



# **Crushin A Concussion: Attacking Claims Of Impairment Following Mild TBI**

Presented By John Jerry Glas

There was a time when defense attorneys were satisfied to end their cross-examination by getting a doctor to admit that the plaintiff sustained “just a concussion.” Those days are over. More jurors have heard terrifying stories about concussions; and more experts are willing to testify that concussions cause permanent cognitive and behavioural impairment. Today, when a doctor testifies that a plaintiff sustained a concussion, jurors are left with more questions than answers. The diagnosis marks the beginning, not the end, of the trial.

Jurors may not realize how common concussions have become. An estimated 300,000 Americans lose consciousness from concussions every year, and the total number of concussions could total 3.8 million a year according to the U.S. Centers for Disease Control and Prevention. Because of that frequency, concussions have been well studied, and the recovery period well defined.

It is axiomatic that concussions improve.<sup>1</sup> Most symptoms (usually headaches) manifest in the early weeks;<sup>2</sup> and those symptoms usually resolve within three months.<sup>3</sup> Recovery follows a reasonably consistent pattern, and that pattern has allowed doctors to form a series of mental templates for the expected

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<sup>1</sup> See Donald T. Stuss, Ph.D., A Sensible Approach To Mild Traumatic Brain Injury, *Neurology* 1995, Vol. 45, at 1251 (“*Principle 3* is that the symptoms of mild TBI gradually improve.”).

<sup>2</sup> See Linda J. Carroll, et al, Prognosis For Mild Traumatic Brain Injury: Results Of The WHO Collaborating Centre Task Force On MTBI, *J. Rehabilitation Medicine* 2004; Suppl. 43, p. 102.

<sup>3</sup> Carroll, Prognosis For Mild TBI, at 101 (“With respect to other populations [non-athletes], the stronger studies of MTBI, which use appropriate control groups and consider the effects of other non-MTBI factors, generally show resolution of symptoms within weeks or a few months.”); *Id.*, at 101 (“The best evidence consistently suggests there are no MTBI-attributable, objectively measured, cognitive deficits beyond 1-3 months post injury in the majority of cases.”).



## 100 Questions To Ask In A Concussion Case

### **Mechanism Of Injury:**

1. Is the skull rigid?
2. Is the brain surrounded by fluid?
3. Does the brain float inside the rigid skull?
4. If the rigid skull is moving forward and stops abruptly, will the floating brain continue to move forward?
5. If the rigid skull is moving fast enough, and stops abruptly, can the brain strike the inside of the skull vault?
6. Does the inside of the skull vault contain bony ridges?
7. When the brain strikes the bony ridges of the skull vault, can the brain itself be injured?
8. Is a brain injury at the site where the brain first strikes the skull vault called the “coup” injury?
9. If the rigid skull is moving fast enough, and stops abruptly, can the brain bounce off the skull vault, accelerate backwards, and strike the opposite skull vault?
10. Is a brain injury opposite the “coup” injury called the “contrecoup” injury?

### **Force Of Impact (No Skull Injury):**

11. Did plaintiff fracture the weakest bone at the point of impact?
12. Did plaintiff require stitches at the point of impact?
13. Did plaintiff have a laceration or abrasion at the point of impact?
14. Did plaintiff have swelling at the point of impact?
15. Did plaintiff have bruising at the point of impact?
16. Did plaintiff have tenderness at the point of impact?
17. Did plaintiff have any evidence of head trauma at the point of impact?
18. Did plaintiff have Battle’s sign?
19. Did plaintiff have bilateral “Raccoon Eyes”?
20. Did plaintiff identify the head as the location of pain or injury?

### **Brain Inertia (No Focal Injury):**

21. Can striking the skull vault cause a cerebral contusion (bruising)?
22. Can striking the skull vault cause a cerebral laceration (cut)?
23. Can striking the skull vault cause encephalomalacia (loss of brain tissue)?
24. Can striking the skull vault cause cerebral edema (swelling)?
25. Can striking the skull vault cause a subdural hemorrhage (bleeding)?
26. Can striking the skull vault cause a subdural hematoma?
27. Can subdural bleeding increase intracranial pressure?
28. Can bleeding and intracranial pressure cause brain herniation?
29. Can bleeding and intracranial pressure cause midline shift?
30. What diagnostic images were taken of the brain?
31. What is each image capable of visualizing?
32. Did plaintiff have brain shifting (herniation)?
33. Did plaintiff have brain shrinking (mass effect)?

