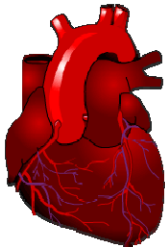
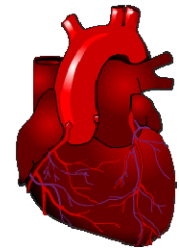




Systematic Anatomy



Nervous system – Part 2



Spinal nerve 脊神经 (2)

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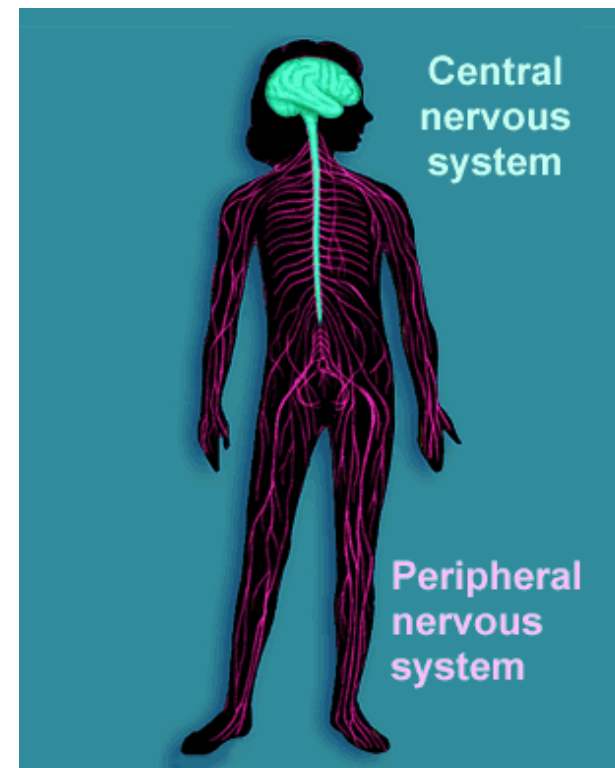
Email: zhanghq58@126.com

Spinal nerves (2) - Contents

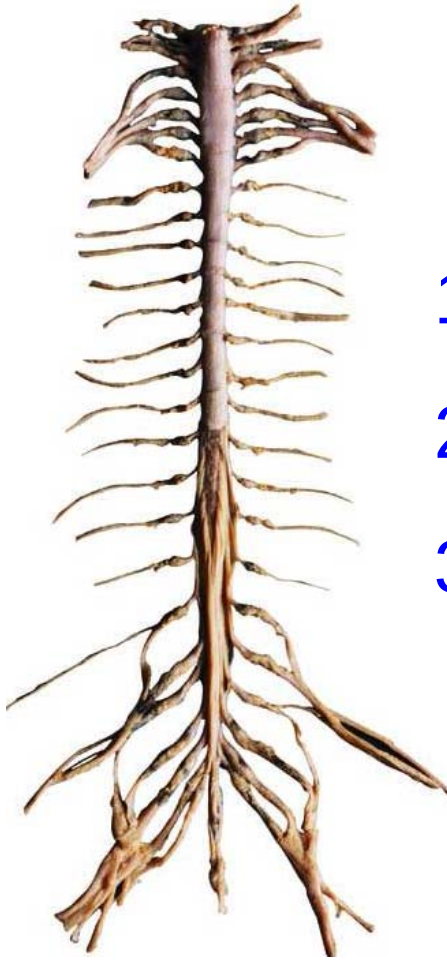
1. Ant. branches of thoracic nerves

2. Lumbar plexus

3. Sacral plexus



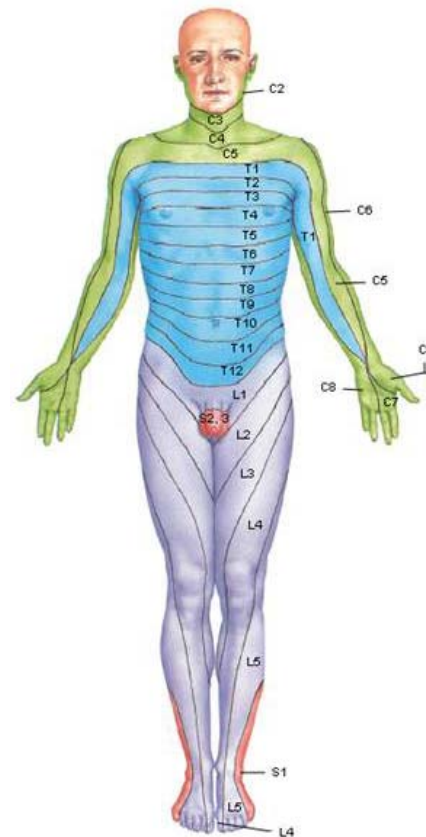
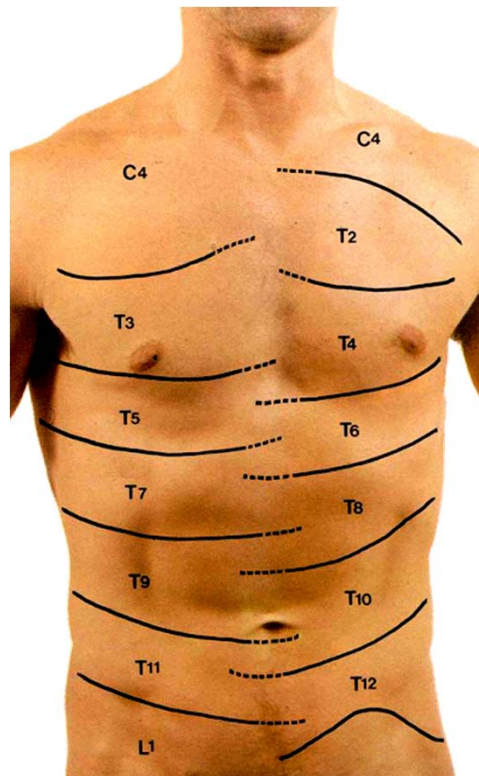
Ant. Branches. of thoracic nn.



1. Do not form plexus
2. Segmental distribution
3. Mainly to thoracic & abdominal wall

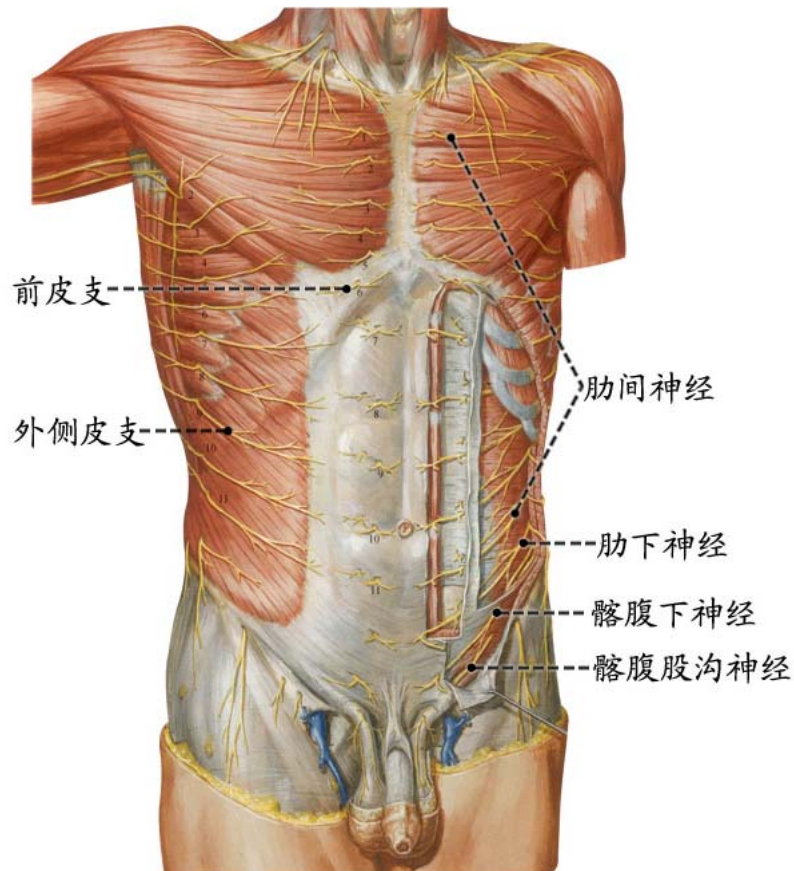
Anterior branches of thoracic nerves

- ◆ Intercostal nn. (ant. brs. or rami of T₁- T₁₁)
- ◆ Subcostal n. (ant. br. or ramus of T₁₂)
- ◆ Distribution: to intercostales & anterolateral abdominal mm.
skin of thoracic & abdominal wall, parietal pleura & peritoneum

