

# Stroke Assessment

## Scenario 1

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### Case Information

#### **PATIENT INFORMATION:**

- 68-year-old male patient complaining of left sided weakness and an unsteady gait.
- Reported last normal time 30 minutes prior to EMS arrival on scene.

#### **ABNORMAL STROKE EXAM FINDINGS:**

- Moderate left arm drift. Unable to maintain extension for 10 secs.
- Moderate decrease left leg motor function. Unable to maintain leg raise for 5 secs.

#### **EXPECTED OUTCOME:**

- CPSS positive, suggesting possible ischemic event.
- EMS should transport to the nearest primary stroke center; onset < 3 hours.
- mRACE exam should be completed en route to the primary center.
- mRACE of 2, not indicative of a large vessel occlusion.

Item	Exam	Abnormal	Points	mRACE
1. Speech	<p><b>Repeat: "The sky is blue in Pittsburgh."</b></p> <p><b>Normal</b> (speech with correct words and no slurring)</p> <p><b>Abnormal</b> (slurs words, says wrong words, or unable to speak)</p>	Yes / <b>No</b>		
2. Facial Palsy	<p><b>Ask patient to smile / show teeth</b></p> <p><b>Absent</b> (symmetric movement)</p> <p><b>Mild</b> facial palsy (slightly asymmetrical)</p> <p><b>Moderate-severe</b> facial palsy (completely asymmetric)</p>	Yes / <b>No</b>	0 Points 1 Point 2 Points	0
3. Arm Motor Function	<p><b>Ask patient to raise both arms, palms up, for 10 secs</b></p> <p><b>No or mild</b> drift of either arm (limb held &gt; 10 secs)</p> <p><b>Moderate</b> drift of either arm (limb held &lt; 10 secs)</p> <p><b>Severe</b> weakness of either arm (no movement against gravity)</p>	<b>Yes</b> / No	0 Points 1 Point 2 Points	1
<b>Presence of Stroke</b>	Cincinnati Prehospital Stroke Score Positive (any yes above):	<b>Yes</b> / No		
4. Leg Motor Function	<p><b>Ask patient to raise each leg for 5 secs No or mild</b> drift of either leg (limb held &gt; 5 secs)</p> <p><b>Moderate</b> drift of either leg (limb held &lt; 5 secs)</p> <p><b>Severe</b> weakness of either leg (no movement against gravity)</p>		0 Points 1 Point 2 Points	1
5. Head and Gaze Deviation	<p><b>Ask patient to move head and eyes horizontally and assess gaze deviation</b></p> <p><b>Absent</b> (eye movements to both sides possible and no head deviation)</p> <p><b>Present</b> (eyes and head deviation to one side)</p>		0 Points 1 Point	0
6. Commands	<p><b>Ask the patient to "close your eyes" and "make a fist"</b></p> <p><b>Normal</b> (performs both tasks)</p> <p><b>Moderate</b> (performs one task)</p> <p><b>Severe</b> (performs no tasks)</p>		0 Points 1 Point 2 Points	0
7. Agnosia	<p><b>Ask patient while showing the affected arm: "Whose arm is this?"</b></p> <p><b>Ask patient to lift both arms and clap (evaluate if patient recognizes functional impairment)</b></p> <p><b>Normal</b> (recognizes his/her arm and the impairment)</p> <p><b>Moderate</b> (does not recognize his/her arm or the impairment)</p> <p><b>Severe</b> (does not recognize his/her arm nor the impairment)</p>		0 Points 1 Point 2 Points	0
<b>Stroke Severity</b>	Serum Glucose:	mRACE Score:		2

# Stroke Assessment

## Scenario 2

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### Case Information

#### **PATIENT INFORMATION:**

- 83-year-old female patient experiencing an altered level of consciousness.
- Last normal time approximately 5 hours prior.

#### **ABNORMAL STROKE EXAM FINDINGS:**

- Slurred speech.
- Unable to move right arm against gravity.
- Unable to move right leg against gravity.
- Unable to make a fist with her left hand.
- Unable to close her eyes.
- Does not recognize deficit.
- Is not able to clap.

