Neurological Assessment of Acute Stroke

Stroke Best Practice Workshop
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Learner Objectives

Upon completion of this presentation, participants will be able to:

- **Describe the components of a neurological assessment**
- **Assess for Pronator Drift**
- **Describe visual fields**
- **Complete a CNS assessment**

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"The nurse is often the first to see changes and early warning signs that may predict a neurological crisis.

Familiarity with a stroke nurse assessment promotes the nurse's ability to gather accurate patient information, identify stroke emergencies and promote timely referrals to appropriate specialists and time-dependent investigations"

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A stroke assessment includes*:*

1. ABC

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A B C

Begin a general assessment the moment you first encounter the patient.

Take note any signs of acute distress that are present and assess ABC (airway-breathing-circulation).

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A stroke assessment includes*:*

1. ABC
2. Health History

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Health History

The purpose of the health history is to collect subjective data and combine it with objective data from the physical examination.

The combined data base is can used to make a judgment or diagnosis about the health status of the patient.

Health history will help determine the necessary interventions

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A stroke assessment includes*:*

1. ABC
2. Health History
3. Vital Signs

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Vital Signs

Temperature, heart rate, blood pressure, respiration rate, pain assessment and oxygen saturation are all measured/monitored according to *Standards of Care* for the unit.

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A stroke assessment includes*:*

1. ABC
2. Health History
3. Vital Signs
4. Pupils and Visual fields

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Pupils

Record size of the pupils in mm using the pupil scale prior to the application of the light stimulus. Indicate the reaction of pupils as either:

+ = *Brisk Reaction*

S = *Sluggish*

- = *No Reaction*

- **If the eyes are closed due to swelling, record "C"**

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Visual fields

Visual fields are tested using finger counting or movement to confrontation and evaluate upper and lower quadrants separately.

Each eye is evaluated independently, and 4 quadrants are tested with each eye.

You may ask the patient to tell you when they see the moving fingers or the number of fingers they see.

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A stroke assessment includes:

1. ABC
2. Health History
3. Vital Signs
4. Pupils and Visual fields
5. Pronator Drift

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To assess for pronator drift, explain to your patient what they needs to do.

Ask them to stand or sit, close their eyes, then to stretch out both arms with the palms facing up.

Your patient should maintain this position for 20 to 30 seconds.

Observe both arms. If your patient's motor pathway is intact, the arms should remain in this position equally.

Document your findings.

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A stroke assessment includes:

1. ABC
2. Health History
3. Vital Signs
4. Pupils and Visual fields
5. Pronator Drift
6. Neuro Assessment

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Why do a Neuro assessment?

The use of standardized and validated stroke assessment tools in both the acute and rehabilitation settings enables sound decision making and care planning.

Provides a standardized method to rapidly identify “emerging” stroke complications.

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Canadian Neurological Scale (CNS):

The Canadian Neurological Scale is an assessment tool for evaluating and monitoring the neurological status of acute stoke patients.

It has been found to be brief, valid and reliable, and can be administered in approximately 5 minutes.

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Canadian Neurological Scale

Measures deficits due to stroke

Allows earlier detection of deterioration

Patient needs to be able to participate

Glasgow Coma Scale (GCS) used with stuporous or comatose patients

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The CNS assesses:

- level of consciousness
- orientation
- speech
- motor function of the face, arm and legs

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orientation

Alert: Patient is awake and alert and has a normal level of consciousness

Drowsy: Patient rouses when stimulated verbally and remains awake and alert for short periods but tends to doze

Note: stuporous or comatose patients are excluded

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Speech

Speech may be slurred (dysarthria) but must be intelligible to be scored as normal.

The speech section is looking strictly at the patient's abilities to produce speech.

Speech

Receptive

- **Ability to follow simple requests**
- **If the patient does not respond appropriately to all questions they have a receptive (comprehension) deficit.**

Expressive

Patient can understand verbal speech, but is unable to say the word, or cannot think of the right word.

- Pay close attention to word pronunciation.

- **With speech that is totally or partially unintelligible an expressive deficit exists.**

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Motor Function: Section A1 or A2

If patient is able to follow directions and cooperate, complete section Motor Function A1 – No Receptive Deficit.

