

Fun with the Central Nervous System

Arachnoid	reflex	cerebrospinal
Ventricles	meninges	pia mater
Dura mater	sinuses	meningitis

1. A neural response that does not involve integration of information is a _____.
2. Fluid that cushions the brain and spinal cord is manufactured in a series of _____ within the brain.
3. The series of connective tissue layers protecting the CNS are the _____.
4. The name of this connective tissue layer is derived from a term meaning “tender”. The _____ provides a thin, blood-filled layer of protection to the exterior of the brain and spinal cord.
5. The “tough” layer of tissue that is the outermost layer of meningeal protection is the _____.
6. _____ fluid nourishes and protects the CNS.
7. CSF that returns to the head eventually makes its way to _____ that are connected to veins that return the fluid back to the heart.
8. Because of the infection’s proximity to the blood brain barrier, _____, or inflammation of the meninges, can be life-threatening.
9. The fluid that protects and nourishes the CNS flows in the sub-_____ space; so named because it is just below the thin, delicate membrane that is the second layer of the meninges.

Fun with the Brain

Cerebellum	midbrain	thalamus
Basal ganglia	substantia nigra	medulla
Olive	brainstem	breathing
Blood-brain barrier	cerebrum	pons

1. All sensory impulses, except smell, go through the _____ on the way to the higher centers of the brain.
2. The _____ is a nucleus in the midbrain that helps control body movements and its dysfunction is the hallmark of Parkinson's Disease.
3. The medulla, pons, and midbrain make up the _____.
4. Glucose and oxygen are actively transported across the _____ so that the brain has the raw materials to stay alive.
5. The _____ has irons out differences between intended and actual movements, and also has a role in cognition.
6. Descending motor nerves decussate in the pyramids of the _____, linking the right half of the brain to the left side of the body.
7. The largest area of the brain, the _____, is mostly white matter.
8. The _____ nucleus of the medulla helps relay information to the cerebellum in hopes of keeping balance, posture, and locomotion efficient.
9. The medulla and the pons share the responsibility for controlling _____ via three nuclei of the reticular formation.
10. The _____ works closely with the substantia nigra to coordinate unconscious movement such as arm swing while walking or the motions of laughter in response to a joke.
11. The red nucleus is in the _____.
12. The _____ lies superior and adjacent to the medulla.

Brain, Brain, Brain

1. Identify the area of the cerebral cortex that is the site of each of the following:
 - a. Auditory sensory area: _____
 - b. Postcentral gyrus (primary sensory area): _____
 - c. Precentral gyrus (primary motor area): _____
 - d. Broca's area: _____
 - e. Primary visual area: _____
 - f. Collective association area for taste, vision, and hearing: _____
2. Identify the area of the brain that is most closely associated with each of these physiologic functions:
 - a. Rage and aggression: _____
 - b. Circadian rhythm (2 areas): _____
 - c. Regulation of heartbeat: _____
 - d. Emotional response to odors: _____
 - e. Connection of the right and left cerebral hemispheres: _____
 - f. Maintaining consciousness; awakening from sleep: _____
3. In BodyTalk terms, the Reptilian brain is responsible for subconscious aspects of basic life functions like breathing, regulation of heartbeat, consciousness, and reflexes. Please list the areas of the CNS that could might be included in this definition of the Reptilian brain.
4. On the back of this sheet, describe what a brain wave is and how its measurement can tell us something about the present consciousness of the individual.

The Spinal Cord

Conus medullaris	gray matter	white matter
Crossed extensor	reflexes	filum terminale
Integration	cauda equina	tracts

1. Spinal _____ do not involve the brain, although the brain is made aware that they are happening.
2. The tip of the _____ is at L2 and is created by the tapering of the spinal cord from superior to inferior.
3. The “horns” of the spinal cord are made of _____ and include the cell bodies of efferent motor neurons.
4. The _____ reflex is processed contralaterally: a fact that makes it unique among reflexes.
5. Below about the second lumbar vertebrae (L2), the spinal cord becomes a group of individual spinal nerves, termed the _____.
6. An ascending sensory impulse headed towards the brain would travel in a _____ housed in the white matter of the spinal cord.
7. The _____ of the spinal cord is on the exterior of the cord, which is opposite of the arrangement in the brain.
8. The pia mater anchors the conus medullaris to the coccyx via the _____.
9. The _____ center for reflexes is the gray matter of the spinal cord, not the brain. This arrangement enables reflexes to happen more quickly than they would otherwise.