

Rapid Arterial ocClusion Evaluation Scale (RACE)

Background

- RACE is a simple pre-hospital stroke scale that is designed to identify large vessel occlusions (LVO)
 - Think of LVO as a “STEMI” of the brain
- RACE was developed based on the National Institutes of Health Stroke Scale (NIHSS)
- RACE does not replace the Cincinnati Prehospital Stroke Scale (CPSS), but works in conjunction with CPSS
- RACE uses a numerical value to determine if the patient is having a LVO. A score of 5 or greater, the patient may be having an ischemic stroke with a large vessel occlusion

Stroke Alert Check List

Stroke Alert Prehospital Checklist

Date & Times					
Date:	Dispatch Time:	EMS Arrival Time:	EMS Departure Time:	ED Arrival Time:	
Basic Data					
Patient Name:		Age:	Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female		
Witness Name:		Witness Phone #:			
Chief Complaint:		BP: Left arm /	Right arm /		
Last Time w/o Symptoms:	Glucose:	Pulse:	Resp:		
History					
Severe Headache: <input type="checkbox"/> Yes <input type="checkbox"/> No		Head Trauma at Onset: <input type="checkbox"/> Yes <input type="checkbox"/> No			
Stroke Alert Criteria				Yes	No
Time of Onset <6 hours?				<input type="checkbox"/>	<input type="checkbox"/>
Any abnormal findings on examination?				<input type="checkbox"/>	<input type="checkbox"/>
Deficit <u>not</u> likely due to head trauma?				<input type="checkbox"/>	<input type="checkbox"/>
Blood glucose >80 (if fingerstick possible) (see protocol)				<input type="checkbox"/>	<input type="checkbox"/>
RACE Score from Page 2					
Past History / Medications / Allergies					
Past History	Recent → Surgery <input type="checkbox"/> Trauma <input type="checkbox"/> MI <input type="checkbox"/> Blood Thinners <input type="checkbox"/>		Other PMHx:		
Medications:			Allergies:		
Management Reminders					
Do NOT treat Hypertension		Do NOT allow aspiration → keep NPO, head 30° up		Do NOT give glucose → unless glucose <80 and symptomatic	
Stroke Specific Report to Emergency Department					
Basic Data	Symptom Onset	Supplemental Information	Neurological Exam	t-PA Exclusions	
<ul style="list-style-type: none"> Age Gender Chief Complaint 	<ul style="list-style-type: none"> Last time w/o symptoms Head trauma Severe Headache Seizure – staring or shaking 	<ul style="list-style-type: none"> Recent surgery, trauma, MI Medications, allergies BP, glucose Witness name, contact info 	<ul style="list-style-type: none"> Consciousness Speech / language Visual fields Motor strengths 	<ul style="list-style-type: none"> Head trauma at onset Seizures (shaking or staring spell) at onset Taking blood thinners History of bleeding problems Brain hemorrhage (stiff neck, ↓ LOC) 	

RACE Exam

Item	Exam	Abnormal?	Points	Race
1. Speech	“You can’t teach a dog new tricks” Normal (speech with correct words and no slurring) Abnormal (slurs words, says wrong words, or unable to speak)	Yes / No		
2 Facial Palsy	Ask patient to smile/show teeth Absent (slightly asymmetrical) Mild facial palsy (slightly asymmetrical) Moderate – severe facial palsy (completely asymmetrical)	Yes / No	0 Points 1 Point 2 Points	
3. Arm Motor Function	Ask Patient to raise both arms, palms up, for 10 seconds No or mild drift of either arm (limb held ≥ 10 seconds) Moderate drift of either arm (limb held < 10 seconds) Severe weakness of either arm (no movement against gravity)	Yes / No	0 Points 1 Point 2 Points	
Presence of Stroke	Cincinnati Prehospital Stroke Score Positive (any yes above):	Yes / No		
4. Leg Motor Function	Ask patient to raise each leg for 5 seconds No or mild drift of either leg (limb held ≥ 5 seconds) Moderate drift of either leg (limb held < 5 seconds) Severe weakness of either leg (no movement against gravity)		0 Points 1 Point 2 Points	
5. Head and Gaze Deviation	Ask patient to move head and eyes horizontally and assess gaze deviation Absent (eye movements to both sides possible and no head deviation) Present (eyes and head deviation to one side)		0 Points 1 Point	
6. Aphasia (if right hemisphere)	Ask the patient to “close your eyes” and “make a fist” Normal (performs both tasks) Moderate (performs one task) Severe (performs no tasks)		0 Points 1 Point 2 Points	
7. Agnosia (if left hemisphere)	Ask patient while showing the affected arm: “Whose arm is this?” Ask patient to lift both arms and clap (evaluate if patient recognizes functional impairment) Normal (recognizes his/her arm and the impairment) Moderate (does not recognize his/her arm or the impairment) Severe (does not recognize his/her arm nor the impairment)		0 Points 1 Point 2 Points	
			Race Score	
If RACE Score = 5 or greater, patient may have an ischemic stroke with a large vessel occlusion				

Stroke Alert Check List

- Page one of the check list is the patient demographic and assessment page
- This page should be filled out as completely as possible and given to the receiving hospital upon arrival
- If there was a witness to the event, if possible, bring them to the hospital or get a name and phone number for the physician

RACE Examination

- The RACE exam is made up of 7 questions with a total possible score of 9
- The Cincinnati Prehospital Stroke Scale makes up the first three questions
- The final four questions are more in depth and must be performed prior to going en-route to the hospital
- Once the RACE examination is completed, patient then transported to the appropriate stroke center

Transport Criteria

- Per Dr. Longoria:
 - <4.5 hours and RACE score <5 = Primary Stroke Center
 - <4.5 hours and RACE score >5 = Comprehensive Stroke Center
 - >4.5 Hours or wake up stroke = Comprehensive Stroke Center

Hospitals

- Primary Stroke Centers
 - Houston Methodist St. John Hospital
 - Bay Area Regional Medical Center
 - Memorial Hermann Southeast Hospital
- Comprehensive Stroke Centers
 - Clear Lake Regional Medical Center
 - UTMB Galveston
 - CHI St. Luke's Baylor College of Medicine (TMC)
 - Methodist Hospital – Houston (TMC)
 - Memorial Hermann Hospital (TMC)

Definitions

- Aphasia: Partial or total loss of the ability to articulate ideas or comprehend spoken or written language, resulting from damage to the brain from injury or disease
- Agnosia: Loss of the ability to interpret sensory stimuli, such as sounds or images

References

- Design and Validation of a Prehospital Stroke Scale to Predict Large Arterial Occlusion. <http://stroke.ahajournals.org/content/45/1/87.full>
- A Paradigm Shift in EMS Evaluation of Stroke. <http://www.jems.com/articles/2016/08/a-paradigm-shift-in-ems-evaluation-of-stroke.html>
- RACE Stroke Assessment Video. <https://www.youtube.com/watch?v=9Sx0pJueV50>
- RACE Scale Calculator (with video). <http://www.rccc.eu/race/RACEen.html>
- RACE Scale Calculator. <https://www.mdcalc.com/rapid-arterial-occlusion-evaluation-race-scale-stroke#next-steps>
- TheFreeDictionary.com