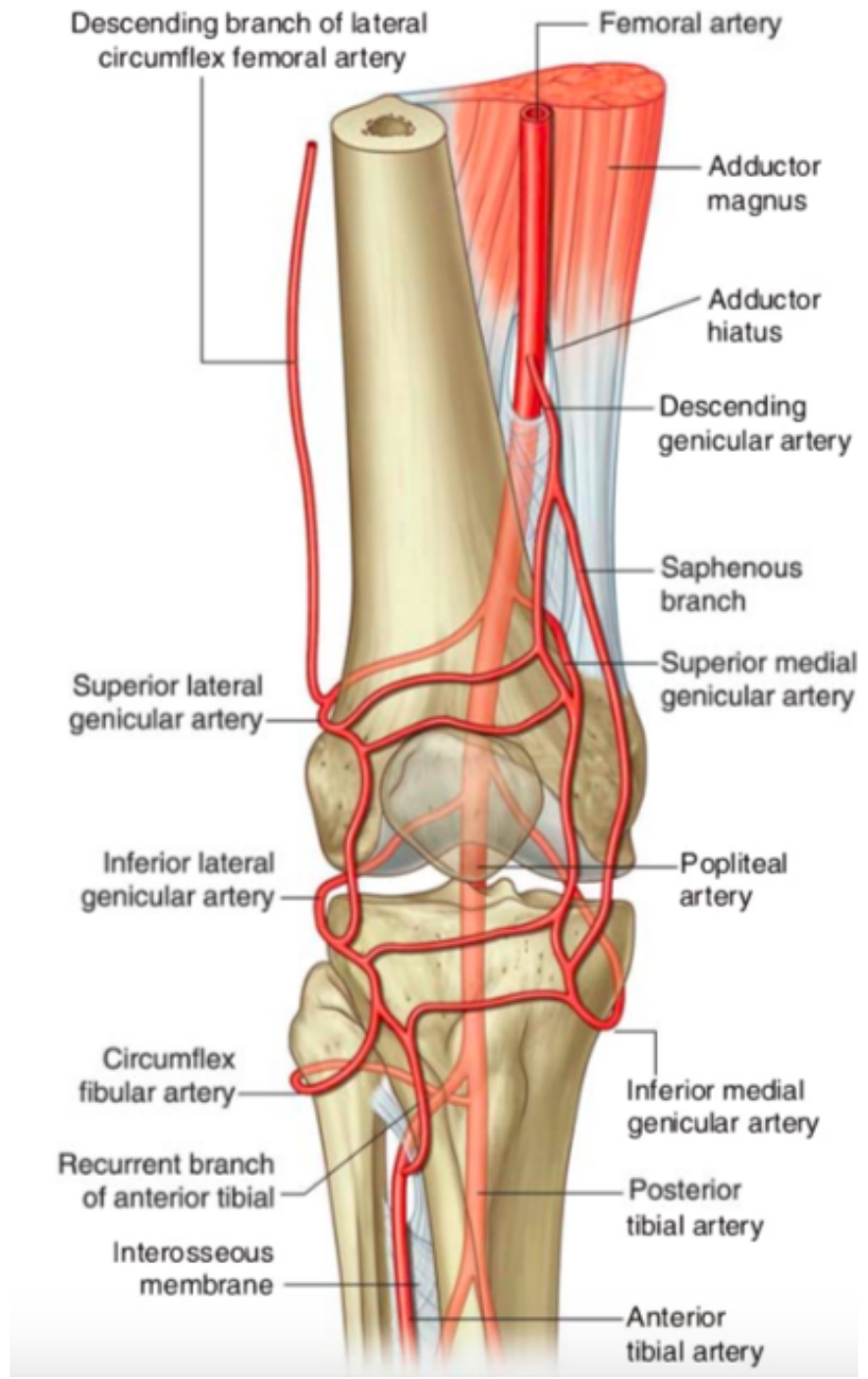


C Posterior view





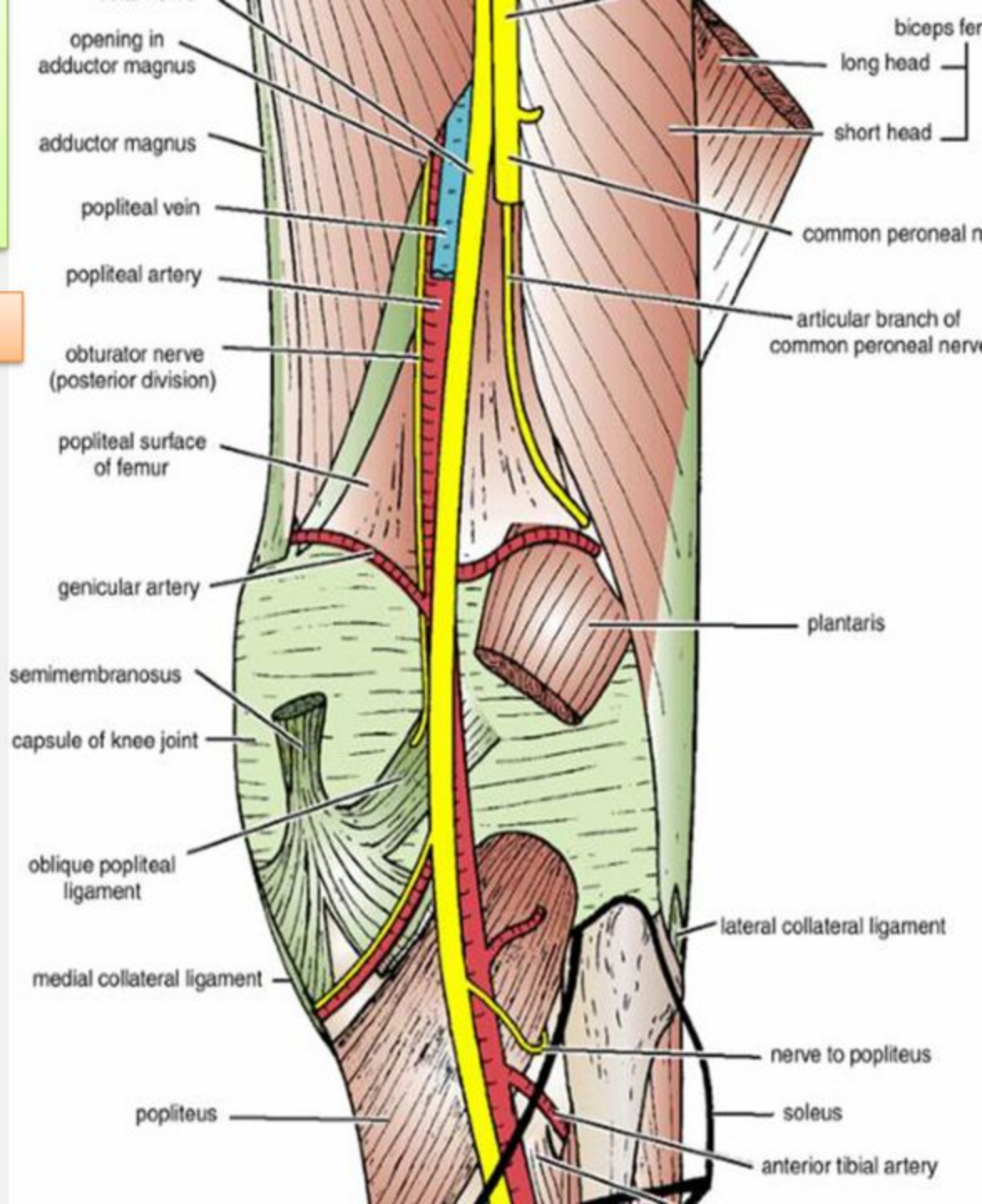
A. Anterior View

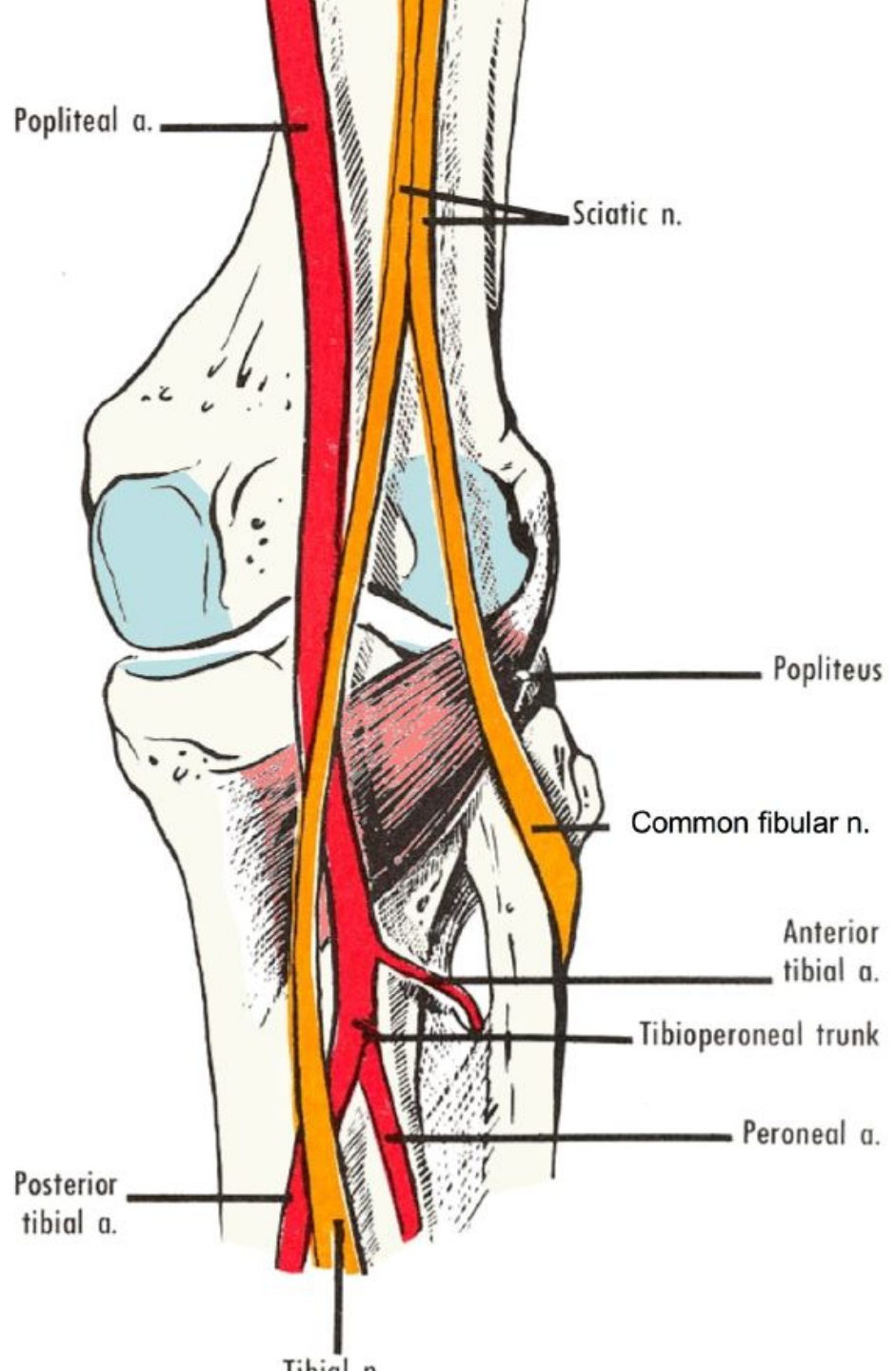


fossa
Popliteal artery and vein
The common peroneal nerve
Tibial nerve

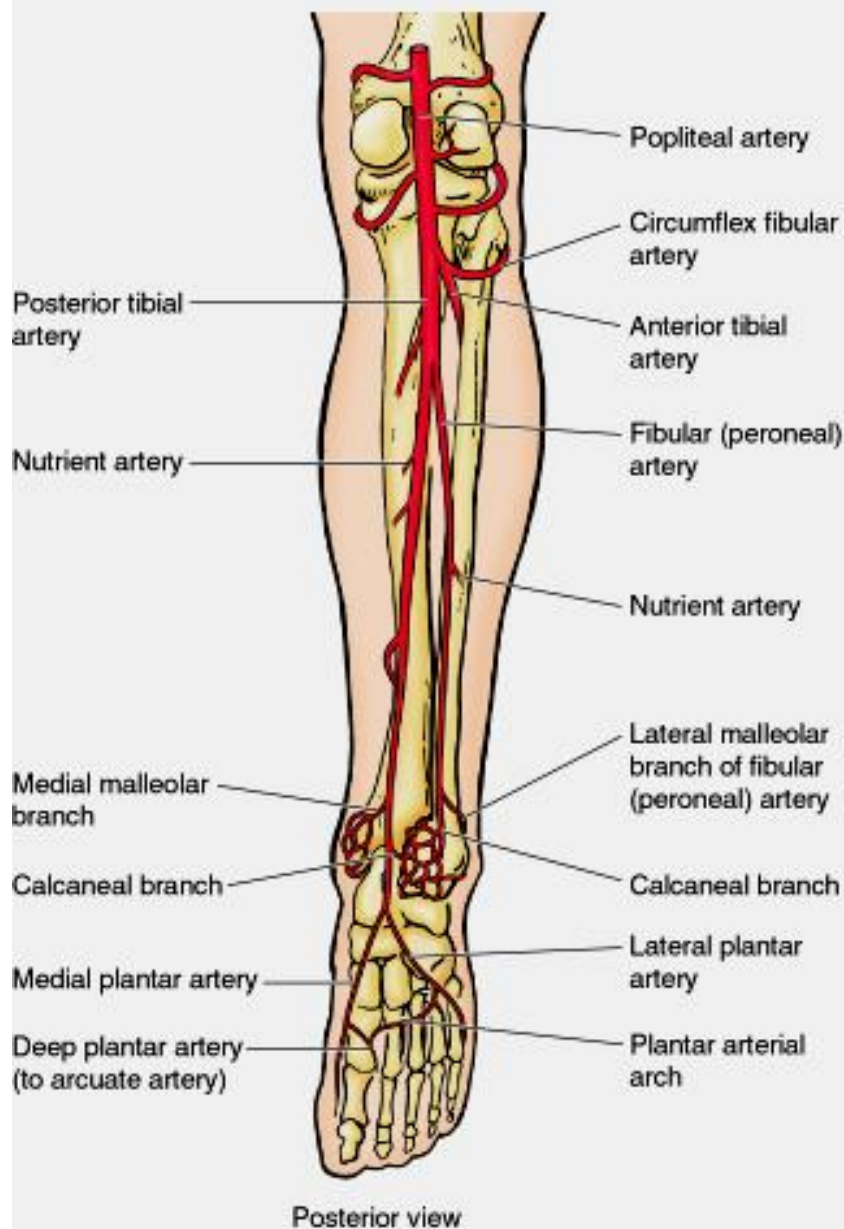
the popliteal artery

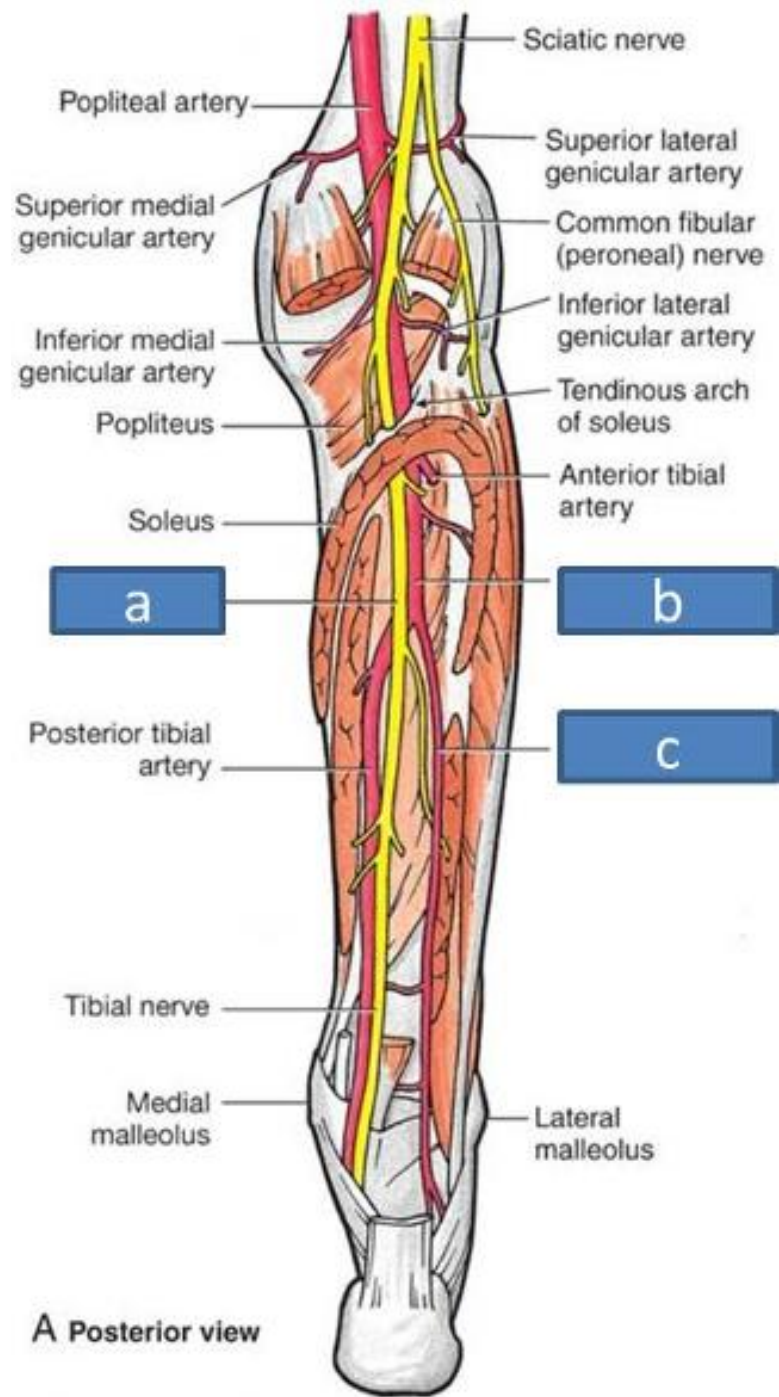
**AT the middle
of the fossa
The popliteal
artery is the
deepest
structure
While the vein
is
intermediate
and the tibial
nerve
Is most
superficial**



