

Legal Perspective On Understanding Traumatic Brain Injuries & All The Medical Consequences

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What is a MTBI?

- A traumatic brain injury (TBI) can be classified as mild if loss of consciousness and/or confusion and disorientation is shorter than 30 minutes. While MRI and CAT scans are often normal, the individual has cognitive problems such as headache, difficulty thinking, memory problems, attention deficits, mood swings and frustration. These injuries are commonly overlooked. Even though this type of TBI is called “mild”, the effect on the family and the injured person can be devastating. 15% of people with mild TBI have symptoms that last one year or more.

Defined as the result of the forceful motion of the head or impact causing a brief change in mental status (confusion, disorientation or loss of memory) or loss of consciousness for less than 30 minutes.

- Glasgow Coma Scale just look at eyes and verbal and motor response
 - Mild 13-15 | Moderate 9-12 | Severe 8 or less
- MILD COMPLICATED. Depressed skull fracture and or trauma-related intracranial abnormality (i.e. hemorrhage, contusion, and edema) usually more likely to be a GCS of 13 or 14 versus the 15. Abnormal scan. Studies have shown that it is not uncommon for a patient with mild complicated BIs to have symptoms one year post injury and in fact the presentation of symptomatology and prognosis is more similar to patients with a moderate TBI rather than a mild uncomplicated BI.
- TBI can be caused by
 - **Closed Head Injury**
 - Resulting from a slip and fall, motor vehicle crashes, etc.

- Focal damage and diffuse damage to axons
- Effects tend to be broad (diffuse)
- No penetration to the skull
- **Deceleration Injuries (Diffuse Axonal Injury)**
 - *Diffuse axonal shearing*: when the brain is slammed back and forth inside the skull it is alternately compressed and stretched because of the gelatinous consistency. The long, fragile axons of the neurons (single nerve cells in the brain and spinal cord) are also compressed and stretched. If the impact is strong enough, axons can be stretched until they are torn. This is called axonal shearing. When this happens, the neurons die. After a severe brain injury, there is massive axonal shearing and neuron death.
- **Chemical / Toxic**
 - Also known as metabolic disorders
 - This occurs when harmful chemicals damage the neurons
 - Chemicals and toxins can include insecticides, solvents, carbon monoxide poisoning, lead poisoning, etc.
- **Hypoxia (Lack of Oxygen)**
 - If the blood flow is depleted of oxygen, then irreversible brain injury can occur from anoxia (no oxygen) or hypoxia (reduced oxygen)
 - It may take only a few minutes for this to occur
 - This condition may be caused by heart attacks, respiratory failure, drops in blood pressure and a low oxygen environment
 - This type of brain injury can result in severe cognitive and memory deficits
 - **Case Study**
 - Applicant was shot 7 times during the course of 25 minutes by a disgruntled employee. We inherited the case one and a half years post incident. Most bullet fragment had been removed and applicant was receiving psycho treatment on an ongoing basis. She was found to be a combined 36% whole person impairment with discussions of return to work. She had severe agoraphobia and did not do well with strangers. We went to trial on the issue of replacing her nurse case manager who had missed her hypoxic brain injury and neglected to get her a neuro consult. This was a small ancillary issue that ended up being a trajectory-changing juncture in her case. It not only depicts hypoxic injury but highlights the importance of a good independent nurse case manager versus an insurance carrier imposed one.
 1. 3-minute video clip on the NCM testimony at trial.
- **Stroke**
 - If blood flow is blocked through a cerebral vascular accident (stroke), cell death in the area deprived of blood will result

- If there is bleeding in or over the brain (hemorrhage or hematoma) because of a tear in an artery or vein, loss of blood flow and injury to the brain tissue by the blood will also result in brain damage.
 - Gradient –echo susceptibility-weighted imaging or SWI is good at detecting hemorrhagic lesions associated with DAI. It uses a magnetic property that can detect the iron in hemocidrin blood deposits within the white matter of the brain to detect if there are microscopic shear injuries in the brain months and sometimes years after the injury.
 - In most mild BI cases imaging, a year or even 6 months out, is clear and so we rely on neuropsychological testing and current symptom presentation to get to the bottom of the injury.

