

General Histology Practical

by
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Nerve endings

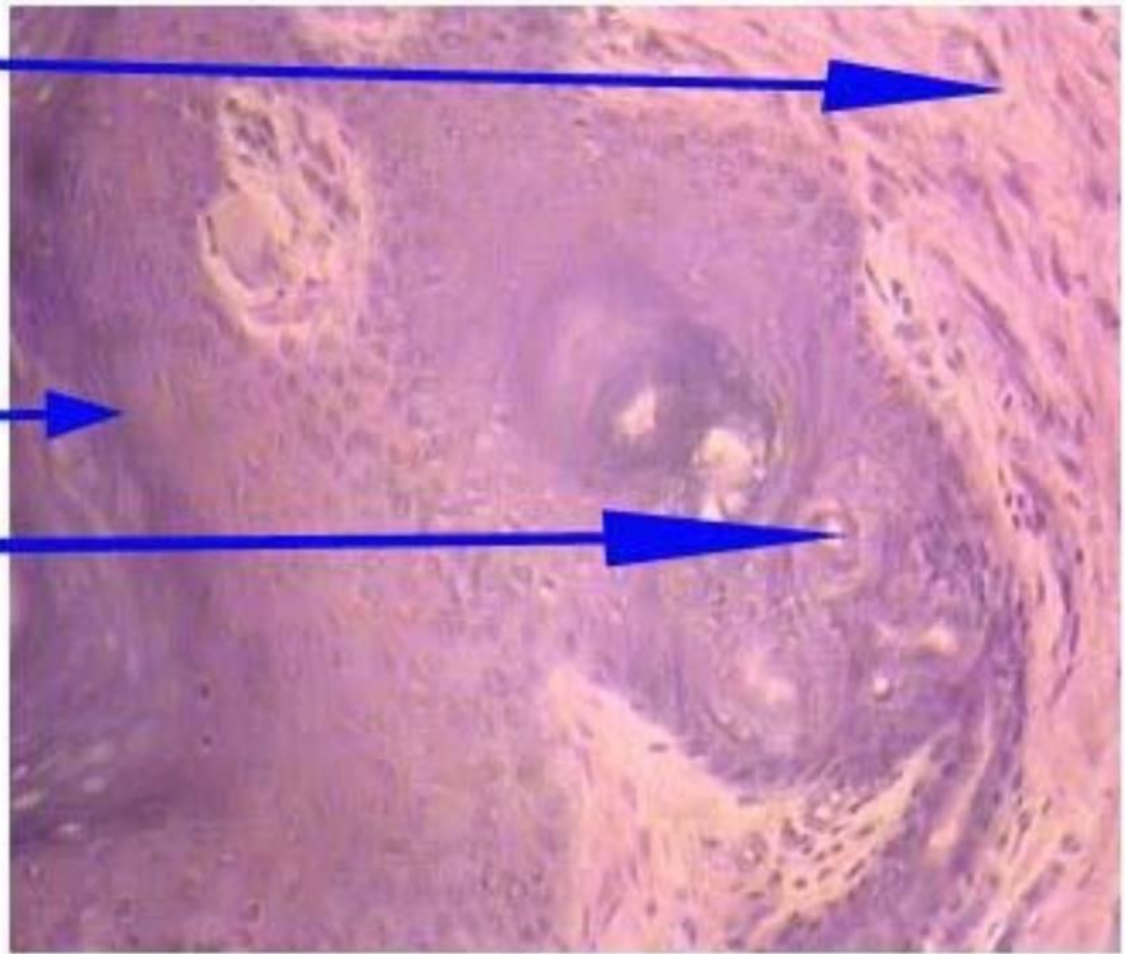
3. Meissner corpuscles

- ❖ Found in certain dermal papillae of the fingertips and lips.
- ❖ Pear-shaped encapsulated mechanoreceptors specialized in responding to touch sensitivity.
- ❖ Comprised of stratified flattened epithelial cells and encased in a fibrous connective tissue capsule.
- ❖ Most prevalent in skin areas highly sensitive to tactile stimulation.

dermis

epidermis

meissner corpuscle



perpendicular section in thick **skin**
(meissner corpuscle) 4x

Nerve endings

4. Pacinian corpuscles

- ❖ Located in the dermis and hypodermis, Pacinian corpuscles are encapsulated mechanoreceptors.
- ❖ Specialized in perceiving pressure and vibration.
- ❖ these large ovoid receptors have a core containing non-myelinated nerve terminals, surrounded by layers of modified fibroblasts, and enveloped by connective tissue to form the capsule.
- ❖ Found in the pancreas and the human skin (specifically in the dermis and hypodermis).

