

Glasgow Coma Scale

Eye Opening Response

- Spontaneous – open with blinking at baseline **4 points**
- To verbal stimuli, command, speech **3 points**
- To pain only (not applied to face) **2 points**
- No response **1 point**

Verbal Response

- Oriented **5 points**
- Confused conversation, but able to answer questions **4 points**
- Inappropriate word **3 points**
- Incomprehensible speech **2 points**
- No response **1 point**

Motor Response

- Obeys commands for movement **6 points**
- Purposeful movement to painful stimulus **5 points**
- Withdraws in response to pain **4 points**
- Flexion in response to pain (decorticate posturing) **3 points**
- Extension response in response to pain (decerebrate posturing) **2 points**
- No response **1 point**

Centers for Disease Control
"Glasgow Coma Scale"

www.bt.cdc.gov/masstrauma/gscale.asp

The GCS is computed by adding the score from each category or Eye Response + Verbal Response + Motor Response = Total Score

Severe brain injury:

- coma longer than 24 hours, often lasting days or weeks
- Initial Glasgow Coma Scale of 8 or less
- long term impairments in one or more areas of life (i.e., home, work, community)

References

- Teasdale G, Jennett B. Assessment of coma and impaired consciousness. *Lancet* 1974; 81-84.
- Teasdale G, Jennett B. Assessment and prognosis of coma after head injury. *Acta Neurochir* 1976; 34: 45-55.

Categorization

Coma: No eye opening, no ability to follow commands, no words verbalizations (3-8)

Head Injury Classification

- Severe Head Injury – GCS score of 8 or less
 - Moderate Head Injury – GCS score of 9 to 12
 - Mild Head Injury – GCS score of 13 to 15
- (Adapted from: *Advanced Trauma Life Support: Course for Physicians, American College of Surgeons, 1993*).

Local Support



"Creating a Better Future"

To become a member, contact the Brain Injury Association of Michigan for a membership form & mail it with your contribution to:

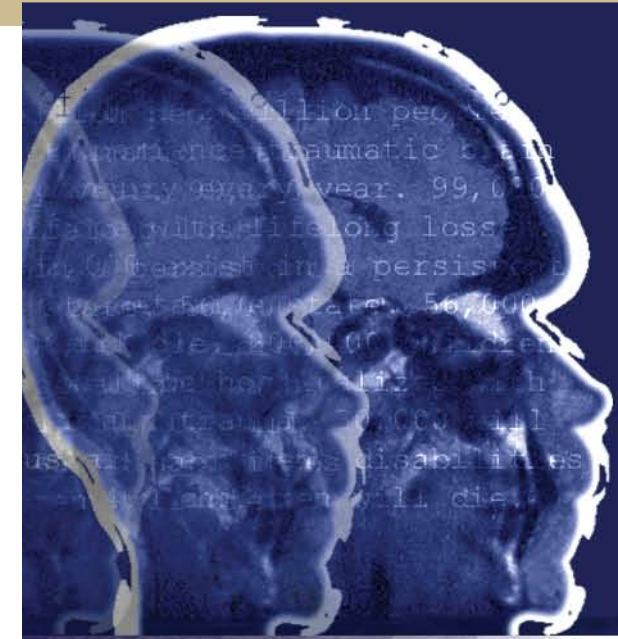
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COMA



"Creating a Better Future"

A supportive advocacy organization for persons with brain injuries, their families and friends.

Impaired Consciousness (Coma)

For thousands of individuals who sustain a severe brain injury, the resulting disability is a prolonged state of impaired consciousness. The terminology currently used to define the varied states of impaired consciousness includes “coma,” “vegetative state” and “minimally conscious state.” Some object to the term ‘vegetative’, finding it demeaning and derogatory. Alternate terms, such as “wakeful unconsciousness” have been suggested to avoid the negative connotations of this word. Current science is just beginning to develop the tools to understand, to treat and to predict accurately recovery from impaired consciousness. The American Congress of Rehabilitation Medicine (ACRM), a multidisciplinary group of rehabilitation professionals involved in clinical care and research, has provided the following guidance:

