

Scoring, associated diagnosis, and additional index points. Additional index points obtained for each item should be added to calculate the additional index score, ranging from 0 to 100. Zero additional index point should be scored for non-administered conditional items (e.g., pain localization when command-following is present) or unsuccessful items (i.e., when the criteria to score the item are not met). * denotes conditional items.

Diagnosis	Score	Item	Sub-item	Additional index points
EMCS	8	Communication*	5 answers (accurate)	29
MCS+	7		3 or 4 answers (accurate)	21
			5 answers (inaccurate OK)	14
			3 or 4 answers (inaccurate OK)	7
		6	Command-following	2 commands 3/3
	2 commands 2/3			18
	1 command 3/3			12
1 command 2/3	6			
MCS-	5	Oriented behaviors	More than two different movements	15
			Two different movements	10
			One movement	5
	4	Visual pursuit	On four (all) occasions	16
			On three occasions	12
			On two occasions	8
	3	Visual fixation	On four (all) occasions	12
			On three occasions	9
			On two occasions	6
	2	Pain localization*	On both hands	4
On one hand			2	
UWS	1	Arousal	Spontaneously	4
			To auditory stimulation	3
			To tactile stimulation	2
			To pain	1
Coma	0		None	0

Detailed administration guidelines¹

A. Observation: Observe the patient for one minute and report spontaneous behaviors. Pay attention to vocalizations, spontaneous movements of the four limbs, head, lips, or eyes, as well as spontaneous interactions with the environment.

B. Command-following: Select three simple movements that were not observed as spontaneously repetitive during the observation period. Appropriate examples include: 'Move your hand', 'Turn your head', 'Blink twice', 'Look at [object or person]', 'Look up/down', 'Open/close your mouth', 'Stick out your tongue', 'Say a word/make a sound'. Adapt the selection of commands to the physical abilities of the patient. In cases of suspected LIS, relate at least one command to eye movements. Test each command in three trials, with a 10-second interval between trials. A command may be repeated once within the same trial to increase the patient's motivation. If the first two commands are successfully performed (3/3 trials for both commands with accurate responses), the third command does not have to be administered. In cases of known or suspected deafness, administer written commands. If the patient does not react to any of the oral commands, test at least one written command. Score "6" for command-following if the patient accurately responds to 2/3 trials for at least one command. To be scored, the response has to be clear and must appear within 10 seconds following the command prompt (and not spontaneously). All unclear, ambiguous responses or reflexive movements due to spasms or grasping must not be scored. Report the commands used on the scoring sheet, as well as the number of successful trials.

C. Communication (conditional): Perform a communication test only if at least two distinct responses to command are successfully performed (i.e., at least 2/3 for two commands) or if the patient can express a "yes" and a "no", either verbally, through gestures, eye movements or writing, spontaneously or not. If no verbal response can be produced, base the communication code on previously identified motor responses. Clearly explain the code to the patient before starting (e.g., thumbs-up for a "yes" and

¹ as prescribed in Sanz et al., 2021¹⁷⁶

thumbs-down for a "no") and employ the most frequently used code for this patient, if any. The examiner can remind the code to be used to the patient before each question. It is necessary to use two distinct responses; the absence of movement cannot be used for a "yes" or a "no". First ask 5 binary autobiographical questions - (1) 'Is your name [incorrect name]?' (2) 'Are you born in [correct birth year]?' (3) 'Is your name [correct name]?' (4) 'Are you born in [incorrect birth year]?' (5) 'Do you have children?' If the patient fails to correctly answer the autobiographical questions, ask the following binary situational questions: (1) 'Are we in [place: hospital, home or else]?' (2) 'Am I wearing a hat?' (3) 'Are we at the swimming pool?' (4) 'Am I touching your hand?' (Touch) (5) 'Am I touching your face?' (Do not touch). Score "7" for intentional communication if the patient responds to at least three out of five questions from one question set, regardless of accuracy. Score "8" for functional communication if the patient correctly responds to the five questions from one question set (either autobiographical or situational). Report the nature of the "yes/no" code, the modality (verbal, written) and the type (autobiographical, situational) of the questions used, the number of responses and the number of correct ones. Question sets must be considered separately, and correct answers from distinct question sets cannot be added up when scoring the item.