Peripheral nerves

- Peripheral nerves consist of bundles of nerve fibers (axons) surrounded by multiple layers of connective tissue (sheaths).
- **The epineurium** is the outermost layer among the three investments, composed of dense irregular fibrous connective tissue.
- These nerves contain thick elastic fibers and collagen fibers that serve to protect the nerve bundle from damage due to overstretching.

Peripheral nerves

- **The perineurium** is the middle layer of connective tissue investments surrounding peripheral nerves.
- Composed of dense connective tissue, it is thinner than the epineurium.
- The inner surface of the perineurium is lined by multiple layers of epithelial cells.
- Within the perineurium, there are dispersed collagen fibers, some elastic fibers, fibroblasts, and blood vessels.

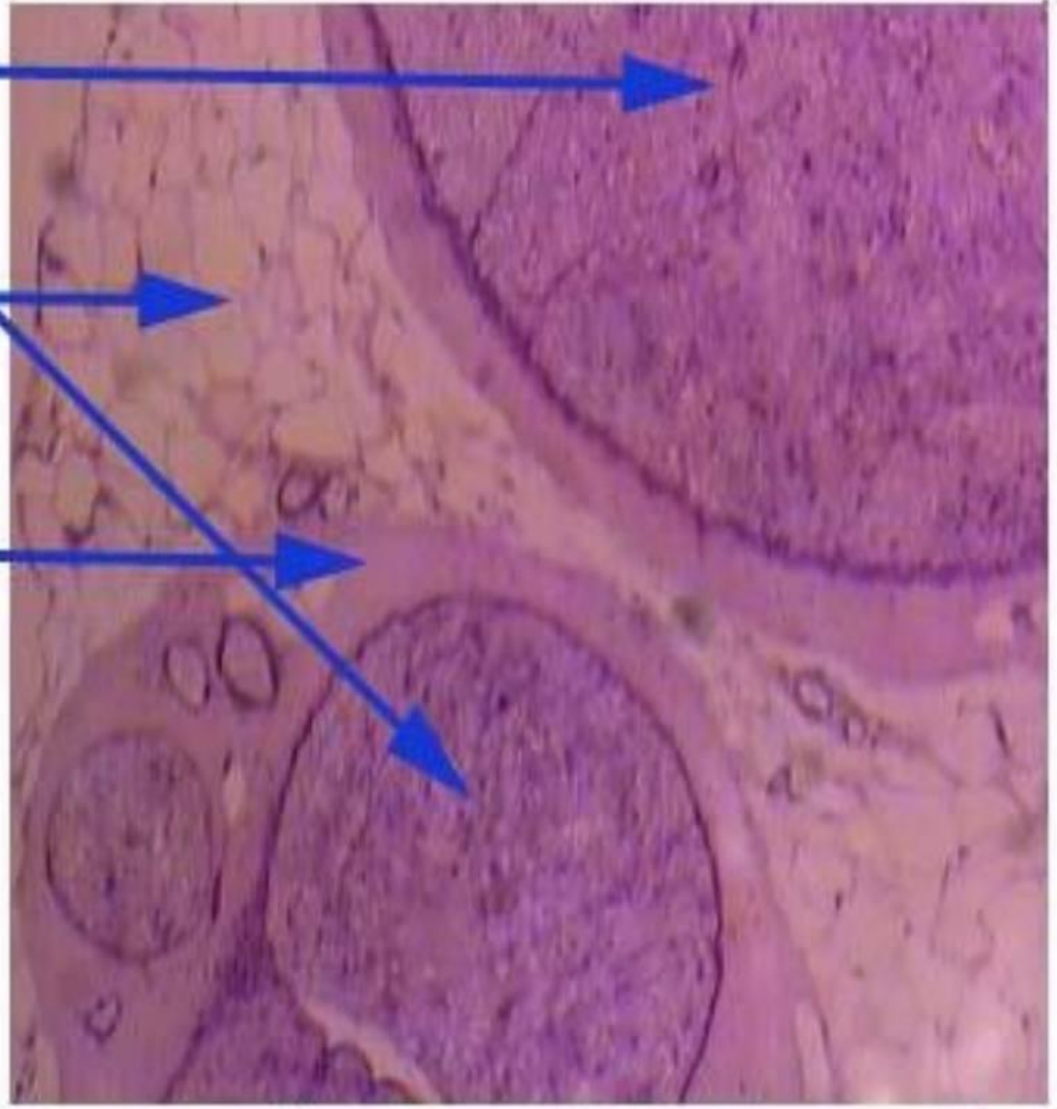
Peripheral nerves

- **The endoneurium is the innermost layer of the investments surrounding each axon in peripheral nerves.**
- **It is a loose connective tissue consisting of a thin layer of reticular fibers, fibroblasts, macrophages, capillaries, and mast cells.**
- **The endoneurium is in contact with the basal lamina of the Schwann cells.**

