



Brain Injury Assessments

Acute Care



PUPIL REACTION

- Nr** - Nonreactive
- BR** - Brisk
- SL** - Sluggish
- CO** - Constricted

GLASGOW COMA SCALE

Eyes Open	Spontaneous	4
	To Speech	3
	To Pain	2
	None	1
Best Verbal Response	Oriented	5
	Confused	4
	Inappropriate	3
	Incomprehensible	2
Best Motor Response	None	1
	Obeys Commands	6
	Localizes Pain	5
	Withdraws	4
	Flexes Pain	3
	Extends to Pain	2
	None	1

CLASSIFICATION OF BRAIN INJURY

Mild	LOC less than 30 minutes	GCS 13-15	PTA less than 24 hours
Moderate	LOC greater than 30 minutes, but less than 24 hours	GCS 9-12	PTA 24 hours to 7 days
Severe	LOC greater than 24 hours	GCS 8 or less	PTA more than 7 days

LOC – loss of consciousness; **GCS** – Glasgow Coma Score;
PTA – Post-traumatic amnesia

Comparison of Coma, Vegetative State, and Minimally Conscious State

	Coma	Vegetative State	Minimally Conscious State
Eye Opening	No	Yes	Yes
Sleep/Wake Cycles	No	Yes	Yes
Visual Tracking	No	No	Often
Object Recognition	No	No	Inconsistent
Command	No	No	Inconsistent
Communication	No	No	Inconsistent
Contingent Emotion	No	No	Inconsistent

Source: NIDRR 2007 Consciousness Consortium



Brain Injury Rehabilitation Assessments & Interventions

RANCHO LEVELS OF COGNITIVE FUNCTIONING

LEVEL 1 - (No Response)

Unresponsive to touch, pain, auditory or verbal stimuli.

LEVEL 2 - (Generalized)

Inconsistent, non-purposeful responses and/or reactions to painful stimuli.

LEVEL 3 - (Localized Response)

Inconsistent reaction directly related to type of stimulus presented (e.g., touch, pain, auditory or verbal).

LEVEL 4 - (Confused, Agitated)

Disoriented and unaware of present events with frequent inappropriate behavior (e.g., may yell, hit or bite); attention span is short and ability to process information is significantly impaired.

LEVEL 5 - (Confused, Inappropriate, Non-agitated)

Non-purposeful, random or fragmented responses when asked to do tasks that may be difficult; patient appears alert and responds to simple commands; performs previously learned tasks, but is unable to learn new ones.

LEVEL 6 - (Confused, Appropriate)

Behavior is goal-directed; responses are appropriate to the situation with incorrect responses because of memory difficulties.

LEVEL 7 - (Automatic, Appropriate)

Correct routine responses that are robot-like; appears oriented to setting, but insight, judgment and problem-solving are poor.

LEVEL 8 - (Purposeful, Appropriate)

Correct responses, carryover of new learning; poor tolerance for stress; some abstract reasoning difficulties. Insight, judgment and problem-solving require minimum assist to supervision.

LEVEL 9 - (Purposeful, Appropriate)

Able to shift attention and use memory aids. Insight, judgment, problem-solving and self-monitoring require standby assistance.

LEVEL 10 - (Purposeful, Appropriate)

Independently uses strategies, if needed, for memory, attention, judgment, problem-solving and self-monitoring. Aware of strengths and weaknesses.

Early Interventions to Prepare Patient for Rehabilitation

- ROM/positioning (PT, OT)
- Tone management
- Nutritional optimization
- Pulmonary optimization
- Dysautonomia management
- Neuroendocrine assessment
- Swallowing/dysphagia (ST)
- Restriction of overstimulation/noise
- Limitation of narcotic/sedating medications
- Promotion of good sleep/wake cycle

For more information, visit:
www.myshepherdconnection.org

MAKE A REFERRAL

Contact Shepherd Center's admissions team to make a referral for patients with a spinal cord injury, brain injury, stroke or neuromuscular diagnosis.

Visit shepherd.org/admissions for more information or call our admissions department at **404-352-2020**.