34. Did plaintiff have brain swelling (edema)?
35. Did plaintiff have brain bruising (contusion)?
36. Did plaintiff have brain bleeding (hematoma)?
37. Did any image reveal objective evidence of a contrecoup injury?
38. Did any image reveal objective evidence of a coup injury?
39. Did any image reveal *any* objective evidence of brain damage?

**Neck Momentum (No Neck Injury):**

40. Can a cervical injury be sustained in this type of accident?
41. Did plaintiff sustain a cervical injury?
42. Did plaintiff report neck pain?

**Review Of Symptoms**

43. How long did plaintiff remain unconscious?
44. How long did plaintiff remain dazed?
45. When was plaintiff able to communicate?
46. When was plaintiff able to follow commands?
47. Did plaintiff have a 15/15 initial Glasgow Coma Scale Score?
48. Was plaintiff alert & oriented to time, place & person at hospital?
49. Did plaintiff provide an accurate description of the accident?
50. Did plaintiff provide an accurate medical history?
51. Did plaintiff have a seizure?
52. Did plaintiff have nausea or vomiting?
53. Did plaintiff have altered mood or affect?
54. Did plaintiff report a headache?

**Evaluation Of 12 Cranial Nerves:**

55. Did plaintiff have normal sense of smell?
56. Did plaintiff have normal (same as before) visual acuity?
57. Did plaintiff have normal (equal & round) pupils?
58. Did plaintiff have normal pupillary reaction (equal constriction) to light?
59. Did plaintiff report sensitivity to light?
60. Did plaintiff have normal extra-ocular range of motion?
61. Did plaintiff have normal saccadic function?
62. Did plaintiff have normal accommodation response?
63. Did plaintiff have normal positioning of the upper eyelids?
64. Did plaintiff have normal peripheral vision?
65. Did plaintiff have normal vision (no double vision)?
66. Did plaintiff have normal sensation & pain symmetry?
67. Did plaintiff have normal (symmetric) blink response?
68. Did plaintiff have normal (symmetric) tone in the masseter muscles?
69. Did plaintiff have normal functioning of the Facial Nerve?
70. Did plaintiff have normal sense of taste?
71. Did plaintiff have normal hearing?
72. Did plaintiff report sensitivity to noise?
73. Did plaintiff report ringing in the ears?

74. Did plaintiff have normal gag reflex?
75. Did plaintiff pass the “say aah” test?
76. Did plaintiff have ability to swallow normally?
77. Did plaintiff have a normal voice (not hoarse)?
78. Did plaintiff have normal laryngeal function?
79. Did plaintiff have slurred speech?
80. Did plaintiff have symmetric muscle tone?
81. Did plaintiff have normal tongue strength and control?

Evaluation of Motor Function:

82. Did plaintiff have normal muscle tone?
83. Did plaintiff have normal strength in each muscle group?
84. Did plaintiff have any muscle wasting or atrophy?
85. Did plaintiff have drift?
86. Did patient have normal fine movement control?
87. Did plaintiff have normal upper extremity motor strength?
88. Did plaintiff have normal lower extremity motor strength?
89. Did plaintiff have normal posturing?
90. Did plaintiff have any involuntary movements?
91. Did plaintiff have any fasciculations?

Evaluation of Reflexes

92. Did plaintiff have normal deep tendon reflexes?
93. Did plaintiff have normal plantar response (Babinski’s sign)?
94. Did plaintiff have normal balance (Romberg’s sign)?
95. Did plaintiff have normal finger flexors (Hoffmann’s sign)?

Evaluation of Coordination & Gait

96. Did plaintiff have normal coordination?
97. Did plaintiff have normal gait?

Evaluation of Sensory Functions

98. Did plaintiff have normal tactile sensation?
99. Did plaintiff have normal pain sensation?
100. Did plaintiff have normal vibration sense

## Analysis Of 100 Concussion Questions

### Mechanism Of Injury

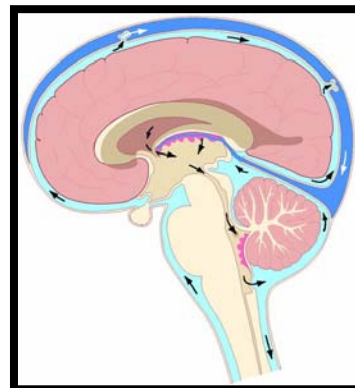
Jurors like bright lines, and bright lines can frame the discussion and define the severity of an injury. In a case involving cervical trauma, the cervical disc either was or was not herniated. In a case involving mild traumatic brain injury, a defense attorney can frame the discussion *and* define the severity of the injury by focusing the jury's attention on whether or not the brain actually struck the inside of the skull vault (cranial vault). That is a bright line that the jury can remember and understand. To draw that bright line, you will have to teach the jury a little (a very little) about what *can* happen to the brain during the traumatic event. Here are ten questions designed to accomplish that goal.