endoneurium

epineurium

perineurium



cross section in peripheral nerve 4x

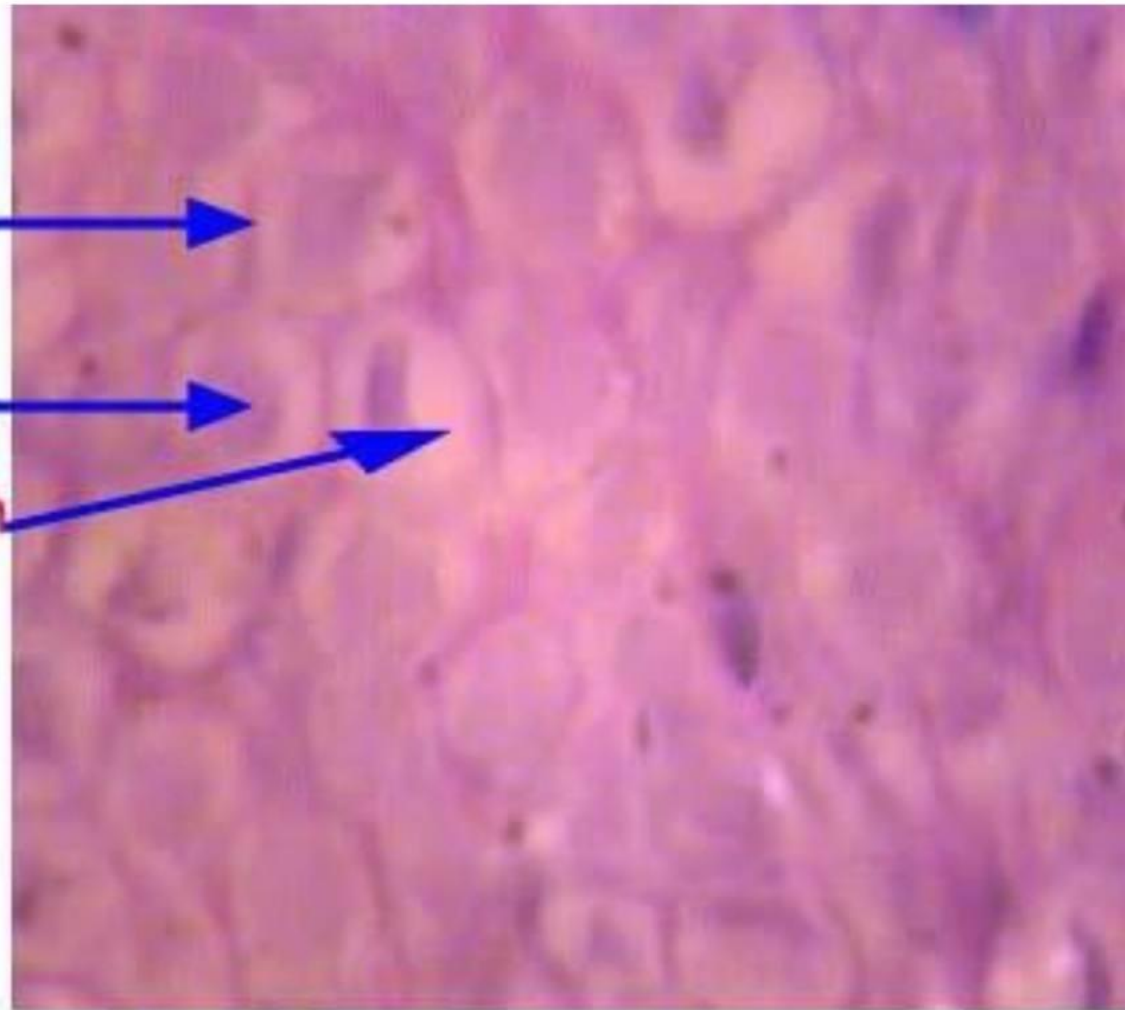
endoneurium