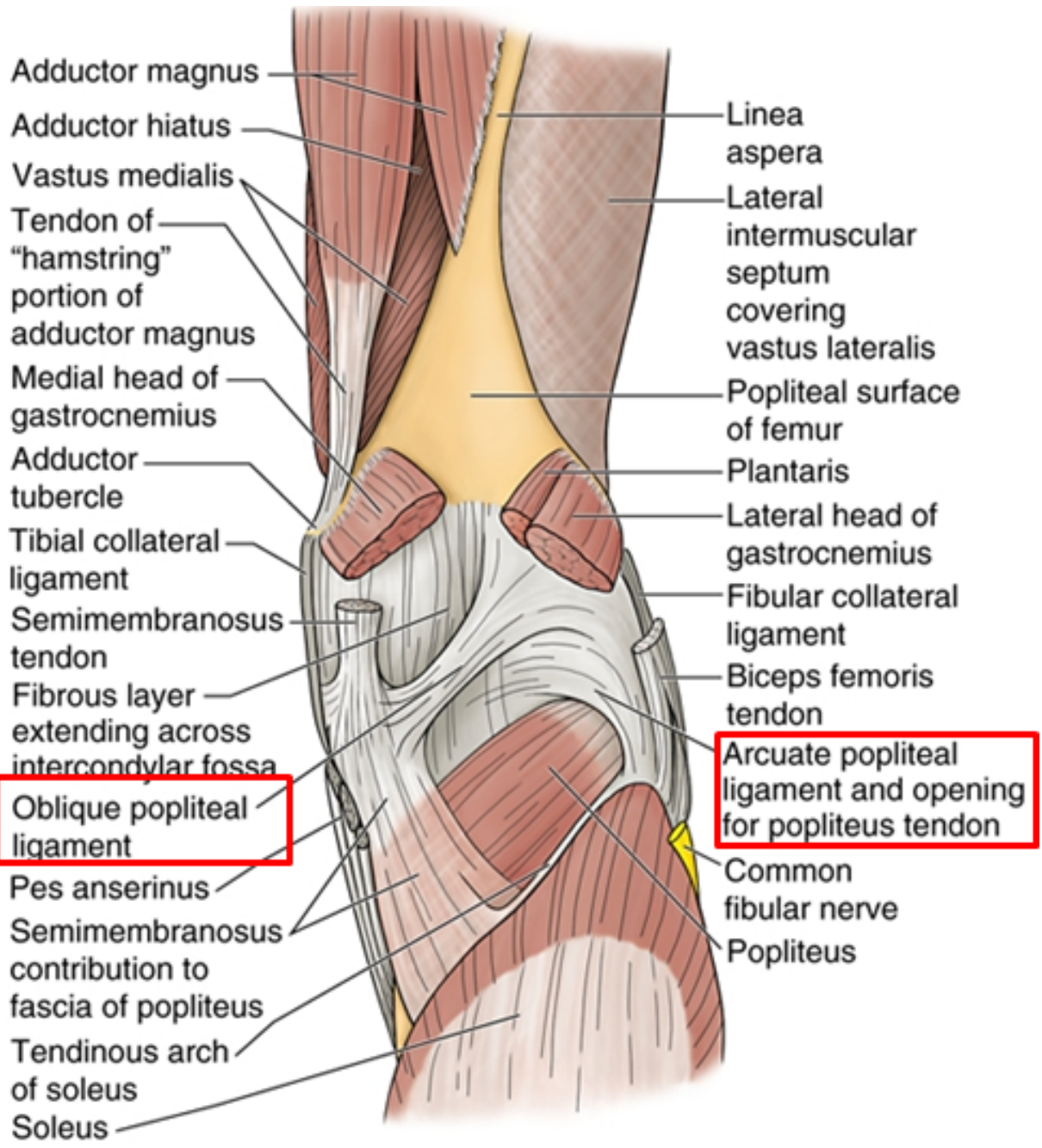


5.40. Arteries of the knee, leg, and foot.

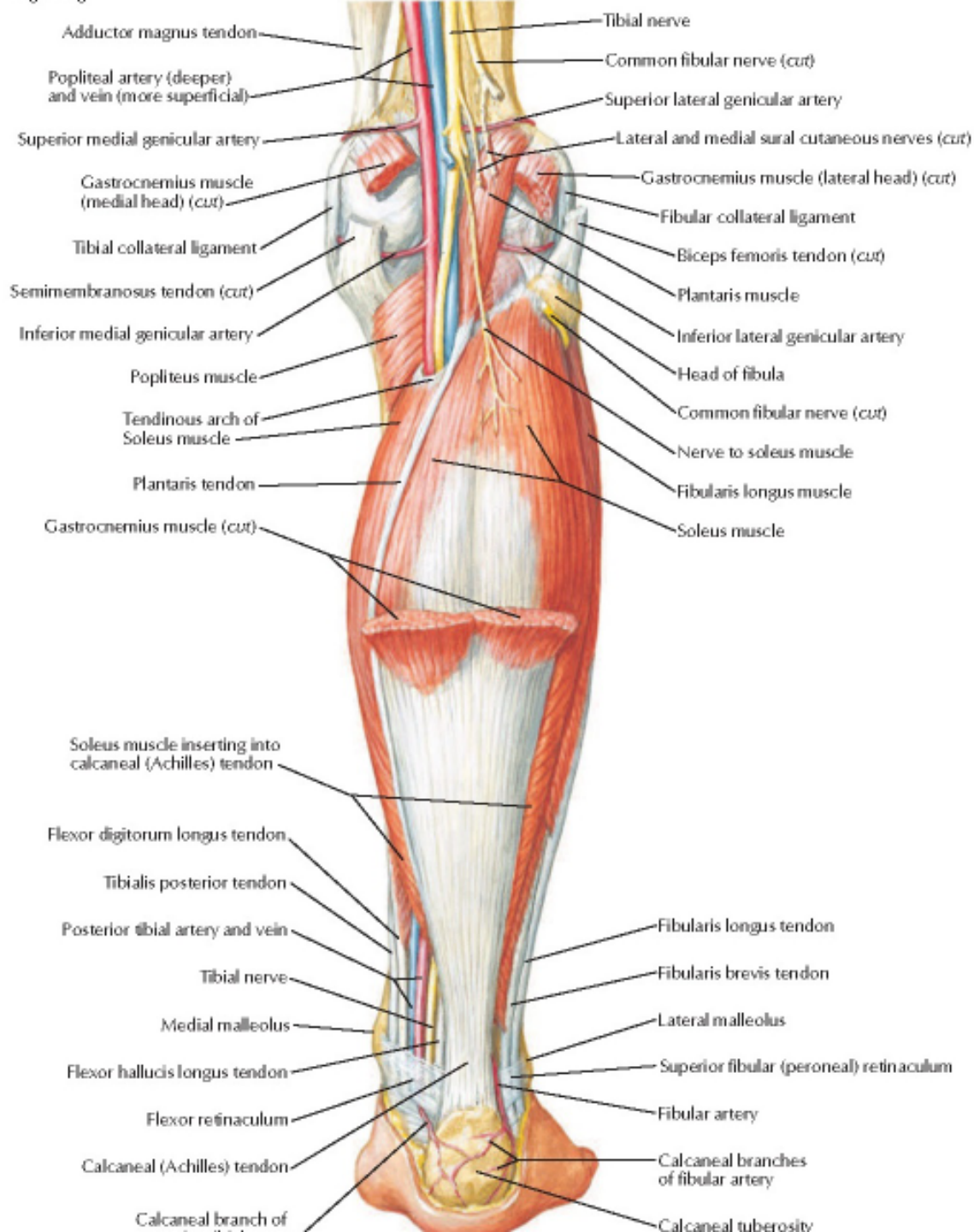


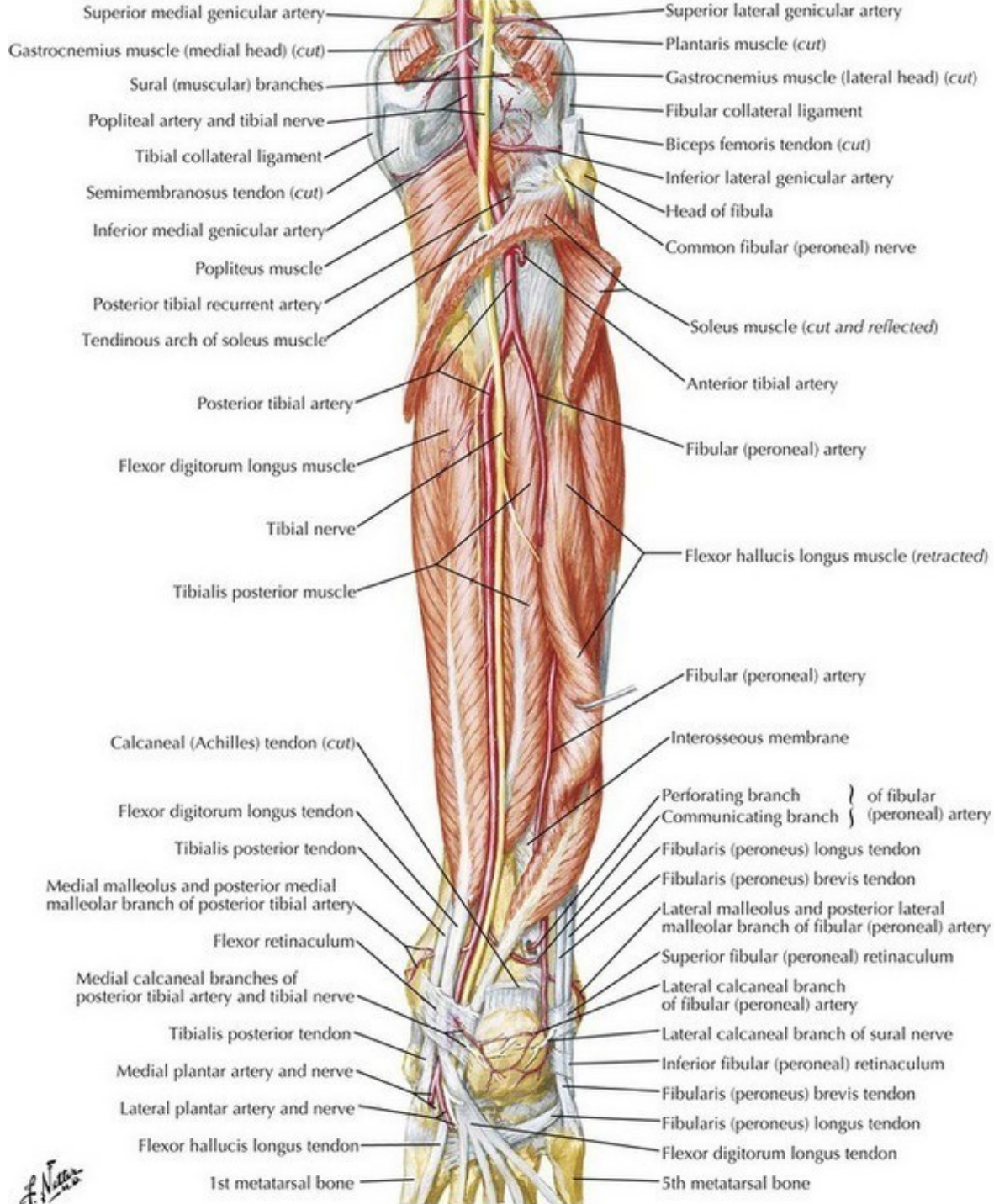


A Posterior view



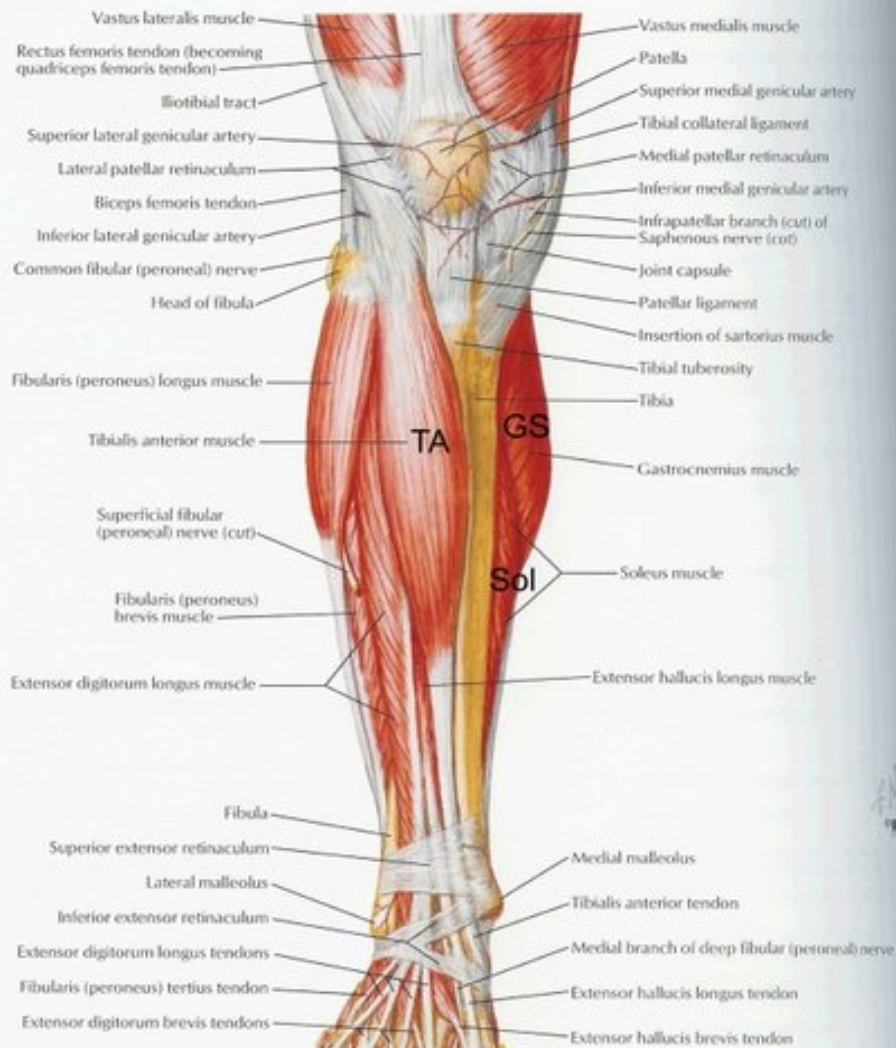
(B) Posterior view





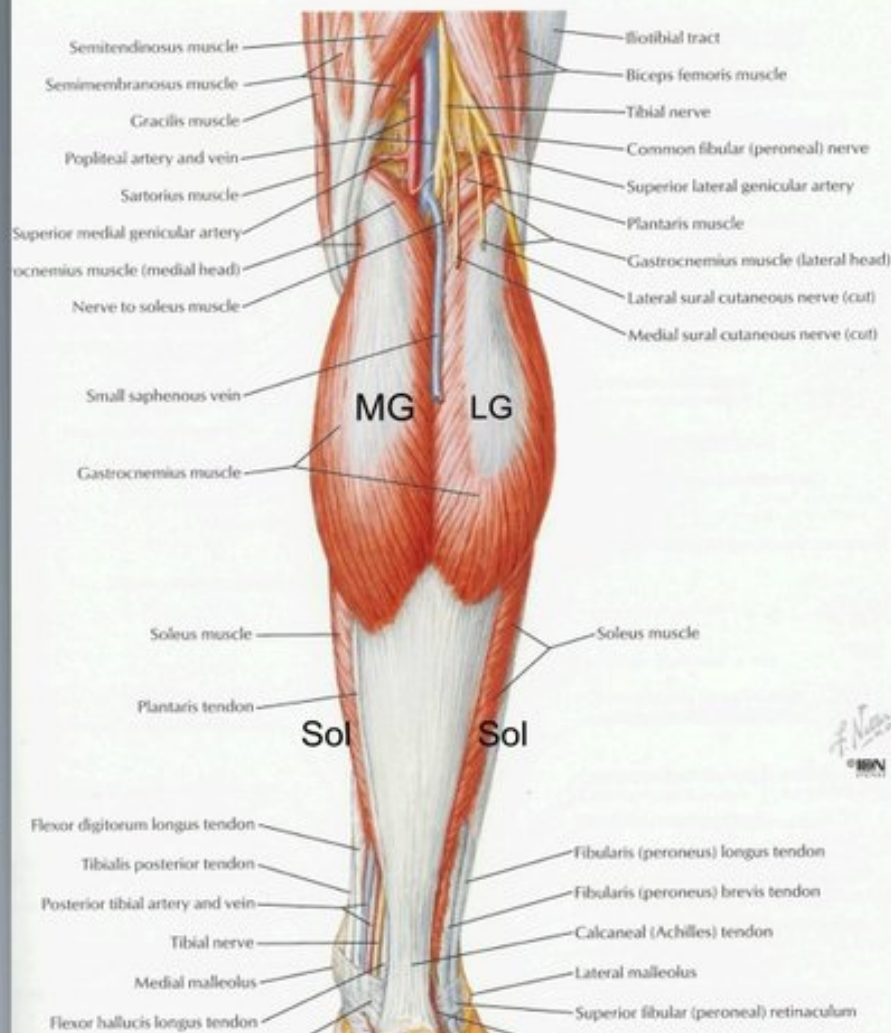
A Muscles of Leg (Superficial Dissection): Anterior View

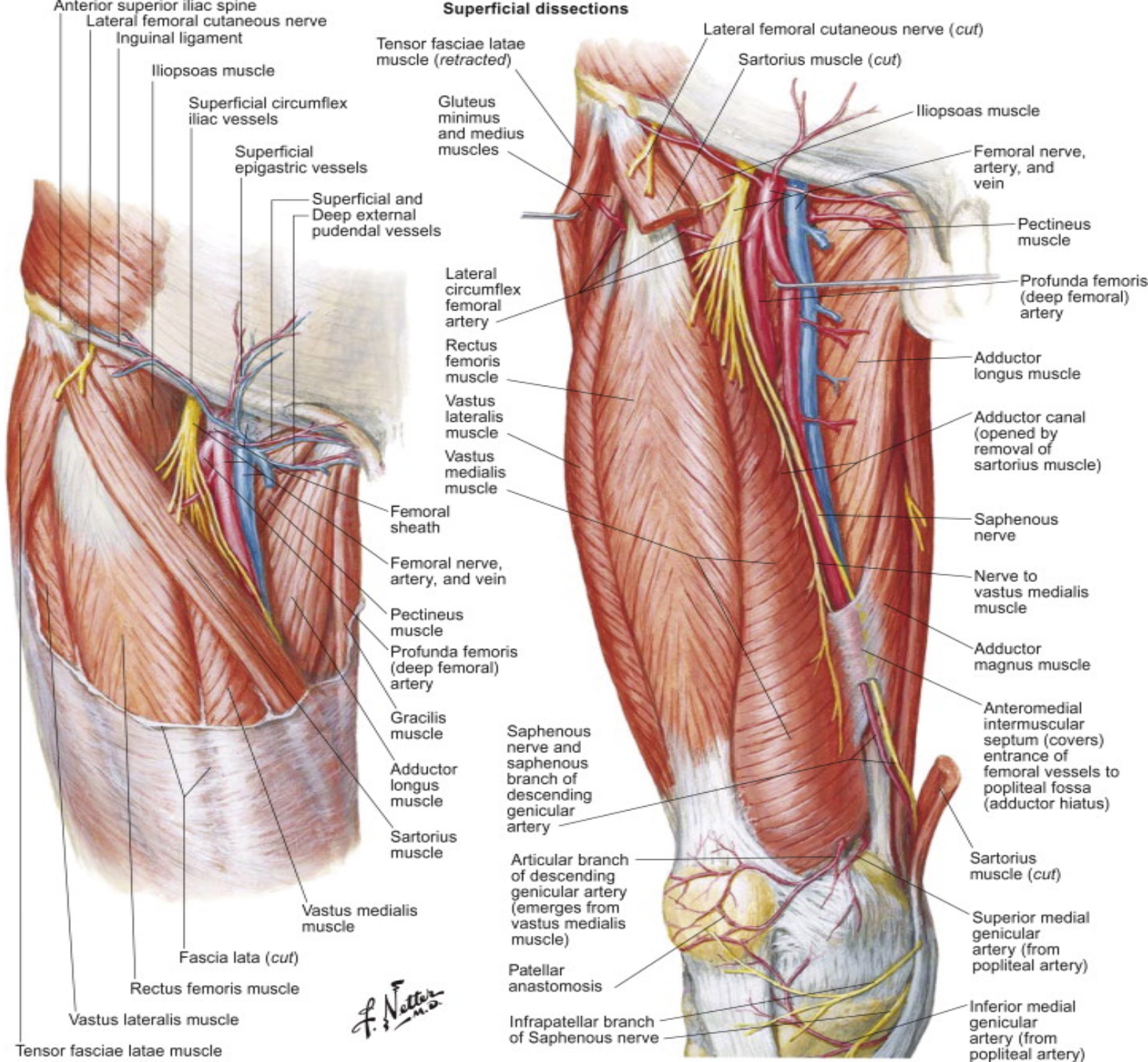
SEE ALSO PLATE 506



B Muscles of Leg (Superficial Dissection): Posterior View

SEE ALSO PLATE 504





Anterior superior iliac spine
 Lateral femoral cutaneous nerve
 Inguinal ligament
 Iliopsoas muscle
 Superficial circumflex iliac vessels
 Superficial epigastric vessels

Tensor fasciae latae muscle (retracted)
 Gluteus minimus and medius muscles

Lateral femoral cutaneous nerve (cut)
 Sartorius muscle (cut)

Iliopsoas muscle
 Femoral nerve, artery, and vein
 Pectineus muscle

Superficial and Deep external pudendal vessels

Lateral circumflex femoral artery
 Rectus femoris muscle
 Vastus lateralis muscle
 Vastus medialis muscle

Profunda femoris (deep femoral) artery

Femoral sheath
 Femoral nerve, artery, and vein

Adductor longus muscle

Pectineus muscle
 Profunda femoris (deep femoral) artery

Adductor canal (opened by removal of sartorius muscle)

Gracilis muscle
 Adductor longus muscle
 Sartorius muscle

Saphenous nerve

Nerve to vastus medialis muscle

Adductor magnus muscle

Anteromedial intermuscular septum (covers) entrance of femoral vessels to popliteal fossa (adductor hiatus)

Vastus medialis muscle

Saphenous nerve and saphenous branch of descending genicular artery

Articular branch of descending genicular artery (emerges from vastus medialis muscle)

Sartorius muscle (cut)

Superior medial genicular artery (from popliteal artery)

Fascia lata (cut)

Patellar anastomosis

Inferior medial genicular artery (from popliteal artery)