**1. Is the skull rigid?**

Yes. The cranium is the upper portion of the skull. The eight cranial bones include the frontal, parietal (2), temporal (2), occipital, sphenoid, and ethmoid. These cranial bones are strong but light weight. They are held together by fibrous joints called "sutures," which are held together by "Sharpey's fibres." Sharpey's fibres grow from one cranial bone into the adjacent bone, and bind them in a way that permits very little movement.

**2. Is the brain surrounded by fluid?**

Yes. The brain is surrounded by cerebrospinal fluid (CSF), which occupies the subarachnoid space and the ventricular system around and inside the brain. CSF is a clear solution containing ions and different substances to serve as an intracerebral transport medium for nutrients, neuroendocrine substances & neurotransmitters. The diagram (right) shows the circulation of CSF.



**3. Does the brain float inside the rigid skull?**

Yes. ("Kindah, sortah"). The cranium is the upper portion of the skull, and most will agree that the brain basically "floats" in cerebrospinal fluid inside the skull vault (or "cranial vault"). Jurors often remember this imagery of the brain being "cushioned gently by the surrounding spinal fluid;" it can also help jurors focus on what happened to the brain itself.

**4. If the rigid skull is moving forward and stops abruptly, will the floating brain continue to move forward?**

Yes. Inertia is the resistance of an object to a change in its state of motion. When the skull stops, the brain's inertia keeps it moving forward. Newton's first law of motion states: "An object at rest tends to stay at rest and an object in motion tends to stay in motion with the same speed and in the same direction unless acted upon by an unbalanced force."

5. **If the rigid skull is moving fast enough, and stops abruptly, can the brain strike the inside of the skull vault?**

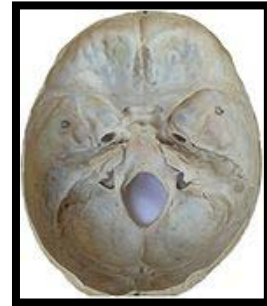
Yes. The brain will strike the inside of the cranial vault. The brain may also rotate along (or rub against) the cranial vault.

6. **Does the inside of the skull vault contain bony ridges?**

Yes. The inside of the cranial vault is not smooth. The interior of the skull (right) contains sharp bony ridges that can injure the brain. The following is an excerpt from a deposition of a neuropsychologist in a case where a plaintiff wearing a hard hat struck walked into a steel beam:

“Q. And that part of the brain. . . is the basic area that is associated with the forehead and directly above?

A. Correctly more – and also the region behind the eyes and sinus passages. The inside of the skull vault is not very smooth in that area.” (Dr. Stephen K. Martin, Ph.D. 9/25/07 Deposition)



7. **When the brain strikes the bony ridges of the skull vault, can the brain itself be injured?**

Yes. The brain is vulnerable to trauma. Note: Different experts describe brain tissue *very* differently. Some describe it as being “firm gelatin-like”; others insist it has “the consistency of warm butter.” Be careful.

8. **Is a brain injury at the site where the brain first strikes the skull vault called the “coup” injury?**

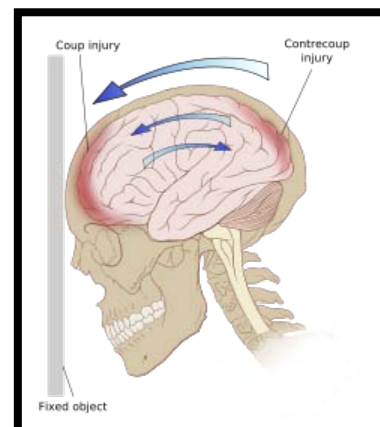
Yes. In a coup injury, the head stops abruptly and the brain collides with the inside of the cranial vault. This type of injury is called a “focal injury,” as opposed to a diffuse injury.

