

# **Meninges**

---

1. 3 meninges found in brain and spinal cord.
2. Which has a "true" epidural space—the brain, the spinal cord, or both?
3. What is the name of the piece of dura mater that attaches to the crista galli in the cranium, and extends up to separate the 2 cerebral hemispheres?
4. Compare a subdural hematoma, an epidural hematoma, and an intracranial hematoma. Which is most likely to be bleeding arterial blood?
5. Where is CSF reabsorbed into the venous blood supply?
6. What is venous blood supply?
7. Within the meninges, where is CSF circulating?
8. What are three bacteria species known for causing meningitis?
9. Compare an epidural procedure with a lumbar puncture procedure – location, purpose, etc.

## **Answers:**

### **Meninges**

---

1. 3 meninges found in brain and spinal cord.

**Dura mater, arachnoid mater, pia mater**

2. Which has a "true" epidural space—the brain, the spinal cord, or both?

**Only the spinal cord has a true space between the bone (vertebrae) and the dura mater.**

3. What is the name of the piece of dura mater that attaches to the crista galli in the cranium, and extends up to separate the 2 cerebral hemispheres?

**falx cerebri**

4. Compare a subdural hematoma, an epidural hematoma, and an intracranial hematoma.

- **epidural hematoma: bleeding between the skull and dura mater**
- **subdural hematoma: bleeding between the dura mater and the arachnoid mater**
- **intracranial hematoma: bleeding in the brain tissue**

5. Where is one place CSF may be reabsorbed into the venous blood supply?

**CSF may pass through the arachnoid villi and into the blood sinuses (superior sagittal sinus and transverse sinuses). The blood sinuses eventually drain to the jugular veins.**

6. What is venous blood supply?

**Blood returning to the heart. It is deoxygenated and low pressure.**

7. Within the meninges, where is CSF circulating?

**Subarachnoid space**

8. What are three bacteria species known for causing meningitis?

***Neisseria meningitidis***

***Haemophilus influenza***

***Streptococcus agalacticae* (Group B Strep)**

9. Compare an epidural procedure with a lumbar puncture procedure – location, purpose, etc.

- **Both are performed below the level of the spinal cord.**
- **Epidural medication is delivered into the joint capsule of the vertebrae, upon the dura mater. Epidural is a more shallow procedure and should NOT puncture the dura mater. Unfortunately, if the dura mater is punctured, the arachnoid mater (which adheres to it) also is punctured. CSF can leak out causing a headache and nausea.**
- **Lumbar puncture is the removal of CSF from below the level of the spinal cord, usually between L4/L5, where the meninges form a sac of CSF. The needle has to pass through the ligament of the joint capsule, and then through the dura mater and arachnoid mater into the sac to remove fluid. Afterwards, headache and nausea are common.**
- **Interestingly, caffeine has shown some good results in treating the headache and nausea common after both these procedures.**