

THE NERVOUS SYSTEM

Lab Objectives

Students should be able to:

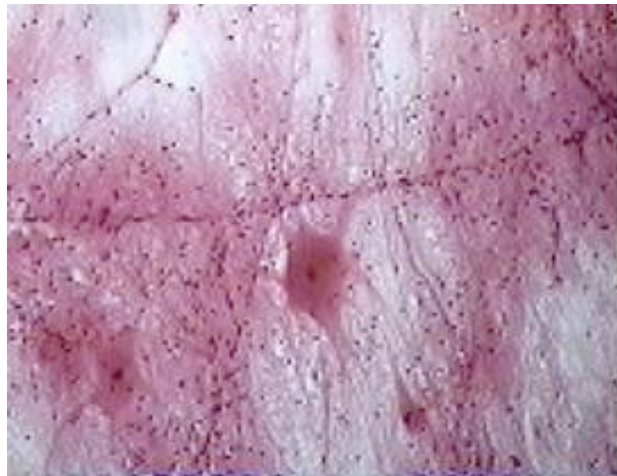
1. Identify the microscopic structures of the neuron using a slide and model of a neuron.
2. Identify the microscopic and macroscopic anatomy of the spinal cord.
3. Identify the microscopic anatomy of a nerve.
4. Identify various anatomical structures on whole and sagittal section brain models.
5. Identify various anatomical structures on preserved sheep brain.

I. Neuron, Neural Tissue, and Nerve(s)

Motor Neuron

Using the slides labeled "Motor Neuron", learn to recognize the following:

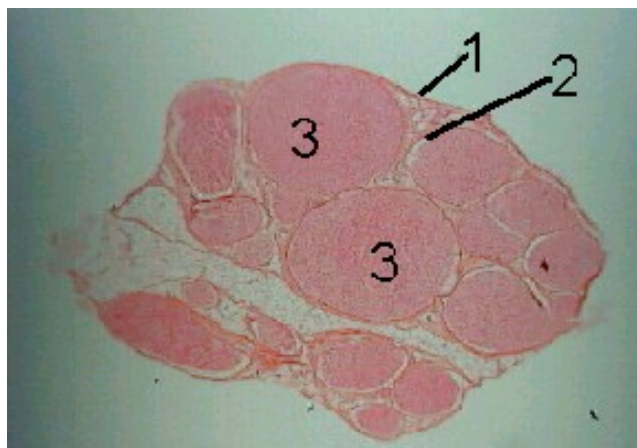
1. neuroglia cells
2. multipolar neuron
 - a. cell body (soma)
 - b. nucleus
 - c. nerve cell processes



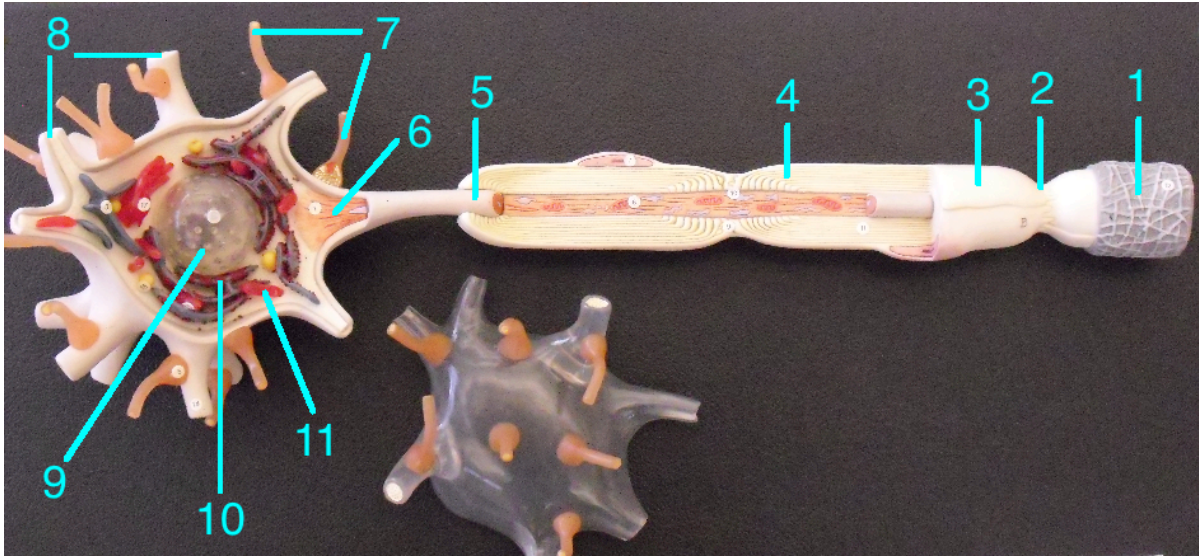
Peripheral Nerve

Using the slide labeled "Peripheral Nerve, c.s", learn to recognize the following:

