

# **CRSR-FAST**

Coma Recovery Scale Revised-  
For Accelerated Standardized Testing

## **Administration and Scoring Manual**

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**Traumatic Brain Injury Model System**

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Serving the New England Region

## CRSR-FAST Record Form

Patient: \_\_\_\_\_

Date: \_\_\_\_\_

Administer each item per guidelines until a scoreable response is obtained									
Present (1=yes, 0=no)	Signs of Consciousness	Responses							
	Reproducible command following ■								
	Fixation/Visual pursuit*								
	Automatic motor response*								
	Localization to noxious stimulation*								
	Intelligible expression ■								
Supplementary Items									
	Functional object use <sup>†</sup>								
	Functional: accurate communication <sup>†</sup>								
	Non-Functional: intentional communication ■								

\* MCS-; ■ MCS+; † eMCS

Trial scoring: 0 =no response; - =incorrect response; + =correct

Resting Posture			
RUE:		RLE:	
LUE:		LLE:	
Spontaneous Behaviors			
Eye Opening:			
Visual Tracking:			
Active Movements:			
Psychoactive Medications/Paralytics (use Notes section for additional medications)			
Name	1.	2.	3.
Dose			
Time admin. hh:mm			
Time lifted			
Check all potential confounders to exam findings			
<input type="checkbox"/> Psychoactive agents not lifted for exam			
<input type="checkbox"/> General anesthesia within 24 hrs			
<input type="checkbox"/> Ictal event within 24 hrs			
<input type="checkbox"/> Intubation			
<input type="checkbox"/> Fever >99 within 2 hrs of exam			
<input type="checkbox"/> Underarousal (i.e., sustained eye closure >3 seconds)			
<input type="checkbox"/> No confounding factors			

**Notes: Record observations or concerns that may influence or ambiguate scoring of any items**

\_\_\_\_\_ # Arousal Facilitation Protocol administrations

Test Completion Codes - circle one			
1	test completed in full, in person- results valid		
Test attempted, not completed due to:		Test not attempted due to:	
2.1	impaired sensory function (cortical or peripheral)	3.1	impaired sensory function (cortical or peripheral)
2.2	aphasia	3.2	aphasia
2.3	physical limitation restricting movement (e.g., fracture, hemiparesis)	3.3	physical limitation restricting movement (e.g., fracture, hemiparesis)
2.4	primary language barrier	3.4	primary language barrier
2.5	illness/medical instability	3.5	illness/medical instability
2.6	examiner error	3.6	examiner error
2.7	logistical problem	3.7	logistical problem
2.8	other (specify):	3.8	other (specify):

## ADMINISTRATION GUIDELINES

### Prior to the exam

1	Review the medical record or speak with the clinical team to determine whether confounding issues may affect the examination. Record administration of psychoactive medications.
2	When possible, administer exam when sedation has been lifted. If this is not possible, list psychoactive medications on the case report form.
3	Observe and record spontaneous behaviors for 1 minute.
4	If the eyes are closed or there are other signs of underarousal, administer the Arousal Facilitation Protocol (AFP, see pg. 5).

### During the exam

5	Adhere to instructions for administration of items and present each one in the order listed on the case report form.
6	The response window for each stimulus is 10 seconds. Responses occurring after the 10-second interval should be noted but not scored.
7	Only score clearly discernible responses. Do not score ambiguous responses.
8	No specific test procedure is used to assess for automatic motor behavior. This item is scored when automatic movements are observed spontaneously and scoring criteria are met.
9	Administer the command-following item regardless of whether other signs of consciousness are observed at any time during the examination (including during administration of the AFP).
10	Administer the AFP anytime the eyes close for $\geq 3$ seconds and/or there is no behavioral response to verbal and tactile stimuli.
11	The examination should be discontinued as soon as the first behavioral sign of consciousness is detected. The exception to this rule is that the command-following item should always be administered (see #9).
12	If peripheral or central auditory impairments are suspected as the cause of failure to respond to verbal prompts, re-administer the command-following and intelligible speech using written instructions.

### After the exam

13	Upon completion of the assessment, determine the validity of the results using the Test Completion Codes. Record potentially confounding circumstances using the checkboxes and free text field in the case report forms.
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## INSTRUCTIONS FOR ITEM ADMINISTRATION

Item	Assessment	Scoreable Response
Reproducible movement to command	Select at least 2 eye movement, limb movement or oral movement/vocalization commands and present each command over 4 trials at 10-second intervals (see pg. 5). The same command should be used for all 4 trials of each type of command.	At least three clearly discernible and accurate responses occur over 4 trials of either type of command.
Automatic motor response	Automatic motor behaviors are complex over-learned movement sequences that occur in response to specific environmental triggers and cannot be attributed to reflexive activity (e.g., grasp reflex). Examples include nose scratching, grasping the bedrail, pulling indwelling tubes/lines, and picking up objects. Observe for episodes of automatic motor behavior that occur spontaneously during the examination.	At least 2 episodes of automatic motor behavior are observed during the examination and each episode can be clearly differentiated from a reflexive response.
Fixation/ Visual pursuit	Place a hand-held mirror 4-6 inches directly in front of the patient's face and instruct the patient to fixate on the mirror. Move mirror slowly 45 degrees to the right and hold at this location for at least 2 seconds. Repeat this procedure moving the mirror to the left of midline, above midline, and below midline.  Complete the above procedure a total of two times.	<u>Visual pursuit</u> : The eyes must follow the mirror for 45 degrees without loss of fixation on 2 occasions in any direction.  <u>Visual fixation</u> : The eyes change from initial fixation point and re-fixate on the new location for at least 2 seconds. At least 2 episodes of fixation are required.
Localization to noxious stimulation	Squeeze a finger or toe between your thumb and index finger as hard as possible for approximately 5 seconds. Administer 2 trials on each side for a total of 4 trials. Stimulation can also be applied to other regions, such as chest or thigh, if there is restricted range of motion in the limbs.	The non-stimulated limb <b>must locate and make contact with</b> the stimulated body part or the source of stimulation (examiner's hand) on at least 2 of the 4 trials. May be scored from observation during administration of the AFP.