9. **If the skull is moving fast enough, and stops abruptly, can the brain bounce off the skull vault, accelerate backwards, and strike the opposite skull vault?**

Yes. If sufficient speed/force is involved, the brain can experience deceleration forward and then acceleration backwards.

10. **Is a brain injury opposite the “coup” injury called a “contrecoup” injury?**

Yes. A contrecoup injury is a brain injury opposite from the impact. A contrecoup injury occurs when the brain bounces from the point of impact to the opposite side of the skull. It is also a focal injury.





### **Force Of Impact (No Skull/Skin Injury):**

Jurors may not understand complicated calculations of force, but they know that if you hit your head hard enough, you will get a hickey. In most concussion cases, the jury will want to know how “fast” the plaintiff was walking when he struck his head on the steel beam, or how “hard” the plaintiff fell when he struck his head against the ground. In those cases, a defense lawyer can define and limit the amount of force involved in a concussion by reviewing the absence of those injuries at the point of impact. Start by asking about injuries requiring the most force, and end by asking about injuries requiring the least force.

**11. Did plaintiff fracture the weakest bone at point of impact?**

Identify the weakest bone in the area that struck (or was struck) by the object. Establish that the force of impact was not sufficient to fracture that bone. This can be especially effective line of questioning in cases where an object simultaneously strikes the facial bones.

**12. Did plaintiff require stitches at point of impact?**

**13. Did plaintiff have a laceration or abrasion at point of impact?**

**14. Did plaintiff have swelling at point of impact?**

**15. Did plaintiff have bruising at point of impact?**

**16. Did plaintiff have tenderness at point of impact?**

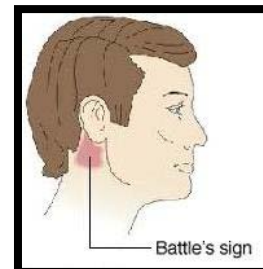
Emergency Room records often include a diagram on which the ER staff is required to record (using specific symbols) whether their physical examination of the plaintiff revealed any lacerations, abrasions, swelling, bruising, point tenderness, or tenderness. In many concussion cases, the patient will sustain no injury to the head or face.

**17. Did plaintiff have any evidence of head trauma at point of impact?**

Emergency Room records often include a Physical Examination section; and, sometimes, that section includes a box entitled “No evidence of head trauma.” Let the jury know if that box was checked.

**18. Did plaintiff have Battle’s sign?**

Battle’s sign (“mastoid ecchymosis”) is named after William Henry Battle. It consists of bruising over the mastoid process, a conical prominence projecting from the undersurface of the mastoid process of the temporal bone. It can be an indication of a fracture at the base of the posterior portion of the skull.



**19. Did plaintiff have bilateral “Raccoon Eyes”?**

It is important to differentiate Raccoon Eyes, which are always bilateral periorbital ecchymoses, from a “black eye” caused by facial trauma. The box for Raccoon Eyes will rarely be checked in ER records because they often develop 2 or 3 days after closed head injury. Raccoon eyes are usually evidence of a basilar skull fracture, and occur when damage (at

the time of fracture) tears the meninges and causes the venous sinuses to bleed into the arachnoid villi and the cranial sinuses.

**20. Did plaintiff identify the head as the location of pain or injury?**

Emergency Room records often include a section which allows the ER staff to circle the “location of pain/injuries” according to the plaintiff. Always check to see if “head” is circled.

**Brain Momentum (No Focal Injury):**

When a plaintiff admits that his head did not strike anything, then defense lawyer can define and limit the amount of force involved in a concussion by reviewing the absence of any brain injury at the point where the brain *could have* impacted the cranial vault (*if* sufficient force had been involved). Start by establishing that striking the cranial vault *can* cause each injury, and which injuries the diagnostic image(s) taken of the plaintiff’s brain *can* show. When you have laid the proper foundation, prove that the diagnostic image(s) revealed no objective evidence of any of these injuries (from most severe to least severe).

**21. Can striking the skull vault cause a cerebral contusion (bruising)?**

Yes. A cerebral contusion is a “bruise of the brain tissue.” It has been described as a heterogenous areas of hemorrhage (bleeding) into the brain parenchyma.

**22. Can striking the skull vault cause a cerebral laceration (cut)?**

Yes. A cerebral laceration occurs when the tissue of the brain is mechanically cut or torn. The injury is similar to a cerebral contusion, but the pia-arachnoid membranes are torn during a cerebral laceration (but not during a cerebral contusion).