1. Epineurium
2. Perineurium
3. Fascicles, and
4. Endoneurium (not identified in picture to the right, only seen on high power)



Motor Neuron Model

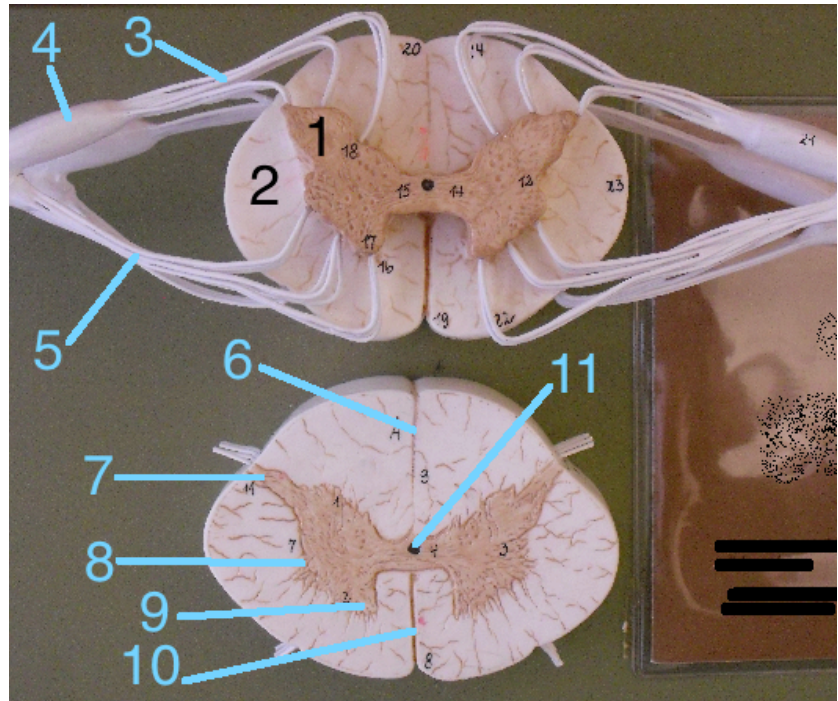


- | | |
|-----------------------------------|---------------------------------|
| 1. Endoneurium | 7. Telodendria (axon terminals) |
| 2. Node of Ranvier | 8. Dendrites |
| 3. Neurilemma | 9. Nucleus |
| 4. Myelin sheaths of Schwann cell | 10. Endoplasmic reticulum |
| 5. Axon | 11. Mitochondria |
| 6. Axon hillock | |

