

Université de Liège

Simplified Evaluation of CONsciousness Disorders (SECONDS)

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Administration and scoring guidelines of the SECONDS and comparison with the corresponding CRS-R item.

Item	Administration guidelines	Scoring guidelines	Main criteria	Criteria of CRS-R corresponding item
Observation	<p>Observe the patient for one minute and report spontaneous behaviors. If no sustained eye opening is observed, administer auditory, tactile or noxious stimulation to arouse the patient. During the assessment, promote eye opening before testing each item. If this is not possible, assess visual items and the capacity to look up (on command) by manually opening the patient's eyes.</p> <p>During the whole assessment, observe the patient and report the presence of eye opening, either spontaneously or to stimulation (report the number and type of stimulation used when appropriate), as well as the presence of oriented non-reflexive behaviors towards himself/herself or his/her environment (e.g., scratching nose, grabbing bedsheets, smiling in an appropriate context).</p>	See levels 1 and 5 below for instructions on how to report those observations.	N/A	N/A
Response to command – Level 6	<p>Ask the patient to produce a movement (e.g., move a limb or head, blink twice, look at specific objects, look up, open/close your mouth, say a word, make a sound) that was not observed repeatedly during the observation period. Ensure the commands circumvent physical limitations that might prevent the emergence of responses.</p> <p>Administer three different commands and repeat each of them three times, leaving a 10-second interval after the end of the instruction. A command may be repeated once within the 10-second trial in order to increase the patient's motivation.</p> <p>If the first two commands are successfully performed (3/3 accurate responses), the third command does not need to be administered. In case of known or suspected deafness, administer written commands. If the patient does not react to oral commands, at least one fourth additional written command should be administered.</p>	Score “6” (response to command) if the patient accurately responds to 2/3 trials for one command. To be scored, the response must be unequivocal, not spontaneously redundant and must appear within the 10 seconds following the command. All unclear or ambiguous responses as well as reflexive movements due to spasms or grasping reflexes should not be scored. Report the commands used on the scoring sheet as well as the number of successful trials.	Minimum 2/3 succeeded for one given command	“Three clearly discernible responses occur over the 4 trials on any one of the object or non-object related commands.”

<p>Communication (conditional) – Level 7 & 8</p>	<p>The communication will be assessed only if the patient can express a “yes” and a “no” (either verbally, or through gestures or writing, spontaneously or not) or if at least two distinct responses to command are successfully performed (i.e., 2/3). In this last case, the communication code will be based on the responses previously identified. Make sure the code is clearly explained to the patient before starting (e.g., thumbs-up for a “yes” and thumbs-down for a “no”). The examiner can restate the code used before each question. It is necessary to use two distinct responses; the absence of movement or response cannot be used for a “yes” or a “no”.</p> <p>The examiner will administer the following five 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 date]? (5) Do you have children?</p> <p>If the patient seems to have difficulties with those questions (according to the clinician), ask the following situational questions: (1) Are we at [(correct place), hospital, home or else]? (2) Am I wearing a hat (not wearing one)? (3) Are we at the swimming pool? (4) Am I touching your face? (Touch) (5) Am I touching your face? (Do not touch).</p>	<p>Report the number of correct/incorrect responses.</p> <p>Score “7” (intentional communication) if the patient responds to at least 3 out of the 5 questions, regardless of accuracy.</p> <p>Score “8” (functional communication) if the patient correctly responds to the 5 questions (autobiographical or situational).</p> <p>A score of “8” (functional communication) should be obtained on 2 consecutive assessments to diagnose a patient as emerging from the minimally conscious state.</p>	<p>Score “7”: 3 to 5 answers, even if inaccurate</p> <p>Score “8”: 5 accurate</p>	<p>Intentional communication if “a clearly discernible communicative response occurs within 10 seconds on at least 2 of the 6 visual or auditory situational orientation questions (irrespective of accuracy)”.</p> <p>Functional communication if “clearly discernible and accurate responses occur on all 6 of the questions.”</p>
<p>Visual pursuit – Level 4</p>	<p>If a clear pursuit is not spontaneously observed, use a mirror and hold it in front of the patient, about 30 cm from his/her face. Move the mirror slowly (ensure the patient is always able to see his/her reflection) from left to the right (or right to left, according to the initial position of the patient’s eyes), from right to the left, and then from top to bottom and from bottom to top. Each movement of the mirror should last at least 4 seconds.</p>	<p>Score “4” if :</p> <ul style="list-style-type: none"> - the patient’s gaze spontaneously and clearly follows the examiner, who is silently moving around the bed, during at least two seconds on two occasions. - a smooth pursuit is observed in two directions during at least two seconds. Report the number of successful trials on each axis. 	<p>Minimum 2 pursuits</p> <p>(> 2 sec)</p>	<p>“Eyes must follow the mirror without loss of fixation on 2 occasions in any direction.”</p>