Rectus femoris muscle

Infrapatellar branch of Saphenous nerve

Vastus lateralis muscle

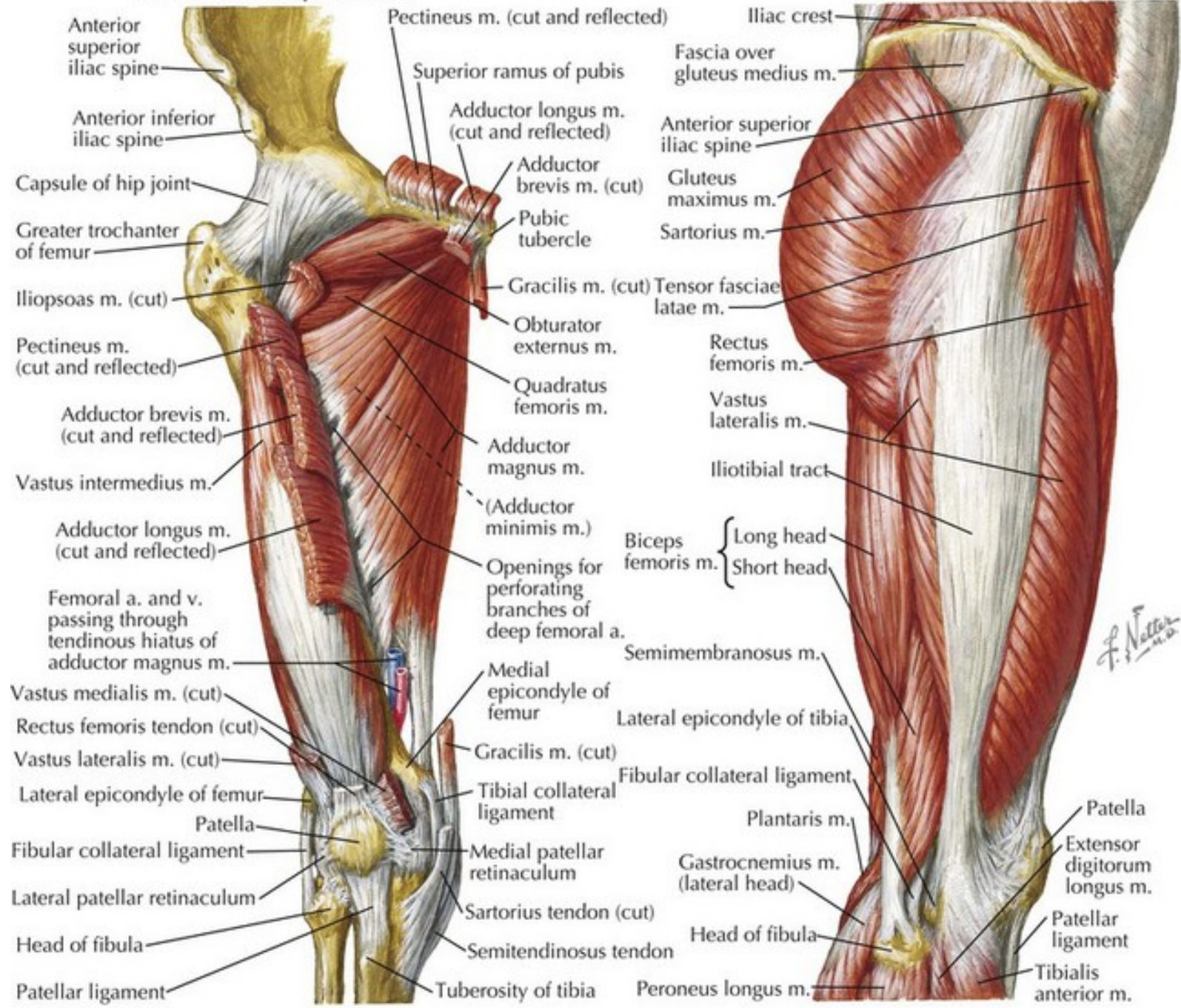
Tensor fasciae latae muscle

F. Netter M.D.

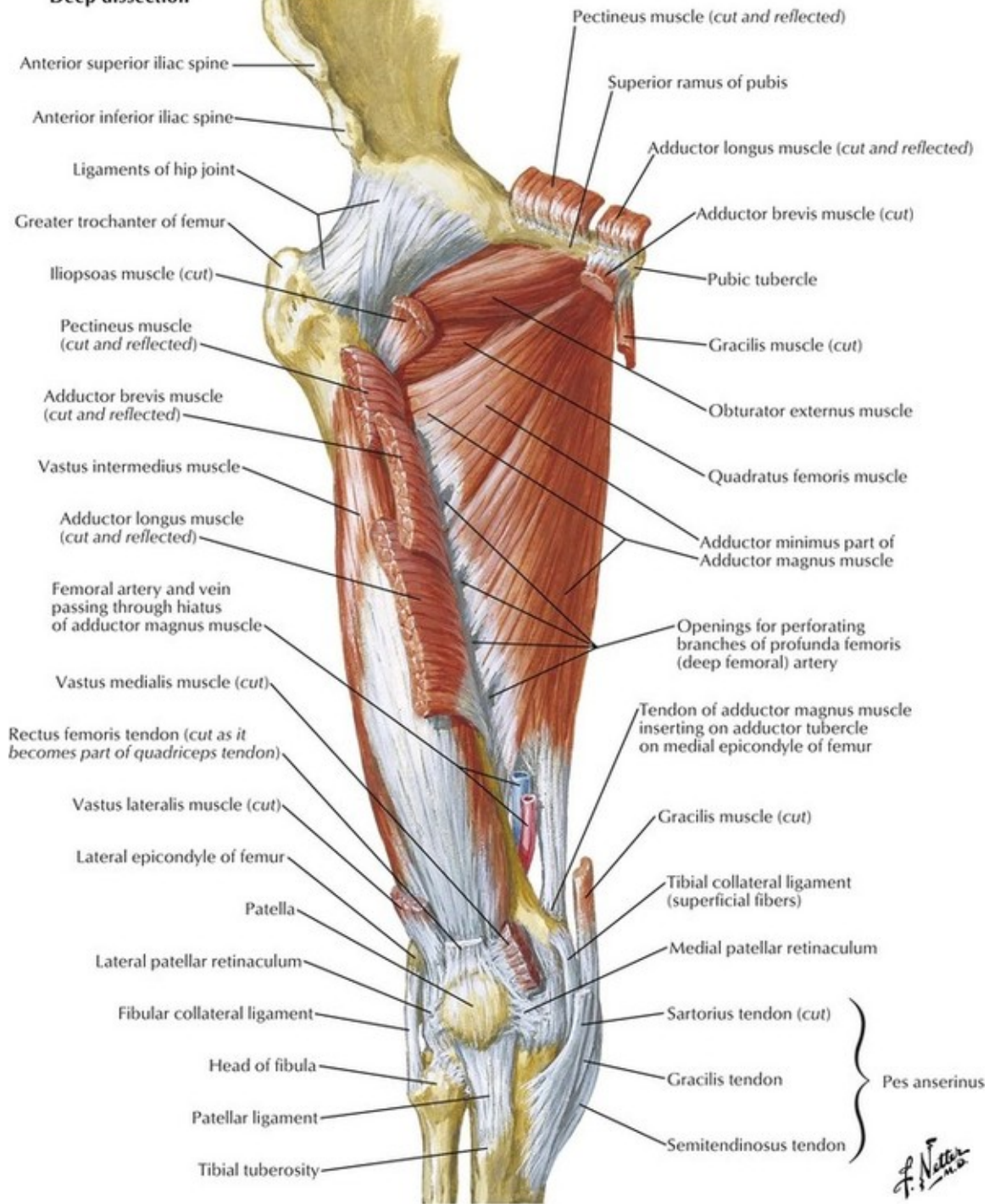
Muscles of Hip and Thigh

Anterior view: deep dissection

Lateral view: superficial dissection

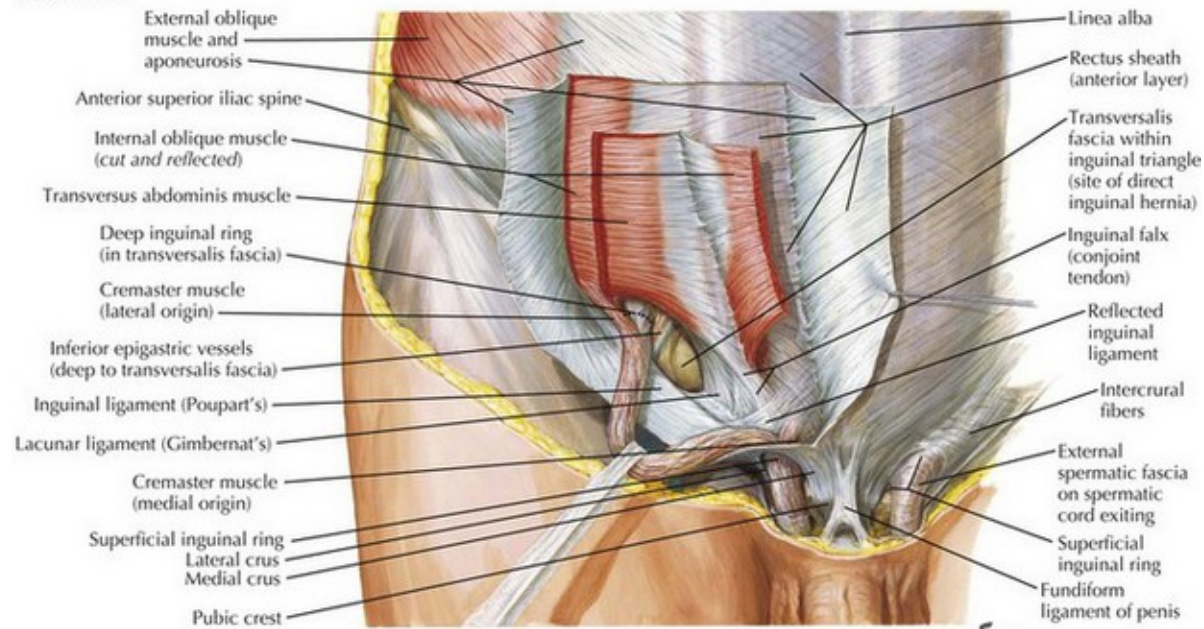


Deep dissection



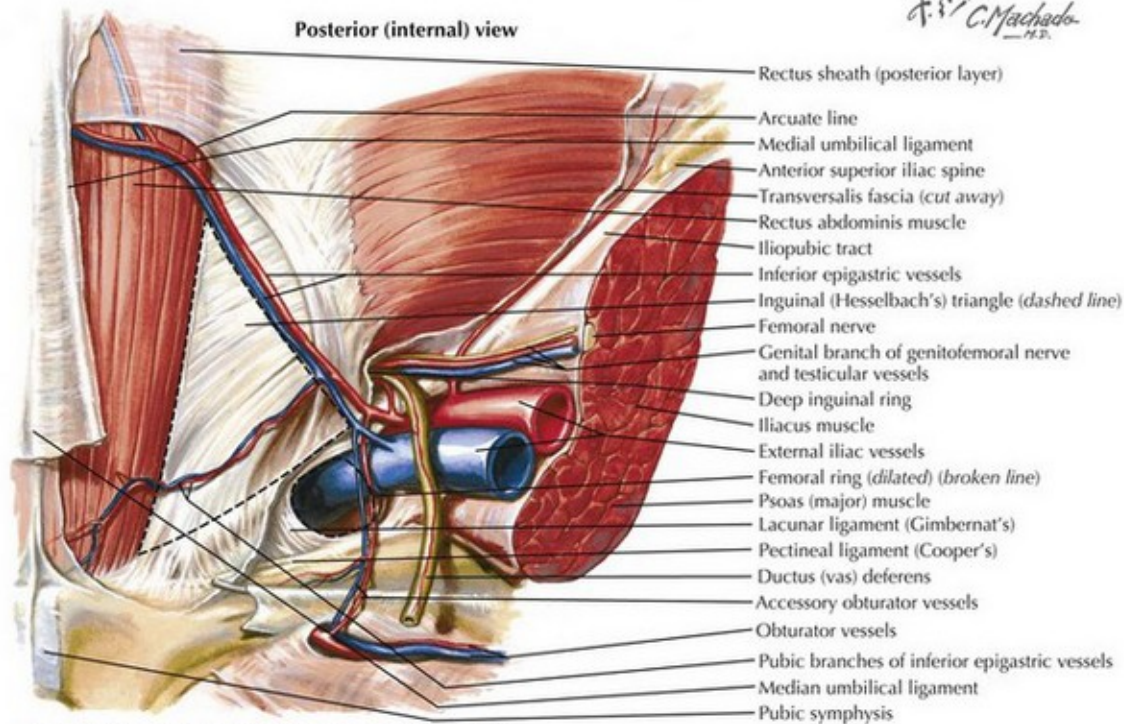
F. Netter M.D.

Anterior view



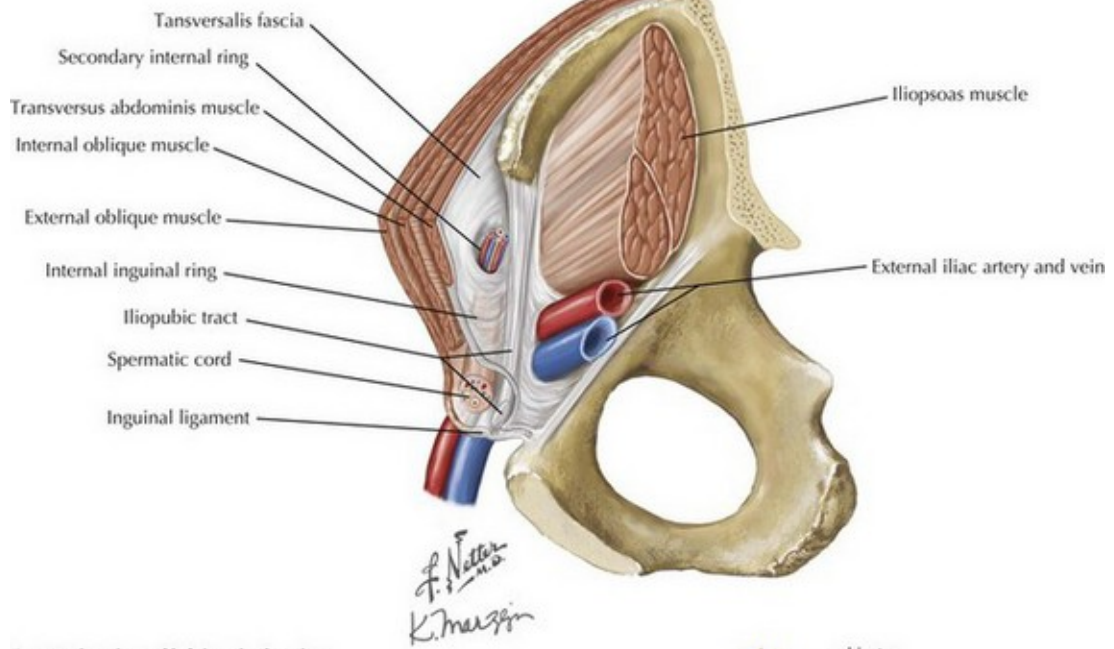
F. Netter M.D.
C. Machado M.D.

Posterior (internal) view

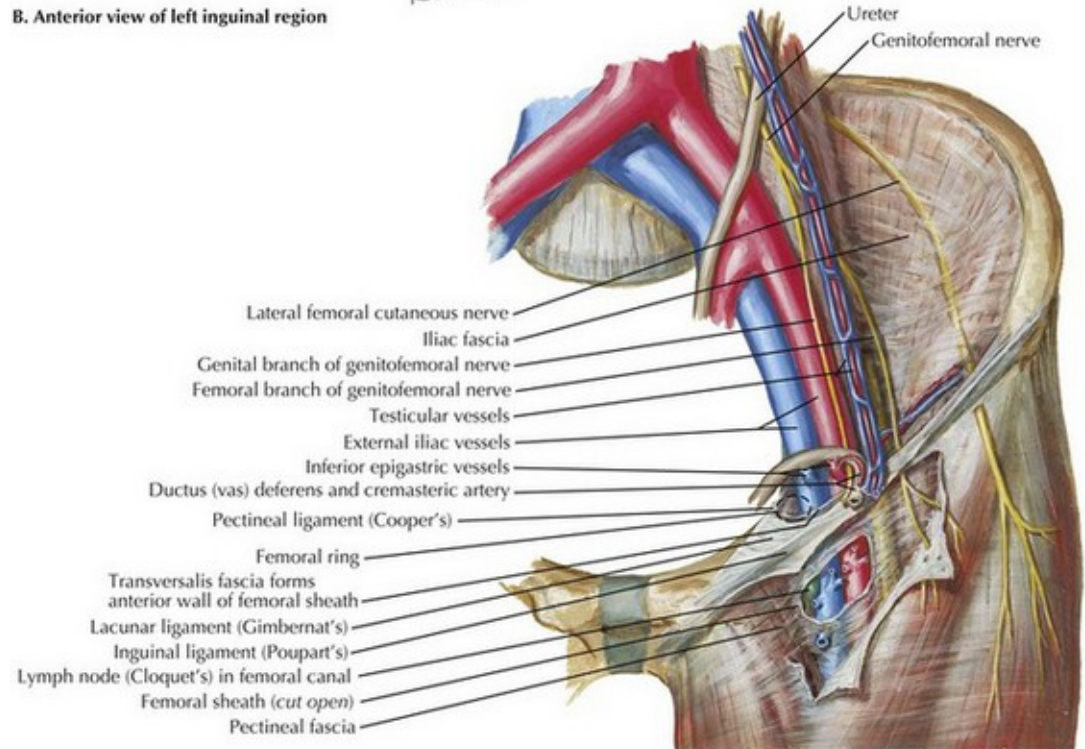


Hesselbach's triangle by Carlos Machado after Frank Netter

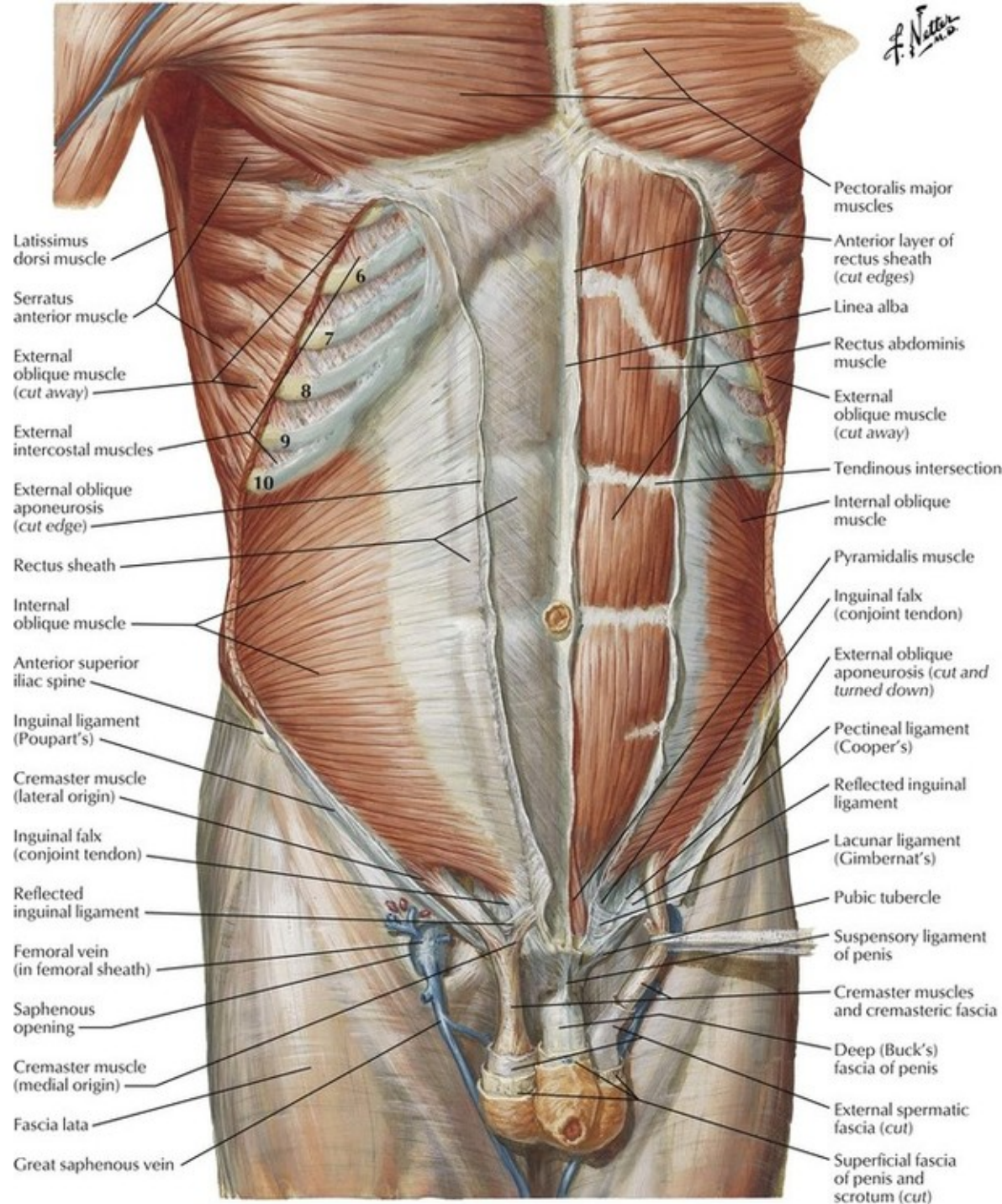
A. Posterior view of right inguinal region



