Title: **ISCHEMIC STROKE MANAGEMENT - PROTOCOL & GUIDELINES INCLUDING TISSUE PLASMINOGEN ACTIVATOR (tPA), OR ACTIVASE (ALTEPLASE) ADMINISTRATION**

Responsibility: RN

Equipment:
1. Monitoring equipment: ECG, BP, Pulse oximetry, Temperature probe
2. Supportive equipment as needed: oxygen, pulse-ox or ETCO2 monitoring devices
3. tPA from pharmacy
4. IV tubing

Purpose: To outline the nursing management of patients with a new diagnosis of stroke, rule out stroke, or TIA (Transient Ischemic Attack).

Prerequisite:
1. A physician’s order is required to execute all “**” items
2. Physiologic principles related to Stroke, and how to assess for a Stroke
3. How to notify the Stroke Team pager: 419-218-3399 OR call the Operator to page the Stroke Team.
4. Care of the patient with a stroke; tPA, and non-tPA care. Technical aspects of monitoring a stroke patient before, during, and after administering tPA dosing. Vital Signs (VS), including Heart Rate (HR), Respiration/minute (R), temperature (T), and Blood Pressure (BP). Systolic Blood Pressure (SBP), Diastolic Blood Pressure (DBP).

Supportive Data

Stroke is the third leading cause of death in the US, the leading cause of brain injury in adults, and the leading cause of major disability. The effectiveness of organized stroke care in reducing mortality, institutionalization, and dependency in activities of daily living has been clearly shown. Organized stroke care is intended to facilitate the use of our best resources to minimize or prevent, when possible, the complications of a stroke through rapid identification of symptoms, appropriate interventions, and patient education.

There are 4 classes of stroke. Two (2) are caused by clots (ischemic stroke) and 2 by hemorrhage (hemorrhagic stroke):

**Ischemic strokes** are caused by blood clots, such as:
1. Cerebral thrombosis
2. Cerebral embolism

**Hemorrhagic strokes** are caused by ruptured blood vessels, such as:
1. Intracerebral hemorrhage
2. Subarachnoid hemorrhage

**Note:** 70-80% of all strokes are ischemic; ischemic strokes are the only type that may receive fibrinolytics (tPA) if the patient meets the criteria.

The National Institute of Health Stroke Scale (NIHSS), or the modified NIHSS (mNIHSS), is considered the standard, routine in-hospital measure of neurologic function for acute Stroke patients, and it is incorporated into Attachment A: STROKE TEAM Worksheet for suspected Stroke or TIA.

The initial plan for the management of a patient with acute stroke is to control vital signs, prevent deterioration of the patient, and prevent medical complications of the stroke that worsen the patient’s outcome. Medical complications include respiratory failure, hypertension, hyperglycemia, cerebral edema, and fever. The nurse caring for the patient will assist with coordinate the activities of the interdisciplinary team.
IDENTIFICATION OF STROKE SYMPTOMS

**Procedure**

**Point of Emphasis**

**I. ASSESSMENT/SUPPORT:**

A. If Stroke symptoms are present, notify the Stroke Team Pager by:

- **PAGE #419-218-3399**
- OR
- **Call the Operator to page the Stroke Team**

1. Support symptoms as needed (Airway, clear secretions, etc).
2. Initiate Telemetry
   - All patients admitted with a diagnosis of acute stroke, R/O stroke, TIA will be placed on the remote monitor for 24 hours. If no order has been received within 24 hours, consult the physician to obtain a “continue” or “discontinue” monitoring order.
3. Monitor VS and pulse oximetry, continue to monitor every 2 hours for the first 8 hours, then every 4 hours.
4. Prepare for Computed Tomography (CT), and/or transfer to ICU or Step-down unit. Goals for Stroke Patients:
   - Order to CT done (<25 minutes)
   - Order to CT interpretation (<45 minutes)
   - Order to lab results (<45 minutes)
   - rtPA administered to eligible patients (<60 minutes – from arrival)
5. Notify family, and educate as needed.
6. Verify orders with Neurology, and Send orders to pharmacy. If ordered, prepare for tPA administration, and refer to section III.