#### **EXPECTED OUTCOME:**

- CPSS positive, suggesting possible ischemic event.
- mRACE exam should be completed on scene.
- mRACE of 8, suggestive of a large vessel occlusion.
- EMS should consult medical command for interventional center; onset 3-12 hours.

Item	Exam	Abnormal	Points	mRACE
1. Speech	<b>Repeat: "The sky is blue in Pittsburgh."</b> Normal (speech with correct words and no slurring) Abnormal (slurs words, says wrong words, or unable to speak)	<u>Yes</u> / No		
2. Facial Palsy	<b>Ask patient to smile / show teeth</b> Absent (symmetric movement) Mild facial palsy (slightly asymmetrical) Moderate-severe facial palsy (completely asymmetrical)	Yes / <u>No</u>	0 Points 1 Point 2 Points	0
3. Arm Motor Function	<b>Ask patient to raise both arms, palms up, for 10 secs</b> No or mild drift of either arm (limb held > 10 secs) Moderate drift of either arm (limb held < 10 secs) Severe weakness of either arm (no movement against gravity)	<u>Yes</u> / No	0 Points 1 Point 2 Points	2
<b>Presence of Stroke</b>	Cincinnati Prehospital Stroke Score Positive (any yes above):	<u>Yes</u> / No		
4. Leg Motor Function	<b>Ask patient to raise each leg for 5 secs</b> No or mild drift of either leg (limb held > 5 secs) Moderate drift of either leg (limb held < 5 secs) Severe weakness of either leg (no movement against gravity)		0 Points 1 Point 2 Points	2
5. Head and Gaze Deviation	<b>Ask patient to move head and eyes horizontally and assess gaze deviation</b> Absent (eye movements to both sides possible and no head deviation) Present (eyes and head deviation to one side)		0 Points 1 Point	0
6. Commands	<b>Ask the patient to "close your eyes" and "make a fist"</b> Normal (performs both tasks) Moderate (performs one task) Severe (performs no tasks)		0 Points 1 Point 2 Points	2
7. Agnosia	<b>Ask patient while showing the affected arm: "Whose arm is this?"</b>  <b>Ask patient to lift both arms and clap (evaluate if patient recognizes functional impairment)</b> 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	2
<b>Stroke Severity</b>	Serum Glucose:	mRACE Score:		8

# Stroke Assessment

## Scenario 3

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### Case Information

#### **PATIENT INFORMATION:**

- 74-year-old male patient complaining of a headache and increased weakness.
- Residual left sided deficits from a prior CVA in 2007.
- Last normal time approximately 90 minutes ago.

#### **ABNORMAL STROKE EXAM FINDINGS:**

- Mild left-sided facial droop.
- Moderate left arm drift. Unable to maintain extension for 10 secs.
- Moderate decrease left leg motor function. Unable to maintain leg raise for 5 secs.
- Unable to clap and recognizes the deficit.

#### **EXPECTED OUTCOME:**

- CPSS positive, suggesting possible ischemic event.
- EMS should transport to the nearest primary stroke center; onset < 3 hours.
- mRACE exam should be completed en route to the primary center.
- mRACE of 3, not indicative of a large vessel occlusion.