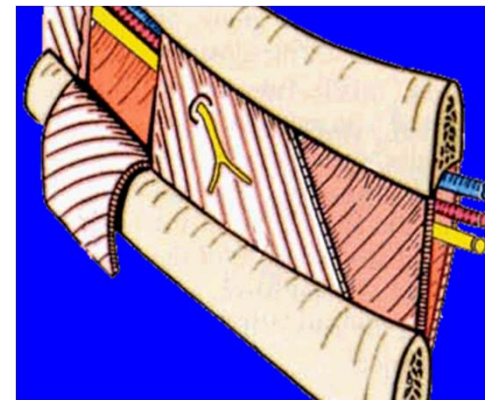


Anterior branches of thoracic nerves

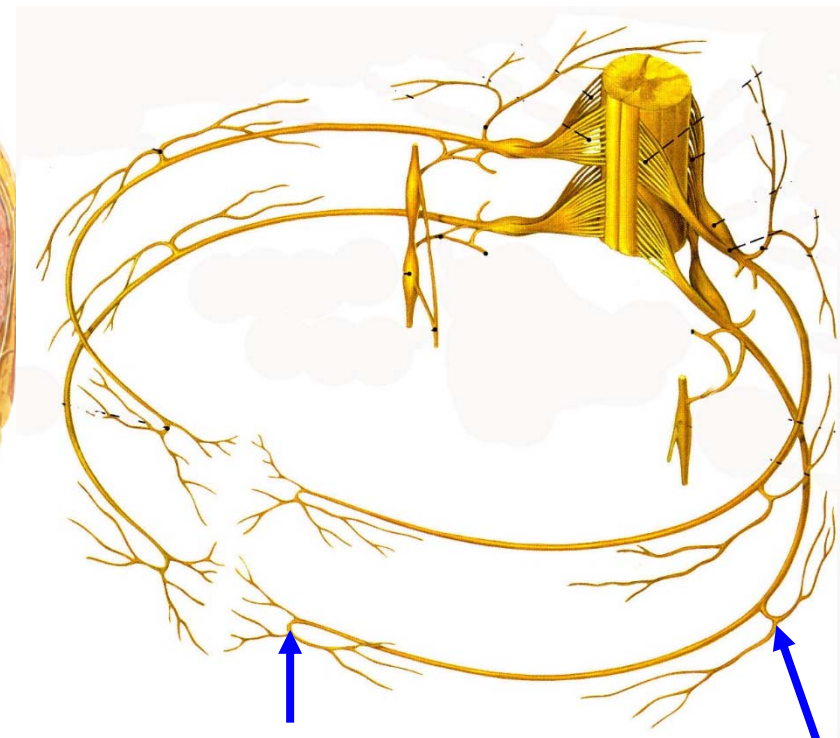
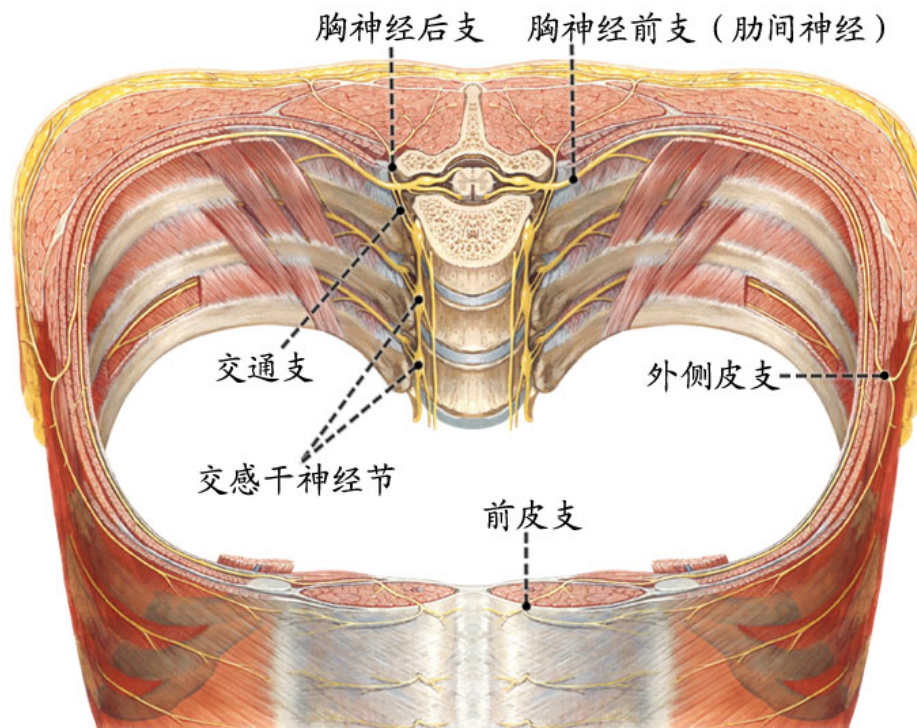
位置: locate between int.intercostal m.& intecostalis intimi (in thorax),between int. obliquus abdominis & transvers abdominis (in abdomen),their cutaneous in subcutaneous tissue.



上：肋间静脉
中：肋间动脉
下：肋间神经



Branches of thoracic nn.



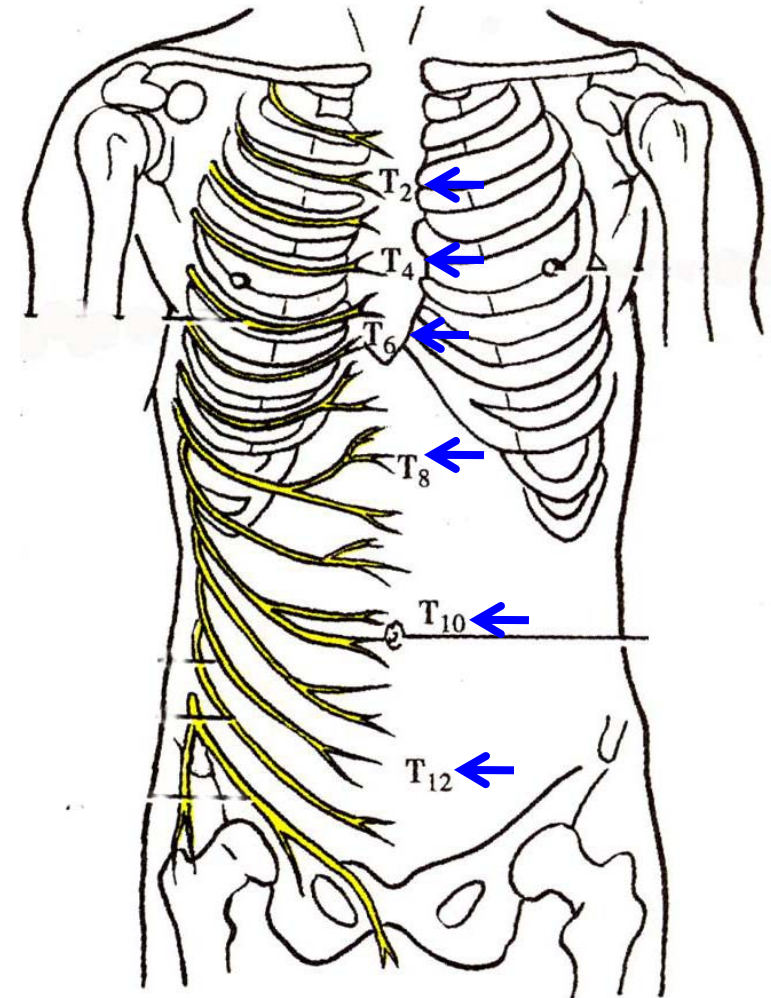
Ant. cutaneous br.
of intercostal n.
前皮支

Lat. cutaneous br.
of intercostal n.
外侧皮支

Segmental distribution of thoracic nn.

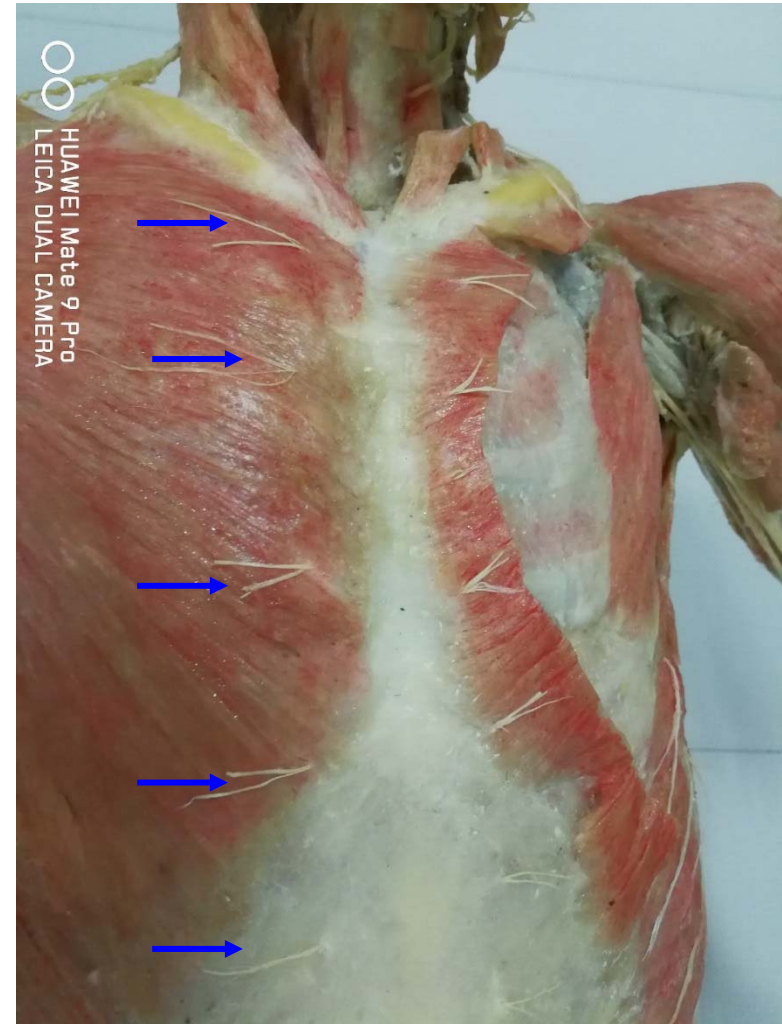
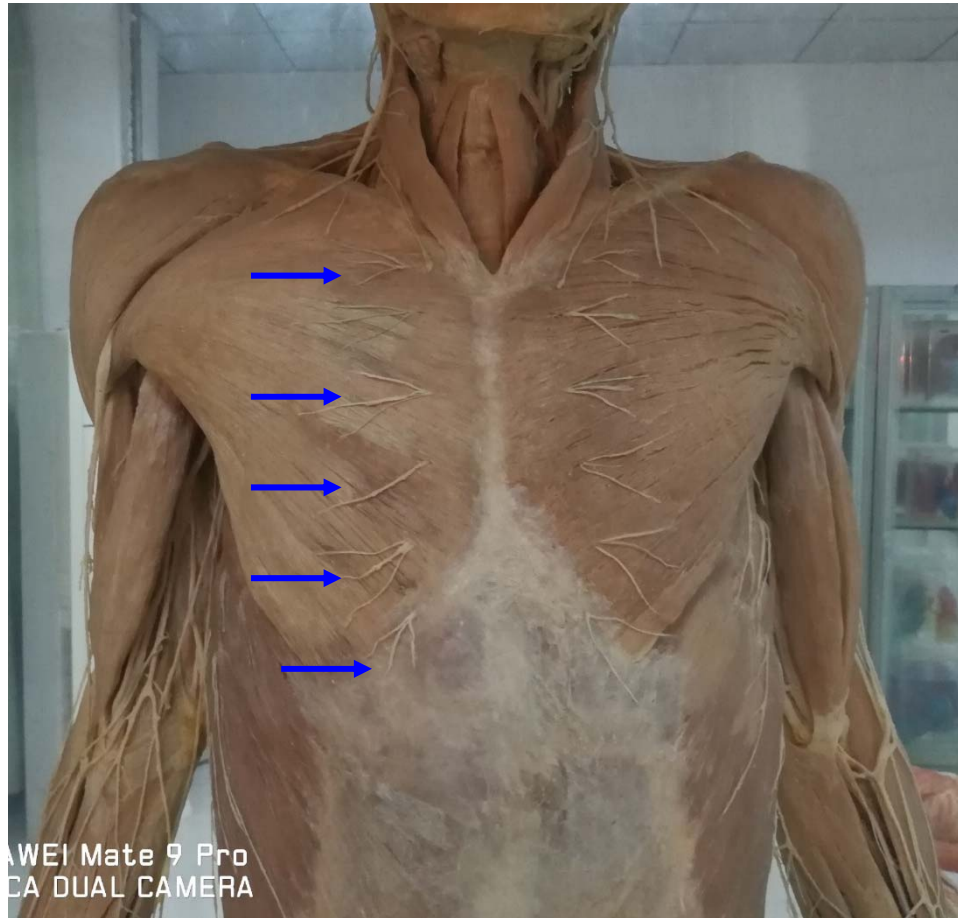
Dermatome: The area of skin supplied by a single nerve, and, therefore, a single segment of the spinal cord. On the trunk the dermatomes extend round the body from the post.to the ant. median plane.

