

Peripheral Nervous System

Central Nervous System -

Peripheral Nervous System –

Cranial nerves –

Spinal Nerves –

Dorsal Root –

Ventral Root –

Spinal Nerve –

Dorsal Ramus -

Ventral Ramus -

8 cervical -

T1 - T12 -

L1 – L5 -

S1 through S5 -

Cox 1 -

Peripheral Nervous System

Central Nervous System - Everything enclosed in bone. The brain in the skull and the spinal chord in the bony spine.

Peripheral Nervous System – Nerves coming off of the CNS and going out to the rest of the body.

Cranial nerves – 12 pairs of nerves coming off of the brain and taking care (with a couple of exceptions) things above the neck.

Spinal Nerves – 31 pairs of nerves coming off of the spinal chord.

Dorsal Root – sensory and afferent. Sensory neurons from the body to the CNS via the spinal chord.

Ventral Root – motor and efferent. These are motor neurons from the brain to the PNS.

Spinal Nerve – When the dorsal and ventral roots combine. It is at most an inch long.

Dorsal Ramus - Posterior Branch – that part of the spinal nerve that branches off to supply nerves supply posterior to the spinal chord.

Ventral Ramus - Anterior Branch - that part of the spinal nerve branches off to supply everything anterior to the spine.
In most cases it is a much larger branch.

8 cervical called – C1 – C8: C1 – C7 exit above the named vertebra C8 exits between C7 and T1.

T1 - T12 exit below the vertebra T1 – T2.

L1 – L5 below vertebra L1 – L5.

S1 through S5 exit below their names vertebral segments but inside one ossified bone.

Cox 1 – exits through the sacral Cornu.

Roots C1, C2, (C1 – C4), (C3-C5)

Plexus –

Dorsal rami of C1 and C2 -

Off of C1 and C2 -

- **Suboccipital nerve –**
- **Greater occipital nerve –**

Cervical Plexus –

Cutaneous branches –

Motor branches –

Phrenic Nerve –

Roots C1, C2, (C1-C4), (C3-C5)

Plexus – An area of the spinal cord that give off nerves that “mix and match” the nerve fibers before they go to their destination. (giving small areas greater amounts of enervation). A merging and mixing of nerves.

Dorsal rami of C1 and C2 are larger than the ventral rami, because there is more going on behind the spine that in front of it.

Off of C1 and C2 there are two nerves to remember:

- **Suboccipital nerve –** Off of dorsal ramus of C1 and goes to sub occipital region. (It has no dermatome, just muscles)
- **Greater occipital nerve –** Off of dorsal ramus of C2 – Suboccipital muscles and nerves to the skin to the back of the head.

Cervical Plexus – ventral rami/anterior branches of C1 through C4

Cutaneous branches – supply the dermatomes. Nerves of the skin. (Sensory)

Motor branches – supply various muscles.

Phrenic Nerve – mostly C4 with some C3 & C5. Important to know. This goes to the diaphragm.

Roots (C5 – T1)

Brachial Plexus –

Roots –

Trunks –

Divisions –

Cords –

Terminal Nerves –

-
-
-
-
-

Nerves coning off of the brachial plexus before the terminal nerves

Roots (C5-T1)

Brachial Plexus – Ventral ramus of C5 through T1.

Roots – The root of the brachial plexus are the ventral rami of C5 through T1. (There are five of them)

Trunks – The five roots join together and form three trunks.

Divisions – The three trunks split into six divisions.

Cords – The six divisions merge into three cords.

Terminal Nerves – the 3 cords split and merge to form 5 major nerves (i.e. Terminal branches) supplying the upper extremity.

- **Musculocutaneous –** (C5,6,7) Supplies muscles to the front of the arm. It turns into the lateral cutaneous nerve of the forearm and supplies large portions of nerve sensation to the lateral side of the forearm.
- **Median Nerve (C5,6,7,8,T1) – Great flexor** nerve for muscles of the forearm.
- **Ulnar Nerve** (? - at this time) is often called the **Accessory Flexor** nerve. It is concerned with fine movements of the hand.
- **Axillary (Circumflex) C5,6 –** encircles the neck of the humerus.
- **Radial Nerve – C5,6,7,8,T1 –** Great extensor nerve of the upper extremity. The largest of the upper extremity nerves.

Nerves coning off of the brachial plexus before the terminal nerves are called collateral branches and may have a unique name or simply be called a nerve to a specific muscle.

Roots (L1 – L4(L5)), (L4 – S4)

Lumbar plexus

Important Nerve:

Sacral Plexus

Important Nerve:

Roots (L1 – L4(L5)), (L4 – S4)

Lumbar plexus (Ventral rami of L1-L4 (Sometimes L1 - L5))

Femoral Nerve – the largest and most important. The largest branch off of the femoral nerve is the saphenous nerve which accompanies the great saphenous vein from the medial side of the knee to the foot. (This is important to watch out for when stripping veins for varicose veins)

Sacral Plexus (L4-L5, S1-S4)

Sciatic nerve – the largest nerve in the body. It divides at the knee and becomes the tibial (medially) or common peroneal nerve (laterally) The Sciatic nerve is actually two nerves wrapped in one sheath.

Dermatomes (Front)

What to know about Dermatome: relation of spinal cord levels to sensory (cutaneous).

Front

Dermatome on anterior part of head is CN V – only cranial nerve involved with a dermatome. -

Trigeminal (divided into three areas: CN V1 through CN V3)

Neck is C3

Shawl – C4

Arms C5-T1

Next on trunk is T2.

Nipple T4

Umbilicus – T10

Low riding Belt – T12 – under the umbilicus.

Under the belt to top of thighs – L1

L2 – no quite to knees.

Knees – L3

L4 – medial leg

L5 – lateral leg

Dermatomes (Back)

Bottom of Feet S1

Calf and back of thigh S2

Bulleye's around Butt is S3 – S5.

Back of head - C2

Review for Final

1. Match cranial nerve number to name 5 questions
2. Match cranial nerve to class (sensory motor or mixed) 5 questions
3. Match visual field to the side of brain on which it is seen. (right nasal visual field goes to the ...) 3 questions
4. Correct order of structures from the eye back into the brain 1 question
5. Lobe of the brain associated with hearing 1 q
6. Lobe of brain associated with sight 1 q
7. Functions of ascending and descending reticular formations 1q
8. Antidiuretic hormone, what it does and where it works. 1Q
9. Know actions of body (what raise or lower body temperature) 5 q's
10. Brodman's Classification (numbering of cortex) to the degree in class 5q's
11. Identify meningeal layers by description 3 q's
12. Located and give functions of meningeal spaces 2 q's
13. Function of dura mater extensions (faux cerebri, faux cerebelli, tentorium) 3q's
14. Diagram – label circle of Willis (5 q's)
15. Identify by description, location, function structures of ventricular system 5 q's
16. Nerve supply to the tongue 4 q's

Chapter 9 in terminology book. (11 for physiology.)
