

## The European Stroke Scale

### Overview :

The European Stroke Scale can be used to assess a patient who has recently had a stroke involving the distribution of a middle cerebral artery. This can be used to measure therapeutic efficacy and to match patients for comparison.

Parameters:

- (1) level of consciousness
- (2) comprehension: The patient is asked to follow these commands: (a) stick out tongue, (b) put a finger from the (unaffected) side on the nose, (c) close the eyelids. The examiner must not demonstrate the action.
- (3) speech: The examiner makes general conversation with the patient.
- (4) visual field: The examiner stands at arm's length and compares the patient's field of vision by advancing a moving finger from the periphery inwards. The patient is asked to fixate on the examiner's pupil. The test is done first with one eye open and the other closed, then the opposite.
- (5) gaze: The examiner steadies the patient's head and asks the patient to follow the examiner's finger. The examiner observes the resting eye position and subsequently the full range of movements by moving the finger from the left to the right, then vice versa.
- (6) facial movement: The patient's face is examined while talking and smiling, with any asymmetries noted. Only the muscles in the lower half of the face are assessed.
- (7) arm in outstretched position: The patient is asked to close the eyes. The patient's arms are actively lifted into a 45° position relative to the horizontal plane, with both hands in mid position facing each other. The patient is asked to maintain this position for 5 seconds after the examiner withdraws support. Only the affected side is evaluated.
- (8) arm raising: The patient's arm is rested next to the leg with the hand in mid-position. The patient is asked to raise the arm outstretched to 90° (vertical).
- (9) extension of wrist: The patient is tested with the forearm supported. The hand is unsupported but relaxed in pronation. The patient is asked to extend the hand.
- (10) fingers: The patient is asked to form a pinch grip with the thumb and forefinger and to resist a weak pull. The examiner assesses the strength of the pinch grip by pulling on the pinched fingers using one finger.
- (11) leg maintained in position: The examiner actively lifts the patient's affected leg into position, with the thigh perpendicular to the bed and the lower leg parallel to the bed. The patient is asked to close the eyes and to maintain the leg in position for 5 seconds without support.
- (12) leg flexing: The patient is supine with the leg outstretched. The patient is asked to flex the hip and knee.
- (13) dorsiflexion of foot: The patient's leg is outstretched, with the patient asked to dorsiflex the foot.
- (14) gait

Parameter	Finding	Points
level of consciousness	alert, keenly responsive	10
	drowsy but can be aroused by minor stimulation to obey, answer or respond	8

	requires repeated stimulation to attend, or is lethargic or obtunded, requiring strong or painful stimulation to make movements	6
	cannot be roused by any stimulation, does react purposefully to painful stimuli	4
	cannot be roused by any stimulation, does react with decerebration to painful stimuli	2
	cannot be roused by any stimulation, does not react to painful stimuli	0
comprehension	patient performs 3 commands	8
	patient performs 1 or 2 commands	4
	patient does not perform any command	0
speech	normal speech	8
	slight word-finding difficulty, conversation is possible	6
	severe word-finding difficulties, conversation is difficult	4
	only yes or no	2
	mute	0
visual field	normal	8
	deficit	0
gaze	normal	8
	median eye position, deviation to one side impossible	4
	lateral eye position, return to midline possible	2
	lateral eye position, return to midline impossible	0
facial movement	normal	8
	paresis	4
	paralysis	0
arm (ability to maintain outstretched position)	arm maintains position for 5 seconds	4
	arm maintains position for 5 seconds but affected hand pronates	3
	arm drifts before 5 seconds pass and maintains lower position	2
	arm can't maintain position but attempts to oppose gravity	1
	arm falls	0
arm (raising)	normal	4
	straight arm, movement not full	3
	flexed arm	2
	trace movements	1
	no movement	0
extension of the wrist	normal (full isolated movement, no decrease in strength)	8
	full isolated movement, reduced strength	6
	movement not isolated and/or full	4
	trace movements	2
	no movement	0
fingers	equal strength	8
	reduced strength on affected side	4
	pinch grip impossible on affected side	0
leg (maintain position)	leg maintains position for 5 seconds	4
	leg drifts to intermediate position by the end of 5 seconds	2
	leg drifts to bed within 5 seconds but not immediately	1
	leg falls to bed immediately	0
leg (flexing)	normal	4
	movement against resistance, reduced strength	3
	movement against gravity	2
	trace movements	1

	no movement	0
dorsiflexion of foot	normal (leg outstretched, full movement, no decrease in strength)	8
	leg outstretched, full movement, reduced strength	6
	leg outstretched, movement not full or knee flexed or foot in supination	4
	trace movements	2
	no movement	0
gait	normal	10
	gait has abnormal aspect and/or distance limited and/or speed limited	8
	patient can walk with aid	6
	patient can walk with physical assistance of one or more persons	4
	patient cannot walk but can stand supported	2
	patient cannot walk nor stand	0

European stroke score = SUM(points for all 14 parameters)

Interpretation:

- minimum score: 0
- maximum score: 100
- A completely normal person would have a score of 100.
- The maximally affected person has a score of 0.

#### References:

Hantson L, De Weerd W, et al. The European Stroke Scale. Stroke. 1994; 25: 2215-2219.