- ◆ T2- level at sternal angle 胸骨角
- ◆ T4- level at nipple 乳头
- ◆ T6- level at xiphoid process 剑突
- ◆ T8- level at costal arch 肋弓
- ◆ T10- level at umbilicus 脐
- ◆ T12- level at the ant.sup. iliac spine

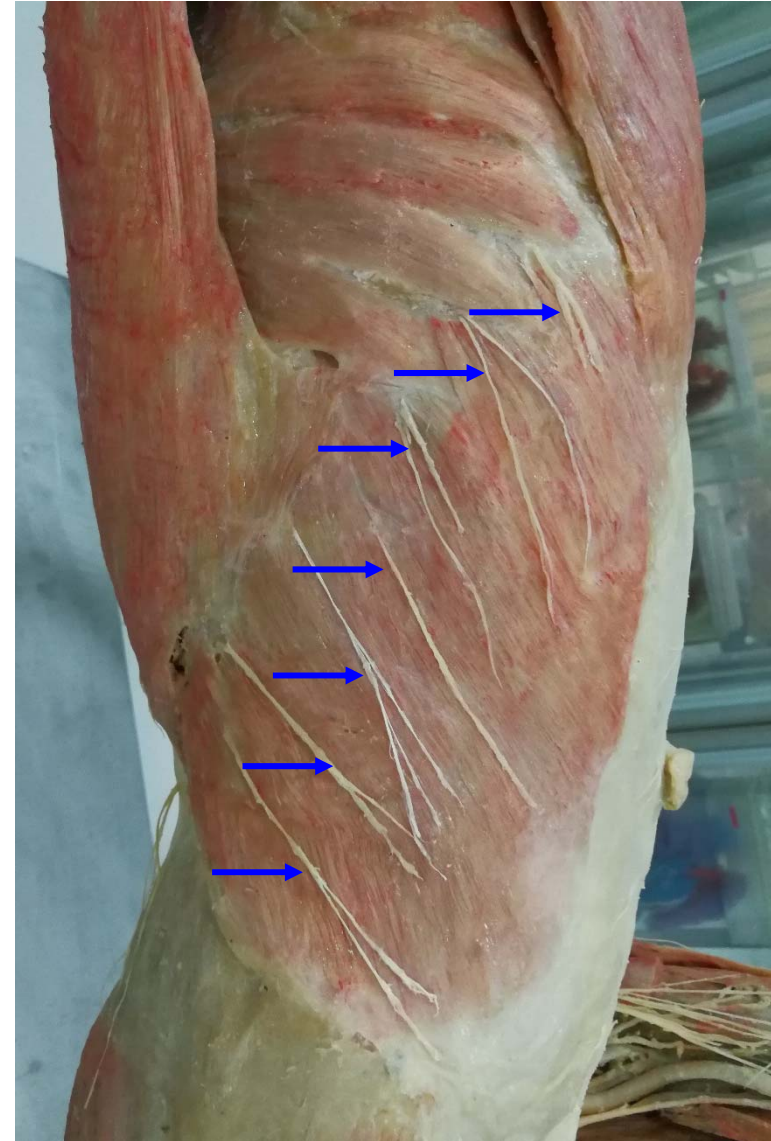
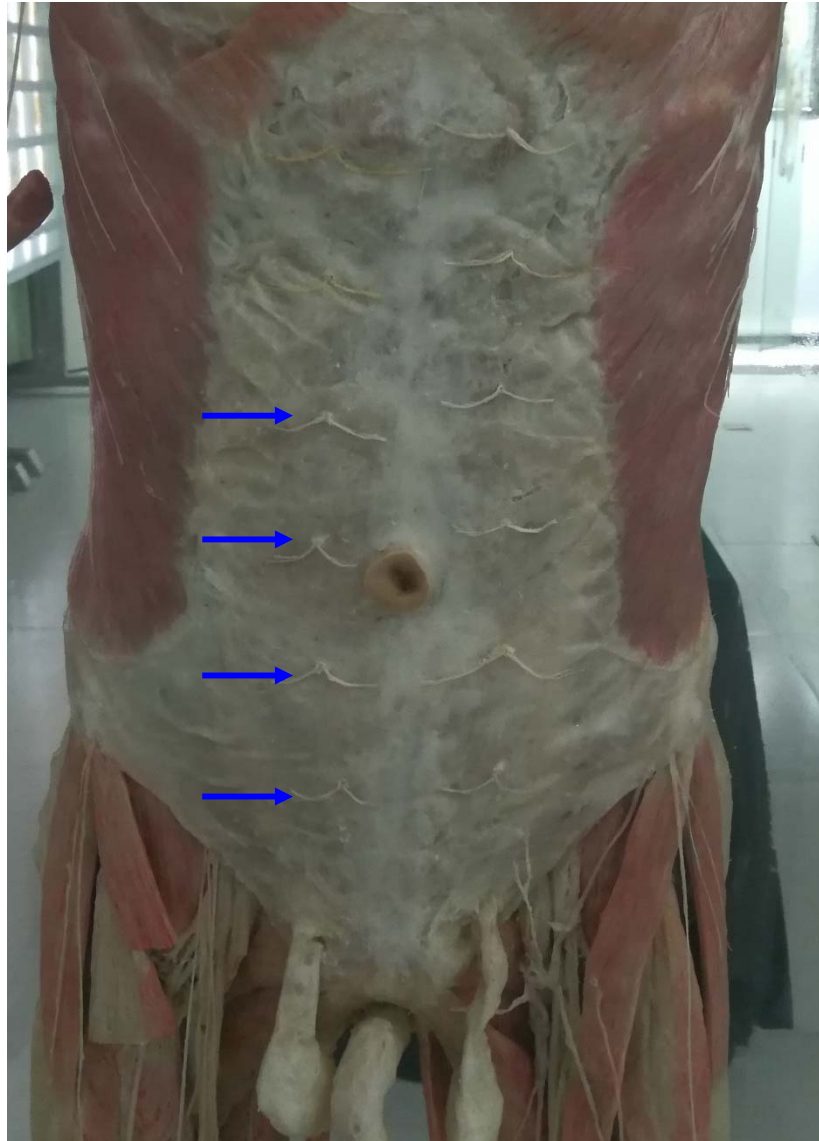


一个肋间受相邻两条肋间神经支配, 临床一支肋间神经伤无大碍

Ant. cutaneous br. of intercostal n. 肋间神经前皮支



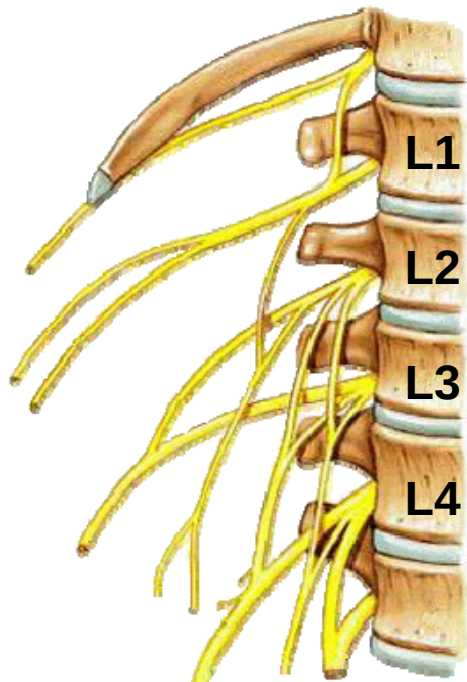
Ant.& lat. cutaneous brs.of lower intercostal nerves



Ant. cutaneous branches and lat.cutaneous branches of intercostal nerve

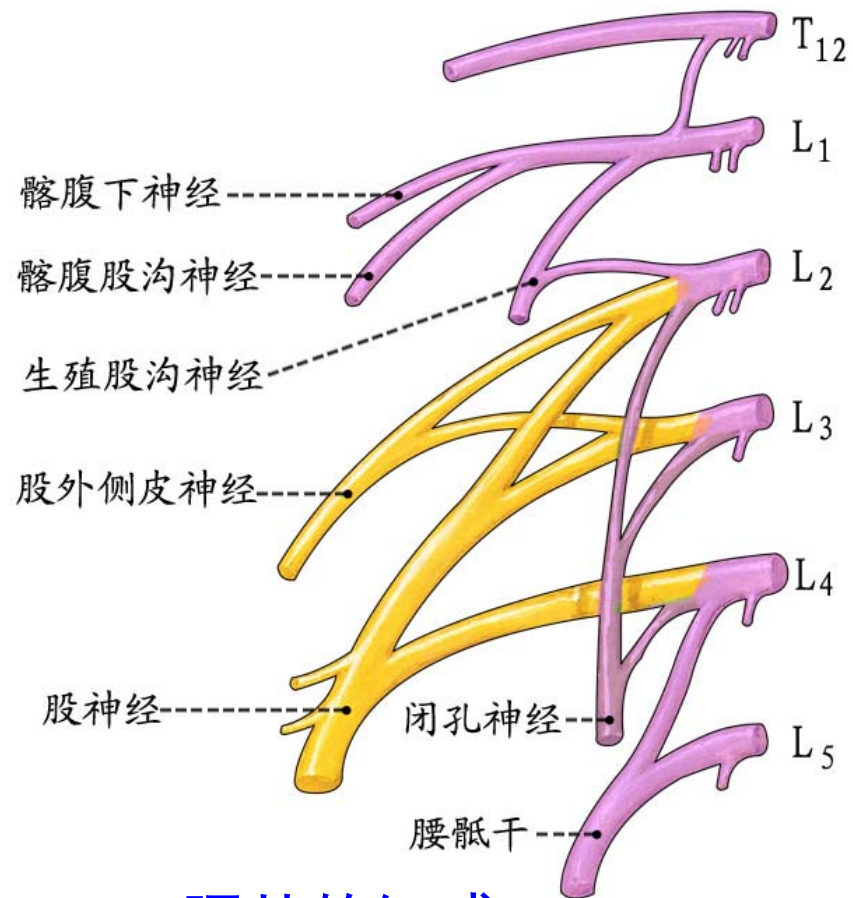
腰丛 - Lumbar plexus

组成: L_1-L_3 , T_{12} 与 L_4 前支一部分. 腰丛一三上下凑



◆ 位置 Position:

腰大肌的后方及外侧



腰丛的组成

腰丛的分支- Main branches of lumbar plexus

分支 Branches

1-髂腹下神经

Iliohypogastric n.