B. Ensure baseline preliminary neurological exam is completed/documented,

1. A complete NIHSS or mNIHSS, and CT must be completed. The Stroke Scale assessment is completed by the Stroke team, or certified personnel (Attachment B).
2. Initiate the Neuro Watch Sheet (Form NU101). This can be completed by a nurse, and used for documenting ongoing monitoring of the patient.

**REMEMBER:**

- **Symptoms of stroke include:** sudden numbness or weakness of the face, arm or leg; sudden confusion, trouble speaking or understanding; sudden trouble seeing in one or both eyes; sudden trouble walking, loss of balance or coordination and dizziness; and sudden severe headache.

  - **ACT F.A.S.T.**
    - **FACE**
      - Ask the person to smile.
      - Does one side of the face droop?
    - **ARMS**
      - Ask the person to raise both arms.
      - Does one arm drift downward?
    - **SPEECH**
      - Ask the person to repeat a simple sentence.
      - Are the words slurred? Can he/she repeat the sentence correctly?
    - **TIME**
      - If a person shows any of these symptoms, time is important.
      - Call for the stroke team. Brain cells are dying.

- Document education utilizing EMR or form NU117.
- If tPA is to be administered in a non-ICU or step-down unit area, notify the Nursing Office for RN coverage.
- Make sure you are aware of the results once test are completed for baseline determination, and hand-off reporting.
- The NIHSS evaluation is incorporated on the Neuro Watch Sheet.
- Check orders for additional labs which may need to be drawn:
  - CBC, fasting lipid profile, platelets, venous or arterial thrombotic risk profiles, or HgbA1c.
- Intake and output should be closely monitored and recorded.
### Procedure

3. Complete bedrest, elevate head of bed 30°, and reposition every 2 hours, unless otherwise ordered.
4. Obtain glucose checked by finger stick.
5. Ensure at least one IV is in place, and functional.
6. Implement NPO status, including medications until screened.
7. Complete Nurse Bedside Swallow Assessment Tool before giving oral medications or diet (within first 24 hours), and place it in the progress section of the chart, or charted in the EMR.
8. Be prepared to adjust IV flow rate if decrease in BP occurs.* (physician order required).

### Point of Emphasis

- Recommended by the American Heart Association (AHA)/American Stroke Association and current research findings.
- Blood pressure recommendations for patients receiving fibrinolytics is listed in Section III
- If hypertension is treated, some medications used may be nicardipine HCl (Cardene), labetalol HCl (Labetalol), or Nitroglycerine (Nitro-Bid) paste.

### Special considerations for BP:

1. Hypertension is not routinely treated in patients with acute Ischemic Stroke
2. Treatment for hypertension is recommended for fibrinolytic candidates, and patients with specific medical indications such as AMI, aortic dissection, severe left ventricular failure, true hypertensive encephalopathy, and for the following limits: SBP > 220, DBP> 120.
3. Monitor the blood pressure closely if medications are administered because lowering a blood pressure too quickly can actually facilitate or extend a stroke.

### Reportable conditions:

1. Decreases in BP from baseline for the first 3 days after a Stroke or TIA.
2. Neurological changes
3. Headache
5. Pulse ox <94%
6. Seizure activity

- Note/report if neurological changes occur concomitantly with change in BP.
- If cerebral edema (ICP) is present, furosemide (Lasix) or Mannitol may be ordered.

### II. PATIENT CARE

#### A. Day 1:

1. Ensure admission orders/Acute Ischemic Stroke orders are completed, and processed.
2. Range of motion every 4 hours.
3. Continuous Sequential Compression Devices (SCD)
4. Initiate the following as indicated:
   - Fall precautions
   - General skin care protocols due to immobility
5. If no Foley catheter, and no urine output, check for urinary retention with a bladder scan at least once within the first 24 hours.