B. Anterior view of left inguinal region



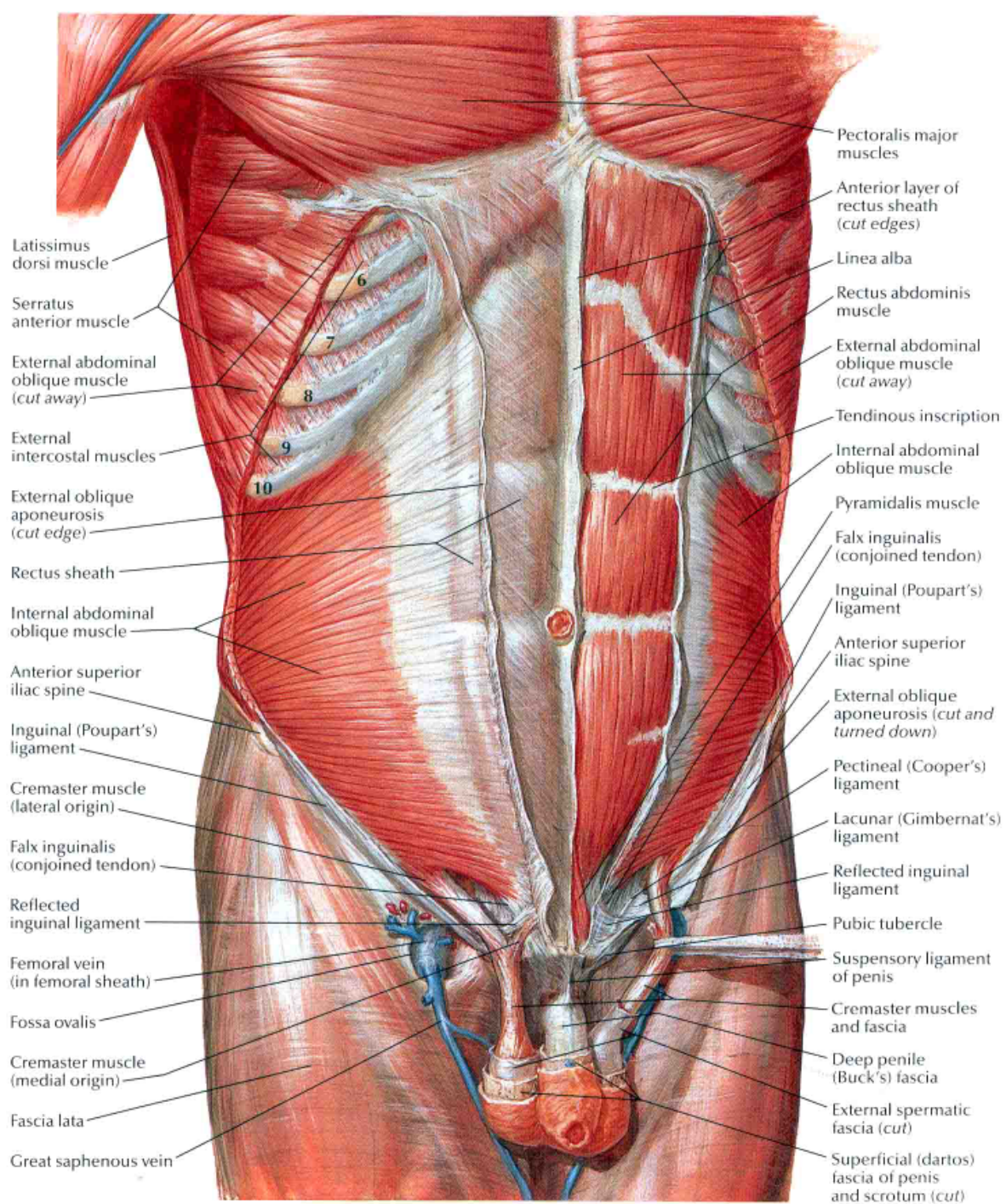
F. Netter M.D.

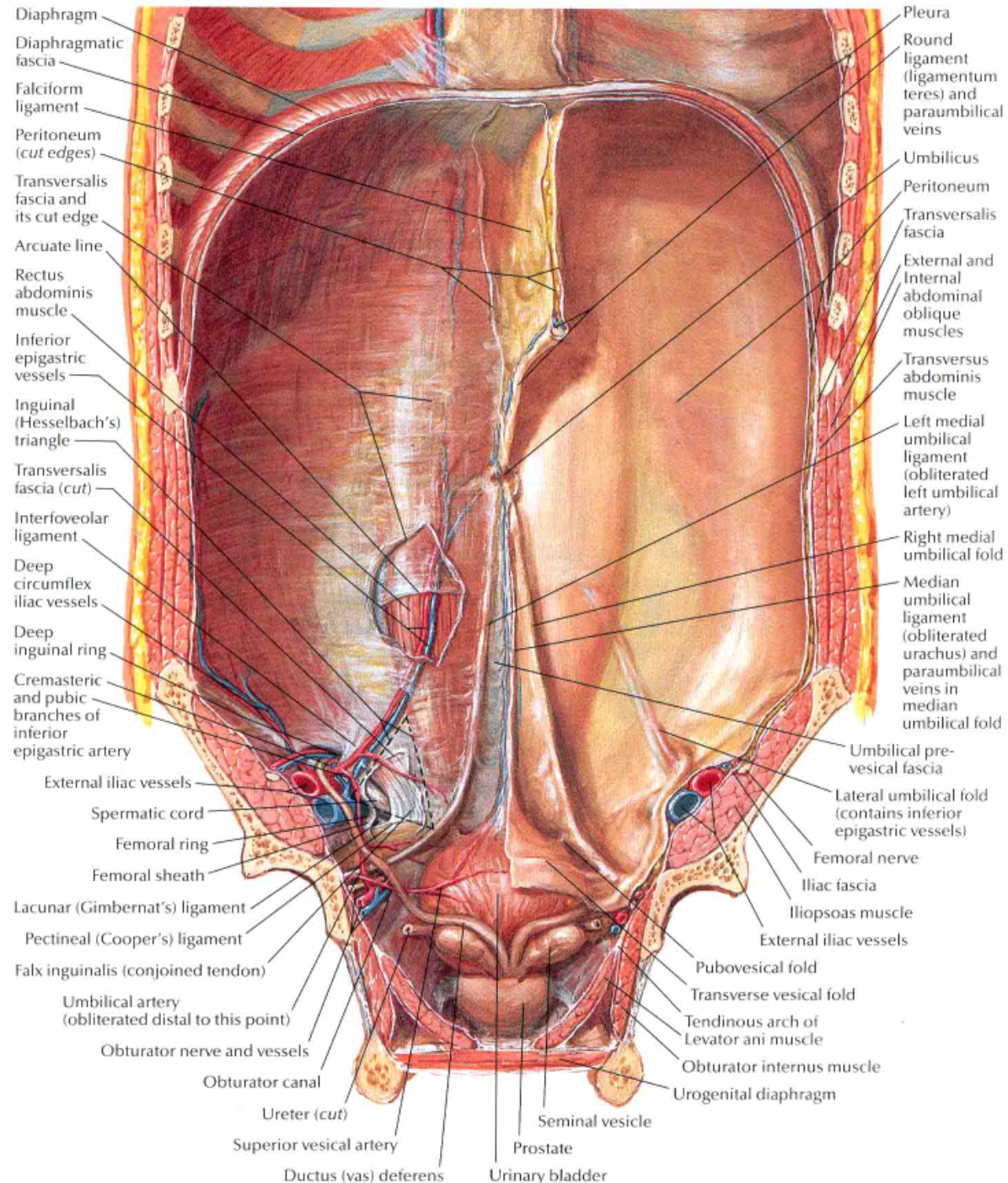


Latissimus dorsi muscle
Serratus anterior muscle
External oblique muscle (cut away)
External intercostal muscles
External oblique aponeurosis (cut edge)
Rectus sheath
Internal oblique muscle
Anterior superior iliac spine
Inguinal ligament (Poupart's)
Cremaster muscle (lateral origin)
Inguinal falx (conjoint tendon)
Reflected inguinal ligament
Femoral vein (in femoral sheath)
Saphenous opening
Cremaster muscle (medial origin)
Fascia lata
Great saphenous vein

6
7
8
9
10

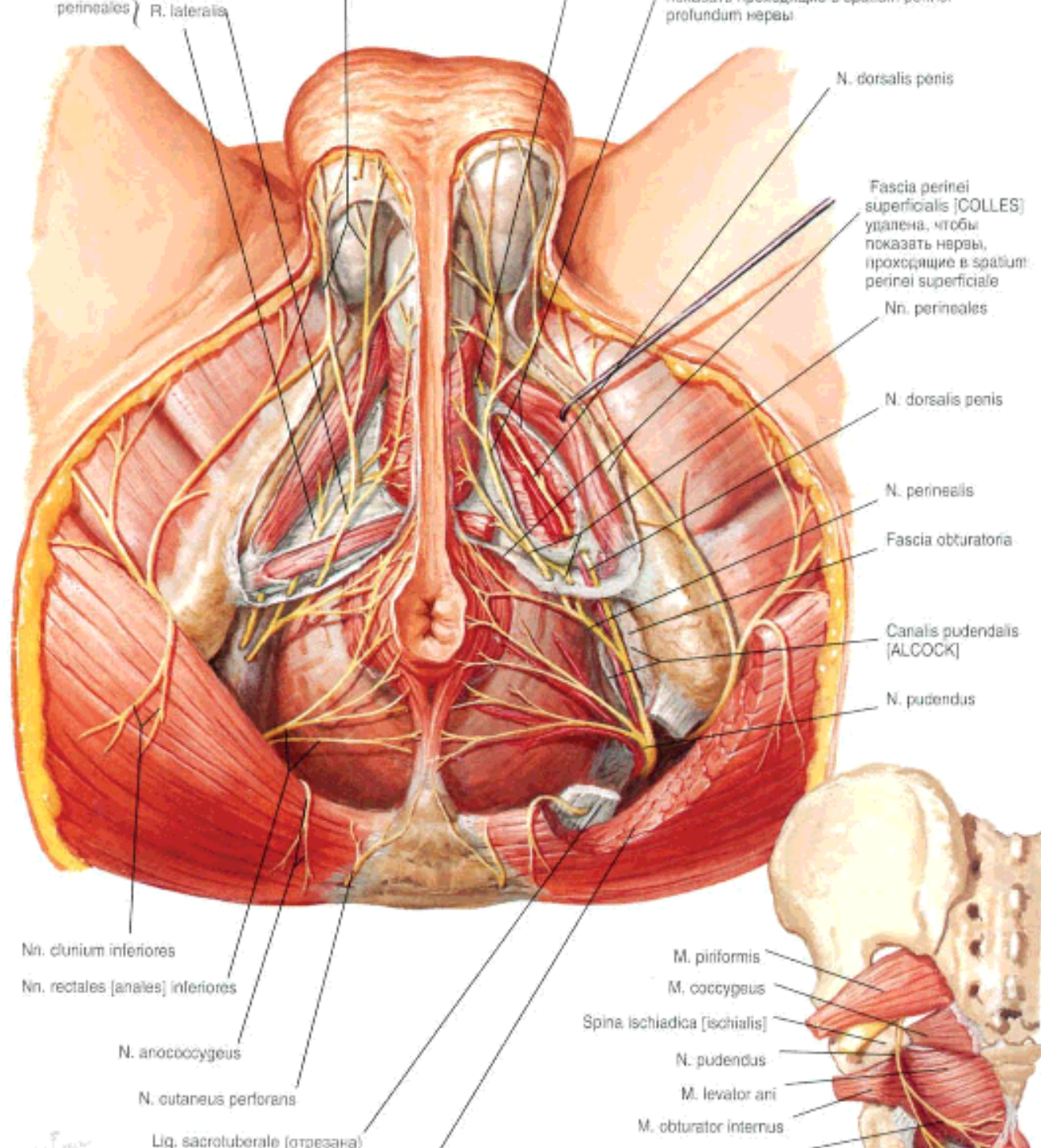
Pectoralis major muscles
Anterior layer of rectus sheath (cut edges)
Linea alba
Rectus abdominis muscle
External oblique muscle (cut away)
Tendinous intersection
Internal oblique muscle
Pyramidalis muscle
Inguinal falx (conjoint tendon)
External oblique aponeurosis (cut and turned down)
Pectineal ligament (Cooper's)
Reflected inguinal ligament
Lacunar ligament (Gimbernat's)
Pubic tubercle
Suspensory ligament of penis
Cremaster muscles and cremasteric fascia
Deep (Buck's) fascia of penis
External spermatic fascia (cut)
Superficial fascia of penis and scrotum (cut)





Diaphragm
 Diaphragmatic fascia
 Falciform ligament
 Peritoneum (cut edges)
 Transversalis fascia and its cut edge
 Arcuate line
 Rectus abdominis muscle
 Inferior epigastric vessels
 Inguinal (Hesselbach's) triangle
 Transversalis fascia (cut)
 Interfoveolar ligament
 Deep circumflex iliac vessels
 Deep inguinal ring
 Cremasteric and pubic branches of inferior epigastric artery
 External iliac vessels
 Spermatic cord
 Femoral ring
 Femoral sheath
 Lacunar (Gimbernat's) ligament
 Pectineal (Cooper's) ligament
 Falx inguinalis (conjoined tendon)
 Umbilical artery (obliterated distal to this point)
 Obturator nerve and vessels
 Obturator canal
 Ureter (cut)
 Superior vesical artery
 Ductus (vas) deferens

Pleura
 Round ligament (ligamentum teres) and paraumbilical veins
 Umbilicus
 Peritoneum
 Transversalis fascia
 External and Internal abdominal oblique muscles
 Transversus abdominis muscle
 Left medial umbilical ligament (obliterated left umbilical artery)
 Right medial umbilical fold
 Median umbilical ligament (obliterated urachus) and paraumbilical veins in median umbilical fold
 Umbilical pre-vesical fascia
 Lateral umbilical fold (contains inferior epigastric vessels)
 Femoral nerve
 Iliac fascia
 Iliopsoas muscle
 External iliac vessels
 Pubovesical fold
 Transverse vesical fold
 Tendinous arch of Levator ani muscle
 Obturator internus muscle
 Urogenital diaphragm
 Seminal vesicle
 Prostate
 Urinary bladder



perineales (R. lateralis)

profundum нервы

N. dorsalis penis

Fascia perinei superficialis [COLLES] удалена, чтобы показать нервы, проходящие в spatium perinei superficiale

Nn. perineales

N. dorsalis penis

N. perinealis

Fascia obturatoria

Canalis pudendalis [ALCOCK]

N. pudendus

Nn. clunium inferiores

Nn. rectales [anales] inferiores

N. anococcygeus

N. cutaneus perforans

Liq. sacrotuberale (отрезана)

M. piriformis

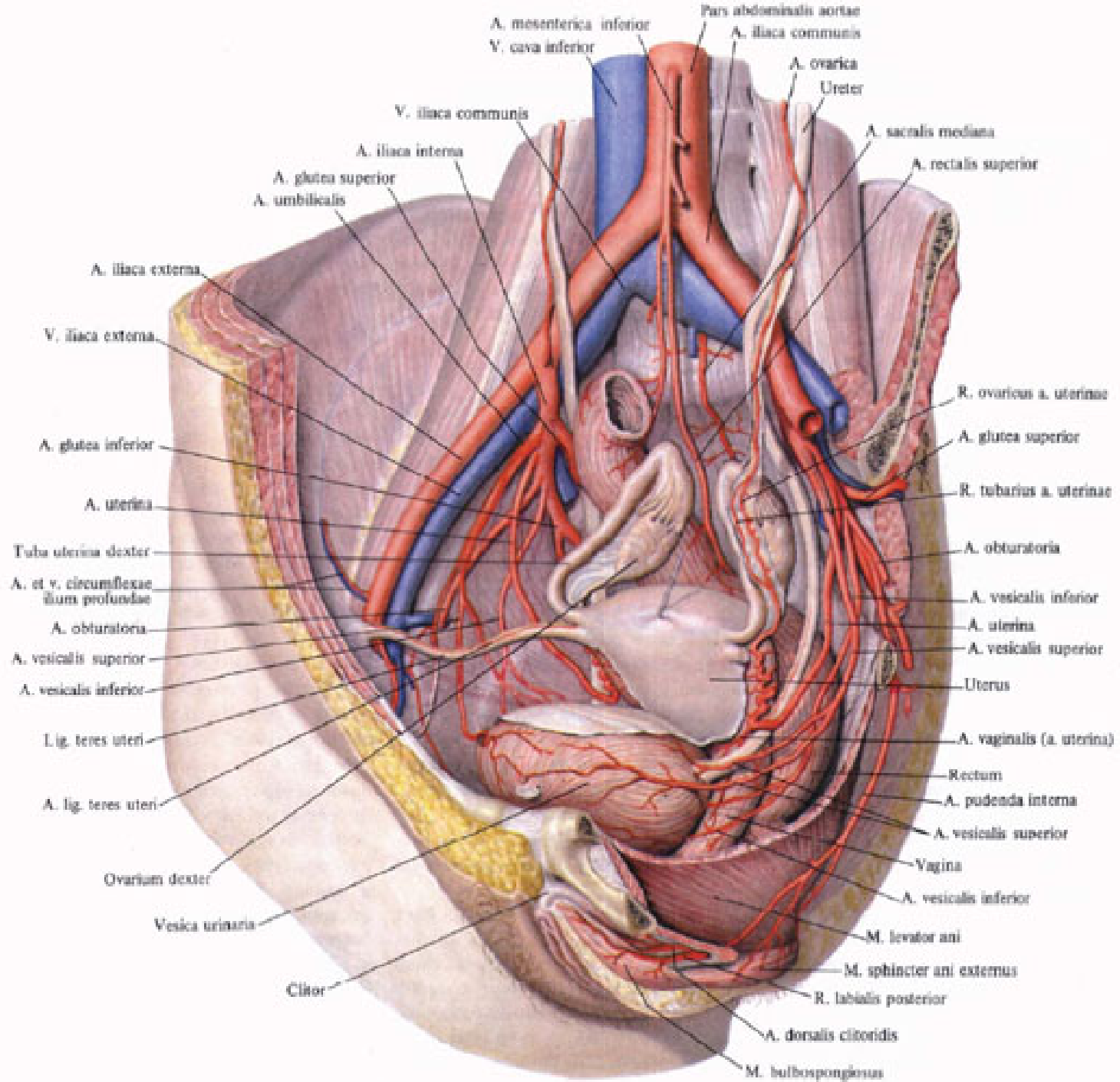
M. coccygeus

Spina ischiadica [ischialis]