2-髂腹股沟神经

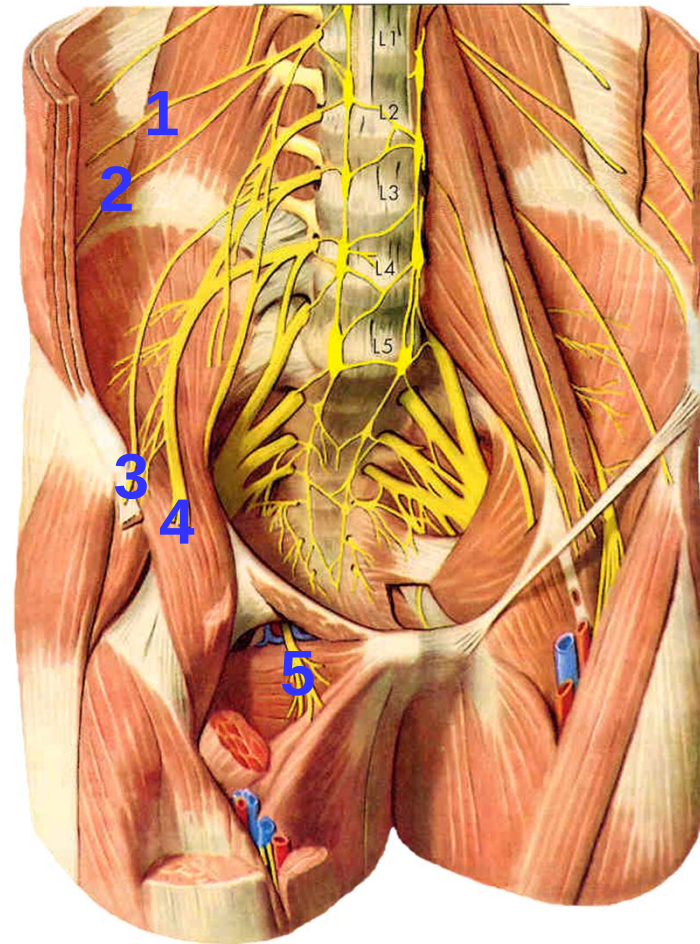
Ilioinguinal n.

3-股外侧皮神经

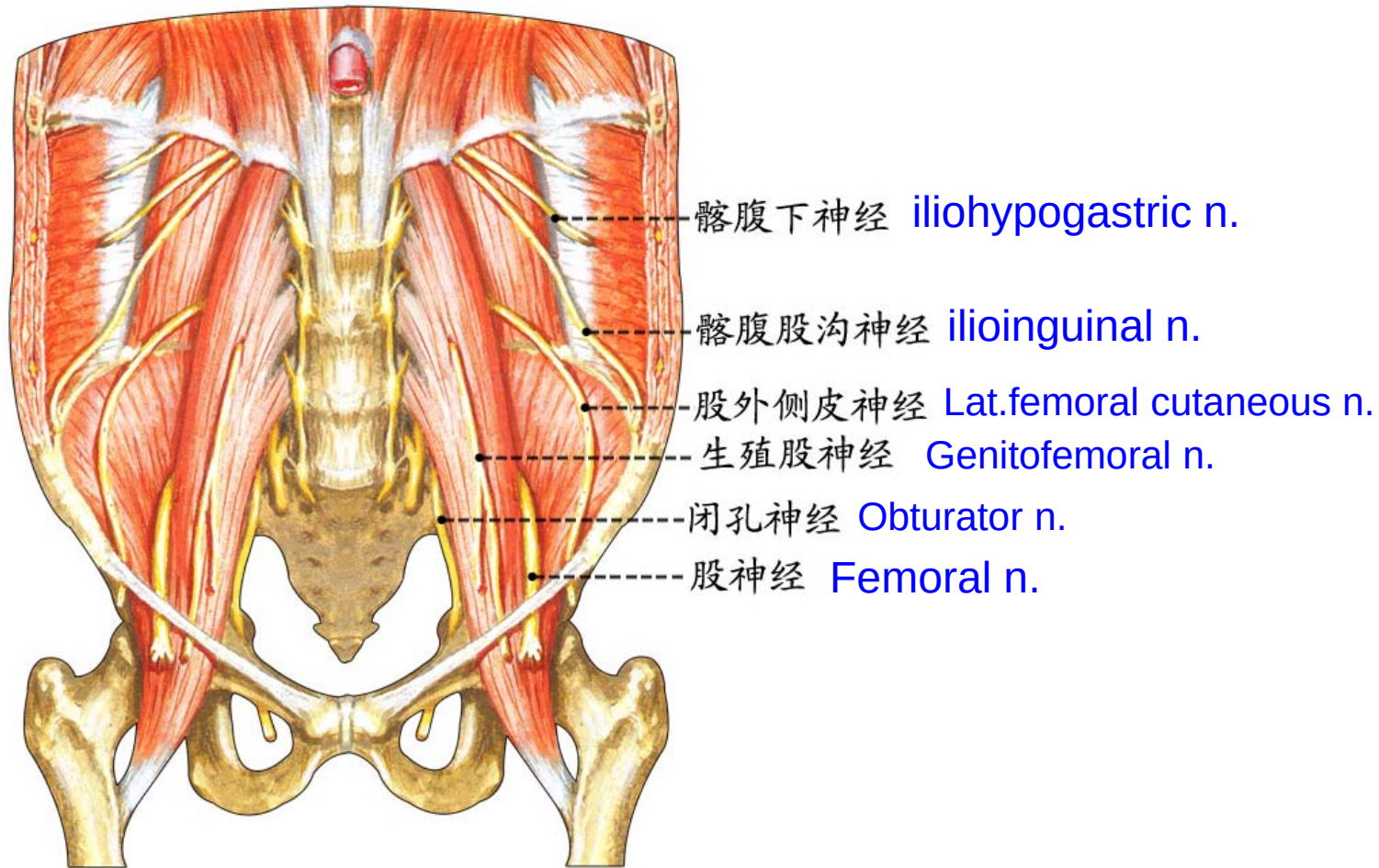
Lat. femoral cutaneous n.

4-股神经 Femoral n.

5-闭孔神经 Obturator n.

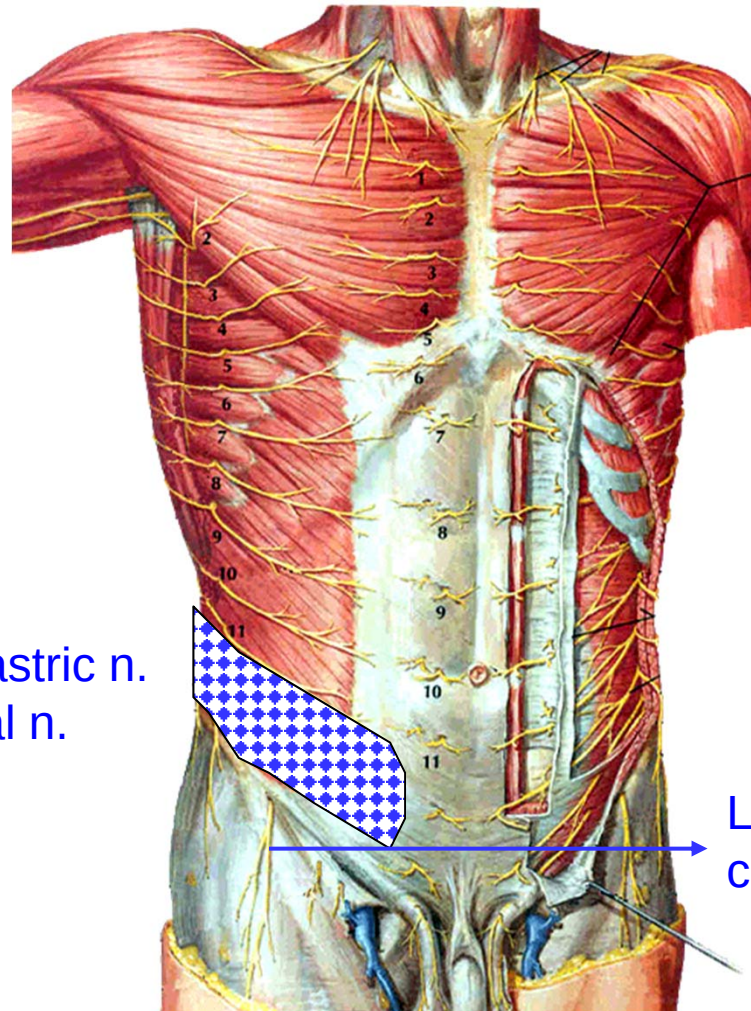


Main branches of lumbar plexus



Lumbar plexus – iliohypogastric n. & ilioinguinal n.

Iliohypogastric n.
Ilioinguinal n.



Lat. femoral
cutaneous n

Lumbar plexus - femoral n.

◆ Femoral n.

Passes deep to inguinal lig. to thigh;

◆ Functions

Supplies ant. thigh muscles (quadriceps, sartorius & pectineus), hip & knee joint, & skin on anteromedial side of thigh,

Its terminal branches - **saphenous n.** is distributed to skin of medial side of leg & foot

Femoral n.

Saphenous n.