axon



myelin sheath



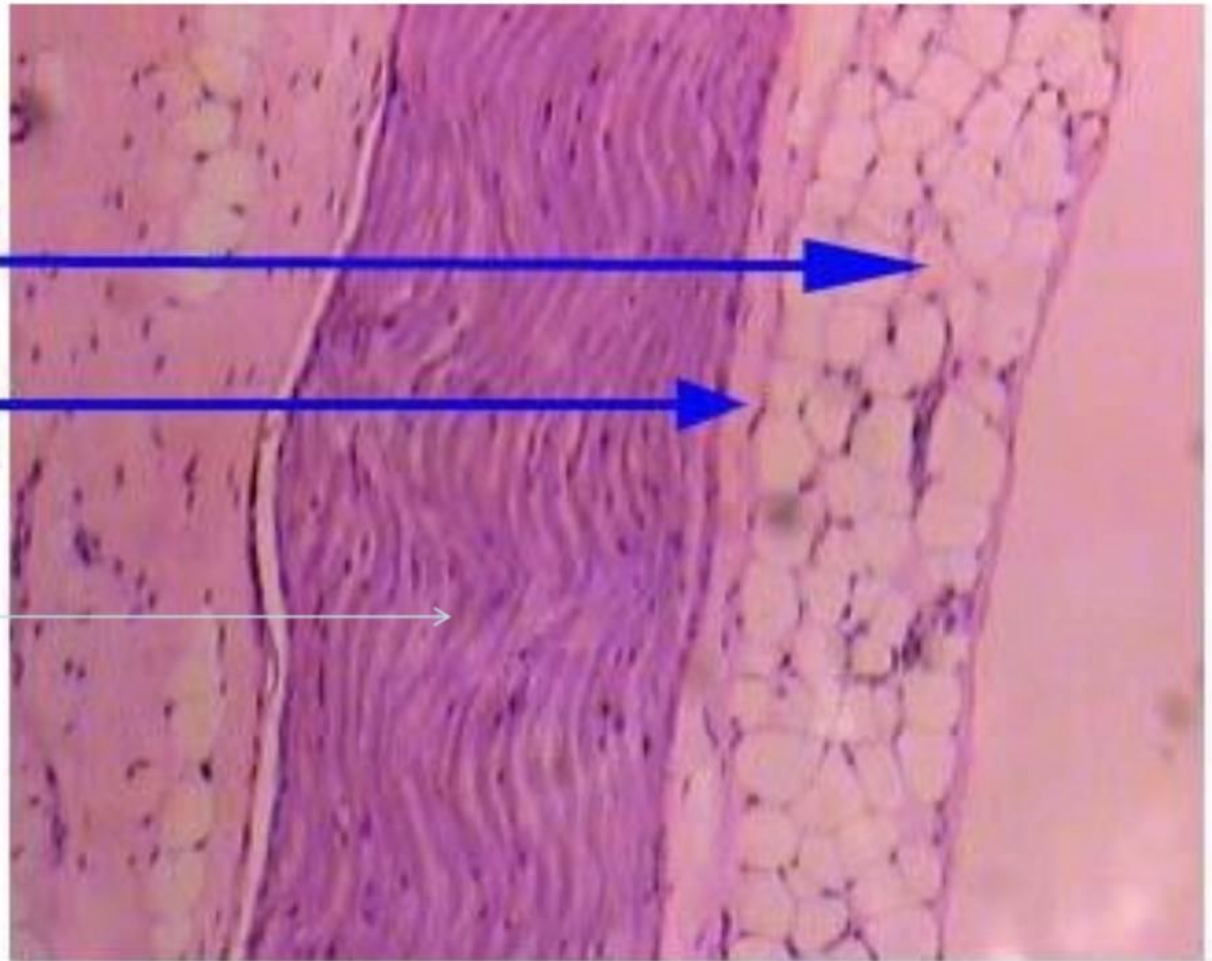
cross section in peripheral nerve 40x

(endoneurium)