If patient is scored as a receptive deficit, complete section Motor Function A2 – Receptive Deficit.

Complete one section only, i.e. A1 or A2 not both.

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Facial Droop

Ask the patient to smile/show teeth and note weakness in mouth or nasal/labial folds

Proximal Arm

Assess both sides. Document affected side

Ask to lift arm 45-90 degrees. Apply resistance between shoulder and elbow

Distal Arm

Assess both sides. Document affected side

Ask to flex wrist backwards, apply resistance between wrist and knuckles

Proximal Leg

Ask to flex hip to 90 degrees, apply pressure to mid thigh

*If EVT: Need to keep puncture site straight for 6 hours therefore document “unable to test”

Distal Leg

Assess both sides. Document affected side

Ask to dorsiflex foot and apply resistance to top of foot

*After EVT: Do not perform on limb where puncture site is for 6 hours post sheath removal

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Scoring the CNS

Score mentation section A for all patients

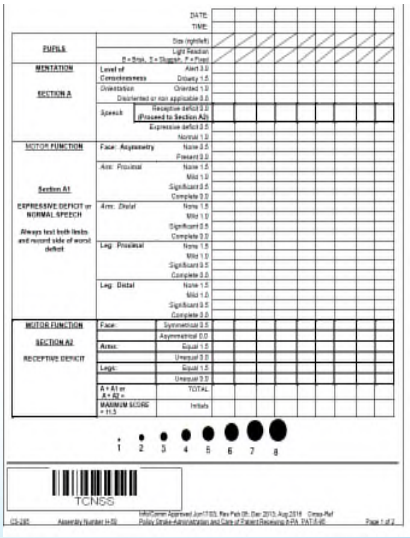
Score section A1 (white) OR section A2 (**Bold**)

DO NOT score both A1 and A2

Add scores from section A + A1 OR A + A2

Maximum score or normal function = 11.5

If change of 1 or more in total score: call neurology



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Glascow Coma Scale (GCS):

- The Glasgow Coma Scale is a standardized and valid neurological assessment tool for assessing level of consciousness or coma.
- It is a neurological assessment that is widely used by the neurological and neurosurgery community and is found in the curriculum of most undergraduate nursing programs.
- It lacks specificity and applicability when applied to stroke patients as most do not have impaired LOC.

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Early identification of "emerging" stroke complications may:

- lead to early intervention
- limit the extension of neurological damage
- impact patient outcomes
- provide a better patient prognosis

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What are you looking for?

Symptoms of Change in Neurological Status

Restlessness	Combativeness
Confusion	Severe headache
Lethargy	Decline in motor strength
■ Decrease in coordination	Change in balance
■ Change in speech/language	

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In summary,

- **a nursing assessment of the post-stroke patient should always include monitoring for the common post-stroke complications:**

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Other Assessments

There are many more assessments that are relevant to the stroke inpatient. Some of these assessments are administered by other members of the team.

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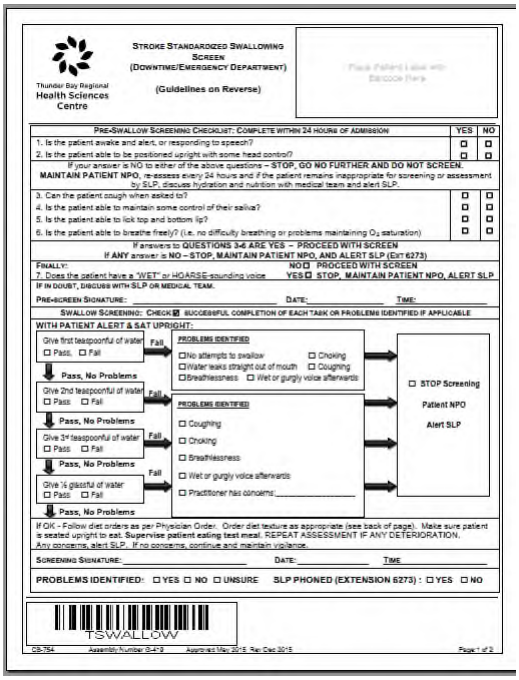
Stroke Standardized Swallowing Screen