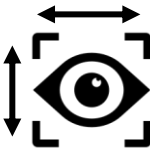




Visual fixation – Level 3	<p>If no clear and spontaneous visual fixations are observed, use a mirror and present it in all four quadrants of the patient’s visual field, but not in the axis of his/her gaze. The mirror should be held about 30 cm from the patient’s face (ensure it is directed towards him/her). A clear change of gaze orientation towards the mirror should be identified, followed by a fixation of at least two seconds. Report the quadrants in which the patient showed the fixations.</p>	<p>Score “3” if:</p> <ul style="list-style-type: none"> - the patient’s eyes spontaneously change their point of fixation towards the examiner for at least two seconds and on two occasions. The examiner should not initially stand in the axis of the patient’s gaze. - a fixation is observed on two trials. - report the quadrants in which the patient showed the fixations. 	<p>Minimum 2 fixations (> 2 sec)</p>	<p>“Eyes change from initial fixation point and fixate on the new target location for more than 2 seconds. At least 2 episodes of fixation are required.”</p>
Localization to pain – Level 2	<p>This item should only be tested if the patient did not obtain a score above “5”. Put a pen or pencil on the patient’s finger nail bed, wait for five seconds, then warn the patient that he/she will feel pain, and that this can be avoided if he/she withdraws the hand. If the patient does not remove the hand within the next five seconds, apply pressure on the nail bed using the pen or pencil for five seconds. One trial should be administered on each hand.</p>	<p>Score “2” (localization to pain) if, during at least one of the two trials, the non-stimulated hand of the patient touches the stimulated hand.</p> <p>Score “6” (response to command) if the patient clearly removes his/her hand after the instructions (and not during the five seconds preceding it) but before the stimulus on both trials.</p>	<p>Minimum 1 localization</p>	<p>“The non-stimulated limb must locate and make contact with the stimulated body part at the point of stimulation on at least 2 of the four trials.”</p>

Arousal – Level 1	See “Observation”.	<p>At the end of the assessment, score “0” (no arousal) if, during the entire evaluation, the patient never opened the eyes, even after stimulation (including nociceptive stimulation).</p> <p>Score “1” (arousal) if the patient opened the eyes at least once during the assessment. Specify if the eye opening happened spontaneously or following a noxious, tactile or auditory stimulation, as well as the number of stimulations for each type that were administered.</p> <p>Report the percentage of eye opening time throughout the entire examination: 0-25%; 25-50%; 50-75%; 75-100%.</p>	Eye-opening at least once	<p>Attention if “there are no more than 3 occasions across the length of the evaluation in which the patient fails to respond to a verbal prompt”.</p> <p>Eye-opening without stimulation if “eyes remain open across the length of the examination without the need for tactile, pressure or noxious stimulation”.</p> <p>Eye-opening with stimulation if “tactile, pressure or noxious stimulation must be applied at least once during the examination in order for the patient to sustain eye opening”.</p>
Oriented behaviors – Level 5	<p>See “Observation”</p> <p>Those may include (but are not limited to): scratching himself/herself, grabbing the bedsheets, holding the bed, pulling on the clothes/tracheostomy or gastrostomy tube/catheter, placing the hand on his/her mouth before coughing/yawning, smiling/laughing/crying in an appropriate context, responding verbally or through gestures when someone talks to him/her (independently of accuracy) or any other automatic non-reflexive behaviors.</p>	Score “5” if the patient presents at least one clearly observed oriented behavior. Document the type and the number of occurrences for each observed behavior.	Minimum 1 observation of any oriented behavior	At least 2 episodes of automatic motor behavior are observed within the session and each episode can be clearly differentiated from a reflexive response.

This table was translated from French.