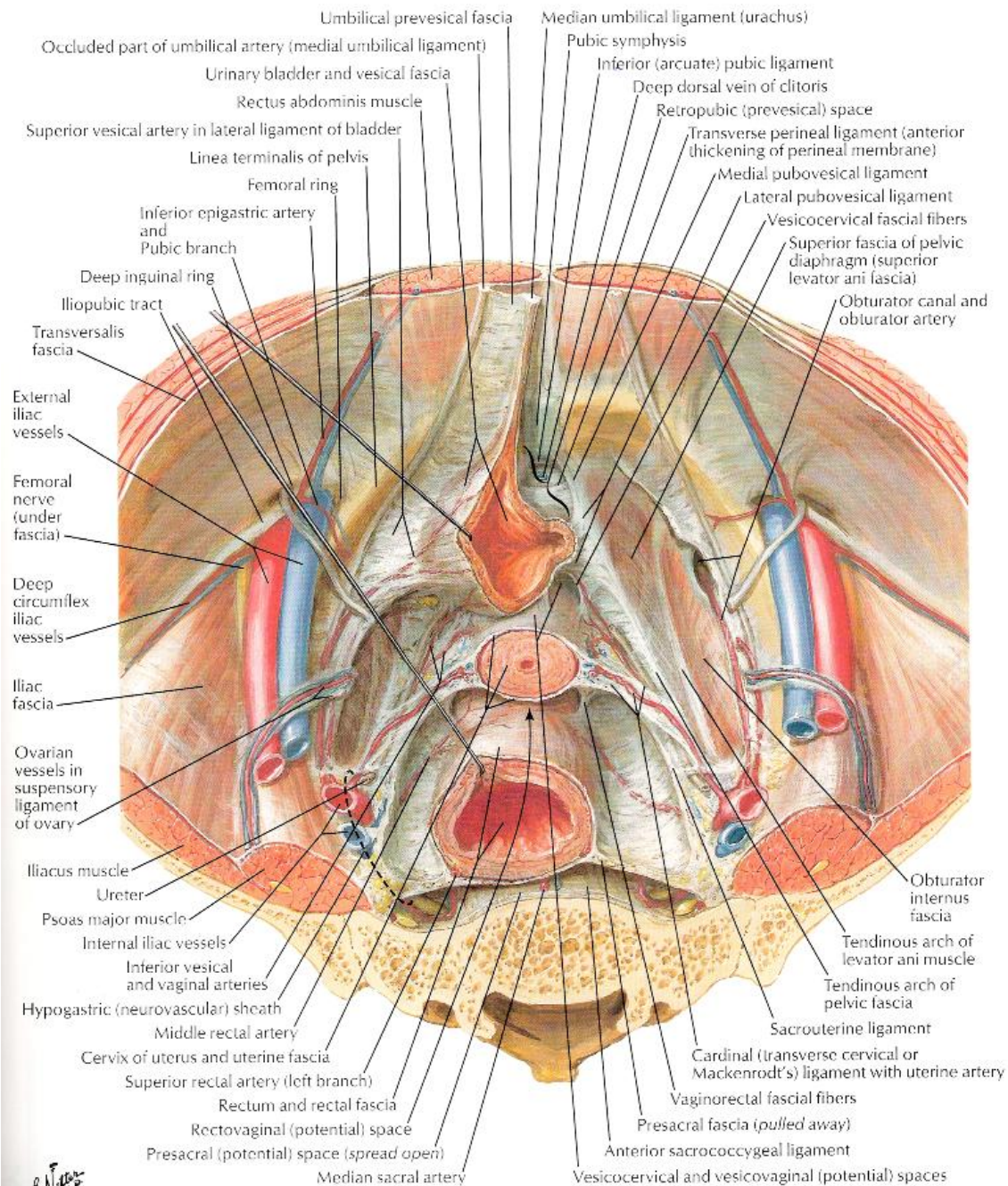
N. pudendus

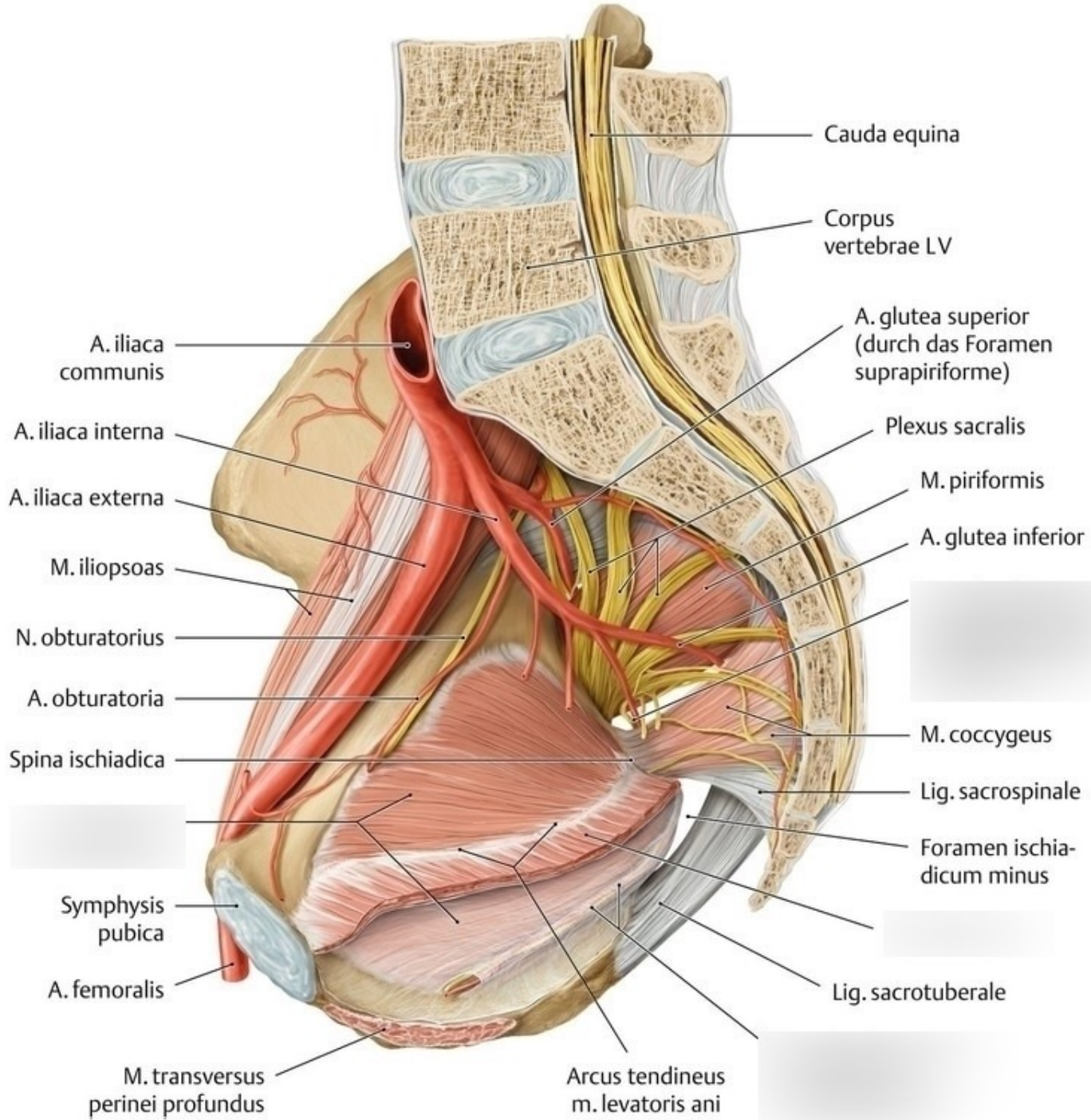
M. levator ani

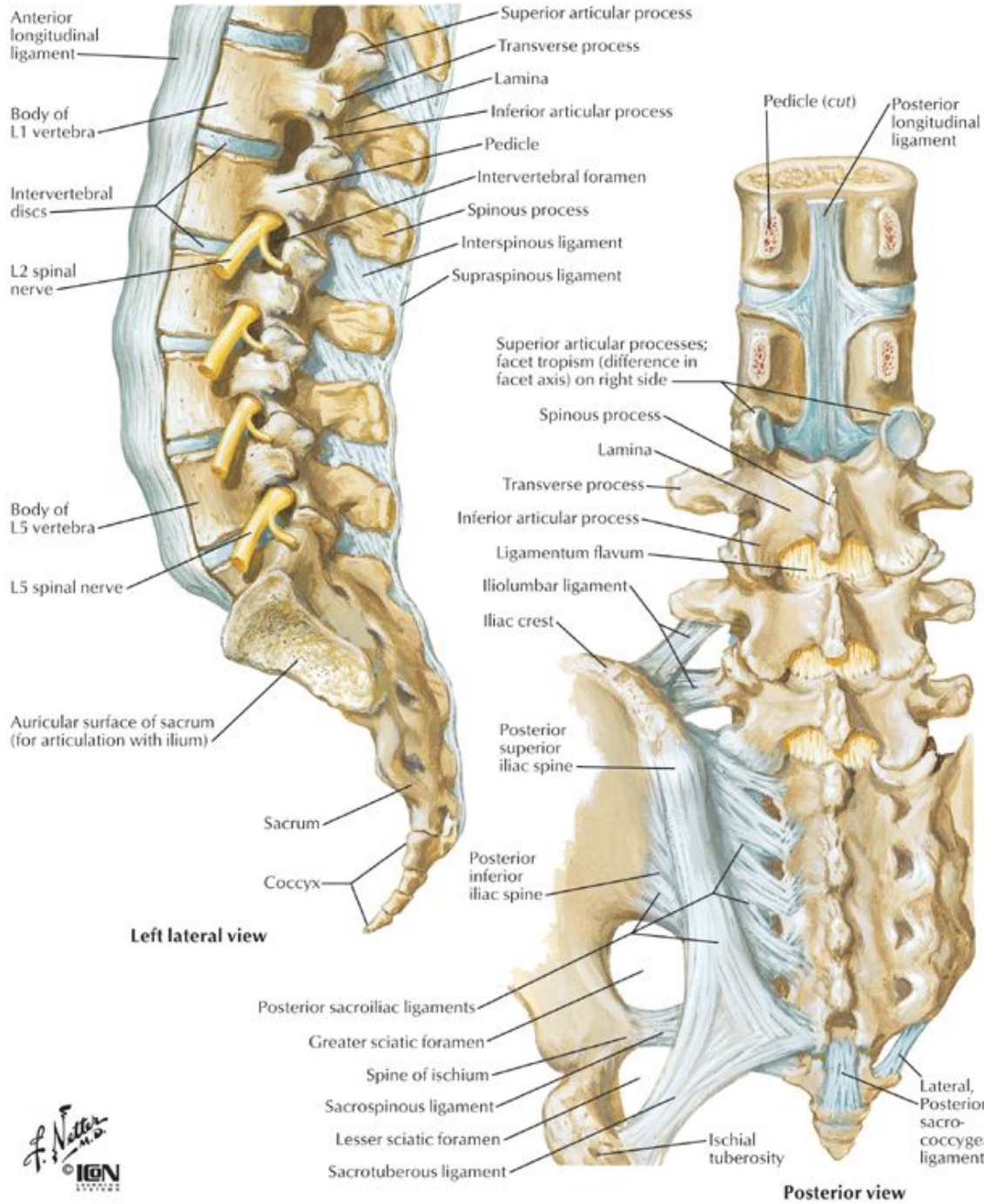
M. obturator internus



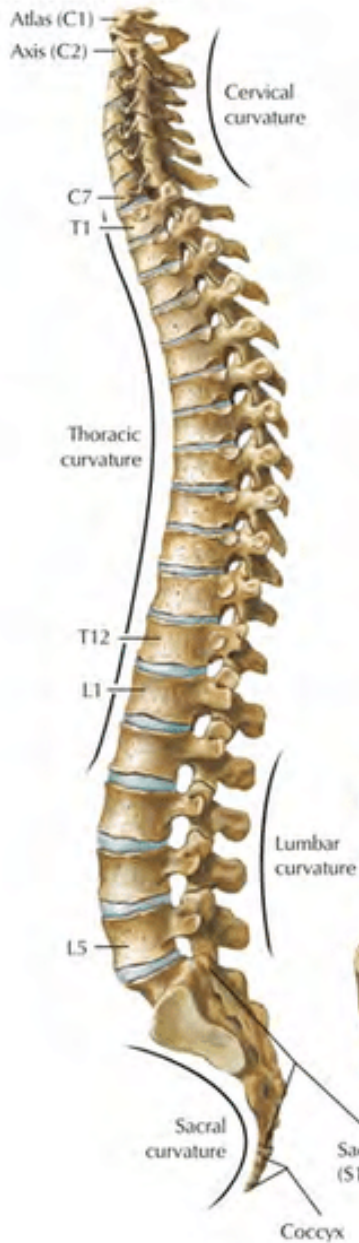
Female: superior view (peritoneum and loose areolar tissue removed)



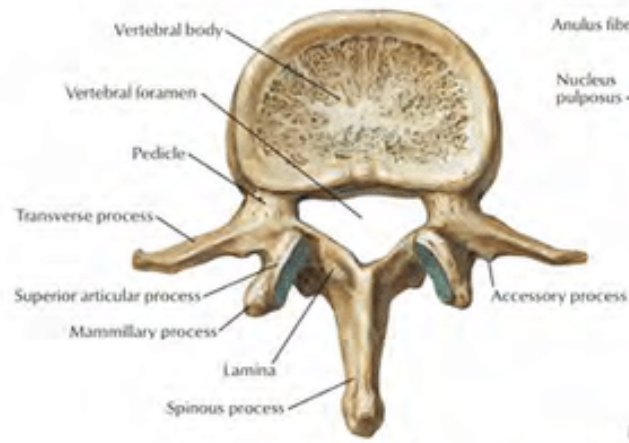




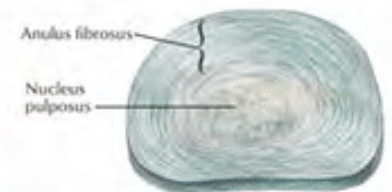
Left lateral view



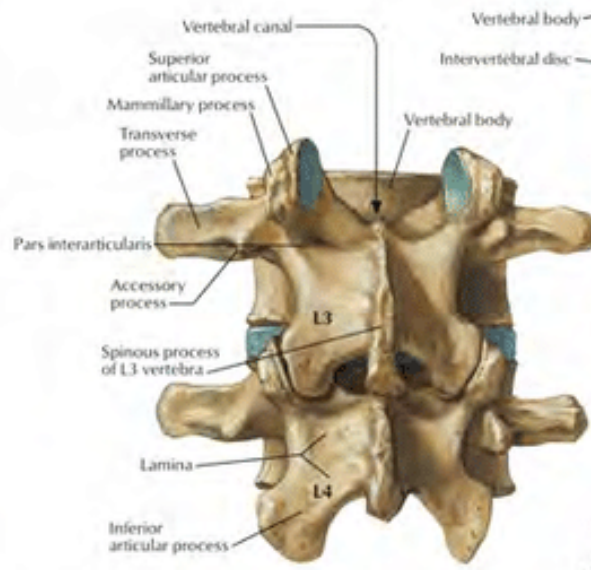
Posterior view



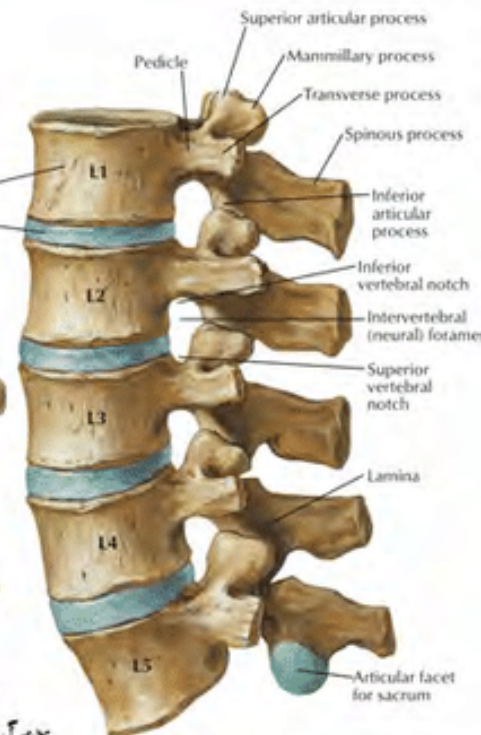
L2 vertebra: superior view



Intervertebral disc



L3 and L4 vertebrae: posterior view



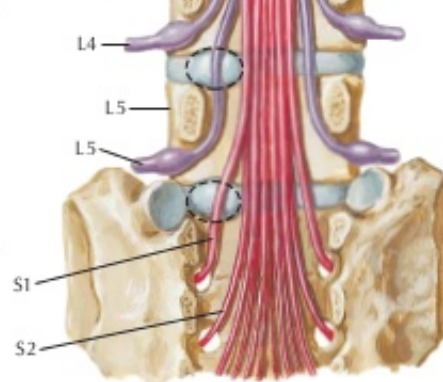
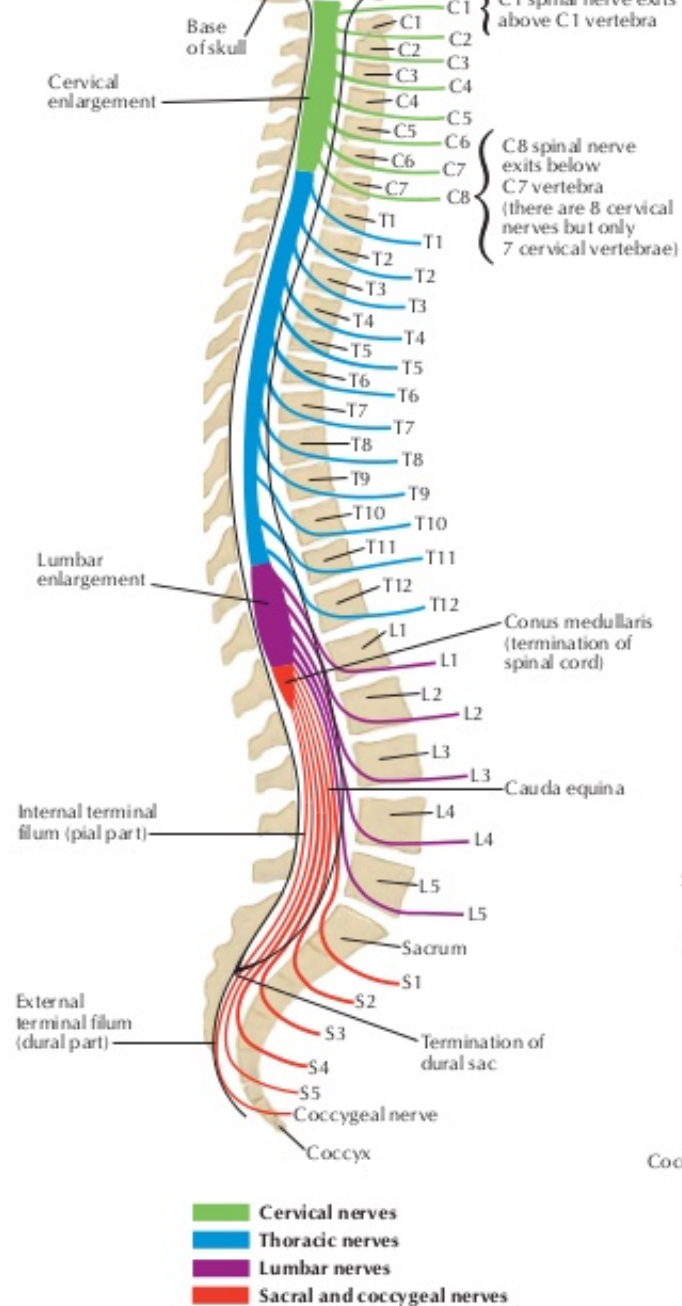
Lumbar vertebrae, assembled: left lateral view

(a)

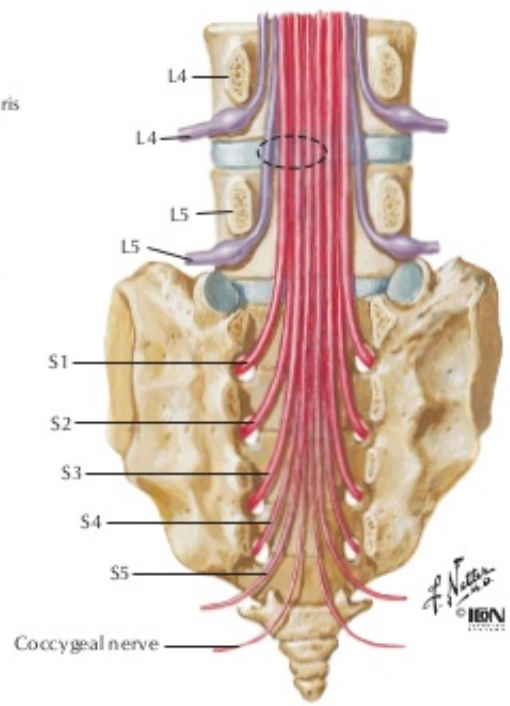
(b)

F. Netter M.D.

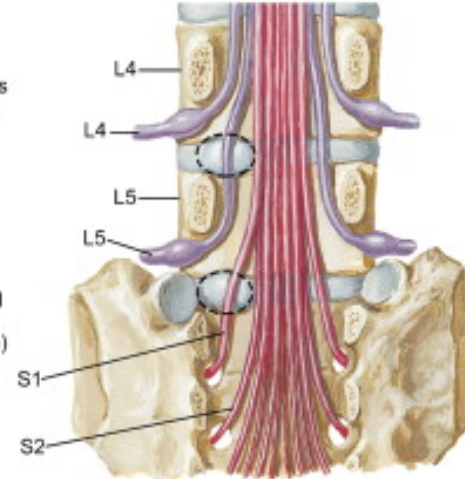
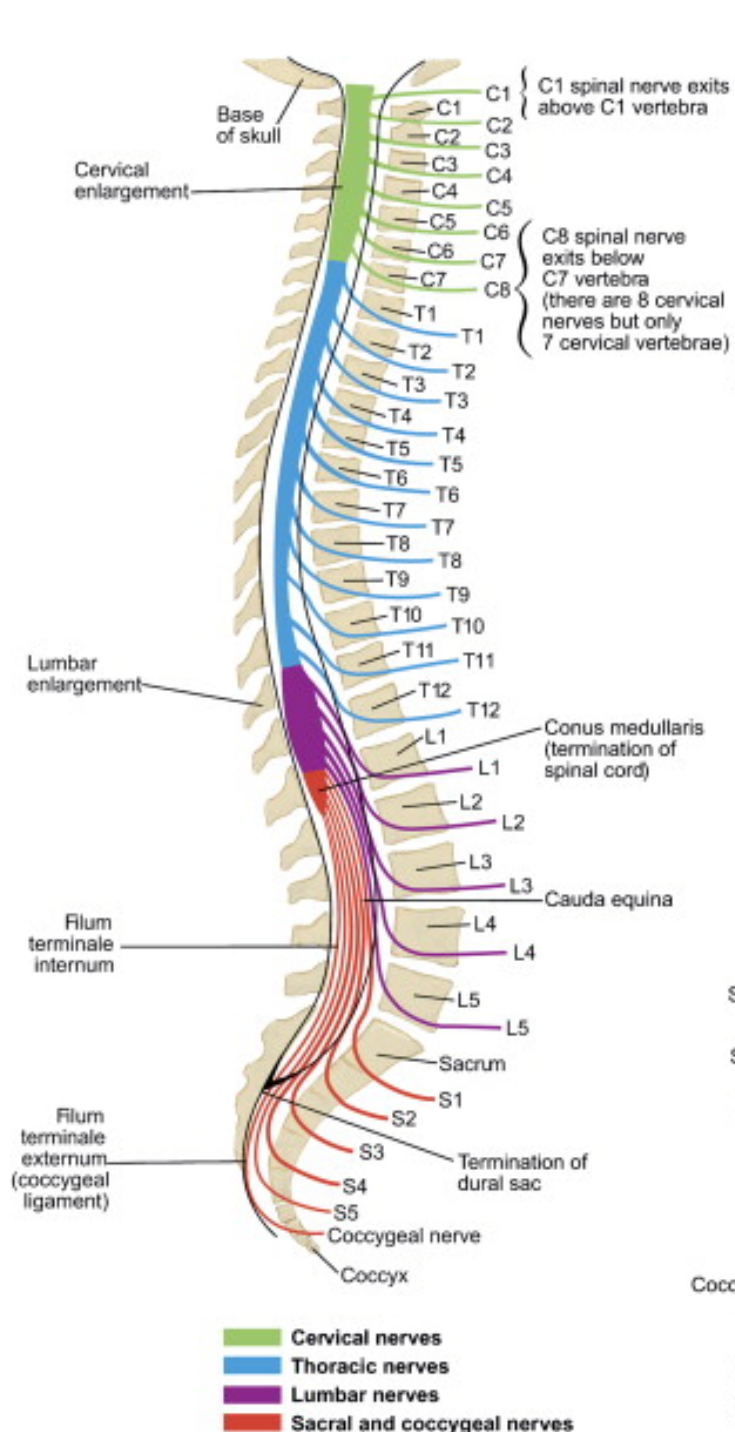
F. Netter M.D.