Intelligible expression	<p>Tell patient "I would like to hear your voice." Administer the following verbal prompts two times each.</p> <p>1) "The opposite of up is ____?"  2) "The color of grass is ____?"</p>	<p>Each of the following criteria must be met:</p> <p>1. Each verbalization must consist of at least 1 consonant-vowel-consonant (C-V-C) triad. For example, "ma" would not be acceptable, but "mom" would. Make sure objects chosen have a C-V-C sequence,</p> <p>and</p> <p>2. Two different words must be documented by the examiner to ensure that a repetitive word-like sound is not mistaken for a word. Words need not be appropriate or accurate for the context, but must be fully intelligible,</p> <p>and</p> <p>3. Words produced by mouthing, writing, or alphabet board are acceptable as long as they meet the scoring criteria above.</p> <p>Verbalizations that occur spontaneously or at other times during the assessment and meet the above criteria should also be scored.</p>
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<b>AROUSAL FACILITATION PROTOCOL (AFP)</b>	
<p>The goal of this intervention is to prolong the length of time the patient maintains arousal (i.e., eye opening). The protocol is administered anytime the eyes close and/or there is no response to verbal and tactile stimuli.</p>	<p>Deep Pressure: Present deep pressure stimulation unilaterally to the face, neck, and shoulder. The muscle should be firmly grasped at its base between the thumb and forefinger. While squeezing the muscle firmly, it should be "rolled" back and forth through the fingertips 3-4 times. The examiner should confirm that there are no internal lines, local injuries (e.g., fractures, contusions, decubiti) or systemic complications before administering deep pressure. Repeat on the contralateral side.</p>

<b>COMMAND FOLLOWING ASSESSMENT PROTOCOL*</b>									
	<b>Object Related Commands</b>			<b>Non-Object Related Commands</b>					
	<b>Eye Movement</b>	<b>Limb Movement</b>		<b>Eye Movement</b>		<b>Limb Movement</b>		<b>Oral Movement/Vocalization</b>	
	Look at the (object #1, object #2)	Take the (object #1, object #2)	Kick the (object #1, object #2)	Look away from me	Look up (at ceiling)	Touch your nose	Move your (body part)	Stick out your tongue	Say 'ah'
Trial 1									
Trial 2									
Trial 3									
Trial 4									

\*These commands are provided as examples and may be substituted, as appropriate.

<b>SUPPLEMENTARY ITEMS</b>		
<b>Item</b>	<b>Assessment</b>	<b>Scoreable Response</b>
Functional object use	Select 2 common objects. Place one of the objects in the patient's hand and instruct the patient to "Show me how to use a [name object]". Next, place the second object in the patient's hand and restate the same instruction. Repeat the above procedure using the same objects so that a total of 2 trials are administered with each object.	Movements executed are generally compatible with both objects specific function (e.g., comb is placed on or near the head) on all 4 trials administered.  If the patient is unable to hold the object because of neuromuscular involvement, this should be noted on the record form and the item should not be scored.
Functional: accurate communication	If there is evidence of command-following or spontaneous "yes" or "no" responses, administer the 6 situational orientation questions from the Communication Assessment protocol. The examiner may use the Visual set, Auditory set, or both sets, if appropriate.	Clearly discernible and accurate responses occur within 10 seconds on all 6 of the Visual or Auditory Situational Orientation questions from the Communication Assessment Protocol.
Non-Functional: intentional communication	As above.	A clearly discernible communicative response (e.g., head nods/ shakes, thumbs up) must occur within 10 seconds on at least 2 of the 6 Situational Orientation questions (irrespective of accuracy) from the Communication Assessment Protocol.  The examiner must determine that this response occurs more frequently following verbal prompting (e.g., questions) than when non-specific auditory stimulation (e.g., hand clapping) is administered.

<b>COMMUNICATION ASSESSMENT PROTOCOL</b>	
<b>Situational Orientation</b>	
<b>Visually Based</b>	<b>Aurally Based</b>
Am I touching my ear right now? (touch nose)	Am I clapping my hands right now? (do not clap)
Am I touching my nose right now? (touch nose)	Am I clapping my hands right now? (clap)
Am I touching my ear right now? (touch ear)	Am I clapping my hands right now? (clap)
Am I touching my ear right now? (touch nose)	Am I clapping my hands right now? (do not clap)
Am I touching my nose right now? (touch ear)	Am I clapping my hands right now? (clap)
Am I touching my ear right now? (touch ear)	Am I clapping my hands right now? (do not clap)