epineurium

perineurium

(endoneurium)



longitudinal section in peripheral nerve 4x

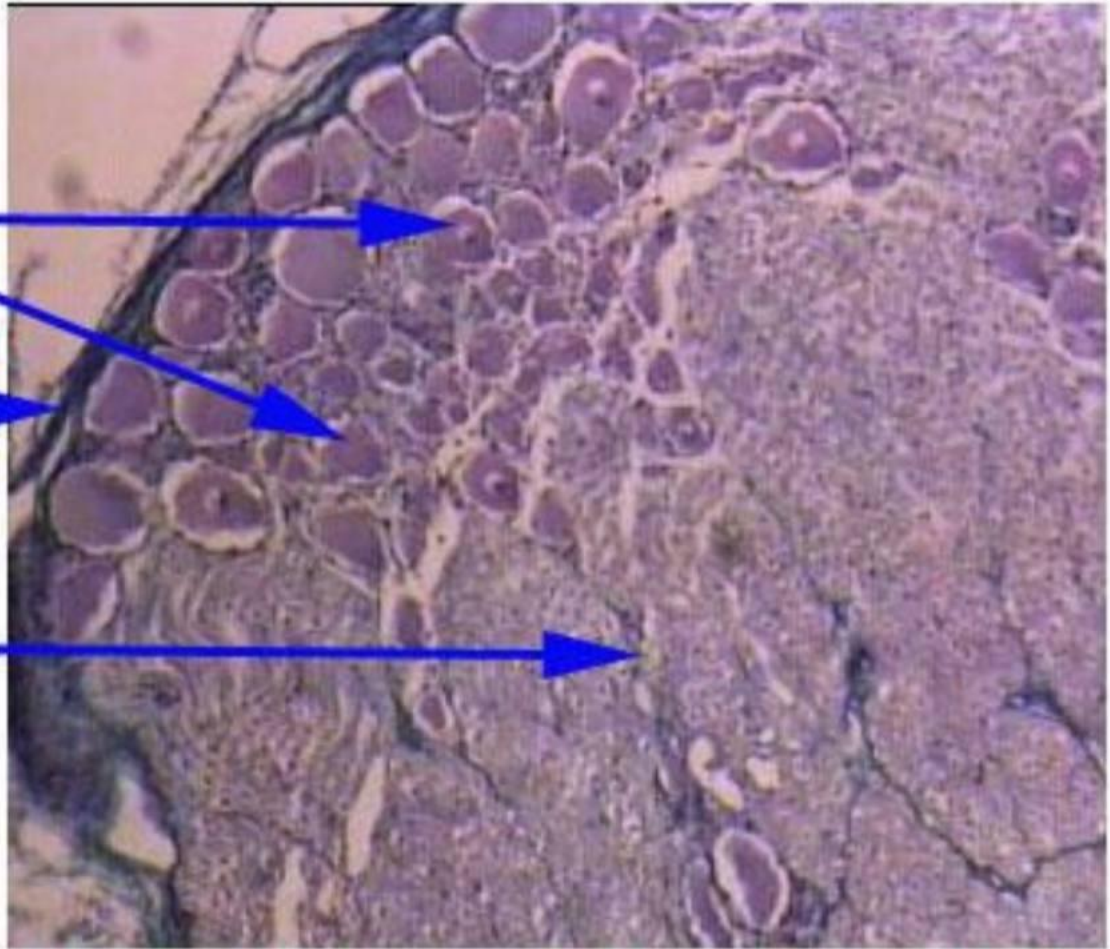
Ganglia

- aggregations of cell bodies of neurons located outside the CNS.
- There are two main types of ganglia: **sensory ganglia and autonomic ganglia.**
- Spinal ganglia Sensory neurons of the spinal nerves are called dorsal root ganglia.
- These ganglia contain pseudounipolar cell bodies of sensory nerves enveloped by a capsule of satellite cells, collagen, and blood vessels, providing support and protection to the neurons.