D. Visual pursuit: Move silently around the bed while observing whether the patient's gaze spontaneously and clearly follows this movement during at least two seconds in two different directions. If a clear pursuit is not spontaneously observed, position the mirror about 30 cm in front of the patient's face. After confirming that the patient can see their reflection, move the mirror slowly from left to right (or right to left, depending on the initial position of the patient's eyes), right to the left, top to bottom, and bottom to top for at least four seconds per movement. Score a "4" for visual pursuit if an uninterrupted visual pursuit is observed in two different directions for at least two seconds. Report the number of observed pursuits on each axis, the type of stimulus used (spontaneous, mirror), and whether manual eye-opening was employed.

E. Visual fixation: Enter the patient's field of view and observe whether the patient's gaze spontaneously fixates on the examiner for at least two seconds in two different visual quadrants by turning toward the examiner (performing a saccadic eye movement). If no

clear and spontaneous visual fixations are observed, present the mirror about 30 cm away from the patient's face in all four quadrants of the patient's visual field, but not in the axis of their gaze, for at least four seconds per quadrant. Score a "3" for visual fixation if two fixations are observed, either spontaneously or induced by the mirror. A clear change of gaze orientation toward the mirror (or examiner) followed by a fixation of at least two seconds should be observed. Report the quadrants in which the patient showed the fixations, as well as the type of the stimulus used (spontaneous, mirror), and whether manual eye-opening was employed.

F. Localization to pain (conditional): Test localization to pain only if the patient did not demonstrate command-following (score of 5 or below). Place a pen or pencil on the patient's fingernail bed for five seconds before instructing the patient to 'Remove your hand to avoid the pain'. If the patient does not remove the hand within the next five seconds, administer pressure on the nail bed with the pen or pencil for five seconds. One trial should be performed on each hand. If the patient removed the hand after the warning, do not apply pressure and directly proceed to the other hand and repeat the warning. Score "2" for localization to pain if, during at least one of the two trials, the non-stimulated hand of the patient clearly touches the stimulated hand. If the patient clearly removes the pain-stimulated hand after the warning but before the stimulation on both trials (anticipation response), score "6" for command-following. Report the side (L or R) of each observed localization and anticipation response (always report stimulated side).

G. Oriented behaviors: To assess oriented behaviors, considering all of the behaviors observed during the entire examination. These behaviors may include (but are not limited to) scratching themselves, grabbing the bed sheets, holding the bed, pulling on the clothes/tracheostomy/gastrostomy/catheter, placing the hand on the mouth to cough, smiling/laughing/crying contextually, stereotyped verbal response or gesture when spoken to (e.g., grunt, head nod or thumbs up), or any other automatic non-reflexive behaviors. Yawning should not be scored as an automatic non-reflexive behavior. Score "5" for oriented behaviors if the patient presents at least one clearly observed oriented behavior. Report the type and the number of times each behavior is observed.

H. Arousal: Score "0" for no arousal if, during the entire evaluation, the patient never opened the eyes, with or without stimulation (including nociceptive stimulation). Score "1" for arousal if the patient opened the eyes at least once during the assessment, either spontaneously or following stimulation. Report the approximate percentage of time the eyes were open throughout the examination (0-25%; 25-50%; 50-75%; 75-100%). Specify if the eye-opening happened spontaneously or following a noxious, tactile, or auditory stimulation, as well as the number of stimulations of each type that were administered.

Additional index: For each successful item, specific index points correspond to the type of behavior observed (see Table 2). Calculate the additional index score by adding up the points earned in each item tested during the assessment (index range 0-100) and report the total index on the scoring sheet.