- PT, OT, speech evaluations, Physical Medicine and Rehabilitation (PM&R) for stroke evaluation and treatment orders.
- Medications for DVT prophylaxis may be started under certain circumstances, if tPA is not given.

“Falls are the number one medical complication after acute stroke” (Weerdesteyn, de Niet, van Duijnhoven, & Geurts, 2008, p. 1196).
6. Administer stool softners, and/or laxatives (*) if needed to prevent impaction.

A. **Day 2:**
   1. Ensure patient is evaluated for speech, OT, PT, and by Social Services & Discharged Planning.
   2. Ordered diagnostic tests are completed.

B. **Day 3:**
   1. Ensure patient is evaluated by PM&R
   2. Patient’s activity will include getting up to the chair and ambulating with assist as appropriate.
   3. Patient is taking oral nutrition, or nutritional needs are being addressed.

C. **By Discharge:**
   1. Patient and caregiver are given stroke education
   2. Patient and caregiver are given smoking cessation information.

**III. tPA Administration**

A. Ensure tPA orders are calculated appropriately/base on patient’s weight. Refer to IIIH.

B. Gather supplies.

C. Perform hand hygiene and apply gloves.

D. **COMPLETE THE FOLLOWING:**
   1. Neurologic assessment
   2. Identify the indications, contraindications, and cautions for the use of tPA, including “stroke mimics” (Attachment B).
   3. Monitor vital signs and neurological assessment before the tPA is administered.

E. Confirm SBP is <185mmHg, and DBP<110 mmHg.

F. Confirm the the patient is prepared for the administration of the drug:
   1. Verify a CT scan is performed and interpreted.
   2. Ensure Inclusion/Exclusion criteria, and NIH

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**Point of Emphasis**

- No ultrasounds on weekend except for emergencies. Physician assistance may be required to make arrangements.
- Information on Stroke Unit or from Stroke RN pager# 419-218-4110.

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**Stroke Mimics:**

- Hypoglycemia
- Migraines
- Seizures/postictal states
- Mass lesions (abscess)
- Encephalopathies/toxic-metabolic conditions
- Functional hemiparesis
- Psychiatric conditions

- **Blood** pressures greater than these increases the RISK OF BLEEDING, during and after tPA is given.
- Options for hypertension management: nicardipine HCl (Cardene), labetalol (Trandate or Normodyne), hydralazine (Apresoline), or enalaprilat maleate (Vasotec).
- Sodium nitroprusside (Nipride) should be avoided. Its use in the presence of cerebral edema may contribute to an increase in Intra-Cranial Pressure (ICP).

Helps to ensure proper safety practices are maintained.
Ischemic Stroke Management - Protocol & Guidelines
Including tissue Plasminogin Activator (tPA),
or Activase (Alteplase) administration
Page 5

**Procedure**

Stroke scale is obtained.
3. Obtain a 12 lead EKG.
5. Have at least 2 IVs, or assist with Central Line placement.
6. Ensure tPA runs by itself, and not with other drugs.
7. Review for necessary lab studies; Chemistries, CBC, Coags, CEIs if not done in past 12-24 hours.

G. Verify patient's identity according to institutional protocol (2 patient identifiers).

H. Verify tPA label dosing to order with a second RN or Physician.

I. Administer tPA as ordered:
   1. 0.9mg/kg--NOT to exceed 90 mg TOTAL dose
   2. Loading dose is 10% of calculated dose, and given IV over 1 minute.
   3. The remaining amount is given over 1 hour (separate line).
   4. Record/document the exact time of bolus and IV administration.
   5. Begin monitoring vital signs every 15 minutes.
   6. Utilize a Special Report Sheet, Neuro Watch Sheet, or in designated EMR area.