股血管神经关系

内-股静脉

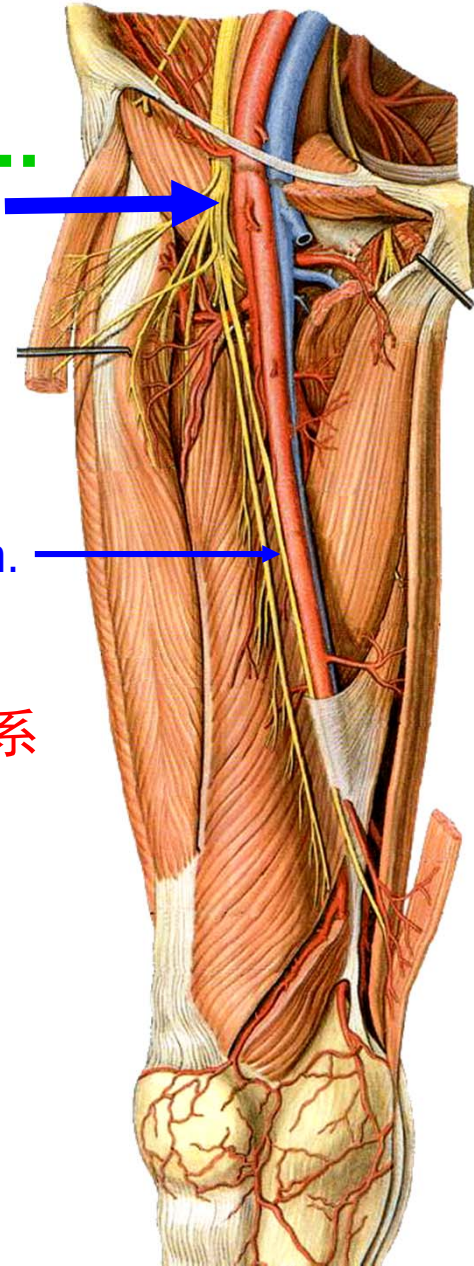
中-股动脉

外-股神经

◆ 股神经麻醉

◆ 股动脉穿刺

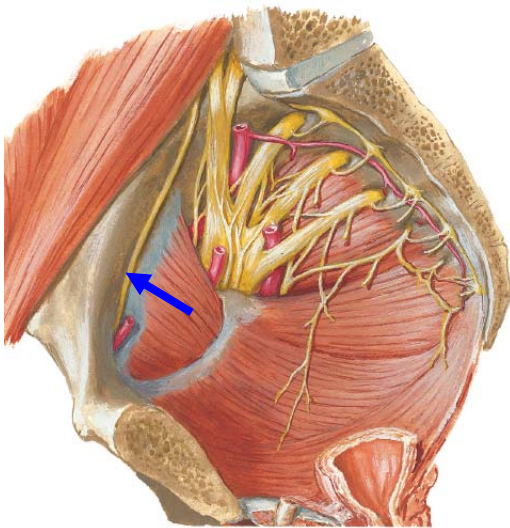
◆ 股静脉穿刺



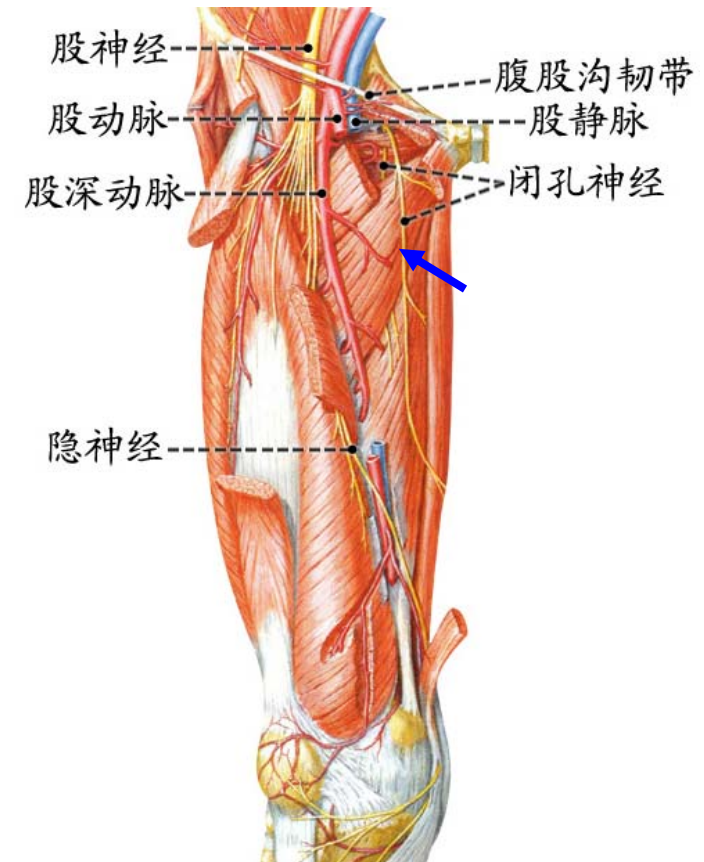
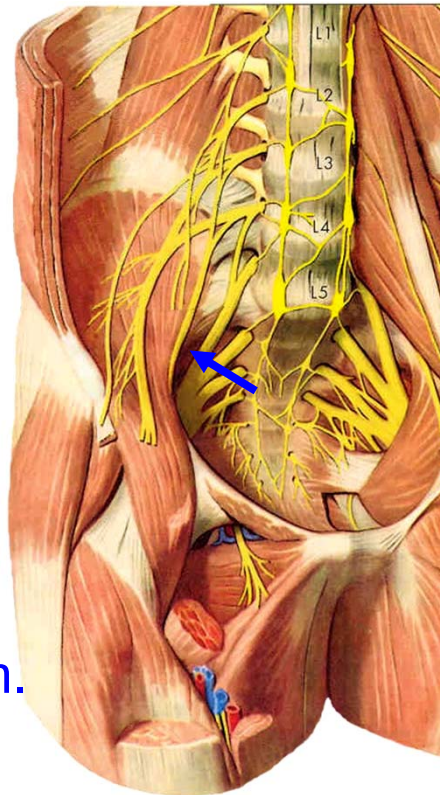
Lumbar plexus - obturator n.

◆ Obturator nerve

Enters thigh through **obturator** foramen; supplies med.group of muscles of thigh, obturator externus, & skin of med. side of thigh.

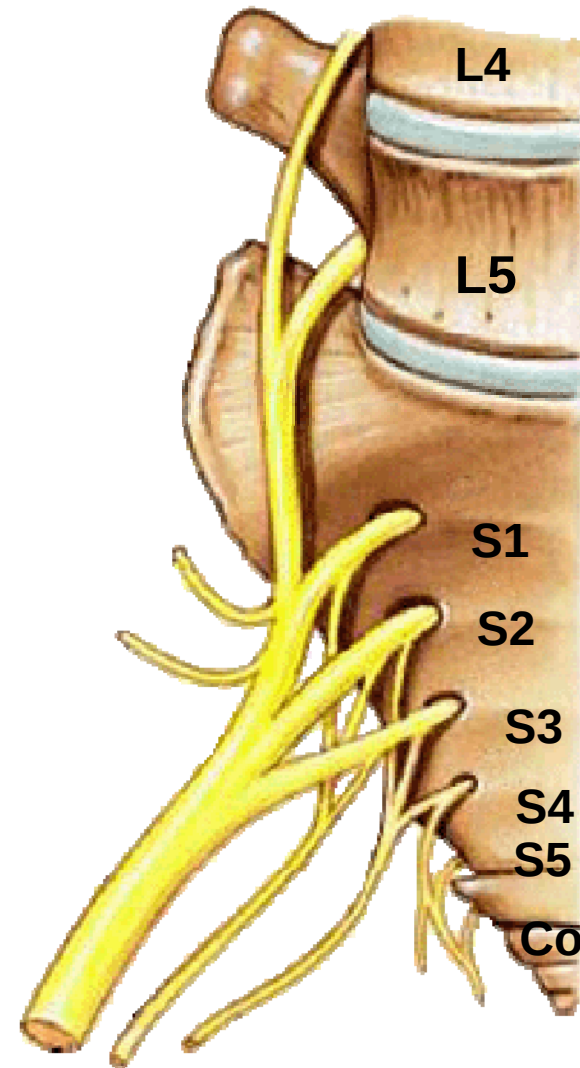


Obturator n.



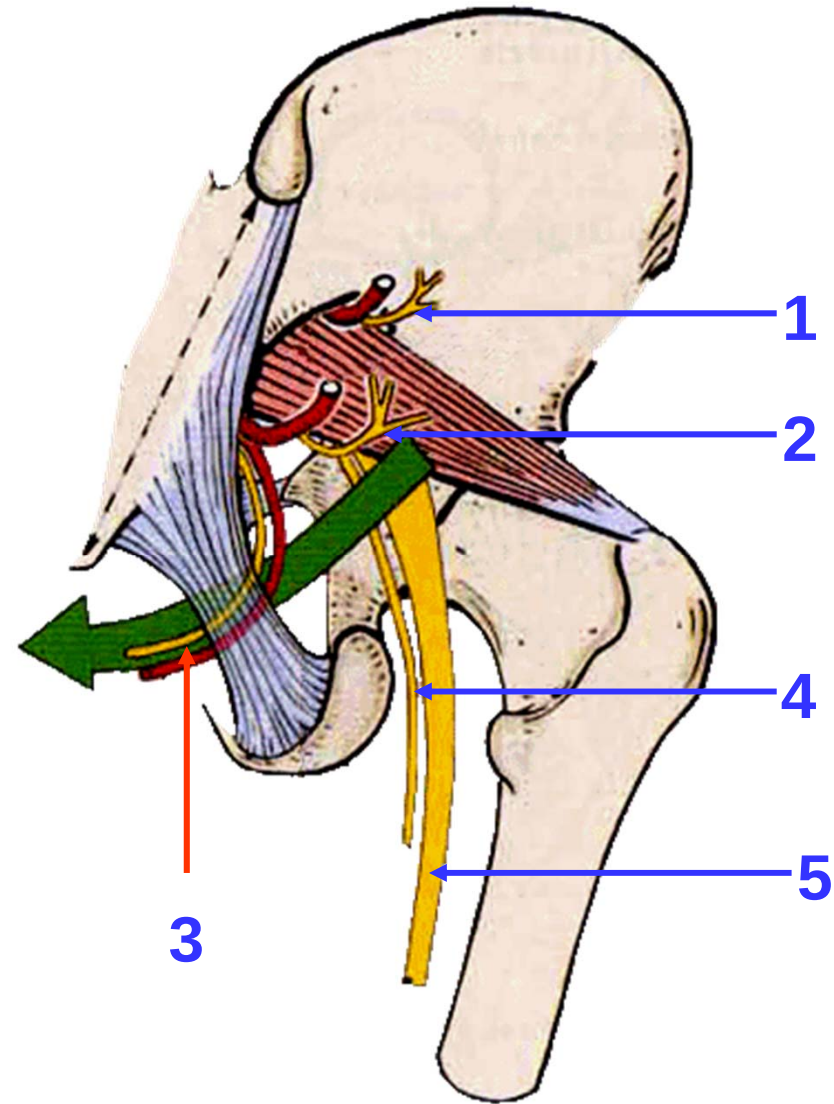
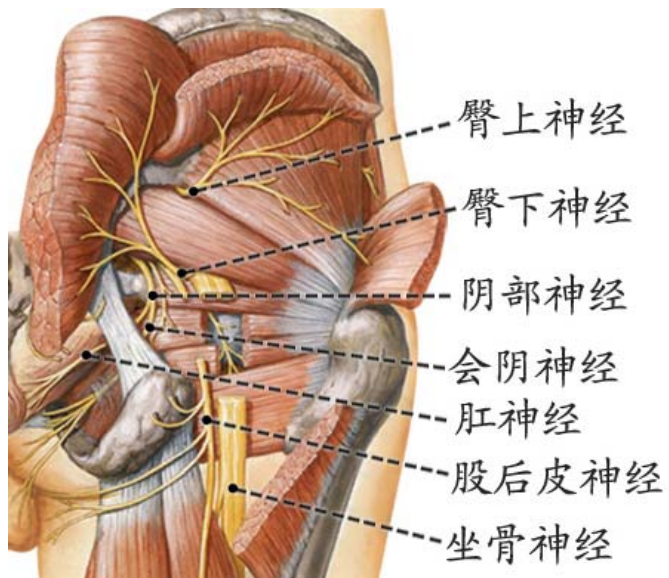
Sacral Plexus 骶丛

- ◆ **Formation:** formed by anterior rami of L₄ & L₅ spinal n. (lumbrosacral trunk) & ant. Brs. of sacral & coccygeal n.
- ◆ **Position:** lies in pelvic cavity, ant. to sacrum and piriformis