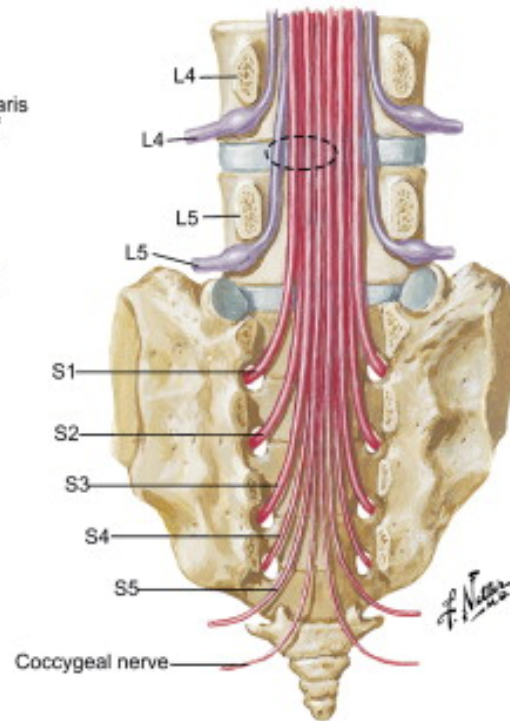
Lumbar disc protrusion does not usually affect nerve exiting above disc. Lateral protrusion at disc level L4-5 affects L5 spinal nerve, not L4 spinal nerve. Protrusion at disc level L5-S1 affects S1 spinal nerve, not L5 spinal nerve



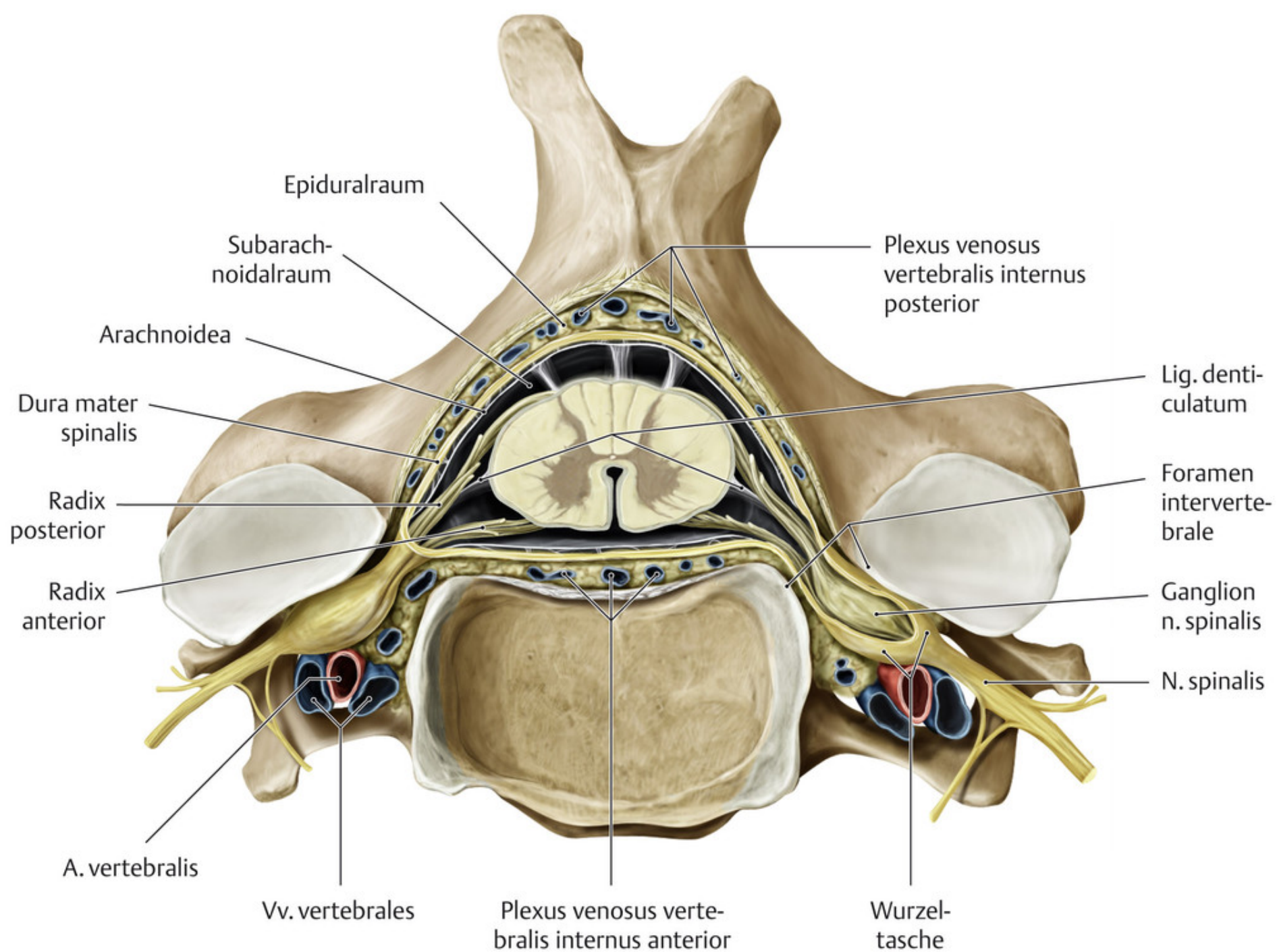
Medial protrusion at disc level L4-5 rarely affects L4 spinal nerve but may affect L5 spinal nerve and sometimes S1-4 spinal nerves

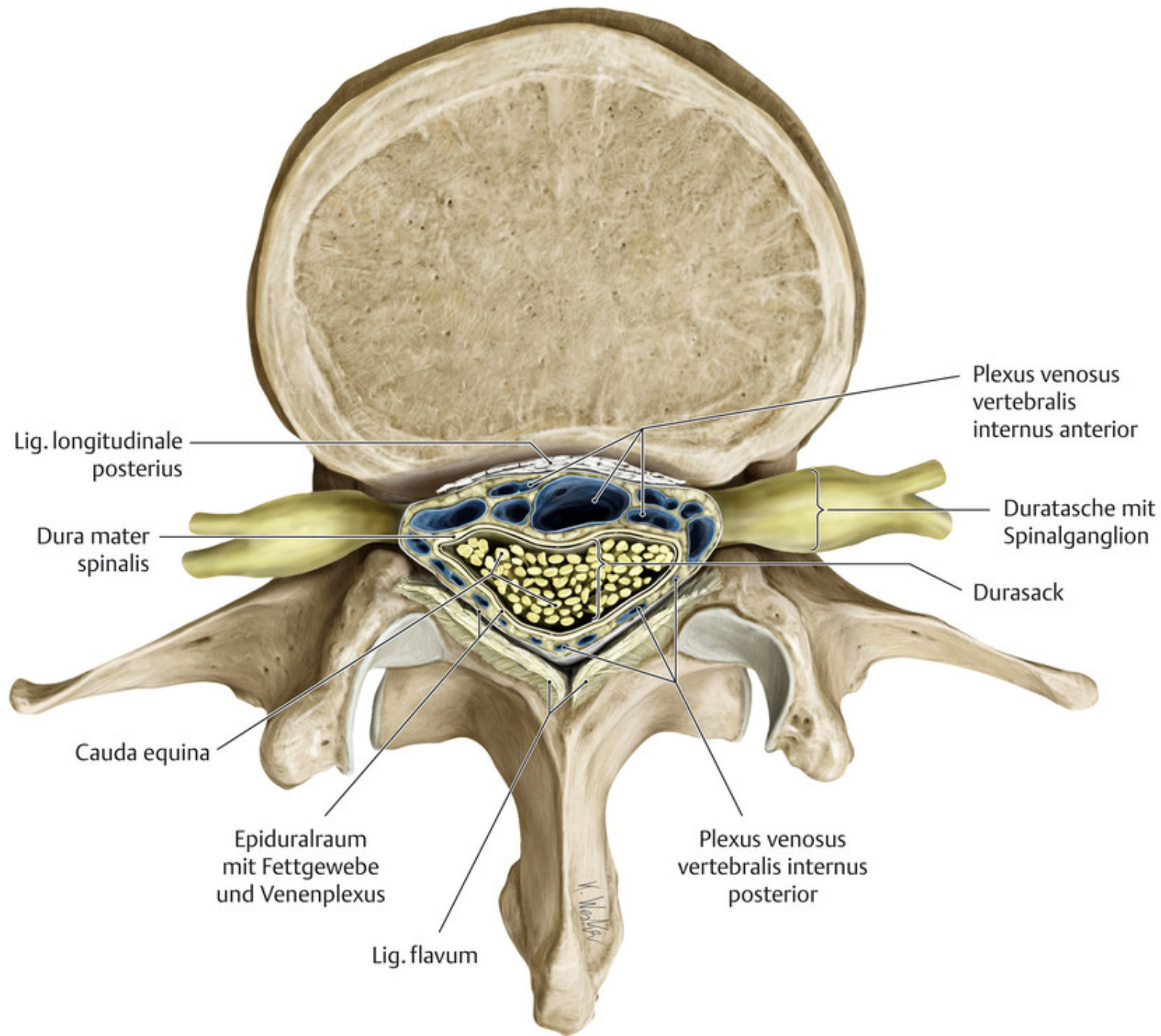


Lumbar disc protrusion does not usually affect nerve exiting above disc. Lateral protrusion at disc level L4-5 affects L5 spinal nerve, not L4 spinal nerve. Protrusion at disc level L5-S1 affects S1 spinal nerve, not L5 spinal nerve.



Medial protrusion at disc level L4-5 rarely affects L4 spinal nerve but may affect L5 spinal nerve and sometimes S1-4 spinal nerves.





Lig. longitudinale posterius

Dura mater spinalis

Cauda equina

Epiduralraum mit Fettgewebe und Venenplexus

Lig. flavum

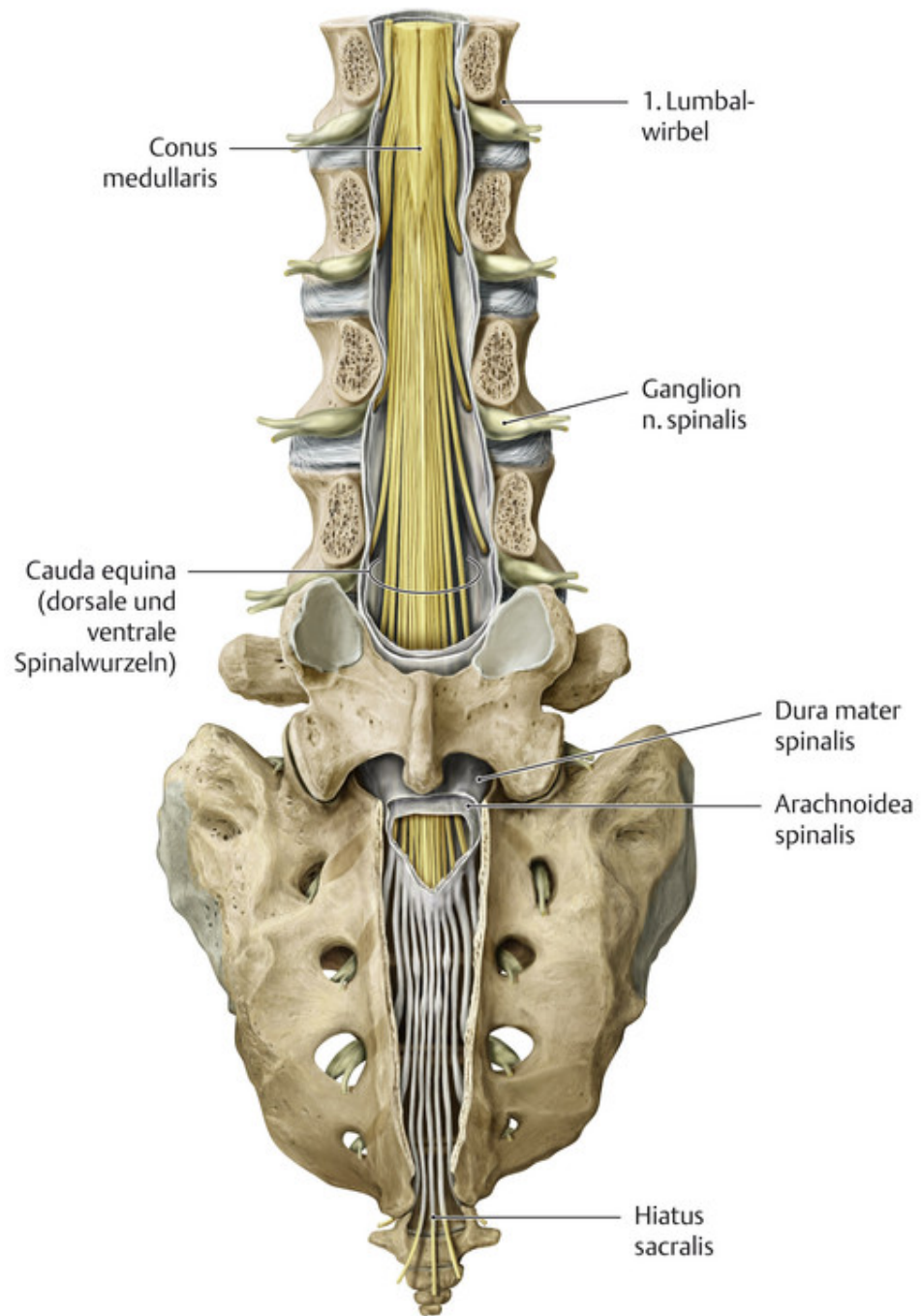
Plexus venosus vertebralis internus anterior