J. Discarded supplies, removed gloves, and performed hand hygiene.

K. **After tPA is started,** monitor neurological assessment (per special report sheet, or EMR) and vital signs every 15 minutes X 2 hours, every 30 minutes X 6 hours, and then every hour X 16 hours (total of 24 hours).
   - Call MD if SBP <120 or ≥185, DBP < 60 or >105, temp >99°F
   - Record neurological deterioration and abnormal bleeding and notify MD.
   - Monitor for adverse allergic reaction, and notify the physician.

L. Obtain orders to maintain blood glucose, or Finger Stick Blood Sugar (FSBS) range 100-150(*).

M. Educate patient, and family to notify staff immediately for all neurological changes.

N. Instructed patient to ask for help when changing positions.

**Point of Emphasis**

Helps to ensure proper safety practices are maintained.

- tPA is considered a high-alert medication.
- Pharmacy will premix the medication.
- Run tPA as a primary infusion line.

- Allergic reaction is an infrequent complication of tPA (<1%), and is seen as angioedema (tongue swells).

- Treatment may include all, or part of the following (*):
  - diphenhydramine (Benedryl) 50 mg IV, and ranitidine (Zantac) 50 mg, or famotidine (Pepcid) 20 mg IV.
  - methylprednisolone (Solu-Medrol) 80–100 mg IV if swelling continues.
  - If there is further increase in angioedema, epinephrine 0.1% 0.3 ml subcutaneously or 0.5 mg by nebulizer may be indicated. The patient may require intubation.

- High glucose levels may inhibit oxygen carrying abilities of hemoglobin.

- Risk of stroke extension or bleeding.

- Reduce risk of activity which my case bleeding, or disrupting infusion.
Ischemic Stroke Management - Protocol & Guidelines
Including tissue Plasminogin Activator (tPA),
or Activase (Alteplase) administration
Page 6

### Procedure

<table>
<thead>
<tr>
<th>O. Document the procedure in the patient's record.</th>
</tr>
</thead>
<tbody>
<tr>
<td>P. Avoid all invasive procedures except necessary venous blood draws, or FSBS for 24 hours.</td>
</tr>
<tr>
<td>Q. Monitor the patient for any blood in urine, stool, emesis, or puncture sites.</td>
</tr>
<tr>
<td>R. Institute/maintain orders for aspiration (swallow studies), DVT, UTI, Fall, and Skin breakdown prevention. Obtain orders for bowel regiments, and supportive services, like PT/OT.</td>
</tr>
<tr>
<td>• Refer to Section II, Patient Care above.</td>
</tr>
</tbody>
</table>

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**Written By:** Jayne A. Murnen, RN, BSN, CCRN
Andrea Korsnack, RN, BS, CNRN, CCRC

Approved: 1/28/2011
Reviewed: 12/5/14
Reviewed by Policies & Standards Committee 1/2011

**References:**

**Websites:**
http://www.americanheart.org/presenter.jhtml?identifier=9181
http://www.activase.com/stroke/stroke_scales.jsp?s_cid=0001&s_src=googleppc&gclid=COTN-6H6u6I CFRINDQod9Etw4Q
Ischemic Stroke Management - Protocol & Guidelines
Including tissue Plasminogin Activator (tPA), or Activase (Alteplase) administration

Attachment A: Stroke Team Worksheet for Suspected Stroke or TIA
https://cp.utoledo.edu/portal/forms/ER014.pdf

STROKE TEAM
Worksheet for Suspected Stroke or TIA

Check box to initiate order. Cross through with single line any intervention already completed.