When is a stroke industrial?

- Secondary to head injury- strokes can often occur post BI when there is bleeding and swelling in the brain putting pressure on blood vessels these types of strokes occur within the first few days post BI.
- In the month following post BI strokes are not as common but there technically can be a stroke as a result of dissection or damage to the wall of the arteries
- Case studies
 1. We had an applicant with a rated age of 69 who previously had pituitary cancer and had his pituitary gland removed and was on long term coumadin monitor making him much more susceptible to bleeds hit his head lightly at work. He went home didn't feel well and had a massive brain bleed the following day. Spent the next two years in and out of neuro rehab and had three shunt replacement surgeries. There were fights with defense regarding medical treatment and whether it was necessitated by the new stroke or preexisting pituitary cancer. The eggshell theory applies to comp and the costs of the catastrophic results of the stroke were astronomical and very much industrial. Once we established that these costs were in fact the carrier's responsibility and were going to be accrued on an ongoing basis, we focused on the benefits of purchasing an annuity and the cost savings it would yield the carrier and settled the claim. This claim ultimately resolved for an undisclosed amount just under 6 mil.
 2. Applicant sustained a TBI a year and a half ago on the job necessitating a hefty regimen of care. The carrier through a cost cutting third party administrator provided most of the medical care necessary including neuro rehab and attendant care. A year and three months post TBI, applicant sustained a massive stroke leaving him extremely debilitated. The carrier through the TPA immediately ceased providing ANY of the care necessary or the care previously provided claiming that all care necessitated was now a result of the NON-INDUSTRIAL stroke. When we inherited this case, it was 11 months post stroke and NO care had been provided and no steps had been taken to medically link the two incidents. Applicant was on his 3rd shunt replacement surgery, in and out of

consciousness had been bouncing around from one subpar adult care center to another through Medical and the right side of his body was contracted which occurs in the final stages of life. Recommendations to the family were to release applicant to hospice care.

- After consulting with physicians and researching the medicine we learned
 - It likely could not be directly linked because of the remoteness in time to the original traumatic incident. We successfully claimed that applicant's BI caused lifestyle changes and hormonal irregularity from his sedentary position and weight gain which occurred as a result of the original trauma. These changes increased his cardiovascular risk factors and caused the stroke.
 - There were some ER notes we found post original brain injury which identified some potential mini stroke activity although not confirmed that cast enough doubt about possible encephalomalacia (softening and atrophy of brain tissue) which could have been an additional factor in causing the stroke.

Post-Acute Medical Care Considerations:

- Psychiatry and Neurology Oversight
- Comprehensive Inpatient or Outpatient Neurorehabilitation Programs
- In-home Rehabilitation Programs

Factors to look for in cases involving mild TBI with mild to total cognitive incapacitation where IW may require further neuropsychological testing to determine extent of deficits and need for long-term medical care:

- The person's condition shows signs of cognitive and behavioral compromise
 - Cognitive memory issues

I.e.: The injured worker cannot recall where he/she put things, or the purpose for which he/she walked into the room. Safety issues at home when IW leaves stove on, leaves doors open, and/or gets lost without supervision.

- Behavioral impulse control issues or impaired judgment

E.g.: IW with brain injury gets behind wheel of car despite restrictions by physician and crashes it because he/she lack insight into his/her own deficits. You cannot always take IW's word with respect to physical/cognitive capabilities.

- Concerns about family dynamics:
 - It is important to build a positive rapport with the family as well, so that family can be supportive, and IW can feel supported through these difficult circumstances. Physiatrist may recommend family participation during family conferences or family/spouse counseling, so that family understands the dynamics of TBIs and dealing with the nuances in behavior.
 - We want the family to focus on being a family and not be encumbered with having to watch the injured worker like a hawk due to safety concerns. Treatment team may comment on need for home care services and extent.

E.g.: IW with brain injury may have an increased susceptibility for unforeseen seizures or strokes which can trigger the need for professional caregiver services or training for spouse or family member if they are insistent on providing services themselves with compensation by the carrier.