

What are the different types of bleeding that a brain injury can cause?

- Traumatic brain injury may cause bleeding inside the skull.
- There are different types of tissue that hemorrhage or bleed inside the brain and skull.
- Depending on what part of the brain or its lining is bleeding; epidural hematomas or hemorrhage, subdural hematomas and intracerebral hematomas may result.
- The location of bleeding determines the type of symptoms a victim may experience.
- **Epidural hematomas** and bleeding are most likely related to arterial bleeds and may lead to the rapid demise of a victim if not surgically corrected in a timely manner. The hemorrhaging causes the brain to shift or may cause herniation of the brain and brainstem through the foramen magnum at the bottom of the skull. Both conditions, if allowed to persist and progress, may cause death.
- **Subdural hematomas** may be acute (< 48 hours) or chronic (> 48 hours to 2 weeks). The subdural bleeding originates from the meningeal and cerebral venous network. The blood may accumulate rapidly or slowly depending on the pathology of the injury and victim's co-morbidities. Subdural hematomas may or may not result in brain shift and/or brainstem herniation. The medical management of these hematomas varies depending on the clinical features of the victim.
- **Intracerebral hematomas** are caused by forces that penetrate the cerebral tissues, whether associated with open or closed head injuries. Generally associated with contusions, these types of hematomas may be found deep within the brain. If the intracerebral hematoma is an expanding mass, increased intracranial pressure may result. This may cause compression of adjacent brain tissue interfering with delivery of blood and oxygen to the cells.