

BRAIN MONITORS

After a severe traumatic brain injury, several changes happen within the brain that may require advanced monitoring. The neurosurgeon will discuss which monitors would most benefit your loved one.

The monitors are listed and described below:

Intraparenchymal Bolt

- Monitors the pressure within the brain and brain temperature
- Calculates the "cerebral perfusion pressure": an indirect measure of how much of the oxygen and glucose that the brain needs is getting across the blood brain barrier
- The healthcare team uses this information to help adjust the medical care that is being provided to the patient
- Inserted through a hole in the skull with the tip lying in the brain tissue

External Ventricular Drain (EVD)

- Monitors the pressure within the brain
- Calculates the "cerebral perfusion pressure":
- Enables the healthcare team to tailor medical therapies to the patient's needs
- Enables the healthcare team to drain extra fluid from the brain if the pressure is too high
- Enables the healthcare team to fluid for lab tests
- Inserted through a hole in the skull with the tip lying in the brain ventricle

Brain Tissue Oxygen (PbtO₂)

- Monitors the amount of oxygen within the brain tissue
- Identifies an early pneumonia that may be developing
- Identifies when the brain is getting too much/not enough oxygen or using more oxygen than it's receiving
- Inserted through a hole in the skull with the tip lying in the brain tissue

Cerebral Blood Flow (CBF)

- Monitors the amount of blood that is flowing through the brain.
- Enables the healthcare team to identify when the patient can no longer control the amount of blood that the brain is receiving (cerebral autoregulation)
- Inserted through a hole in the skull with the tip lying in the brain tissue

Jugular Vein Oxygen (SjVO₂)

- Monitors the amount of oxygen leaving the brain
- Identifies how much oxygen the brain is removing from the blood
- Inserted in the base of the neck into the large vein that leaves the brain known as the jugular vein