DATE: ___________ TIME: ___________ AM / PM

Presenting symptoms:
__________________________________________________________
__________________________________________________________
__________________________________________________________
__________________________________________________________

Stroke symptom onset:
Date: ___________ Time: ___________ AM / PM
Symptom resolution: □ Yes When? ___________ □ No

NIH Stroke Scale Score: ___________ Time: ___________ (on back)

PRINCIPAL DIAGNOSIS:
□ Ischemic Stroke □ TIA □ ICH □ SAH

ORDERS:
□ STAT Blood Draw (Stroke Panel)
□ Chem 14, PT/PTT, Cardiac Panel, Fibrinogen, CBC (Reviewed within 45 min.)
□ IV 0.9% NaCl @ 75 ml/hr
□ 12 lead EKG
□ Continuous Cardiac Monitor
□ Pulse Ox & O2 by NC if O2 sat <90%
□ BP, P and neuro checks q 15 min x 2hrs (or until tPA complete) then q30 min
□ STAT CT Brain Scan w/O Contrast (Results within 45 min.)
□ Swallow Screen results: Passed □ Failed □
□ CTA of neck and brain
□ Non Contrast MRI w/DWI

ACTIVASE THERAPY CHECKLIST:
(All boxes should be checked if considering tPA)
□ Age > 18 years
□ CT negative for blood or large stroke (> 1/3 of hemisphere)
□ Time from onset < 3 hours
□ Glucose > 50
□ Platelet count > 100,000
□ PT/PTT < 35
□ INR < 1.7
□ No stroke, head trauma or MI within 3 months
□ No seizure with postictal neurological impairment
□ No major surgery within 14 days
□ No Gl/GU bleed within 21 days
□ No arterial puncture at noncompressive site within 7 days
□ No prior history of Intracranial Hemorrhage (ICH)
□ Persistent deficit
□ No lumbar puncture within last 7 days
□ No history of increased intracranial pressure
□ SBP ≤ 185, DBP ≤ 110
□ No evidence of active bleeding or acute trauma (fracture)
□ No evidence of ICH
□ No suspicion of SAH

ACTIVASE THERAPY CHECKLIST for 3-4.5 hours
(All boxes should be checked if considering tPA)
□ Age < 80
□ Not currently on oral anticoagulation (regardless of INR)
□ NIHSS ≤ 25
□ No previous history of stroke or diabetes

If Eligible for tPA

□ Check BP every 15 min
If systolic >185 OR diastolic >110
□ Labetalol 10 - 20 mg IV over 1 - 2 min, may repeat once OR
□ Nicardipine 5 mg/h IV infusion as initial dose and titrate to desired effect by increasing 2.5 mg/h every 15 min to max of 15 mg/h

Aim for a 10% - 15% reduction in blood pressure

If blood pressure remains >185/110 do not administer tPA

□ Second IV Access: Saline lock with normal saline flush in arm opposite arm
□ Place foley catheter
□ Activase: 0.9 mg/kg (not to exceed 90 mg total dose)
□ 10% bolus over 1 minute with the rest infused over 60 minutes

Weight ___________ kg Total dose ___________ mg

Time infusion started _______ and Pulse _______ and BP _______

If not eligible for tPA

□ Check BP every 15 min
If systolic ≤ 220 OR diastolic ≤ 120, observe unless other end organ involvement

If systolic > 220 OR diastolic 121 - 140
□ Labetalol 10 - 20 mg IV over 1 - 2 min
□ May repeat or double every 10 min (max dose 300 mg)

OR
□ Nicardipine 5 mg/h IV infusion initially, then titrate to desired effect by increasing by 2.5 mg/h every 15 min, up to a max of 15 mg/h

Aim for a 10% - 15% reduction in blood pressure

If diastolic > 140
□ Nitroprusside 0.5 mcg/kg/min IV infusion as initial rate titrating to effect in increments of 0.5 mcg/kg/min, up to a max of 2 mcg/kg/min, with continuous BP monitoring

Aim for a 10% - 15% reduction in blood pressure

If tPA not given, cite reasons:

Time: □ > 3 hours with extended time inclusion
□ > 4.6 hours
□ Rapidly improving deficit
□ Uncontrolled hypertension

