**Nerve Notes**

**Peripheral Nerves- Overview**

A nerve is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the PNS. It is a bundle of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ peripheral \_\_\_\_\_\_\_\_\_\_ enclosed by \_\_\_\_\_\_\_\_\_\_\_\_ tissue. There are 2 types: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, depending upon where they originate.

The connective tissue coverings of a nerve are:

* Endoneurium\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Perineurium\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Epineurium\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Most nerves are mixtures of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ fibers and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ fibers.

They are classified according to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ they transmit impulses.

* Mixed- transmit impulses \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Sensory- transmit impulses\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Motor- transmit impulses \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Most nerves are mixed nerves and don’t contain only 1 type of fiber.

Types of fibers in mixed nerves:

* + Somatic afferent (sensory from\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_)
  + Somatic efferent (motor from \_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_)
  + Visceral afferent (sensory from \_\_\_\_\_\_\_\_\_ to\_\_\_\_\_\_\_\_\_)
  + Visceral efferent (motor from\_\_\_\_\_\_\_\_\_to \_\_\_\_\_\_\_\_­\_)

**Ganglia**: contain \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ associated with nerves in PNS

**Nerve Repair:** Mature neurons are \_\_\_\_\_\_\_\_\_\_\_\_\_\_, but if the soma (cell body) of the damaged nerve is intact, the peripheral axon may regenerate in PNS; does not occur in CNS

**Cranial Nerves**

There are \_\_\_\_\_\_\_ pr of cranial nerves. The first 2pr attach to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and the rest to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. All except the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ serve only head and neck structures. The \_\_\_\_\_\_\_\_\_\_\_ extends into the abdomen.

Cranial nerves are names according to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Most cranial nerves are considered \_\_\_\_\_\_\_\_\_\_\_\_ and contain both \_\_\_\_\_\_\_\_\_ & \_\_\_\_\_\_\_\_\_\_\_ fibers.

Cranial nerves \_\_\_\_ & \_\_\_\_ have a sensory function only. Cranial nerves \_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_, & \_\_\_\_\_\_\_\_\_\_ carry parasympathetic fibers that serve muscles and glands.

Cranial nerves are part of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ nervous system.

|  |  |  |
| --- | --- | --- |
| Cranial Nerve | Function | Sensory/Motor/Both |
| I |  |  |
| II |  |  |
| III |  |  |
| IV |  |  |
| V |  |  |
| VI |  |  |
| VII |  |  |
| VIII |  |  |
| IX |  |  |
| X |  |  |
| XI |  |  |
| XII |  |  |

**Spinal Nerves**

There are \_\_\_\_\_\_\_ pr of spinal nerves. They supply all parts of the body except \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_.

Spinal nerves are all classified as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ nerves and contain both\_\_\_\_\_ \_\_\_\_\_\_\_\_\_ & \_\_\_\_\_\_\_\_\_\_\_\_\_\_ fibers.

Spinal nerves are named according to the portion of the spinal cord from which they \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

The areas from which spinal nerves leave are:

|  |  |  |
| --- | --- | --- |
| Area | Pairs of Spinal Nerves | Vertebrae |
| Cervical |  |  |
| Thoracic |  |  |
| Lumbar |  |  |
| Sacral |  |  |
| Coccygeal |  |  |

Why are there 8 pairs of spinal nerves and only 7 cervical vertebrae? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Spinal nerves exit the vertebral canal \_\_\_\_\_\_\_\_\_\_\_\_\_ to the vertebrae C1-C7 and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the vertebrae T1 to the coccyx.

Spinal nerves connect to the spinal cord via a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ root and a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ root.

|  |  |  |
| --- | --- | --- |
| Type of Fiber | Root | Path/Destination |
|  | Ventral |  |
|  | Dorsal |  |

Spinal nerves are short \_\_\_\_\_\_\_\_\_ cm. They divide into a \_\_\_\_\_\_\_\_\_\_ ramus , a \_\_\_\_\_\_\_\_\_\_\_ ramus, and a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ branch that reenters the \_\_\_\_\_\_\_\_\_\_\_\_ canal.

A branch of a nerve is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

* Dorsal rami supply \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Ventral rami supply \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Roots lie \_\_\_\_\_\_\_\_\_\_\_\_ to and form the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ nerves. Each one is strictly \_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_

Rami lie \_\_\_\_\_\_\_\_\_\_\_\_\_\_ to and are the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ branches of the spinal nerves. They carry both \_\_\_\_\_\_\_\_\_\_\_\_\_\_ & \_\_\_\_\_\_\_\_\_\_\_\_\_\_ fibers.

Nerve plexuses are interlacing nerve networks formed by all \_\_\_\_\_\_\_\_\_\_\_\_ rami (exc T2- T12) branching and joining each other lateral to the vertebral column.

Nerve plexuses are formed in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ regions to serve the limbs.

|  |  |  |
| --- | --- | --- |
| Spinal Nerve | Function | Nerve Plexus |
| Phrenic |  |  |
| Musculocutaneous |  |  |
| Ulnar |  |  |
| Median |  |  |
| Femoral |  |  |
| Sciatic |  |  |
| Tibial |  |  |
| Common Peroneal (Fibular) |  |  |
| Radial |  |  |
| Axillary |  |  |