

Glasgow Coma Scale (GCS) is a neurological scale that is used to give a reliable, objective way of recording the conscious state of a person for initial as well as subsequent assessments. The initial score derived from the GCS provides an essential baseline for comparison with future scores to determine whether a patient's neurological condition is improving, static or deteriorating.

The GCS evaluates three key categories of behavior that most closely reflect activity in the higher centers of the brain: motor response, verbal response, and eye opening. These enable us to determine whether the patient has cerebral dysfunction and to gauge the impact of a wide variety of conditions such as acute brain damage due to trauma and/or vascular injuries (stroke) or infections, and metabolic disorders (e.g. diabetic coma).

Glasgow Coma Scale

Response	Score
Eye opening	
Opens eyes spontaneously	4
Opens eyes in response to speech	3
Open eyes in response to painful stimulation (eg, endotracheal suctioning)	2
Does not open eyes in response to any stimulation	1
Motor response	
Follows commands	6
Makes localized movement in response to painful stimulation	5
Makes nonpurposeful movement in response to noxious stimulation	4
Flexes upper extremities/extends lower extremities in response to pain	3
Extends all extremities in response to pain	2
Makes no response to noxious stimuli	1
Verbal response	
Is oriented to person, place, and time	5
Converses, may be confused	4
Replies with inappropriate words	3
Makes incomprehensible sounds	2
Makes no response	1

Clinicians use this scale to rate the best eye opening (E) response, the best verbal (V) response and the best motor (M) response an individual makes. The final GCS score or grade is the sum of these numbers.

Individual elements as well as the sum of the scores are important and thus the score is expressed in the form "GCS 9 = E2 V4 M3 at 07:35. The GCS is repeated

often and throughout the care of the head injured patient to assess for improvement or deterioration in the patient's condition.

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

Factors like drug use, alcohol intoxication, shock, or low blood oxygen can alter a patient's level of consciousness. These factors could lead to an inaccurate score on the GCS. Also, the GCS is not used on patients with head injuries who are sedated or ventilated. The GCS is not designed to assess sedation scores but cerebral function.

The apparent "simplicity of the GCS leaves it open to misunderstanding and misuse". In practice, although practitioners may be able to check the right "boxes" on the chart, few nurses appreciate the mechanism underpinning the assessment, which enables them to act appropriately when the patient's condition changes. Not infrequently, a patient's changing neurological state is not identified early enough to be either life-saving or prevent further brain injury.

To ensure consistency, the same member of staff should carry out the assessment over a given shift. At handover or shift change, the receiving nurse should observe how the GCS was obtained. Without such continuity, subtle yet significant alterations can be missed.

It takes skill and practice to perform this assessment so that healthcare professionals can quickly identify almost imperceptible signs of altered levels of consciousness.

References:

Teasdale G, Jennett B. "Assessment of Coma and Impaired Consciousness. A Practical Scale." *The Lancet* 13; 2 (7872):81-4, 1974.