**23. Can striking the skull vault cause encephalomalacia (loss of brain tissue)?**

Yes. The cerebrum is the large rounded structure of the brain occupying most of the cranial cavity. It is divided into two cerebral hemispheres that are joined at the bottom. It controls and integrates motor, sensory, and higher mental functions, such as thought, reason, emotion, and memory. Striking the skull vault can cause the tearing of brain tissues. Encephalomalacia (or cerebromalacia) refers to the loss of brain tissue, which can be caused by a traumatic brain injury and can be visualized on certain diagnostic images.

**24. Can striking the skull vault cause cerebral edema (swelling)?**

Yes. Cerebral edema is an accumulation of fluid in the brain tissue that causes the brain to swell.























screaming, humming, tinging or whistling sound. It can be intermittent or continuous. To quantitatively measure tinnitus, a doctor can play sample sounds of known amplitude, and decreasing the amplitude until the tinnitus becomes audible. The tinnitus will always be equal to or less than the sample noises heard by the patient.

**74. Did plaintiff have a normal gag reflex?**

The gag reflex tests both the sensory & motor components of the 9<sup>th</sup> Cranial Nerve (Glossopharyngeal Nerve) and the 10<sup>th</sup> Cranial Nerve (Vagus Nerve). To test the involuntary gag reflex, the doctor can stroke the back of the pharynx with a tongue depressor and watches the elevation of the palate (as well as causing the patient to gag).

**75. Did plaintiff pass the “say aah” test?**

To test the motor division of the 9<sup>th</sup> Cranial Nerve (Glossopharyngeal Nerve) & the 10<sup>th</sup> Cranial Nerve (Vagus Nerve), the doctor can ask the patient to say “ahh” or “kah.” The palate and uvula will normally elevate symmetrically without deviation. Paralysis of the 9<sup>th</sup> nerve can cause a pulling of the uvula to the unaffected side.

**76. Did plaintiff have the ability to swallow normally?**

**77. Did plaintiff have a normal voice (not hoarse)?**

**78. Did plaintiff have normal laryngeal function?**

The Vagus Nerve is the 10<sup>th</sup> Cranial Nerve. It carries sensory afferent fibers from the larynx, trachea, esophagus, pharynx, and abdominal viscera. It also sends efferent motor fibers to the pharynx, tongue, thoracic and abdominal viscera and the larynx. Testing of the vagus nerve is performed by the gag reflex and the “ahh” test. A unilateral lesion affecting the vagus nerve can produce hoarseness and difficulty swallowing due to a loss of laryngeal function.

**79. Did plaintiff have normal speech (no slurred speech)?**

“Slurred speech” is abnormal speech in which words are not enunciated clearly or completely but are run together or partially eliminated. There are many causes of slurred speech, but it is associated with post-concussion syndrome.

**80. Did plaintiff have symmetric muscle tone?**

The Accessory Nerve is the 11<sup>th</sup> Cranial Nerve. It carries efferent motor fibers to innervate the sternomastoid and trapezius muscles. To test the Accessory Nerve, the doctor can ask the patient to shrug the shoulders (trapezius muscles) and turn the head (sternomastoid muscles) against resistance. While the patient is turning the head, the doctor palpates the sternocleidomastoid muscles. The muscle tone on both sides is compared.

**81. Did plaintiff have normal tongue strength and control?**

The Hypoglossal Nerve is the 12<sup>th</sup> Cranial Nerve. It supplies efferent motor fibers to the muscles of the tongue. To test the hypoglossal nerve, the doctor can ask the patient to stick out their tongue and move it side to side. If there is unilateral weakness, the protruded tongue will deviate toward the side of the weakness. Further testing includes moving the tongue right to left against resistance, or having the patient say “la, la, la.”

Evaluation Of Motor Function:

**82. Did patient have normal muscle tone?**

**83. Did plaintiff have normal strength in each muscle group?**

**84. Did plaintiff have any muscle wasting or hypertrophy?**

Doctor may test the muscle strength of each muscle group and record it in a systematic fashion. To determine muscle tone, the doctor can ask the patient to relax, and then passively move each limb at several joints to evaluate any resistance or rigidity that might be present.

**85. Did patient have drift?**

To test for drift, the doctor can ask a patient to close her/his eyes and extend both arms to the front with palms up. The doctor then observes the patient’s arms to determine if one or both drift downward to side.