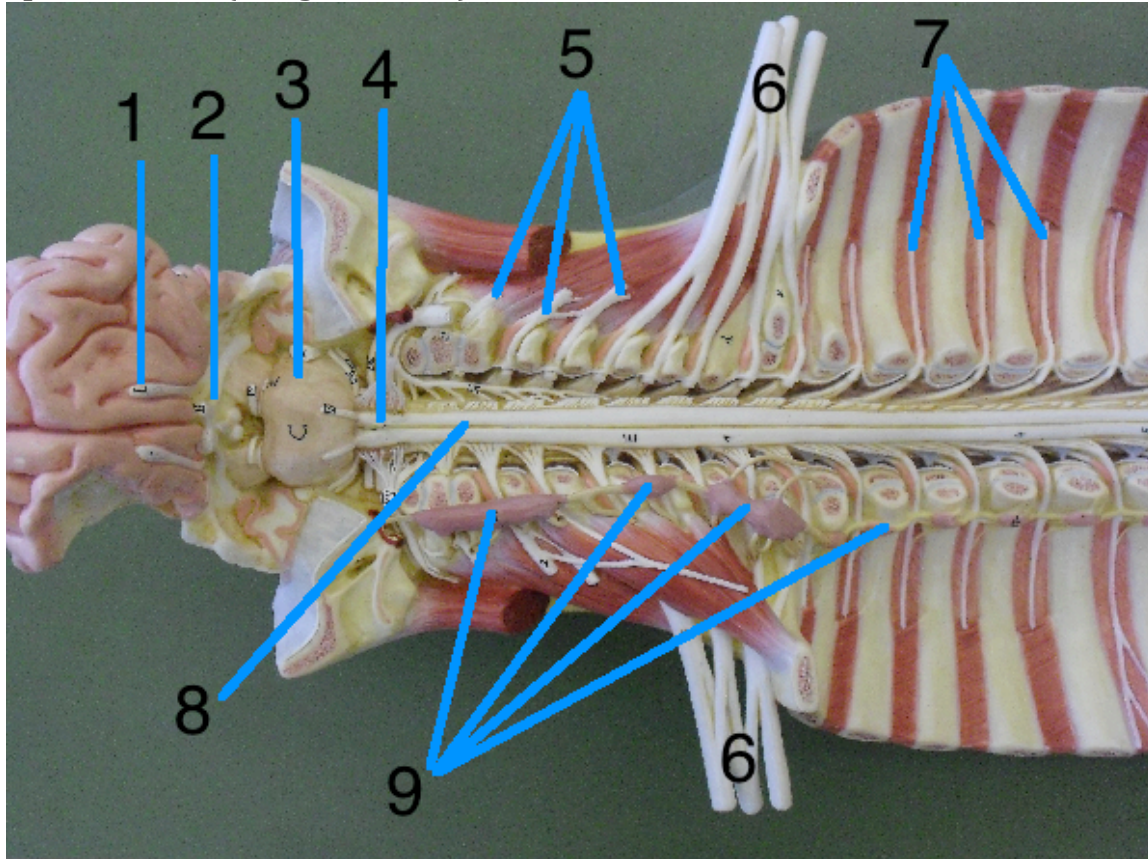
II. Gross Anatomy

Spinal Cord (X Section)

1. Grey Matter
2. White Matter
3. Dorsal root (sensory)
4. Dorsal root ganglia
5. Ventral root (motor)
6. Posterior median sulcus
7. Posterior horn of grey matter
8. Lateral horn of grey matter
9. Anterior horn of grey matter
10. Anterior median fissure
11. Central canal