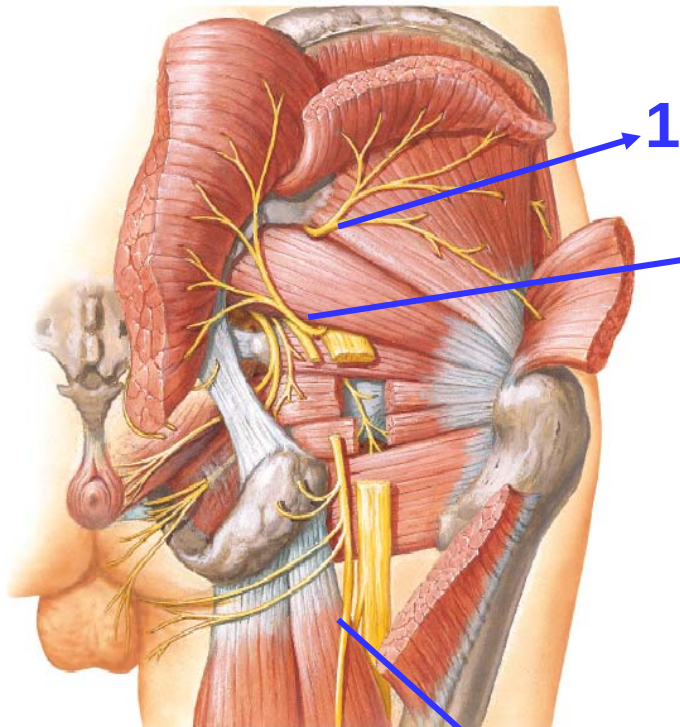


Main branches of sacral plexus

1. Sup.gluteal n. 臀上神经
2. Inf.gluteal n. 臀下神经
3. Pudendal n. 阴部神经
4. Post. femoral cutaneous n.
股外侧皮神经
5. Sciatic n. 坐骨神经



The branches of sacral plexus



3

Nerves of hip & buttock

Sup. gluteal n.
Inf. gluteal n.
Post.femoral cutaneous n.

1 – Sup. gluteal n.

Innervate: runs between gluteus Medius & minimus & supplies them

2 – Inf. gluteal n.

Run deeply to gluteus maximus and supplies it

3 – Post. femoral cutaneous n.

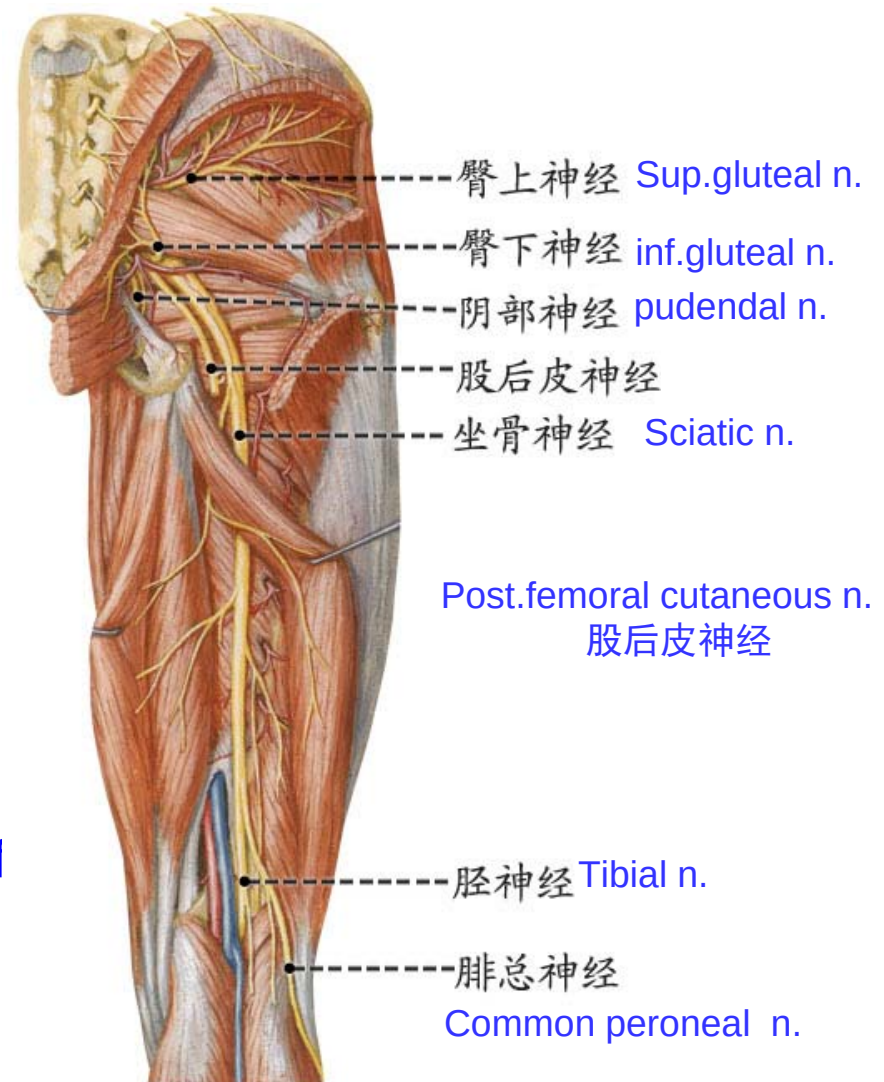
Descends deeply to the gluteus Maximus & supplies the skin of the buttock & back the thigh

Branches of sacral plexus-sciatic n.

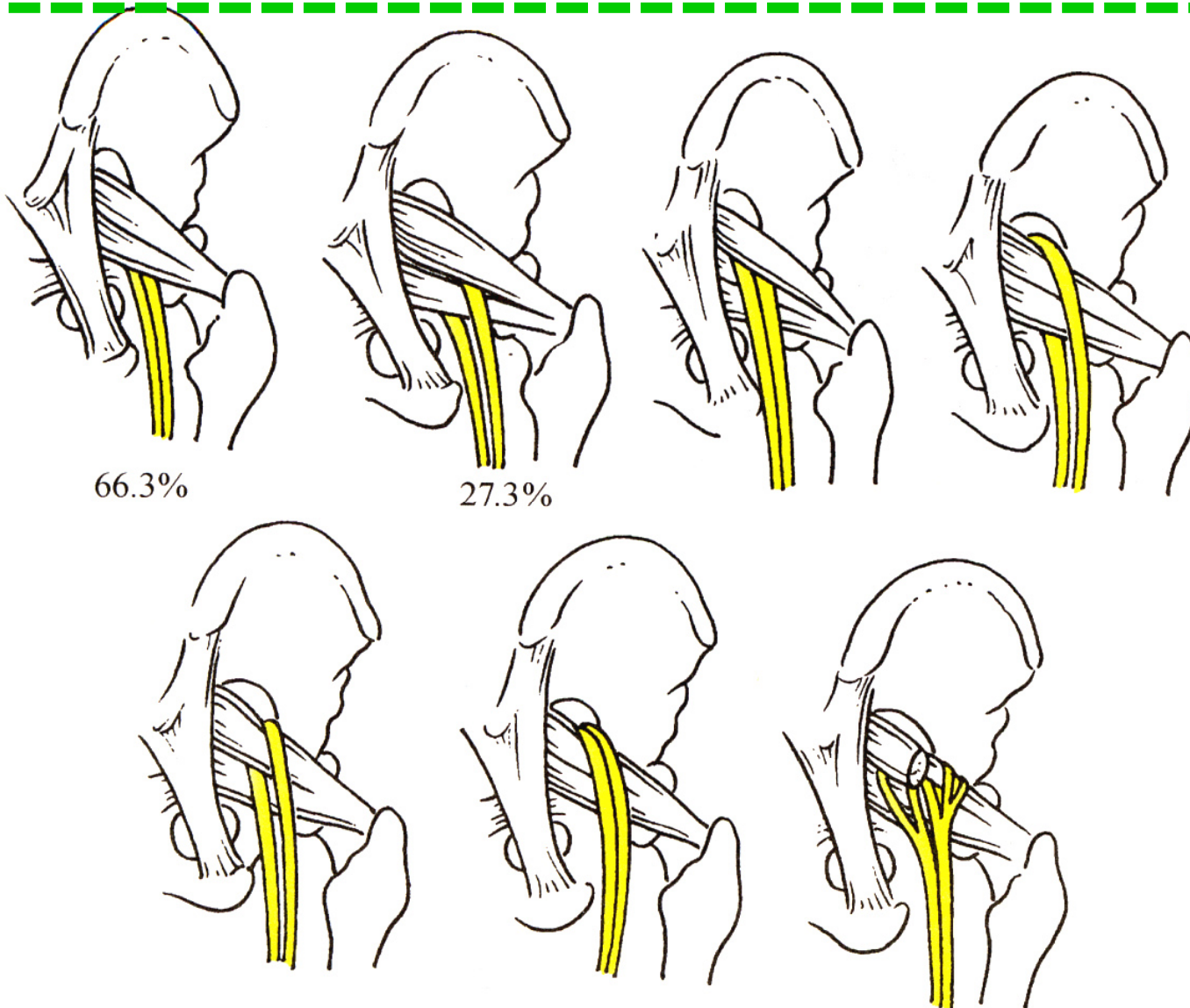
Sciatic n. (largest & longest n.)

Leaves pelvis through infrapiriform foramen to enter gluteal region, runs inferiorly passing midway between the greater trochanter of femur & ischial tuberosity to back of thigh it divided into **tibial n.** & **common peroneal n.** just above popliteal fossa;