Patient : Examiner : Date : Time :

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<p>.....</p> <p>.....</p>		<p>A. Observation</p>	
<p>Command 1:/3</p> <p>2:/3</p> <p>3:/3</p> <p>Written command:/3</p> <p>→ The patient responds at least twice for one of the commands (= score 6)</p>		<p><input type="checkbox"/> B. Command-following (score 6)</p> <p>3 x 3 spoken commands</p> <p>10'' interval between commands</p> <p>(1 x 3 written command if 0/3)</p> <p>Stop if 2 commands 3/3</p>	
<p><i>If command-following</i></p>	<p>Code yes :</p> <p>Code no :</p> <p>Responses : .../5 o Verbal o Autobiographical</p> <p>Correct : .../5 o Written o Situational</p> <p>→ The patient responds (even incorrectly) to at least 3 questions (= score 7)</p> <p>→ The patient correctly responds to the 5 questions (= score 8)</p>	<p>C. Communication</p> <p><input type="checkbox"/> Intentional (score 7)</p> <p><input type="checkbox"/> Functional (score 8)</p> <p>Autobiographical questions</p> <p><i>Name (no), birth date (yes), name (yes), birth date (no), children (yes/no)</i></p> <p>If incorrect answer(s): Situational questions</p> <p><i>Place (yes), wearing a hat (no), place (no), touching hand (yes), touching face (no)</i></p>	
	<p>Horizontal : .../2 Vertical : .../2</p> <p>o Spontaneous o Mirror □ Manual eye-opening</p> <p>→ The patient shows at least 2 visual pursuits of at least 2 seconds (= score 4)</p>	<p><input type="checkbox"/> D. Visual pursuit (score 4)</p> <p>Person/mirror, 30 cm from face</p> <p>Each movement on horizontal or vertical axes = 4'' (→ ← ↓ ↑)</p>	
	<p>Sup L : .../1 Sup R : .../1</p> <p>Inf L : .../1 Inf R : .../1</p> <p>o Spontaneous o Mirror □ Manual eye-opening</p> <p>→ The patient shows at least 2 visual fixations of at least 2 seconds (= score 3)</p>	<p><input type="checkbox"/> E. Visual fixation (score 3)</p> <p>Person/mirror, 30 cm from face</p> <p>Present stimulus in each quadrant</p>	
<p><i>If no command-following</i></p>	<p>Localization: L : .../1 R : .../1</p> <p>Anticipation: L : .../1 R : .../1</p> <p>→ The patient touches the point of stimulation at least once with the non-stimulated hand (= score 2)</p> <p>→ The patient shows 2 anticipations (= score 6)</p>	<p><input type="checkbox"/> F. Pain localization (score 2)</p> <p>Inform patient</p> <p>5'' pressure on nail bed</p> <p>1 trial on each hand</p>	
	<p>.....</p> <p>..... Nb :</p> <p>→ The patient shows at least one oriented behavior (= score 5)</p>	<p><input type="checkbox"/> G. Oriented behaviors (score 5)</p> <p>E.g., scratching, grabbing sheets, holding bed, laughing or crying contextually,...</p>	
<p>0-25% / 25-50% / 50-75% / 75-100%</p> <p>Spontaneously / Auditory / Tactile / Pain stimulations</p> <p>→ The patient shows at least one eye-opening during the whole assessment (= score 1)</p>		<p>H. Arousal</p> <p><input type="checkbox"/> Eye-opening (score 1)</p> <p><input type="checkbox"/> No arousal (score 0)</p> <p>Report the percentage of eye-opening time and administered stimulations</p>	

Diagnosis : Coma (0) / UWS (1) / MCS- (2-5) / MCS+ (6-7) / EMCS (8)

Additional index point : ... /100

Score	Diagnosis	Item	Subitem	Additional index (sum the best in each item; 7&8 are considered together)
0	COMA	No arousal	-	0
1	UWS	Arousal	To pain To tactile stimulation To auditory stimulation Spontaneously	1 2 3 4
2	MCS-	Localisation to pain	On one hand On both hands	2 4
3		Visual fixation	On two occasions On three occasions On four (all) occasions	6 9 12
4		Visual pursuit	On two occasions On three occasions On four (all) occasions	8 12 16
5		Oriented movements	One movement Two different movements More than two different movements	5 10 15
6	MCS+	Response to command	1 command 2/3 1 command 3/3 2 commands 2/3 2 commands 3/3	6 12 18 24
7		First signs of communication	3 or 4 answers (inaccurate OK) 5 answers (inaccurate OK) 3 or 4 answers (accurate)	7 14 21
8	EMCS	Reliable communication	5 answers (accurate)	29