P pseudounipolar
cell bodies

connective tissue
capsule

axons



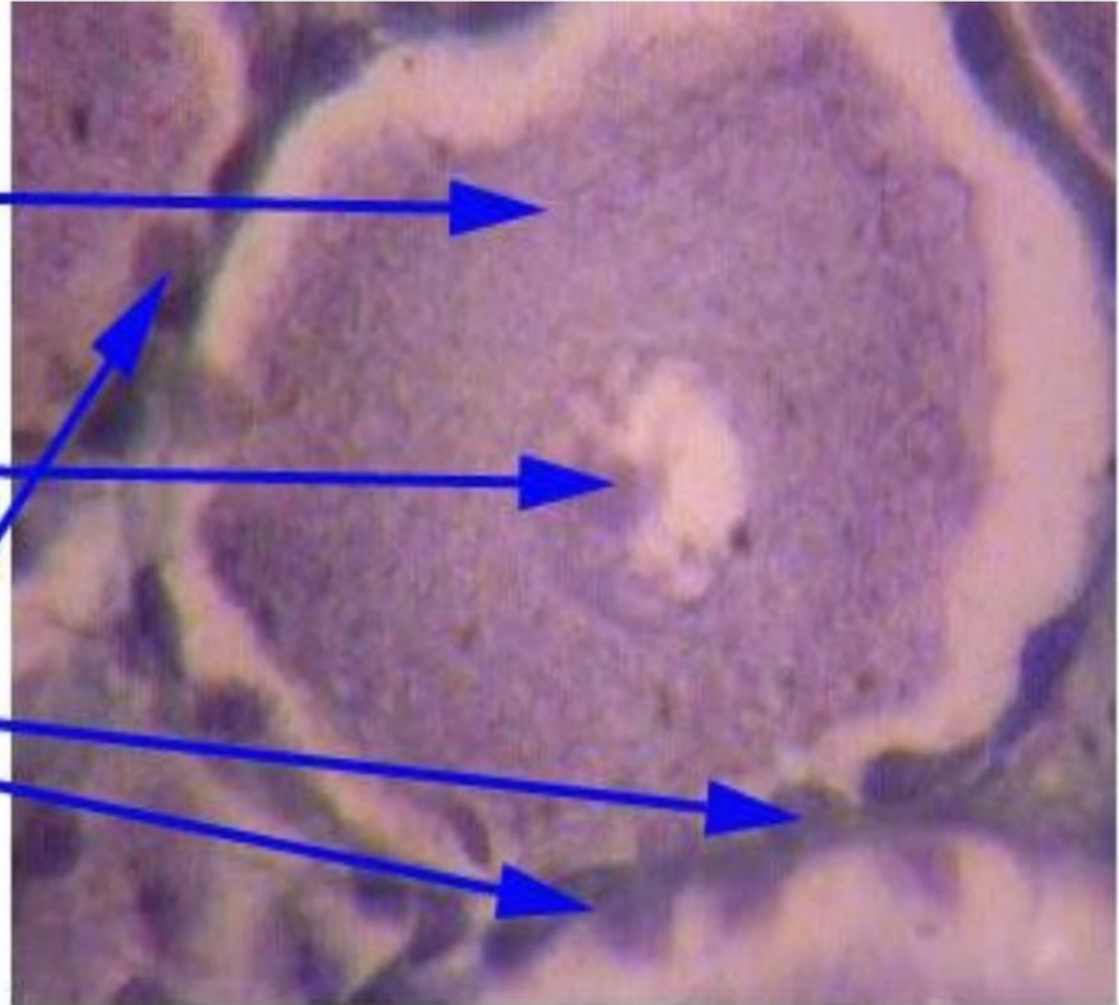
cross section in dorsal root ganglia (spinal ganglia) 4x

(sensory ganglia)

cytoplasm

nucleus

satellite cells



cross section in spinal ganglia (pseudounipolar neuron with capsule) 40x



**THANK YOU
FOR
LISTENING**