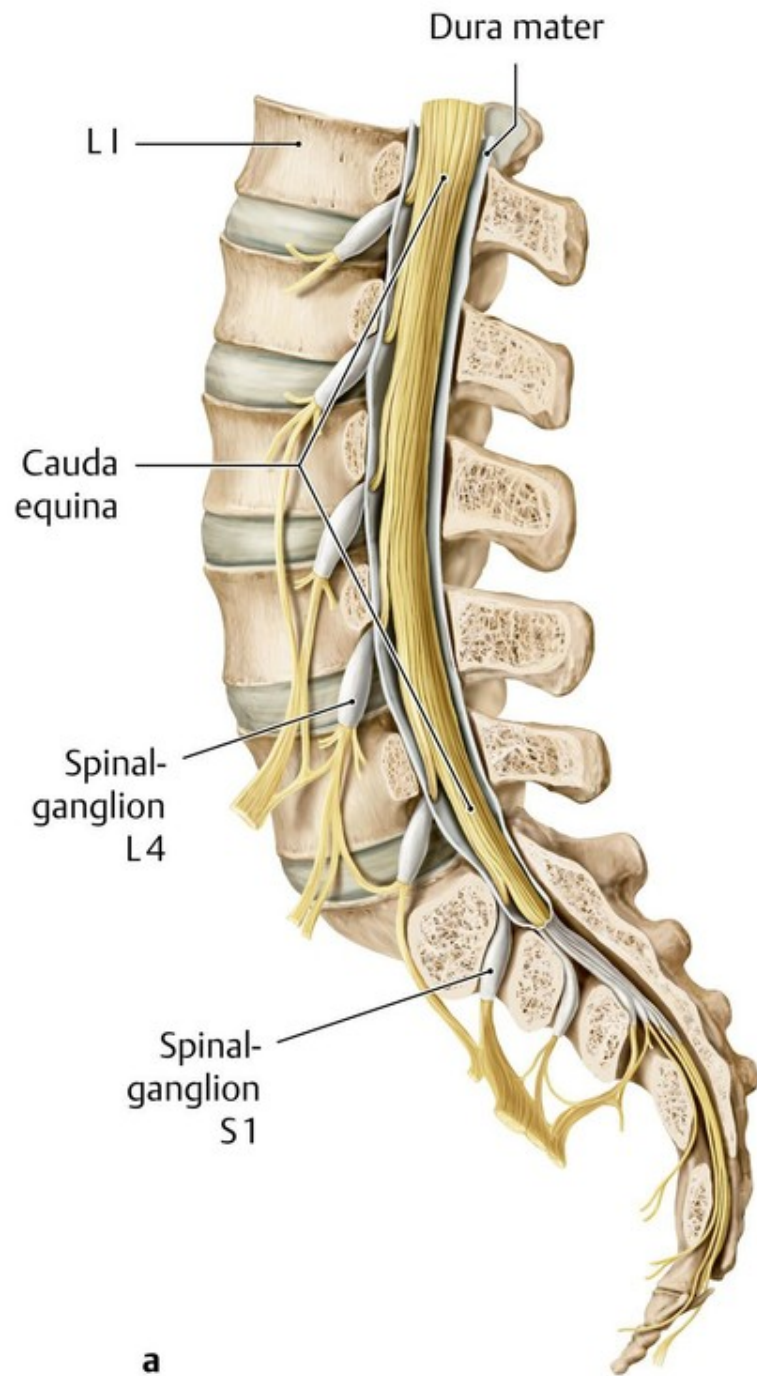
Duratasche mit Spinalganglion

Durasack

Plexus venosus vertebralis internus posterior

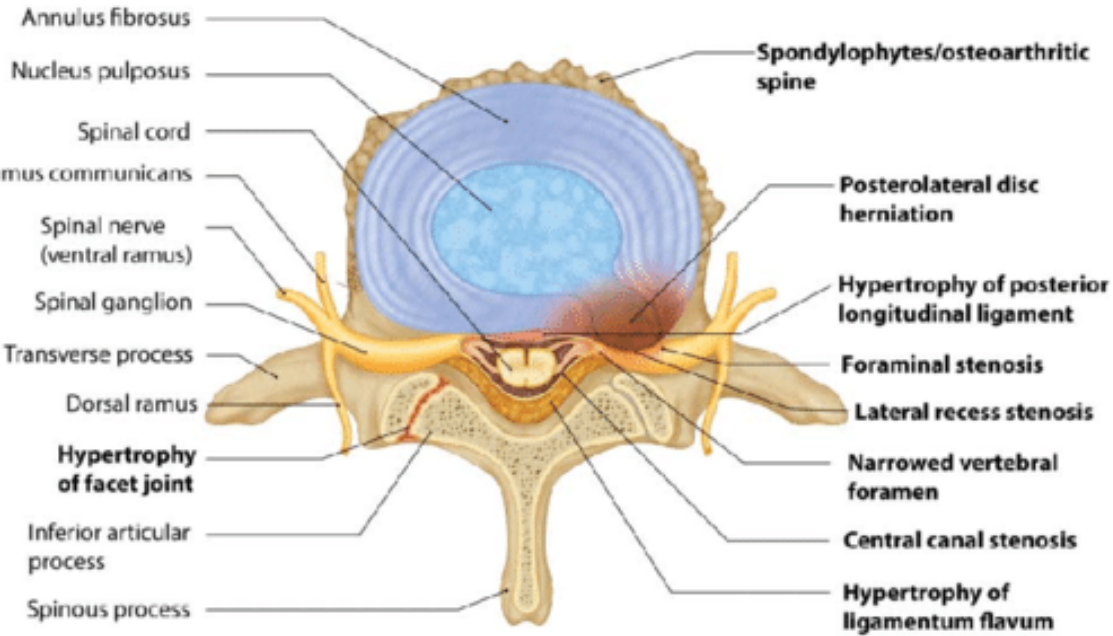
V. Mosler





a

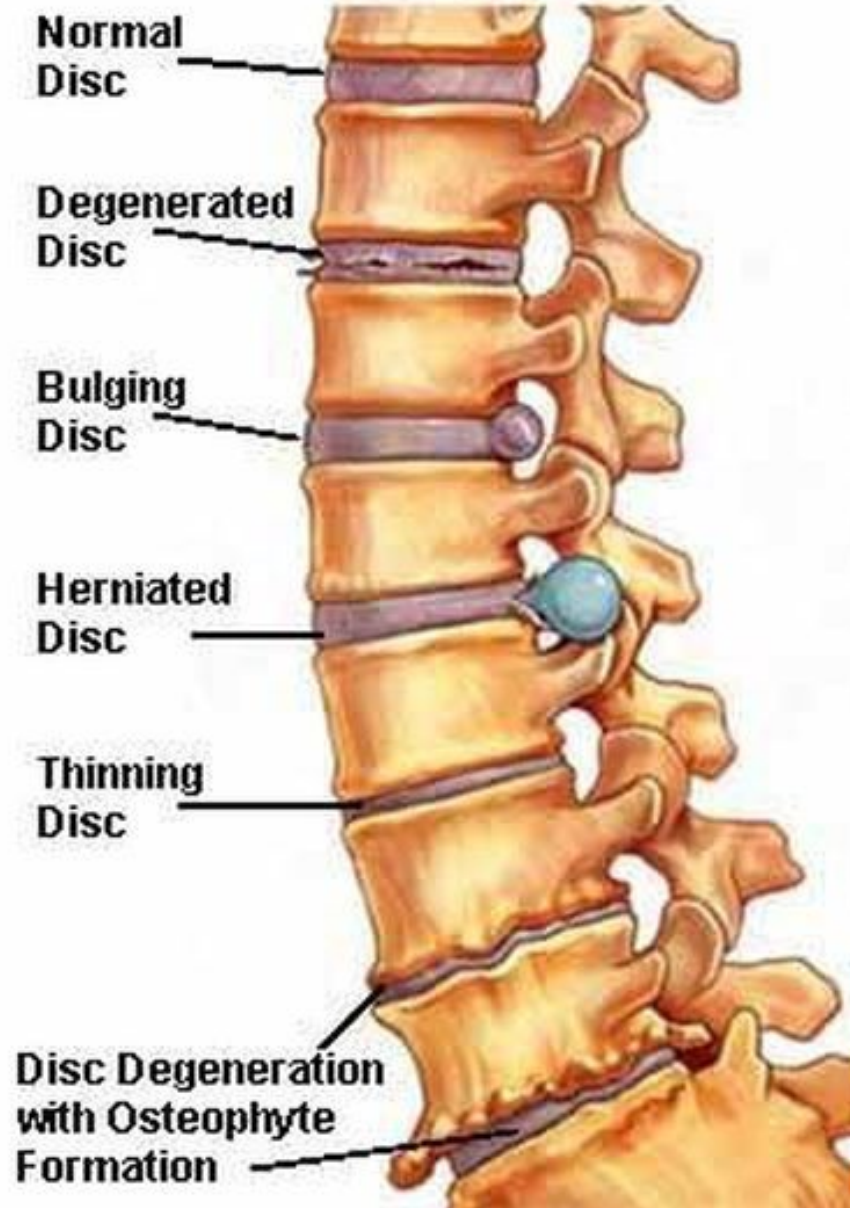
(a)

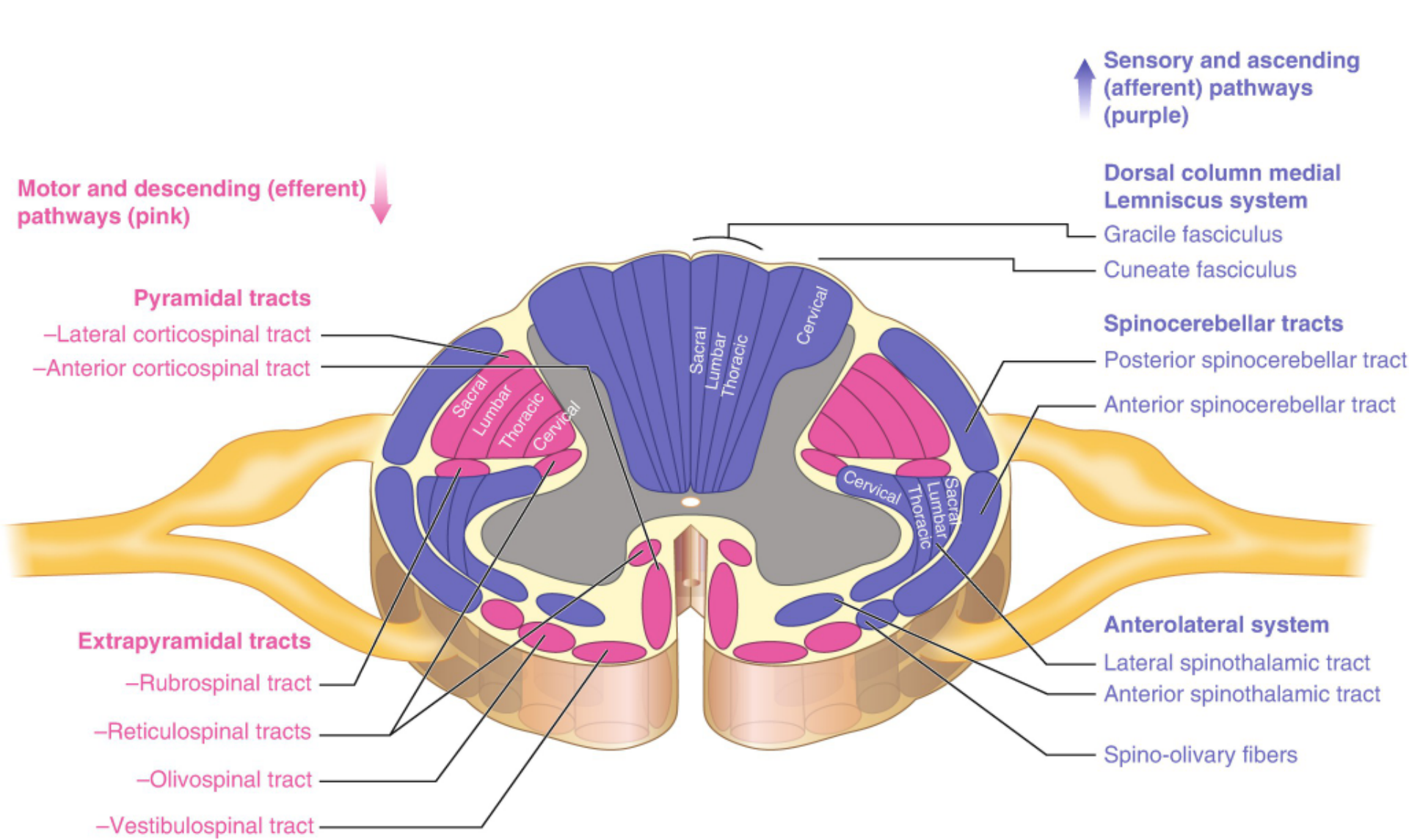


(b)