**86. Did patient have normal fine movement control?**

To test fine movement control, a doctor can ask a patient to make rapid hand movements or tap a foot rapidly.

**87. Did plaintiff have normal upper extremity motor strength?**

To test upper extremity motor strength, the doctor can ask a patient to raise both arms in front of them while the doctor provides resistance. The doctor then records any weakness of one limb when compared to the contralateral limb.

**88. Did plaintiff have normal lower extremity motor strength?**

To test lower extremity motor strength, the doctor can ask a patient to flex and extend both legs in front of them while the doctor provides resistance. The doctor then records any weakness of one limb when compared to the contralateral limb.

**89. Did plaintiff have normal posturing?**

Abnormal posturing is an involuntary flexion or extension of the arms and legs. It occurs when one set of muscles becomes incapacitated while the opposing set is not, and an external stimulus (such as pain) causes the working set of muscles to contract. It can be caused by conditions that lead to large increases in intracranial pressure, and typically indicates severe brain damage.

**90. Did plaintiff have any involuntary movements?**

**91. Did plaintiff have any fasciculations?**

A complete neurological examination should include observation of any twitches or involuntary movements. Fasciculations are quivering movements caused by firing of muscle motor units.

Evaluation Of Reflexes:

**92. Did plaintiff have normal deep tendon reflexes?**

In a normal person, when a muscle tendon is tapped briskly, the muscle immediately contracts due to a two-neuron reflex arc involving the spinal or brainstem segment that innervates the muscle. To test deep tendon reflexes, a doctor can perform the patellar tendon (knee jerk) test. When the doctor strikes the patellar tendon with a reflex hammer, the it should be possible to feel the quadriceps contract and the knee extend. The deep tendon reflexes are typically graded as follows:

- 0 = no response
- 1+ = a slight but definitely present response
- 2+ = a brisk response
- 3+ = a very brisk response
- 4+ = a tap elicits a repeating reflex (clonus)

Whether the 1 + and 3 + responses are normal depends on what they were before the accident (i.e., the patient's reflex history), what the other reflexes are, and analysis of associated findings such as muscle tone, muscle strength, or other evidence of disease. Asymmetry of reflexes suggests abnormality.

**93. Did plaintiff have normal plantar response (Babinski's sign)?**

To test plantar response, a doctor can try to elicit the Babinski response. There are different methods, including stroking the sole (the plantar surface of the foot) firmly with a thumb from back to front along the outside edge. There are three possible responses:

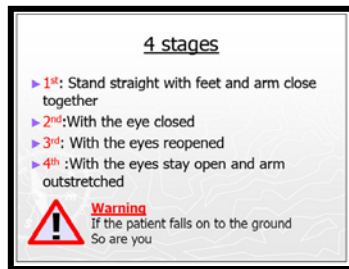


- Flexor: the toes curve inward and the foot everts; this is the response seen in healthy adults (aka a "negative" Babinski)
- Indifferent: there is no response.
- Extensor: the hallux dorsiflexes and the other toes fan out - the "positive Babinski's sign" indicating damage to the central nervous system.

Babinski's sign is associated with upper motor neuron lesions anywhere along the corticospinal tract. **Hoffmann's Note:** It may not be possible to elicit Babinski's sign if there is severe weakness of the toe extensors.

**94. Did plaintiff have normal balance (Romberg's sign)?**

Balance comes from the combination of several neurological systems, namely proprioception, vestibular input, and vision. If any two of these systems are working, then the plaintiff should be able to demonstrate a fair degree of balance. To test balance, a doctor can ask the patient to stand with heels and toes together; to close their eyes, and to balance. The doctor will observe for one minute. If the plaintiff loses balance (sways or falls) while the eyes are closed, then the Romberg's test is positive.

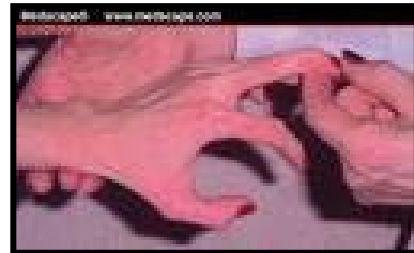


	Sensory	Cerebellar
1 <sup>st</sup>	No sway	Sway
2 <sup>nd</sup>	↑↑ sway	Same
3 <sup>rd</sup>	↓ Sway	Same
4 <sup>th</sup>	Same	↓ Sway

**95. Did plaintiff have normal finger flexor reflexes (Hoffmann's sign)?**

There is no precise hand equivalent for the plantar response, however, finger flexor reflexes can help demonstrate hyperreflexia in the upper extremities. To test finger flexor reflexes, a doctor can tap gently on the palm with the reflex hammer. Alternatively, heightened reflexes can be demonstrated by the presence of Hoffmann's sign.