OTHER
ADMIT: □ Stroke Unit □ MICU

Attending: ___________ MD □ DO
Printed Name: ____________________________

Resident: ___________ MD □ DO
Printed Name: ____________________________

Printed: ____________________________

Page 1 of 2

ER014
### Stroke Team Worksheet for Suspected Stroke or TIA

<table>
<thead>
<tr>
<th>NIH Stroke Scale Item</th>
<th>Function</th>
<th>Scores</th>
<th>Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Level of Consciousness</td>
<td>Alert</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>1. LOC Questions</td>
<td>One correct</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1. LOC Commands</td>
<td>Obey both correctly</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>2. Best Gaze</td>
<td>Normal</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>2. Visual</td>
<td>Normal</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>3. Facial Palsy</td>
<td>Normal</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>4. Motor Arm Left</td>
<td>No drift, drift, some effort against gravity, no movement</td>
<td>0, 1, 2, 3</td>
<td></td>
</tr>
<tr>
<td>4. Motor Arm Right</td>
<td>No drift, drift, some effort against gravity, no movement</td>
<td>0, 1, 2, 3</td>
<td></td>
</tr>
<tr>
<td>4. Motor Leg Left</td>
<td>No drift, drift</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>4. Motor Leg Right</td>
<td>No drift, drift</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>5. Limb Ataxia</td>
<td>Absent or present in upper or lower</td>
<td>0, 1</td>
<td></td>
</tr>
<tr>
<td>6. Sensory</td>
<td>Normal, partial loss, denial loss</td>
<td>0, 1, 2</td>
<td></td>
</tr>
<tr>
<td>7. Best Language</td>
<td>No aphasia, mild-moderate aphasia, severe, mute</td>
<td>1, 2, 3</td>
<td></td>
</tr>
<tr>
<td>8. Dysarthrias</td>
<td>Normal articulation, mild-moderate slurring, severe, nearly unintelligible or worse</td>
<td>0, 1, 2</td>
<td></td>
</tr>
<tr>
<td>9. Extinction and Inattention</td>
<td>No neglect, partial neglect, profound neglect</td>
<td>0, 1, 2</td>
<td></td>
</tr>
</tbody>
</table>

**NIH Stroke Scale TOTAL:** [CR014] 2 of 2
## Attachment B: Neuro Watch Sheet

**NEUROLOGICAL OBSERVATION FORM**

<table>
<thead>
<tr>
<th>DATE:</th>
<th>Shift</th>
<th>Signatures</th>
<th>Shift</th>
<th>Signatures</th>
</tr>
</thead>
</table>

### GLASGOW COMA SCALE

<table>
<thead>
<tr>
<th>GLASGOW COMA SCALE</th>
<th>A.M.</th>
<th>P.M.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spontaneously</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>To speech</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>To pain</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

### Best Eye Opening Response

<table>
<thead>
<tr>
<th>Best Eye Opening Response</th>
<th>A.M.</th>
<th>P.M.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes to verbal commands</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>No purposeful movement</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Flexion-abnormal</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Extension-abnormal</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

### Best Motor Response

<table>
<thead>
<tr>
<th>Best Motor Response</th>
<th>A.M.</th>
<th>P.M.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oriented x 3</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Conversation-confused</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Speech-inappropriate</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Sounds-incomprehensible</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

### Best Verbal Response

<table>
<thead>
<tr>
<th>Best Verbal Response</th>
<th>A.M.</th>
<th>P.M.</th>
</tr>
</thead>
<tbody>
<tr>
<td>S = Sedated A = Aphasic</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

### GCS TOTAL SCORE

<table>
<thead>
<tr>
<th>GCS</th>
<th>TOTAL SCORE</th>
</tr>
</thead>
</table>

### Pupils

<table>
<thead>
<tr>
<th>Pupils</th>
<th>Addressograph</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>B - Brisk</td>
</tr>
<tr>
<td>Reaction*</td>
<td>S - Sluggish</td>
</tr>
<tr>
<td>Size</td>
<td>N - None</td>
</tr>
<tr>
<td>Reaction*</td>
<td>C - Closed</td>
</tr>
</tbody>
</table>