Item	Exam	Abnormal	Points	mRACE
1. Speech	<b>Repeat: "The sky is blue in Pittsburgh."</b> Normal (speech with correct words and no slurring) Abnormal (slurs words, says wrong words, or unable to speak)	Yes / <b>No</b>		
2. Facial Palsy	<b>Ask patient to smile / show teeth</b> Absent (symmetric movement) Mild facial palsy (slightly asymmetrical) Moderate-severe facial palsy (completely asymmetrical)	<b>Yes</b> / No	0 Points 1 Point 2 Points	1
3. Arm Motor Function	<b>Ask patient to raise both arms, palms up, for 10 secs</b> No or mild drift of either arm (limb held > 10 secs) Moderate drift of either arm (limb held < 10 secs) Severe weakness of either arm (no movement against gravity)	<b>Yes</b> / No	0 Points 1 Point 2 Points	1
<b>Presence of Stroke</b>	Cincinnati Prehospital Stroke Score Positive (any yes above):	<b>Yes</b> / No		
4. Leg Motor Function	<b>Ask patient to raise each leg for 5 secs</b> No or mild drift of either leg (limb held > 5 secs) Moderate drift of either leg (limb held < 5 secs) Severe weakness of either leg (no movement against gravity)		0 Points 1 Point 2 Points	1
5. Head and Gaze Deviation	<b>Ask patient to move head and eyes horizontally and assess gaze deviation</b> Absent (eye movements to both sides possible and no head deviation) Present (eyes and head deviation to one side)		0 Points 1 Point	0
6. Commands	<b>Ask the patient to "close your eyes" and "make a fist"</b> Normal (performs both tasks) Moderate (performs one task) Severe (performs no tasks)		0 Points 1 Point 2 Points	0
7. Agnosia	<b>Ask patient while showing the affected arm: "Whose arm is this?"</b>  <b>Ask patient to lift both arms and clap (evaluate if patient recognizes functional impairment)</b> 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	0
<b>Stroke Severity</b>	Serum Glucose:	mRACE Score:		3

# Stroke Assessment

## Scenario 4

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### Case Information

#### **PATIENT INFORMATION:**

- 80-year-old male patient experiencing frequent falls over the past 8 hours.
- Last normal time approximately 8 hours prior, difficult to determine.

#### **ABNORMAL STROKE EXAM FINDINGS:**

- Moderate right arm drift. Unable to maintain extension for 10 secs.
- Moderate decrease right leg motor function. Unable to maintain leg raise for 5 secs.

#### **EXPECTED OUTCOME:**

- CPSS positive, suggesting possible ischemic event.
- mRACE exam should be completed on scene.
- mRACE of 2, not indicative of a large vessel occlusion.
- EMS should consult medical command for appropriate receiving facility.

Item	Exam	Abnormal	Points	mRACE
1. Speech	<p><b>Repeat: "The sky is blue in Pittsburgh."</b></p> <p><b>Normal</b> (speech with correct words and no slurring)</p> <p><b>Abnormal</b> (slurs words, says wrong words, or unable to speak)</p>	Yes / <b>No</b>		
2. Facial Palsy	<p><b>Ask patient to smile / show teeth</b></p> <p><b>Absent</b> (symmetric movement)</p> <p><b>Mild</b> facial palsy (slightly asymmetrical)</p> <p><b>Moderate-severe</b> facial palsy (completely asymmetrical)</p>	Yes / <b>No</b>	0 Points 1 Point 2 Points	0
3. Arm Motor Function	<p><b>Ask patient to raise both arms, palms up, for 10 secs</b></p> <p><b>No or mild</b> drift of either arm (limb held &gt; 10 secs)</p> <p><b>Moderate</b> drift of either arm (limb held &lt; 10 secs)</p> <p><b>Severe</b> weakness of either arm (no movement against gravity)</p>	<b>Yes</b> / No	0 Points 1 Point 2 Points	1
<b>Presence of Stroke</b>	Cincinnati Prehospital Stroke Score Positive (any yes above):	<b>Yes</b> / No		
4. Leg Motor Function	<p><b>Ask patient to raise each leg for 5 secs</b></p> <p><b>No or mild</b> drift of either leg (limb held &gt; 5 secs)</p> <p><b>Moderate</b> drift of either leg (limb held &lt; 5 secs)</p> <p><b>Severe</b> weakness of either leg (no movement against gravity)</p>		0 Points 1 Point 2 Points	1
5. Head and Gaze Deviation	<p><b>Ask patient to move head and eyes horizontally and assess gaze deviation</b></p> <p><b>Absent</b> (eye movements to both sides possible and no head deviation)</p> <p><b>Present</b> (eyes and head deviation to one side)</p>		0 Points 1 Point	0
6. Commands	<p><b>Ask the patient to "close your eyes" and "make a fist"</b></p> <p><b>Normal</b> (performs both tasks)</p> <p><b>Moderate</b> (performs one task)</p> <p><b>Severe</b> (performs no tasks)</p>		0 Points 1 Point 2 Points	0
7. Agnosia	<p><b>Ask patient while showing the affected arm: "Whose arm is this?"</b></p> <p><b>Ask patient to lift both arms and clap (evaluate if patient recognizes functional impairment)</b></p> <p><b>Normal</b> (recognizes his/her arm and the impairment)</p> <p><b>Moderate</b> (does not recognize his/her arm or the impairment)</p> <p><b>Severe</b> (does not recognize his/her arm nor the impairment)</p>		0 Points 1 Point 2 Points	0
<b>Stroke Severity</b>	Serum Glucose:	mRACE Score:		2