Completed in ED, ICU and Regional Stroke Unit



STROKE STANDARDIZED SWALLOWING SCREEN
(DOWNTIME/EMERGENCY DEPARTMENT)

(Guidelines on Reverse)

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PRE-SWALLOW SCREENING CHECKLIST: COMPLETE WITHIN 24 HOURS OF ADMISSION	YES	NO
1. Is the patient awake and alert, or responding to speech?	☐	☐
2. Is the patient able to be positioned upright with some head control?	☐	☐
If your answer is NO to either of the above questions – STOP, GO NO FURTHER AND DO NOT SCREEN. MAINTAIN PATIENT NPO, re-assess every 24 hours and if the patient remains inappropriate for screening or assessment by SLP, discuss hydration and nutrition with medical team and alert SLP.		
3. Can the patient cough when asked to?	☐	☐
4. Is the patient able to maintain some control of their saliva?	☐	☐
5. Is the patient able to lick top and bottom lip?	☐	☐
6. Is the patient able to breathe freely? (i.e. no difficulty breathing or problems maintaining O_2 saturation)	☐	☐

If answers to QUESTIONS 3-6 ARE YES – PROCEED WITH SCREEN
If ANY answer is NO – STOP, MAINTAIN PATIENT NPO, AND ALERT SLP (Ext 6273)

FINALLY:
7. Does the patient have a "WET" or HOARSE-sounding voice
NO ☐ PROCEED WITH SCREEN
YES ☐ STOP, MAINTAIN PATIENT NPO, ALERT SLP
IF IN DOUBT, DISCUSS WITH SLP OR MEDICAL TEAM.

PRE-SCREEN SIGNATURE: _____ DATE: _____ TIME: _____

SWALLOW SCREENING: CHECK ☑ SUCCESSFUL COMPLETION OF EACH TASK OR PROBLEMS IDENTIFIED IF APPLICABLE
WITH PATIENT ALERT & SAT UPRIGHT:

Give first teaspoonful of water ☐ Pass ☐ Fail → Fail → PROBLEMS IDENTIFIED ☐ No attempts to swallow ☐ Choking ☐ Water leaks straight out of mouth ☐ Coughing ☐ Breathlessness ☐ Wet or gurgly voice afterwards

Pass, No Problems

Give 2nd teaspoonful of water ☐ Pass ☐ Fail → Fail → PROBLEMS IDENTIFIED ☐ Coughing ☐ Choking ☐ Breathlessness ☐ Wet or gurgly voice afterwards ☐ Practitioner has concerns: _____

Pass, No Problems

Give 3rd teaspoonful of water ☐ Pass ☐ Fail → Fail

Pass, No Problems

Give ½ glassful of water ☐ Pass ☐ Fail → Fail

Pass, No Problems

→ ☐ STOP Screening Patient NPO Alert SLP

IF OK - Follow diet order/s as per Physician Order. Order diet texture as appropriate (see back of page). Make sure patient is seated upright to eat. Supervise patient eating test meal. REPEAT ASSESSMENT IF ANY DETERIORATION. Any concerns, alert SLP. If no concerns, continue and maintain vigilance.

SCREENING SIGNATURE: _____ DATE: _____ TIME: _____

PROBLEMS IDENTIFIED: ☐ YES ☐ NO ☐ UNSURE SLP PHONED (EXTENSION 6273) : ☐ YES ☐ NO

TSWALLOW

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- AlphaFIM® (to assess function and disability in the acute care setting)
- Pain (Visual Analog Scale)
- Skin Breakdown (Braden Risk Assessment)
- Balance (Berg Balance Scale)
- Cognition (Mini Mental; MoCA)
- Depression (PQH9)
- Morris Fall Scale

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Take Home Message

- It is important to complete a neurological assessment in a timely manner.
- Provide a concise history

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- Consult with your Nurse Educator and/or Clinical Stroke Nurse to learn more.

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Thank You!

Please feel free to contact me

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