

## Commentary Note on Traumatic Brain Injury

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### **Description**

TBI is a well-recognized cause of epilepsy and seizures. The result of an external force on the head is Traumatic Brain Injury (TBI). TBI can occur as a result of,

- the head violently beating an object (falls, car accidents, sports injuries)
- severe trembling of the head (child abuse)
- an object penetrating the skull and entering brain tissue (military combat, gunshot wound)
- pieces of the skull penetrating or compressing brain tissue (skull fractures)

Depending on the severity and type of trauma a person experiences, TBI may cause staining of the brain (brain bruise), continuous bleeding inside the brain (intracerebral hemorrhage), bleeding between the brain and the coverings of the brain (subdural or subarachnoid hemorrhage), bleeding between coverings of the brain and the skull (epidural hematoma). Even if bleeding occurs in the external part of the brain it can have an effect on brain tissue by squeezing the brain and disrupting normal brain anatomy and function. TBI can also cause mild to severe swelling of the brain (intracerebral edema).

A person who has a TBI requires medical treatment as soon as possible. Most often it is not possible to converse the damage caused to brain tissue

by trauma but receiving prompt medical care may make it possible for medical providers to steady a person's brain injury and help to avoid further injury.

Traumatic brain injuries can range from mild, to moderate, to severe and as a result the range of impact on any individual can differ. The terms mild, moderate and severe refer to the harshness of the trauma not the consequences from the TBI. Mild trauma to the brain may impact on brain cell function for hours, days or weeks. More severe brain injuries often have more long-term effects and can result in significant disability or death. A range of both psychiatric symptoms and physical cognitive can be present after a traumatic brain injury. In addition, changes in movement, sensation, vision and hearing are possible and seizures and epilepsy are a comparatively common difficulty of TBI. The area of the brain affected by the injury, the extent of the brain injury and the age and general health of a person before the injury will determine how a person is impacted.

Persons having traumatic brain injury should undergo medical and neurologic evaluations. The situation of the injury, the severity of the injury, and the neurologic and medical conditions of the affected person will help to diagnose the requirement for further evaluations, including neuropsychological testing and the instant versus late treatments offered to a person. Brain imaging with CT and when available brain MRI studies and Electroencephalography (EEG) are regularly used to measure the degree of brain injury after a trauma. Blood work will also be done to classify any toxic, infectious or endogenous cause that may have facilitated the expansion of the head trauma and identify any blood loss. A person who has a head injury will also be evaluated for injury to the spinal cord and cervical spine (neck). Severe head trauma with brain injury is often escorted by other bone or organ injuries and estimation for other physical injury may need to be done.

### **Conclusion**

The sort of treatment a person receives for a TBI will depend on the severity of the brain injury, the clinical exam, the symptoms, and test findings. Each person's individual treatment will be determined by their doctor. For some people with a mild TBI, rest and observation at home may be all that is essential. For others with moderate to severe TBI, emergency hospitalization, anti-seizure medications, ICU level care, surgery and other life-saving stabilization of injuries and treatments may be necessary.