To elicit Hoffmann's sign, a doctor can hold the patient's middle finger loosely and flick the fingernail downward, causing the finger to rebound slightly into extension. If the thumb flexes and adducts in response, Hoffmann's sign is present. Hoffmann's sign (heightened finger flexor reflexes) suggest an upper motor neuron lesion affecting the hands.



Evaluation Of Coordination & Gait:

**96. Did plaintiff have normal coordination?**

The cerebellum coordinates muscle actions to produce organized activities such as walking. To test coordination, the doctor can ask the patient to perform rapidly alternating and point-to-point movements; ask the patient to place hands on thighs and then rapidly turn the hands over and lift them off the thighs; and, holding an index finger at arms length



from the patient, ask the patient to touch the patient's nose and then the doctor's finger. This is repeated with patient's eyes open and then with them closed. Nose to finger touching is an example of a point-to-point movement. A patient with a disorder of the cerebellum tends to overshoot the target.

**97. Did plaintiff have normal gait (no ataxic gait)?**

To test a patient's gait, a doctor can ask the patient to walk across the room. The doctor then watches for normal posture and coordinated arms movements. The doctor can ask the patient to walk heel to toe (tandem gait) across room, to walk on their toes (to test for plantar flexion weakness), and to walk on their heels (to test for dorsiflexion weakness). An ataxic gait is an unsteady, uncoordinated walk, employing a wide base and the feet thrown out.

Evaluation Of Sensory Functions:

**98. Did plaintiff have normal tactile sensation?**

To test a patient's tactile sensation, a doctor can ask the patient to close her/his eyes, and then touch the patient's fingers and toes lightly with a tissue. The doctor can then ask the patient to identify when they feel the stroke of the tissue.

**99. Did plaintiff have normal pain sensation?**

To test a patient's pain sensation, the doctor can ask the patient to close his/her eyes, and then touch the patient on the fingers and hand with a safety pin. The doctor alternates the sharp tip with the blunt end to determine whether the patient can tell the difference between sharp and dull sensations. This test may be repeated on the toes.

**100. Did plaintiff have normal vibration sense?**

To test a patient's vibration sense, the doctor can strike a tuning fork and place it over the base of the nail bed on the patient's index finger. The doctor can then place a finger under the patient's finger to feel the vibration, and ask the patient to identify when they (both) no longer feel the vibration. The doctor will test each side of the body for each extremity and make a comparison. A significant finding during testing is a marked decrease in sensitivity.



## Practice Areas



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**Jurisdictions:** Louisiana

Mr. Glas is a partner in the firm, and a member of the Civil Litigation Department. A significant portion of his practice involves Product Defect, Transportation, Negligent Security, Premises Liability, Intentional Torts, Toxic Exposure, and General Aviation cases throughout Louisiana.

Mr. Glas focuses on handling brain trauma claims, and has tried to verdict four brain trauma cases in the last four years. He has lectured on the testimony of neuropsychologists and neurosurgeons at legal education seminars, and serves as the moderator for Lorman Educational Services' annual one-day *Fundamentals Of Brain Trauma Cases Seminar* in New Orleans.

He has handled several cases for the oil and gas industry, including defending against claims involving plant exposure, scaffolding accidents, equipment failure, premises defect, slip & fall, and work-related auto accidents.

Mr. Glas has also defended manufacturers and owners of equipment against claims that their machinery is unreasonably dangerous by design under the Louisiana Products Liability Act. He has defended the design of 900-Series streetcars, mobile container ramps, and bucket trucks.

Mr. Glas has defended numerous commercial airlines, handling claims arising out of boarding accidents, claims governed by the Warsaw Convention, and claims brought under the Louisiana Products Liability Act.

Mr. Glas has defended law enforcement personnel in Parishes throughout Louisiana, as well as the leading manufacturer of electronic control devices, against claims filed by criminals and prisoners.

Mr. Glas has defended companies and employees against claims filed by co-workers who alleged that their workplace accident was the result of intentional tort and that their claims fell under the intentional tort exclusion to the Louisiana Workers Compensation Act.