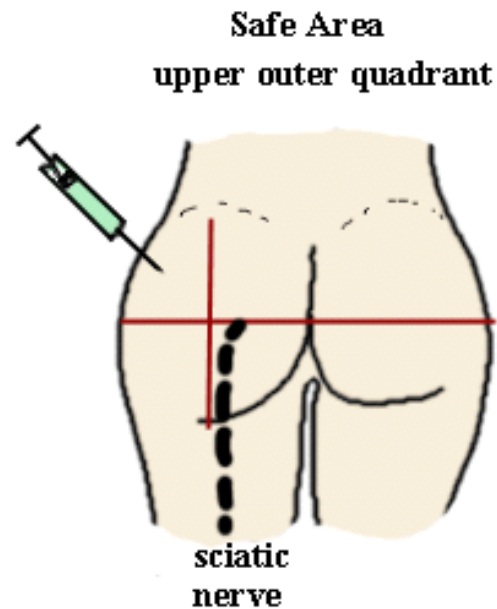
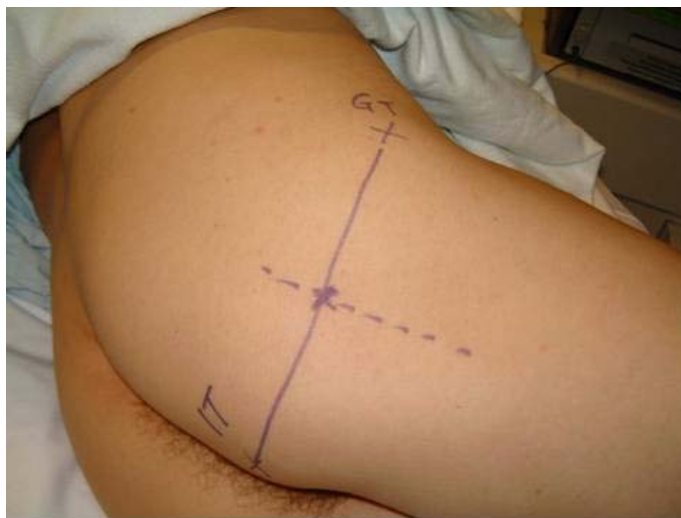
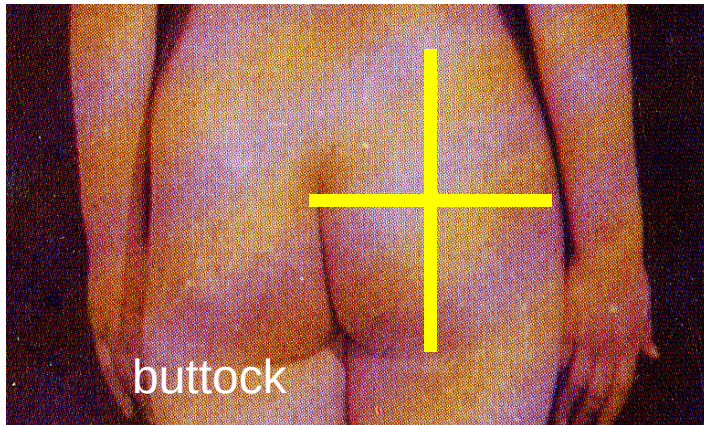
Innervates: post. muscular group & skin of lower limb & mm. & skin of foot sole.



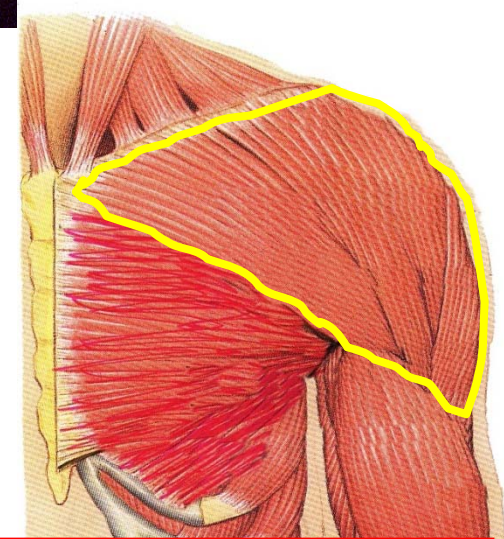
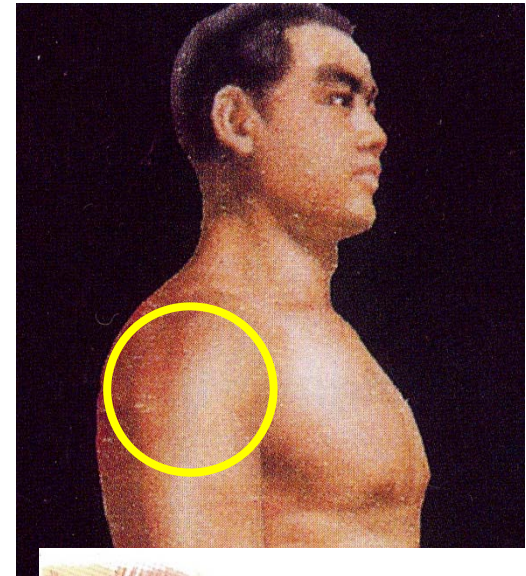
Types of sciatic n.to pass pelvis



Intramuscular injection of hip

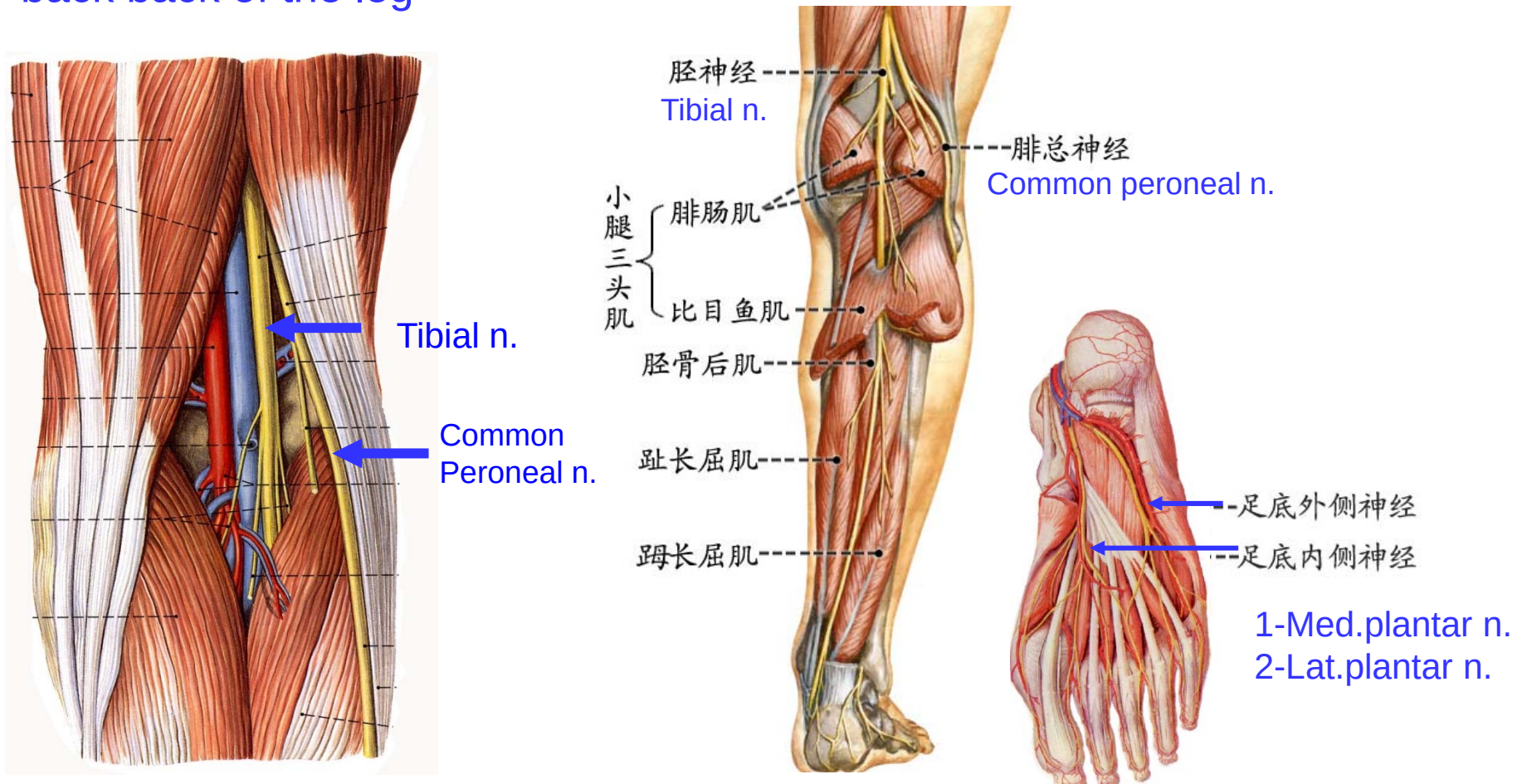


intramuscular injection of shoulder



Sciatic n.& its branches

Tibial n. Descend in popliteal fossa lies in between sup. & deep muscular group of back of leg (with tibial blood vessels), Going to the foot sole then dividing into medial and lateral plantar n. **Innervate:** muscle & the skin of the back back of the leg



Common peroneal n.& its branches

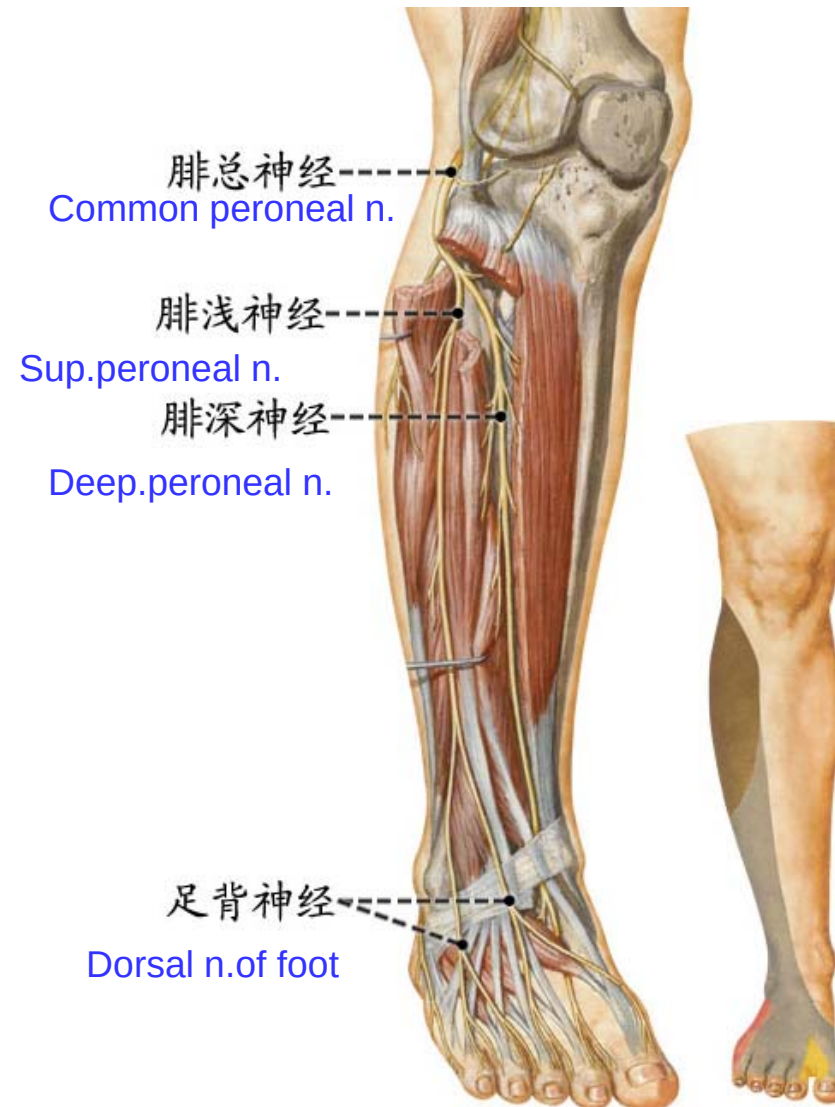
Common peroneal n. From
sciatic n.at apex of popliteal fossa.