### Limb Movements

<table>
<thead>
<tr>
<th>Limb Movements</th>
<th>RU</th>
<th>RL</th>
<th>LU</th>
<th>LL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade limb movement spontaneous or to command</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>For stroke patients use the NIHSS Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Limb Movement Scale (for all other patients)

<table>
<thead>
<tr>
<th>NIHSS</th>
<th>Total paralytic movement</th>
<th>No movement</th>
<th>1/5-palpable or visible movement</th>
<th>2/5-active movement, gravity eliminated</th>
<th>3/5-active movement, against gravity</th>
<th>4/5-active movement, against some resistance</th>
<th>5/5-active movement, against full resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>A = No Drift</td>
<td>B = Drift</td>
<td>C = Effort against gravity, remains off bed</td>
<td>D = No effort against gravity, limbs falls</td>
<td>E = No movement</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Resp

<table>
<thead>
<tr>
<th>Resp</th>
<th>Rate</th>
<th>Patient</th>
<th>Ventilator</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Respiratory Pattern

<table>
<thead>
<tr>
<th>Respiratory Pattern</th>
<th>R = Regular</th>
<th>CS = Cheyne-Stokes</th>
<th>CN = Central Neurogenic Hyperventilation</th>
<th>AP = Apnea</th>
</tr>
</thead>
</table>

*Reaction*: Reaction of pupils to light

*NIHSS (Use only for CVA patients):* A = No Drift, B = Drift but remains off bed, C = Effort against gravity, remains off bed, D = No effort against gravity, limbs falls, E = No movement.
Attachment C: Nursing Swallow Screen (Form E003)

Complete screening before initiation of PO intake including medications.

Prior to starting the screening –
- Have patient sitting in 90 degree upright position
- Have oral suction available

If the answer is "NO" to any of the following, "STOP" the screening procedure and notify the physician

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Patient is alert and can follow simple commands</td>
<td>□</td>
</tr>
<tr>
<td>2.</td>
<td>Patient has clear strong voice and can vocalize upon request.</td>
<td>□</td>
</tr>
<tr>
<td>3.</td>
<td>Patient’s speech is not slurred or garbled.</td>
<td>□</td>
</tr>
<tr>
<td>4.</td>
<td>Patient has voluntary cough (have patient cough 2 times).</td>
<td>□</td>
</tr>
<tr>
<td>5.</td>
<td>Patient able to swallow own secretions (no drooling).</td>
<td>□</td>
</tr>
<tr>
<td>6.</td>
<td>Patient able to swallow a teaspoon of water, without throat clearing, choking, gurgling, coughing, dribbling or drooling.</td>
<td>□</td>
</tr>
<tr>
<td>7.</td>
<td>Patient able to swallow 60 ml of water (4 Tablespoons), without throat clearing, choking, gurgling, coughing, dribbling or drooling (do not use straw).</td>
<td>□</td>
</tr>
<tr>
<td>8.</td>
<td>Patient able to swallow liquid from a straw without throat clearing, choking, gurgling, coughing, dribbling or drooling.</td>
<td>□</td>
</tr>
<tr>
<td>9.</td>
<td>Patient without coughing or throat clearing for several minutes after screening.</td>
<td>□</td>
</tr>
</tbody>
</table>

If any of the responses are "no" and the screen is stopped, then he/she should remain NPO until further dysphagia evaluation by speech therapy is completed. Speech therapy requires a physician order.

If answers to all screening questions are "YES", Contact the physician with the result, and for diet and PO medication orders.

Name: ____________________________ Signature ____________________________ Date: ______ Time: ______

Print Name: ____________________________