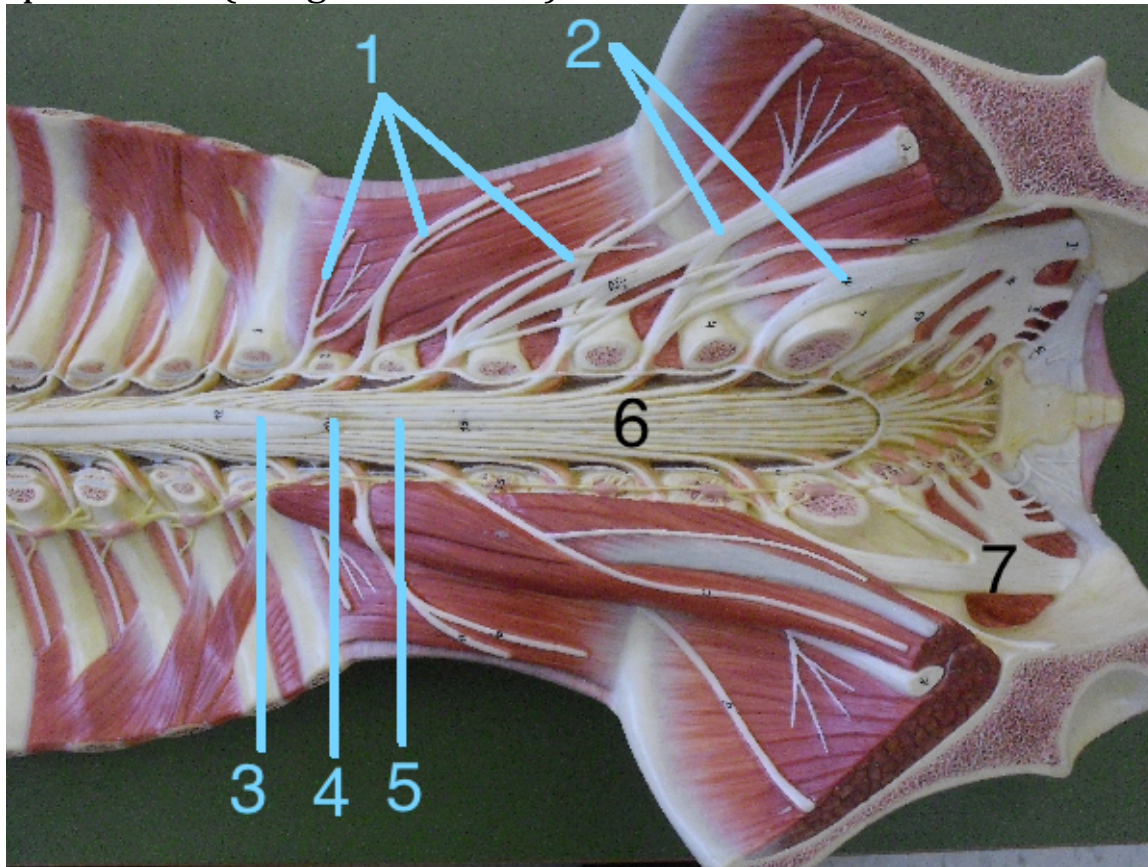


Spinal Cord (longitudinal)



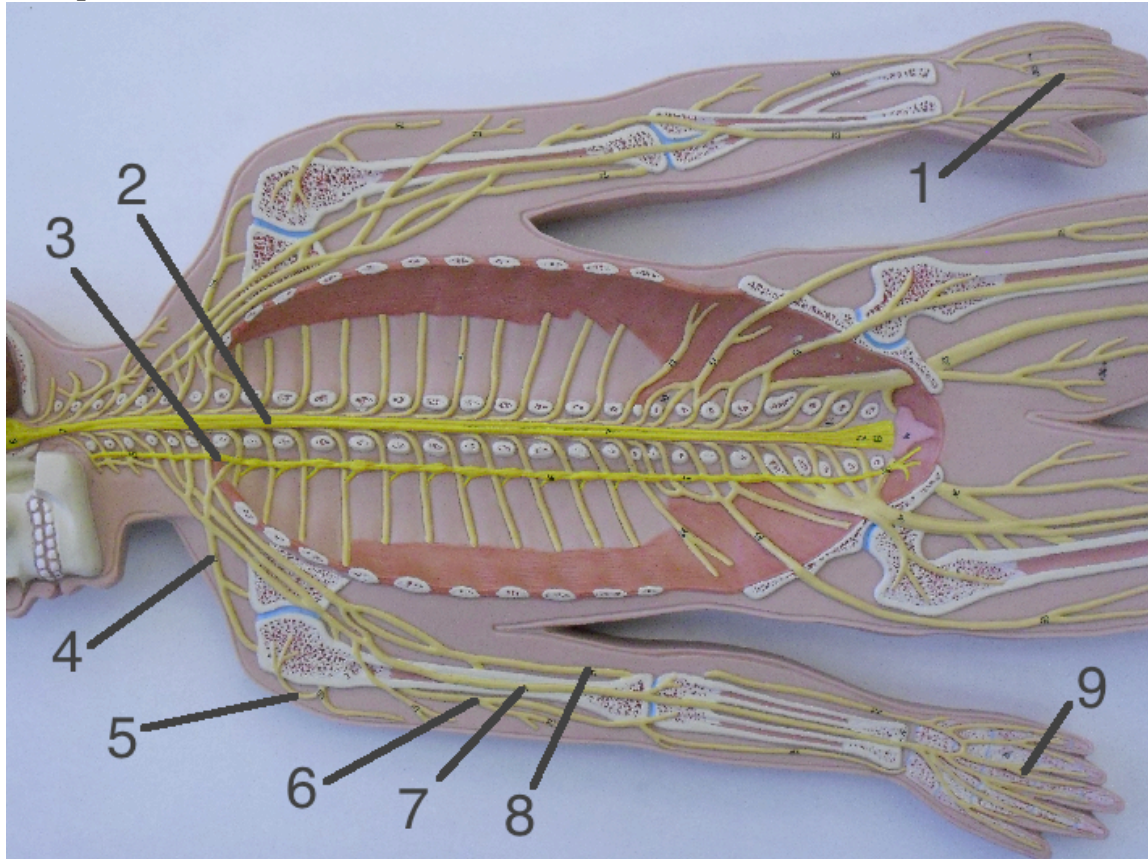
1. Olfactory nerve
2. Optic nerves (optic chiasma)
3. Pons
4. Medulla
5. Cervical plexus
6. Brachial plexus
7. External internal costal nerves
8. Spinal cord
9. Sympathetic chain ganglia

Spinal Cord (Longitudinal ctd.)