Deep peroneal n. (DPN)

Supplies ant. muscles of leg, &
skin of first interdigital cleft

Superficial peroneal n. (SPN)

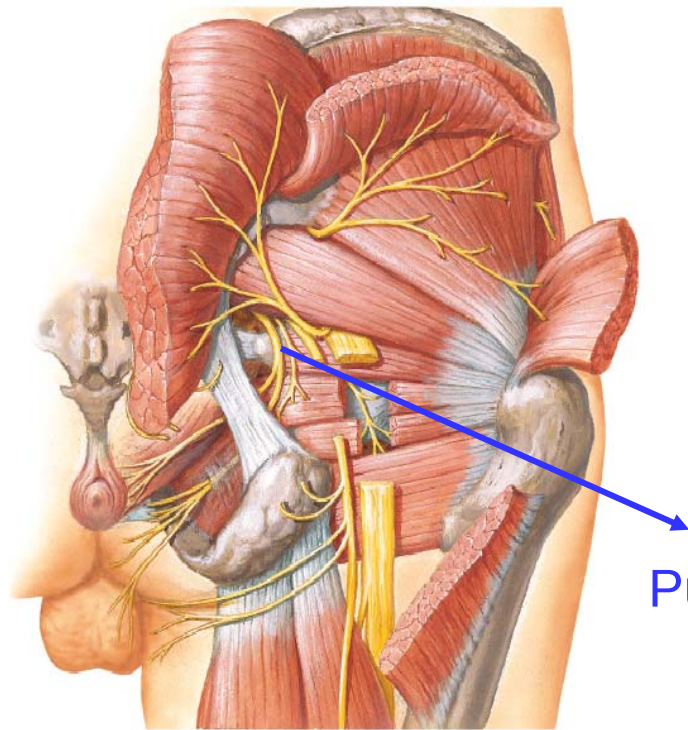
Supplies peroneus longus &
brevis & skin on ant. surface of
leg & dorsum of foot



The branches of sacral plexus - pudendal n.

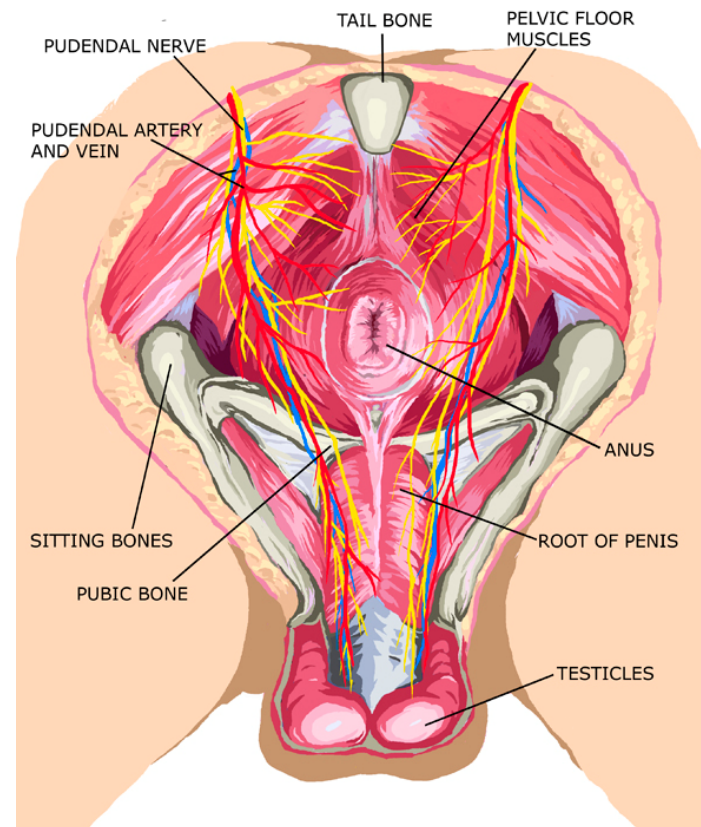
Pudendal n.

Leave the pelvis through inf. piriformis foramen (accompanied With a. and v.) enter the perineum (sensory& motor-mixed)

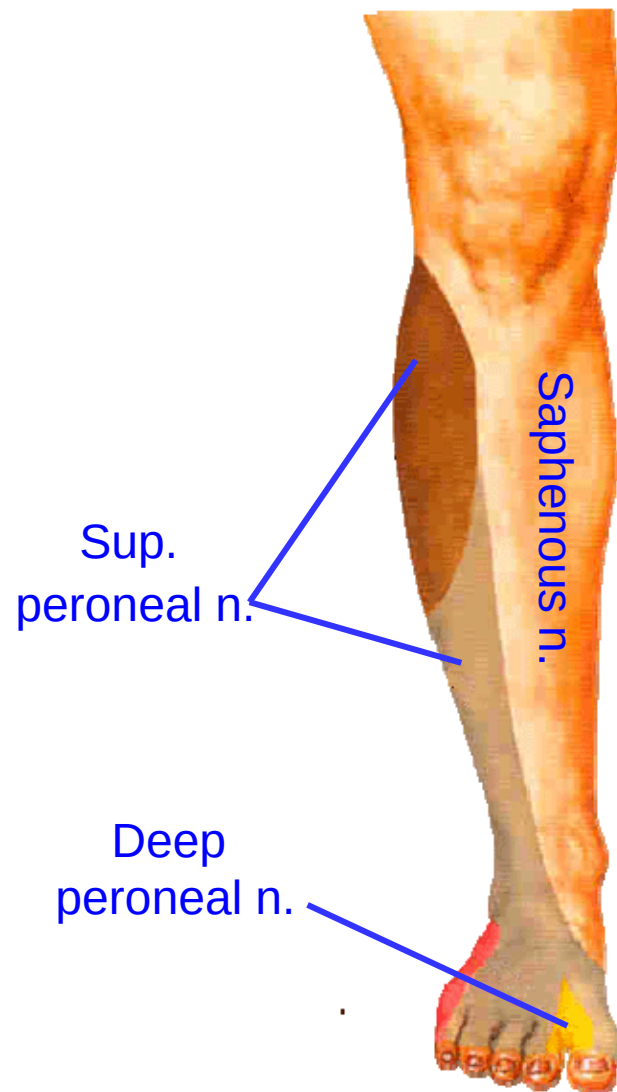


Pudendal n.

Anal n.
Perineal n.
Dorsal n of penis



Syndrome after tibial n. & common peroneal n.injury



仰趾足

Talipes calcaneus

Tibial n.injury



马蹄内翻足

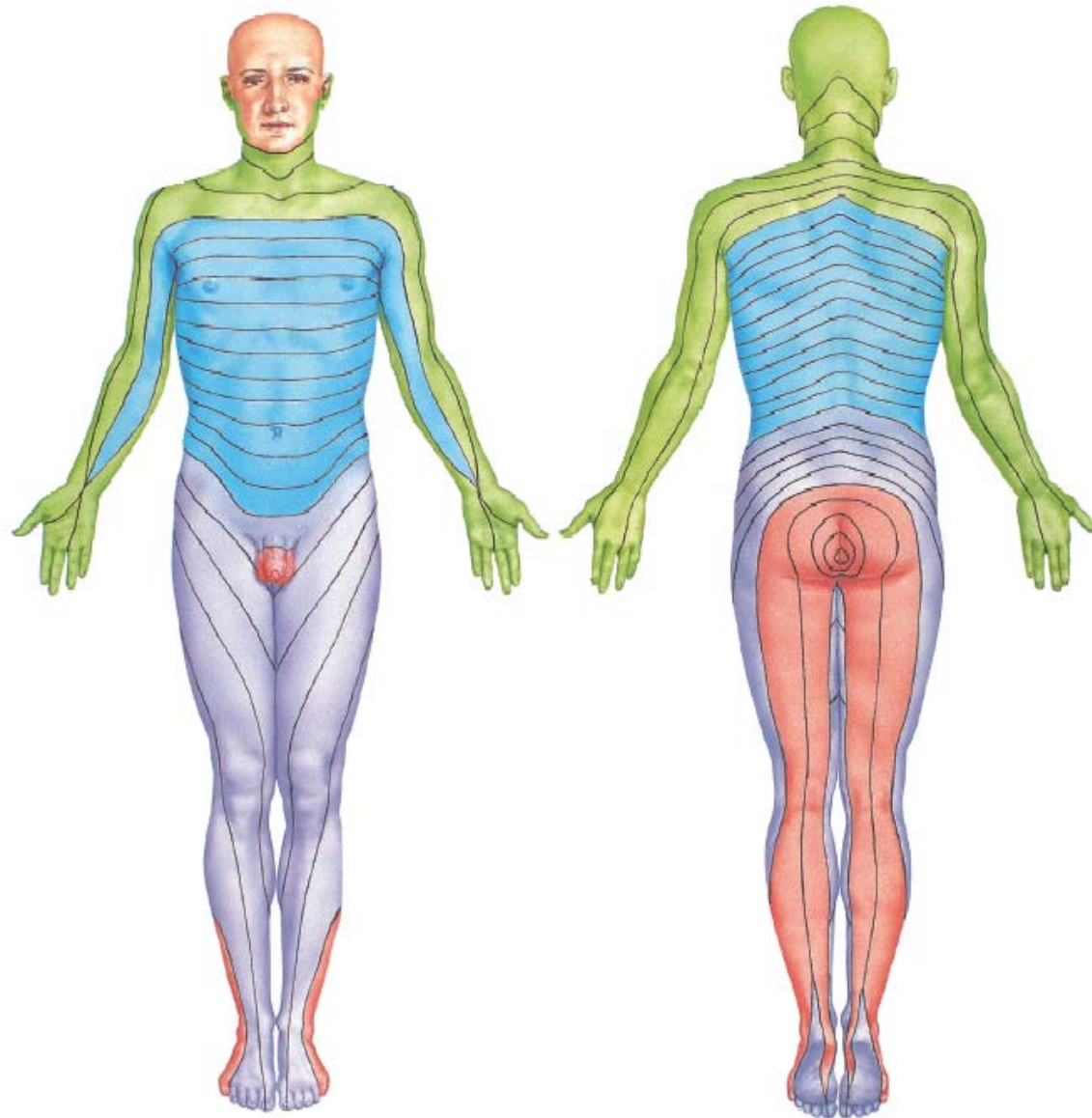
Talipes equinovarus

Common peroneal n. injury

脊神经丛歌诀

脊神经有四大丛，
颈五臂八胸一加。
腰丛一三上下凑，
骶丛骶尾骶干加。

Spinal nerve & skin sense-dermatomes



Summary

1. Master the routine and distribution of ant. branches of thoracic nerves.
2. Master the constitution, location of lumbar plexus, the distribution of femoral n. and obturator n.
3. Master the constitution, location of sacral plexus, main brs. and distribution of sciatic n, pudendal n. tibial n. and common peroneal n. the syndrome after tibial n. and common peroneal n. injury.

Preview the content of cranial nerves



Hardworking

Harvest