

# VIRTUAL MICROSCOPY

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## NERVE TISSUE

SLIDES: NN 1-10

### 1. Motor neurons (NN 1 & 2)

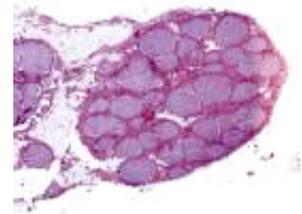
**Spinal cord.** If you look in the area of the ventral (anterior) horn you will see bodies of very large cells called motor neurons. These cells have **AXONS** and **DENDRITES** coming off the cell body or **PERIKARYON**. Dendrites are larger in diameter than axons. In addition, dendrites contain **NISSL SUBSTANCE** whereas the axons do not.



### 2. Nerves (NN 3-5)

**NN 3** is a longitudinal section of a nerve. Identify the **myelin sheaths**, **nodes of Ranvier**, **endoneurium**, and **axons**. A Mallory trichrome stain was used in this section and as a result some of the proteins (membrane and cytoplasmic) associated with the Schwann cell may be visualized.

**NN 4** is a cross section of a nerve. Identify **epineurium**, **perineurium** and **endoneurium**. Under high magnification, study the **nerve fascicles** and the myelinated neurons. The majority of the nuclei seen in nerve sections are those of Schwann cells; a few are fibroblasts that produce the connective tissue.



**NN5** is a section of an artery, vein and nerve. Learn to identify nerves in tissue sections.

### 3. Encapsulated terminal sensory apparatus (NN 6 & 7)

These slides are sections of palmar skin. You should be able to identify both **Pacinian** and **Meissner's corpuscles**. The former are large (1-4 mm), onion-like structures found in the deeper layers of the skin. The



latter, located in the dermal papillae just under the basal lamina, are elongate, pear-shaped structures with rounded ends, their long axes perpendicular to the surface of the skin in cutaneous papillae.

#### 4. Spinal (dorsal root) ganglia (NN 8)

Locate the ganglia on either side of the spinal cord and note the characteristics of these spinal ganglia as compared to autonomic ganglia.

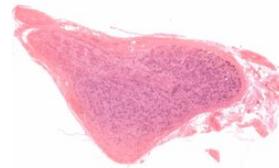
Note that the nuclei of the neurons tend to be centrally located.



#### 5. Autonomic ganglia (NN 9, 10)

##### a. Sympathetic (NN 9)

Using your atlas and information given during lecture, compare and contrast sympathetic and parasympathetic ganglia.



##### b. Parasympathetic (NN 10)

This is a section of the duodenum.

Parasympathetic plexuses are located in the wall of the intestine. The **myenteric plexus** is located between the two muscle layers of the muscularis and the **submucosal plexus** is found in the submucosa (they are easier to locate in the muscularis). Several neurons clustered together may be all that you will see of a plexus.



- 1) How can you distinguish spinal ganglia from autonomic ganglia?
- 2) Sympathetic ganglia from parasympathetic ganglia?