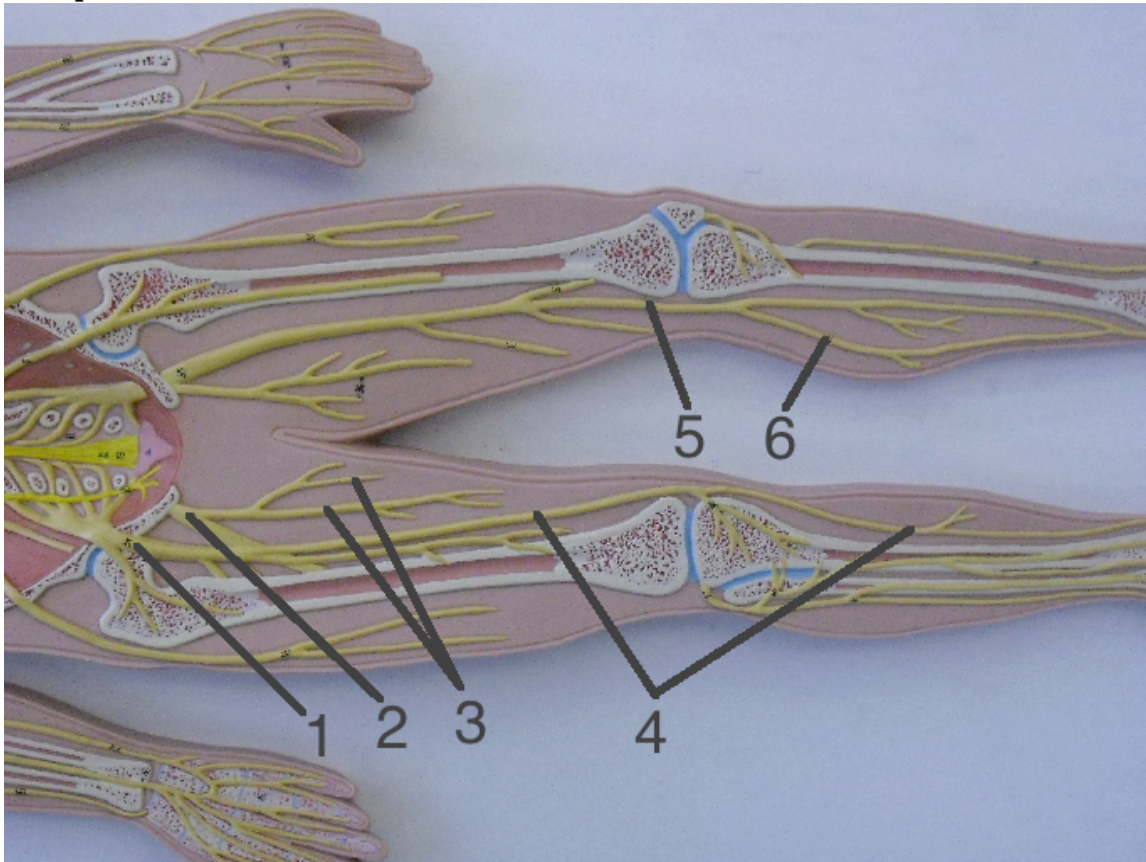
1. Lumbar plexus
2. Sacral plexus
3. Conus medularis
4. Filum terminale
5. Cauda equina
6. Distal portion of cauda equina (leading to sacral plexus)
7. Sciatic nerve

Peripheral Nerves



1. Dorsal digital
2. Spinal cord
3. Sympathetic chain ganglia
4. Supraclavicular
5. Axillary
6. Radial
7. Median
8. Ulnar
9. Palmar digital

Peripheral Nerves



1. Femoral
2. Sciatic
3. Obturator
4. Saphenous
5. Tibial
6. Sural