“After severe brain injury, some individuals remain unconscious for long periods of time. In true coma, the person’s eyes remain closed and there is little or no spontaneous movement. Individuals either recover consciousness or evolve into the vegetative state within 4 weeks. In the vegetative state, the eyes are open and there is some degree of spontaneous movement, but there is no evidence that this movement is purposefully related to the surrounding environment. In the minimally conscious state, there is inconsistent but definite behavioral evidence of conscious awareness. Critical decisions in this context typically revolve around the individual’s current state of consciousness and their potential for further recovery. In order to clarify these issues, it is imperative that the individual be carefully assessed by professionals skilled in distinguishing between the vegetative and minimally conscious states and evaluating prognosis.”

The Brain Injury Association of America strongly endorses the recommendation of the ACRM that individuals with impaired consciousness receive “repeated assessments designed specifically for individuals who are unable to communicate inde-

pendently and that these assessments should be conducted by specialists skilled in this process.” The Brain Injury Association of America maintains that all persons should have access to the best, most recent, most accurate information about the diagnosis, treatment and prognosis of severe brain injury.

Impaired consciousness can be caused by different things, including:

- a severe injury to the brain – this accounts for more than 50% of comas
- infections involving the brain
- anoxic/hypoxic event (lack of oxygen)
- seizure disorders
- a stroke

Presently, there are no known medications that will shorten the length of impaired consciousness. Sometimes, when in the ICU, a coma is induced by giving special medications. These medications are used to deepen the level of unconsciousness while others will be used to temporarily paralyze the body, to minimize the secondary brain injury that can be caused by brain swelling. The medicines given are for the well being of the comatose person, along with recommendations to keep external stimulation down and limit visitations.

Once the patient is out of immediate danger, although still in impaired consciousness, the medical team will concentrate on preventing infections and maintaining the patient’s physical health as much as possible. This includes preventing pneumonia and skin breakdown and providing balanced nutrition. Physical and Occupational Therapy may also be used to prevent permanent muscular contractions and deformities that would limit recovery for the patients who emerge from coma. Additionally, Speech Therapy may be consulted to make suggestions regarding interactions and stimulation exercises.

Abilities of Persons in Impaired Consciousness

A person with impaired consciousness cannot obey commands. However, they may move in response to touch, pain, or move spontaneously. A person with impaired consciousness may respond to pain by inconsistently moving or groaning, but usually they have no recall of pain. Some people with impaired consciousness may appear to be able to hear and understand by occasionally squeezing a hand, sucking, responding to touch, or calming down when a familiar voice is heard. Since most persons with impaired consciousness cannot recall the period of unconsciousness, it is not possible to determine if they could actually hear and understand.

Over time and with the help of therapists, however, many people, who have experienced a period of impaired consciousness, can make a lot of progress. They may not be exactly like they were before the brain injury, but they can do a lot of things and enjoy life with their family and friends.

Family

It is very frightening and frustrating for a family to see their loved one in an unresponsive state. But, after medical stabilization, there are things you can do to help take care of the person. You may visit your loved one and talk, read and even play music because it’s possible that the person may be able to hear what’s going on around him/her, even if he/she can’t respond. A good rule to follow is, to talk to, and about the person as if they could hear and understand you. If stimulation makes your loved one more restless or agitated, talk to your family member’s health care team.

It may be important to identify someone to be the legal decision maker, if this was not identified in writing before the brain injury. The health team will consider how much time it will be before he/she can return to decision making and advise you.



After the Coma

Most people do come out of comas, however. Some of them are able to return to the lives they had before the coma. Television often portrays someone in a coma that wakes up right away, looks around, and is immediately able to think and talk as they did prior to the coma. This is a fallacy. When someone returns to consciousness, they will often be confused and can only slowly respond to what’s going on around him. It will take time for them to start feeling better. Some people may require rehabilitation, to relearn basic things such as like speaking, walking, eating or tying their shoes.