# Stroke Assessment

## Scenario 5

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### Case Information

#### **PATIENT INFORMATION:**

- 58-year-old female patient reported with abnormal behavior and weakness.
- Last normal time reported 90 minutes prior.

#### **ABNORMAL STROKE EXAM FINDINGS:**

- Slurred speech.
- Severe left facial palsy.
- Unable to move left arm against gravity.
- Unable to move left leg against gravity.
- Right gaze deviation.
- Unable to identify left arm.
- Unable to clap and does not recognize impairment.

#### **EXPECTED OUTCOME:**

- CPSS positive, suggesting possible ischemic event.
- EMS should transport to the nearest primary stroke center; onset < 3 hours.
- mRACE of 9, suggestive of a large vessel occlusion.
- mRACE exam should be completed en route.

Item	Exam	Abnormal	Points	mRACE
1. Speech	<p><b>Repeat: “The sky is blue in Pittsburgh.”</b></p> <p><b>Normal</b> (speech with correct words and no slurring)</p> <p><b>Abnormal</b> (slurs words, says wrong words, or unable to speak)</p>	<u>Yes</u> / No		
2. Facial Palsy	<p><b>Ask patient to smile / show teeth</b></p> <p><b>Absent</b> (symmetric movement)</p> <p><b>Mild</b> facial palsy (slightly asymmetrical)</p> <p><b>Moderate-severe</b> facial palsy (completely asymmetrical)</p>	<u>Yes</u> / No	0 Points 1 Point 2 Points	2
3. Arm Motor Function	<p><b>Ask patient to raise both arms, palms up, for 10 secs</b></p> <p><b>No or mild</b> drift of either arm (limb held &gt; 10 secs)</p> <p><b>Moderate</b> drift of either arm (limb held &lt; 10 secs)</p> <p><b>Severe</b> weakness of either arm (no movement against gravity)</p>	<u>Yes</u> / No	0 Points 1 Point 2 Points	2
<b>Presence of Stroke</b>	Cincinnati Prehospital Stroke Score Positive (any yes above):	<u>Yes</u> / No		
4. Leg Motor Function	<p><b>Ask patient to raise each leg for 5 secs</b></p> <p><b>No or mild</b> drift of either leg (limb held &gt; 5 secs)</p> <p><b>Moderate</b> drift of either leg (limb held &lt; 5 secs)</p> <p><b>Severe</b> weakness of either leg (no movement against gravity)</p>		0 Points 1 Point 2 Points	2
5. Head and Gaze Deviation	<p><b>Ask patient to move head and eyes horizontally and assess gaze deviation</b></p> <p><b>Absent</b> (eye movements to both sides possible and no head deviation)</p> <p><b>Present</b> (eyes and head deviation to one side)</p>		0 Points 1 Point	1
6. Commands	<p><b>Ask the patient to “close your eyes” and “make a fist”</b></p> <p><b>Normal</b> (performs both tasks)</p> <p><b>Moderate</b> (performs one task)</p> <p><b>Severe</b> (performs no tasks)</p>		0 Points 1 Point 2 Points	0
7. Agnosia	<p><b>Ask patient while showing the affected arm: “Whose arm is this?”</b></p> <p><b>Ask patient to lift both arms and clap (evaluate if patient recognizes functional impairment)</b></p> <p><b>Normal</b> (recognizes his/her arm and the impairment)</p> <p><b>Moderate</b> (does not recognize his/her arm or the impairment)</p> <p><b>Severe</b> (does not recognize his/her arm nor the impairment)</p>		0 Points 1 Point 2 Points	2
<b>Stroke Severity</b>	Serum Glucose:	mRACE Score:		9