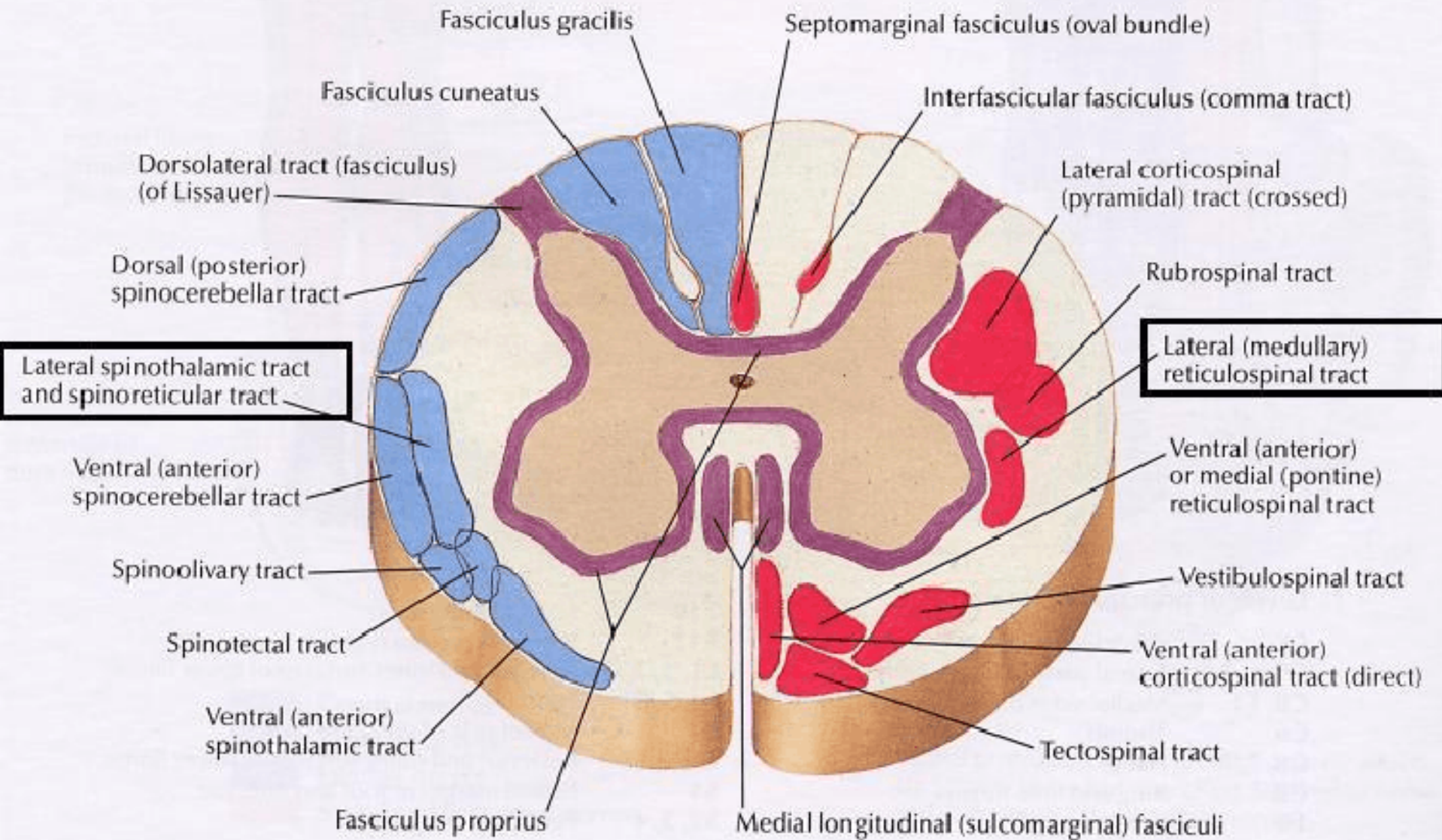
Examples of Disc Problems



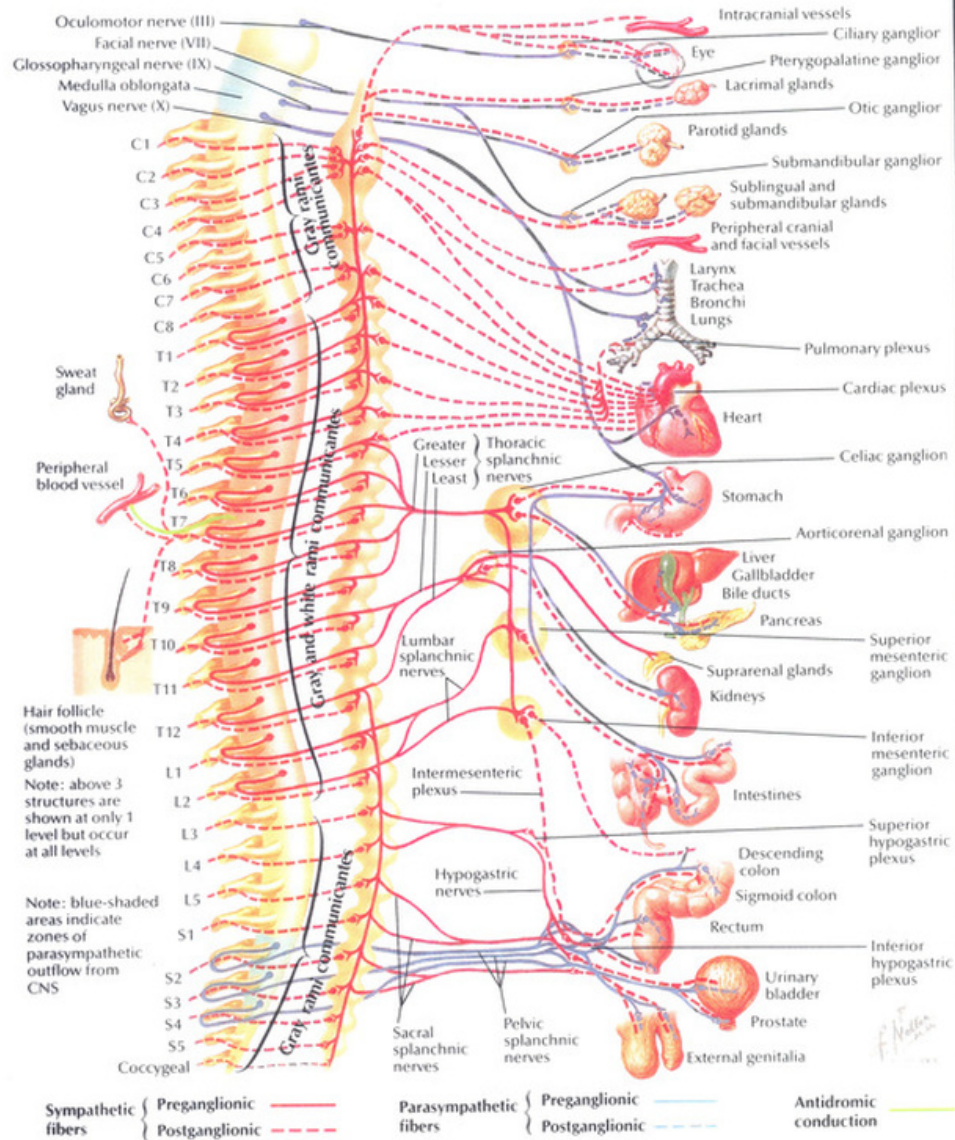


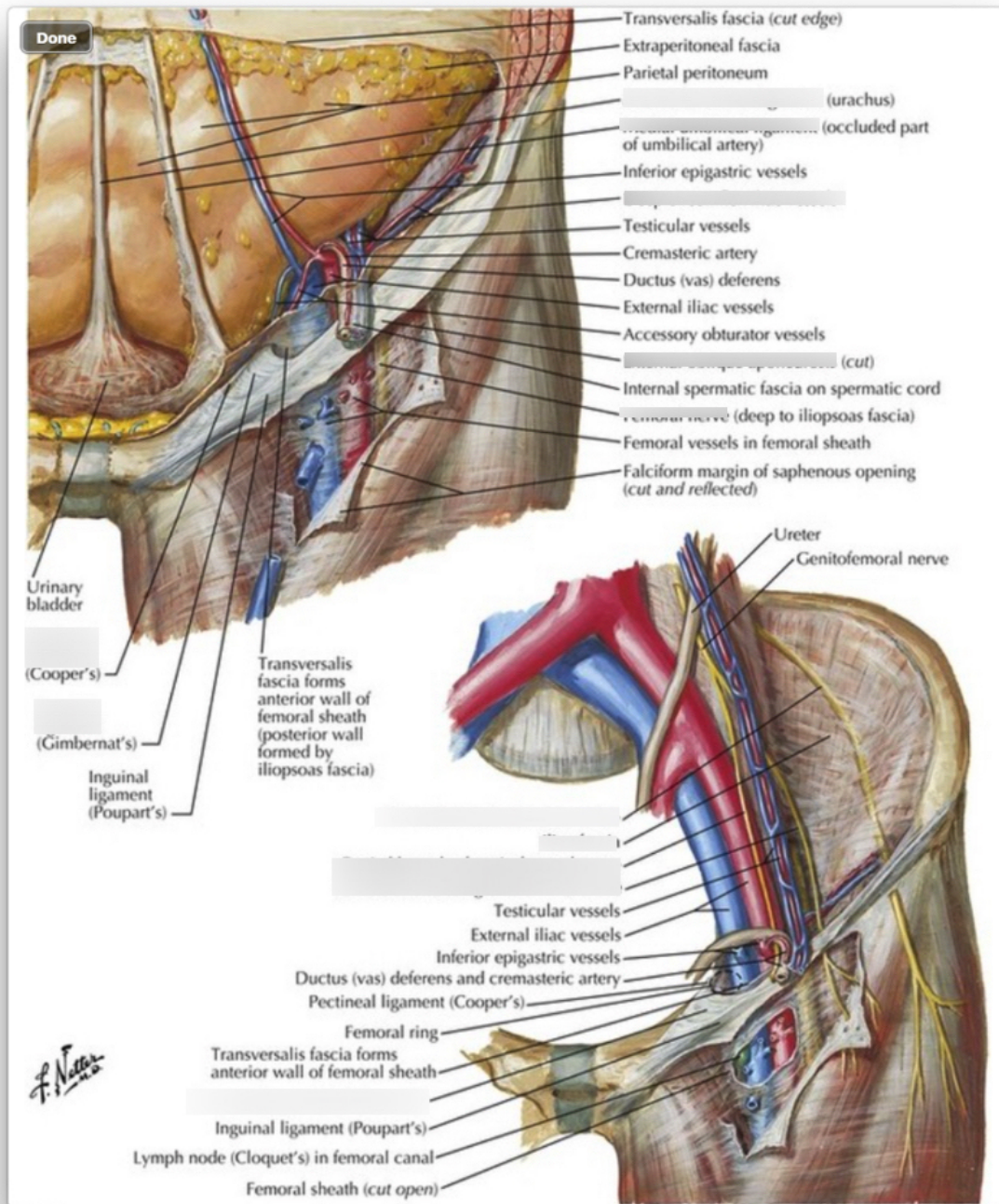
Principal fiber tracts of spinal cord

- Ascending pathways
- Descending pathways
- Fibers passing in both directions

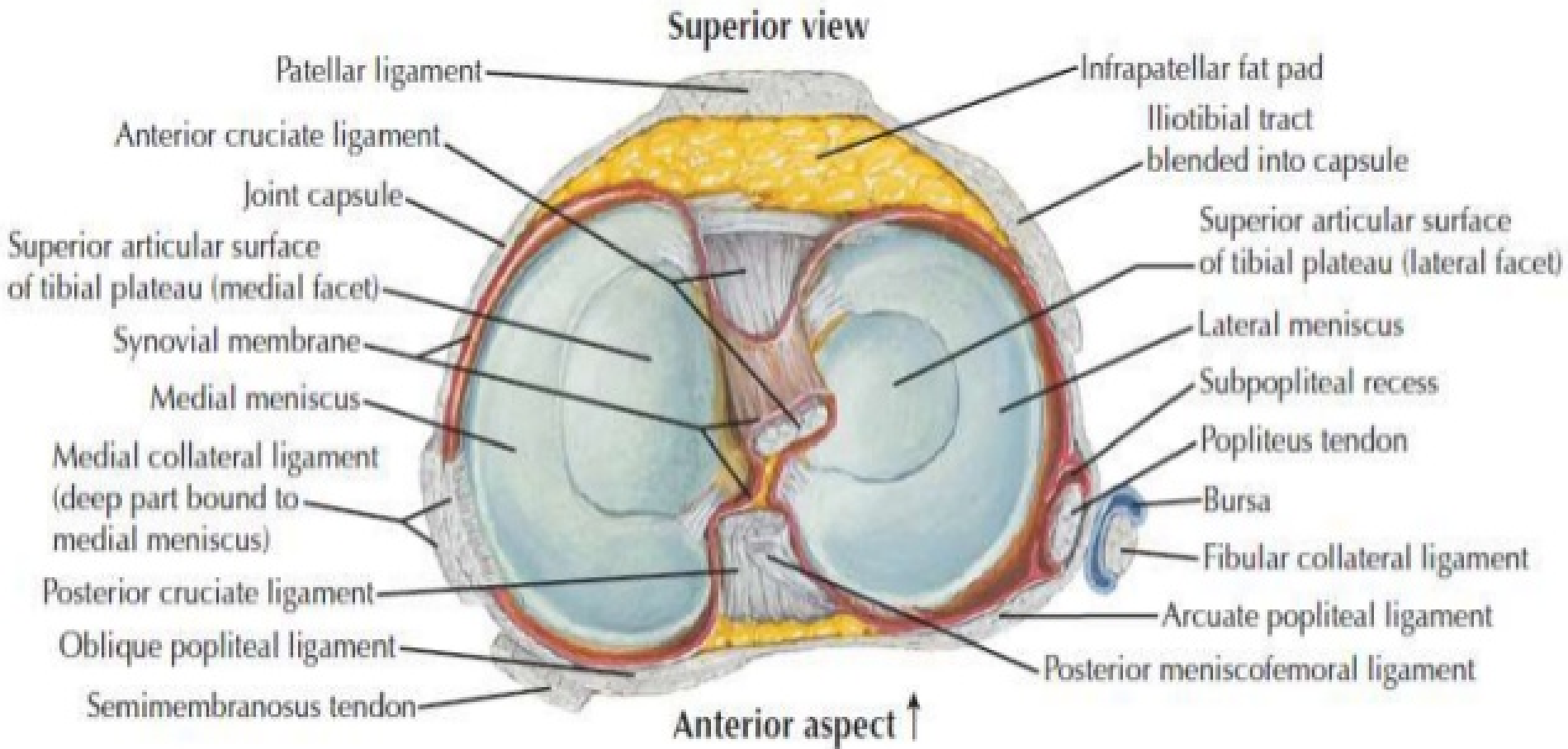


Autonomic Nervous System: Schema

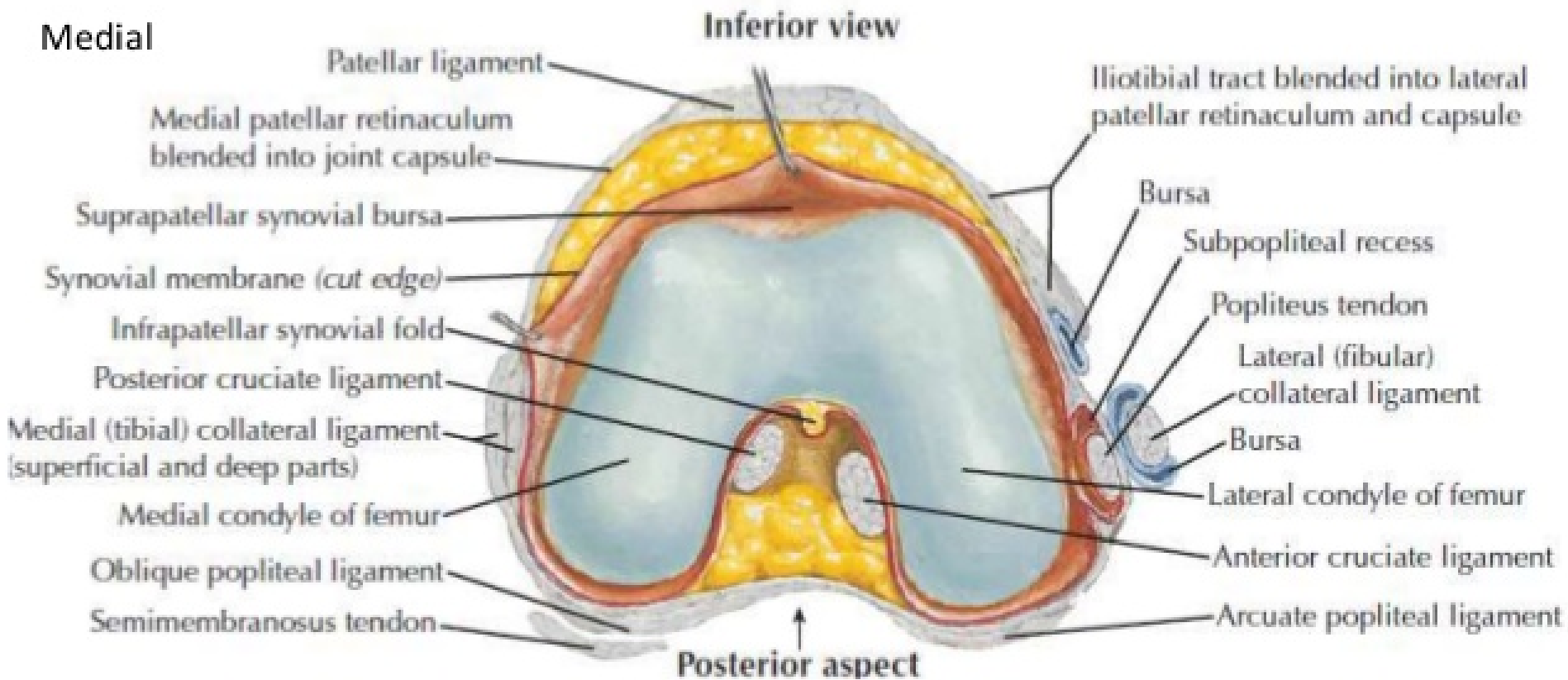


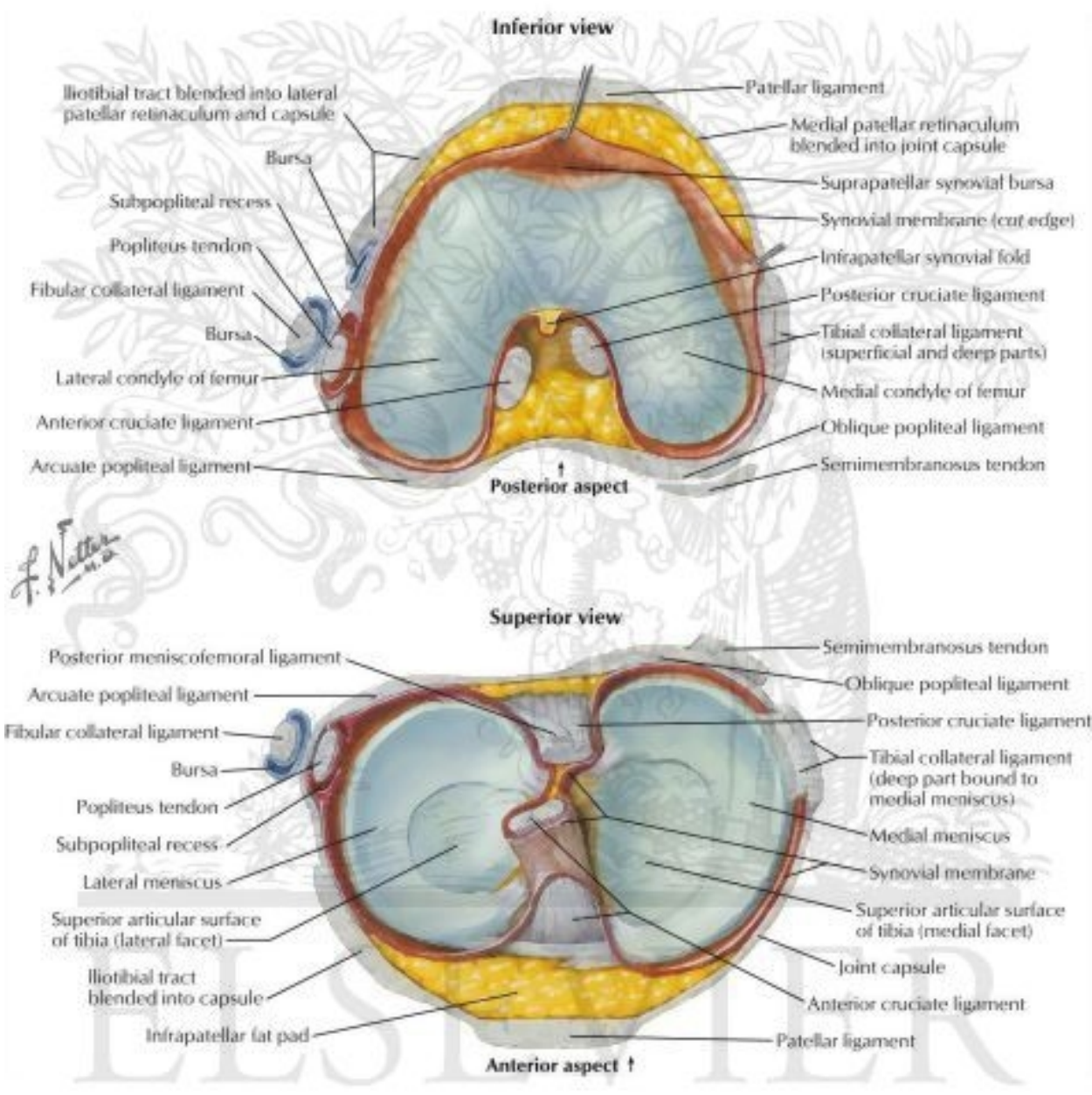


Knee Axial view



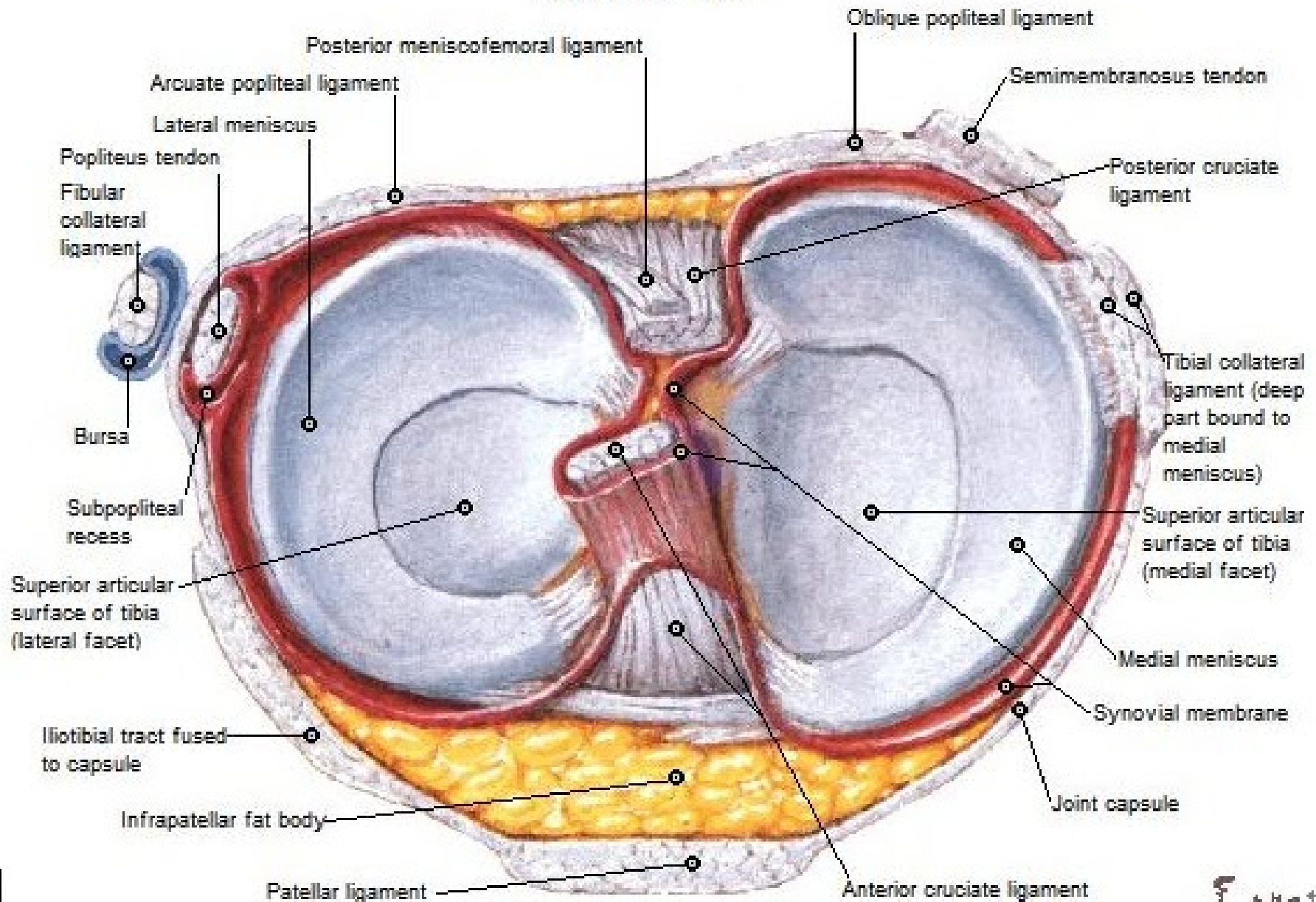
Knee Axial view

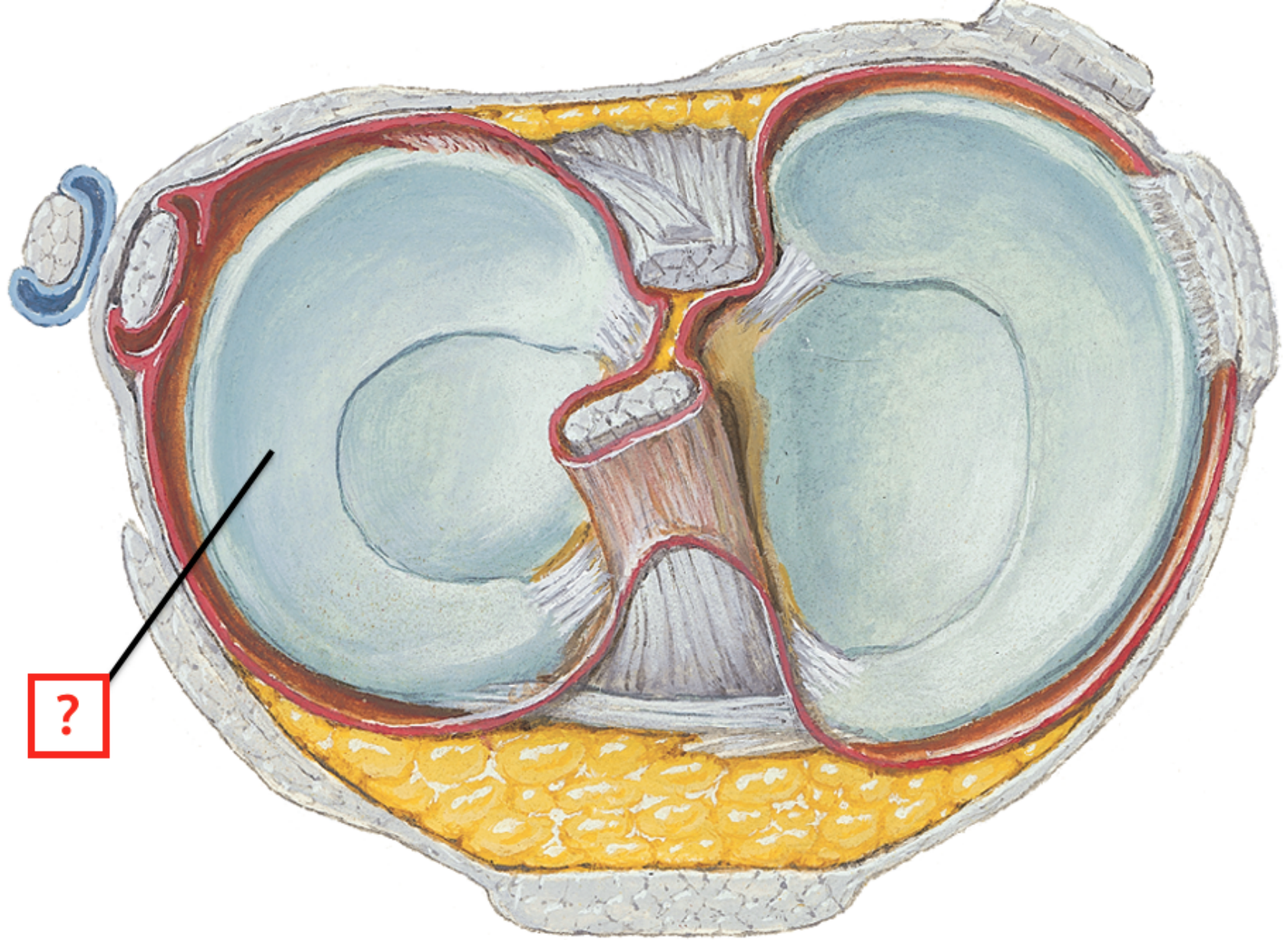




Knee - Interior

Superior View





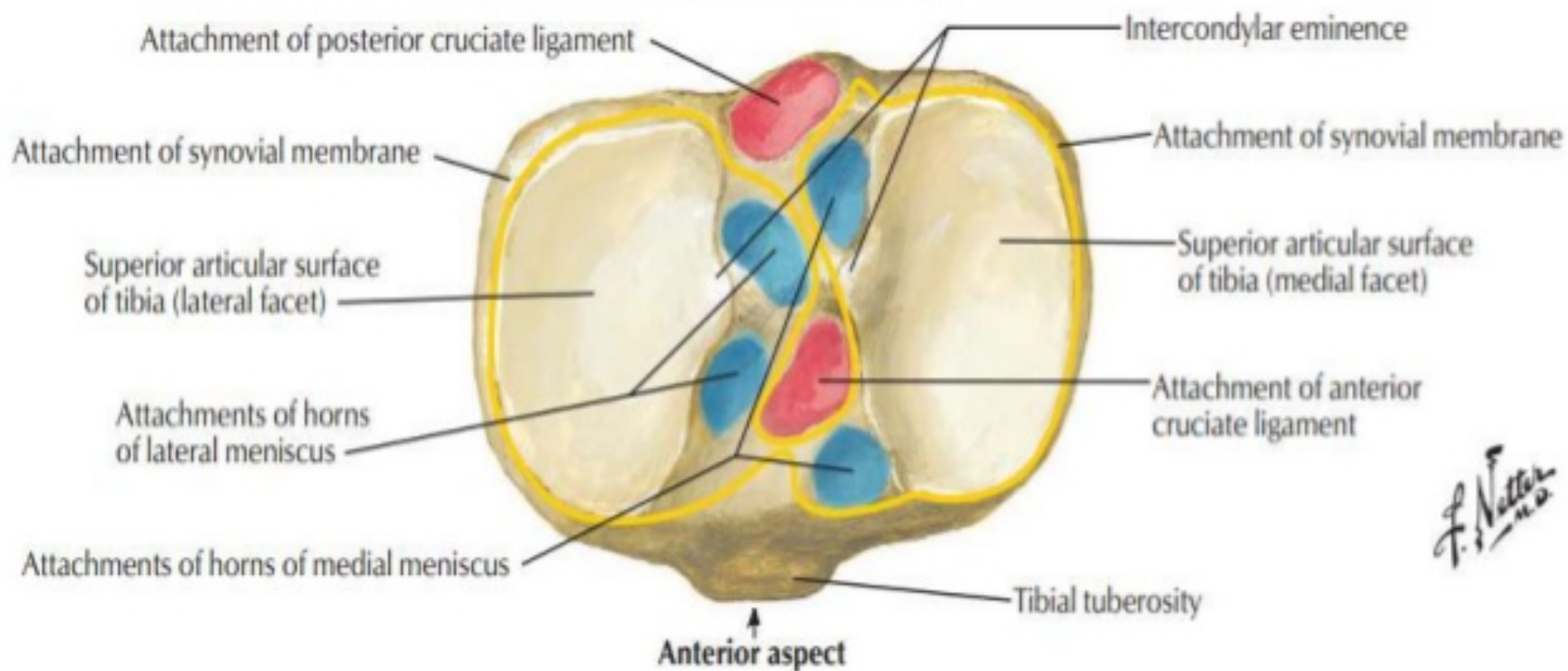
?



Anterior aspect

F. Netter
M.D.

Superior view: ligaments and cartilage removed



F. Netter M.D.

Detecting Meniscal Tears



Longitudinal (vertical) tear

May progress to ↓



Bucket handle tear



Radial tear

May progress to ↓



Parrot beak tear



Horizontal tear (probe in left)

May progress to ↓



Flap tear

MENISCUS TEARS

Longitudinal Tear



Bucket Handle Tear



May Develop Into



Radial Tear



Parrot Beak Tear



May Develop Into



Horizontal Tear

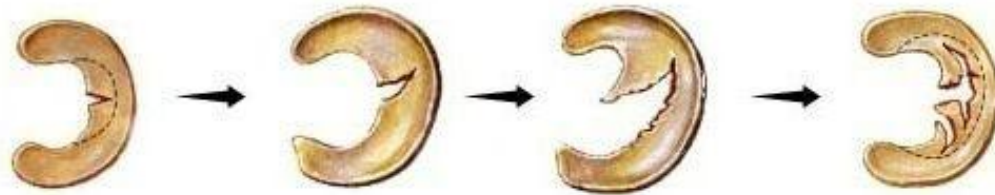


Flap Tear



May Develop Into





A: Radial Tear (small)

Radial Tear (large)

Progresses to
a Flap Tear

Progresses to
Complex or
Degenerative Tear



B:

Flap Tear



Flap Tear



Double Flap Tear



C: Discoid Meniscus



D: Peripheral Tear



Repaired
Peripheral Tear



E: Horizontal
Flap Tear



Displaced Flap
Tear (horizontal)



F: Longitudinal
Tear (short)



Longitudinal
Tear (long)



Longitudinal Tear
(displaced bucket-handle)