

GRAPH TOTAL SCORE OF CANADIAN NEUROLOGIC SCALE STROKE ASSESSMENT SYSTEM

Date:	Time->							
	11.5							
	11							
	10.5							
	10							
	9.5							
	9							
	8.5							
	8							
	7.5							
	7							
	6.5							
	6							
	5.5							
	5							
	4.5							
	4							
	3.5							
	3							
	2.5							
	2							
	1.5							
	Initials ->							

** Plot total points from calculated score **directly on the vertical line** that corresponds with the total score for each time tested. Draw a line to connect all points. This allows for early recognition of deterioration or improvement in patient's condition.

Effective Use of the Stroke Assessment System (SAS)

SAS is only used for the stroke patient who is either alert or drowsy.

NOTE: Use the Glasgow Coma Scale for patients who are Stuporous (responds to loud stimuli but does not become alert) or Comatose (responds to deep pain only).

Section: Mentation

(A) *Level of Consciousness*

- i) Alert - Normal Consciousness
- ii) Drowsy - Wakens when stimulated verbally but tends to doze off to sleep.

(B) *Orientation*

- i) Oriented - To both place and time. Example: hospital or city plus month and year. If it is within first few days of a new month, the previous month is acceptable. Speech can be mispronounced or slurred, but intelligible.
- ii) Disoriented or Non Applicable - If patient can not answer place and time questions. Example: doesn't know the answer, partial answer or cannot express answer in words or intelligible speech.

(C) *Speech* - Testing for speech deficits.

- i) Normal - Answers all questions and commands. Can be slurred but intelligible. Proceed to A₁.
- ii) Expressive - Show patient 3 objects: pencil, key and watch. Ask the patient to name all 3 objects. If patient makes one or more errors and/or mispronounces words (slurred speech) or non intelligible words (severe dysarthria) record as expressive deficit and proceed to A₁. If the patient names all three objects, ask the patient "what do you do with a key?...a watch?...and a pencil? If the patient answers all three, then they are normal speech. If they answer only 2 or less, then they are expressive speech.
- iii) Receptive - Ask patient to follow three commands: Close your eyes, point to the ceiling, and wiggle toes. (Do not mimic commands.) If patient follows all three, then proceed to expressive deficit testing. If unable to obey all 3 commands, score receptive deficit and proceed to section A₂.

Section: A₁ Weakness - No Comprehension Deficit (Expressive Deficit)

NOTE: When evaluating strength and range of motion in limbs, submit both limbs to same testing. "R" or "L" identifies side with weakness. Only mark for the side with the greatest deficit or variation.

(A) **Face** - None: Ask the patient to show their teeth and grin. Is it symmetrical (even)?

Present: Ask the patient to show their teeth and grin. Is it asymmetrical (uneven)?

(B) **Arm** - Proximal: (Test in sitting position if possible.) Apply resistance at midpoint between shoulder and elbow, and ask patient to elevate arms to 45 - 90 degrees. Monitor for weakness.

Arm - Distal: (Test in sitting or lying position.) Patient makes fists and elevates arms, with extended wrists. Check for full range of motion in both wrists, then proceed to apply resistance separately to both fists while stabilizing the patient's arm firmly.

Section A, Weakness (Continued)

(C) Leg: (Test patient lying in bed)

Proximal: i) Hip Flexion - Have patient flex thighs toward trunk with knees flexed at 90 degrees. Apply resistance, one thigh at a time, to test for weakness.

Distal: ii) Dorsi Flexion of foot - Have patient point toes and foot upwards. Apply resistance to one foot at a time, to test for weakness.

Grading level of Weakness

- i) None - No detectable weakness
- ii) Mild - Normal range of motion against gravity but succumbs to resistance either partially or totally.
- iii) Significant - Cannot completely overcome gravity in range of motion (only partial movement)
- iv) Total - Absence of motion or only muscle contraction without movement.

Section A₂ Motor Response - Comprehension Defect (Receptive Deficit)

(A) **Face** - Symmetrical: Ask the patient to show their teeth and grin. Is it symmetrical (even)?

- Asymmetrical: Ask the patient to show their teeth and grin. Is it asymmetrical (uneven)?
Note side.

(B) **Arm** - Place the arms outstretched at 90 degrees - one limb at a time. Note ability to maintain a fixed posture for 3 - 5 seconds.

(C) **Legs** - Flex thighs with knees flexed at 90 degrees, one limb at a time. Note ability to maintain a fixed posture for 3 - 5 seconds.

If patient is unable to cooperate, compare motor response to a noxious stimulus (e.g. pressure on fingernail, toenail). Facial response (grimacing) to pain is tested by applying pressure to the sternum.

Grading Level of Motor Response:

i) Equal - Patient can maintain the fixed posture equally in both limbs for a few seconds or withdraws equally on both sides to pain.

ii) Unequal - Patient cannot maintain fixed position equally on either side or unequal withdrawal to pain. Note side.