

seizure, or a predisposing medical condition should undergo a diagnostic evaluation that includes CT scanning.

MRI may be done to further assess cerebral edema or structural brain abnormalities. A neurobehavioral assessment may be useful in documenting cognitive impairments. Skull radiographs are of little benefit in diagnosing skull fractures. Other radiographic tests may be indicated, depending on the severity or cause of the trauma. EEG is not helpful for diagnosis of head injury but is useful for defining seizures. Lumbar puncture is rarely used in craniocerebral trauma and is contraindicated in the presence of increased ICP because of the possibility of herniation.

Posttraumatic Syndromes

Posttraumatic syndromes include postconcussion syndrome, post-traumatic seizures, and structural complications after a head injury.

Postconcussion syndrome is a sequela to brain injury with or without loss of consciousness. Symptoms can develop within hours to days after a mild head injury but can also occur after moderate to severe head injury. The manifestations vary with the child's age and include nausea, dizziness, headache, photophobia, fatigue, irritability, restlessness, difficulty concentrating, and memory impairment ([Babcock, Byczkowski, Wade, et al, 2013](#)). The duration of manifestations can vary from several days to several months.

Posttraumatic seizures occur in a number of children who survive a head injury, often within 24 hours after the injury but can occur up to 1 week after the trauma ([Christensen, 2012](#)). In comparison to children with no brain injury, seizures are two times more likely to occur in children with mild traumatic brain injury and seven times more likely to occur in children with severe head injury ([Christensen, 2012](#)).

Structural complications (e.g., hydrocephalus) may occur as a result of head injuries. Clinical sequelae include cognitive deterioration, gait changes, optic atrophy, cranial nerve palsies, or aphasia. The type of residual effect depends on the location and nature of the trauma.

Therapeutic Management

The majority of children with mild traumatic brain injury who have not lost consciousness can be cared for and observed at home after a