

# **MOTOR ASSESSMENT SCALE FOR STROKE**

**Amended Version 1994**

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# MOTOR ASSESSMENT SCALE

Name: \_\_\_\_\_

## MOVEMENT SCORING SHEET

DATE: .....

1. Supine to side lying
2. Supine to sitting over side of bed
3. Balanced sitting
4. Sitting to standing
5. Walking
6. Upper arm function
7. Hand movements
8. Advanced hand activities

	0	1	2	3	4	5	6

COMMENTS (IF APPLICABLE)

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## CRITERIA FOR SCORING

### 1. Supine to Side Lying onto Intact Side

1. Pulls self into side lying. (Starting position must be supine lying, legs extended. Patient pulls self into side lying with intact arm, moves affected leg with intact leg.)
2. Moves leg across actively and the lower half of the body follows. Starting position as above. Arm is left behind.
3. Arm is lifted across body with other arm. Leg is moved actively and body follows in a block. (Starting position as above.)
4. Moves arm across body actively and the rest of the body follows in a block. (Starting position as above.)
5. Moves arm and leg and rolls to side but overbalances. (Starting position as above. Shoulder protracts and arm flexes forward.)
6. Rolls to side in 3 seconds. (Starting position as above. Must not use hands.)

### 2. Supine to Sitting over Side of Bed

1. Side lying, lifts head sideways but cannot sit up. (Patient assisted to side lying.)
2. Side lying to sitting over side of bed. (Therapist assists patient with movement. Patient controls head position throughout.)
3. Side lying to sitting over side of bed. (Therapist gives stand-by help [see General Rules item 5] by assisting legs over side of bed.)
4. Side lying to sitting over side of bed. (With no stand-by help.)
5. Supine to sitting over side of bed. (With no stand-by help.)
6. Supine to sitting over side of bed within 10 seconds. (With no stand-by help.)

### 3. Balanced Sitting

1. Sits only with support. (Therapist should assist patient into sitting.)
2. Sits unsupported for 10 seconds. (Without holding on, knees and feet together, feet can be supported on floor.)
3. Sits unsupported with weight well forward and evenly distributed. (Weight should be well forward with hips flexed, head and thoracic spine extended, weight evenly distributed on both sides.)
4. Sits unsupported, turns head and trunk to look behind. (Feet supported and together on floor. Do not allow legs to abduct or feet to move. Have hands resting on thighs, do not allow hands to move onto plinth. Turn to each side.)
5. Sits unsupported, reaches forward to touch floor, and returns to starting position. Feet supported on floor, Do not allow patient to hold on. Do not allow legs and feet to move, support affected arm if necessary. Hand must touch floor at least 10 cm (4 in) in front of feet. Reach with each arm.
6. Sits on stool unsupported, reaches sideways to touch floor, and returns to starting position. (Feet supported on floor. Do not allow patient to hold on. Do not allow legs and feet to move, support affected arm if necessary. Patient must reach sideways not forward. Reach to both sides.)

### 4. Sitting to Standing

1. Gets to standing with help from therapist. (Any method.)
2. Gets to standing with stand-by help. (Weight unevenly distributed, uses hands for support.)
3. Gets to standing. (Do not allow uneven weight distribution or help from hands.)
4. Gets to standing and stands for 5 seconds with hips and knees extended. (Do not allow uneven weight distribution.)
5. Sitting to standing to sitting with no stand-by help. (Do not allow uneven weight distribution. Full extension of hips and knees.)
6. Sitting to standing to sitting with no stand-by help three times in 10 seconds. (Do not allow uneven weight distribution.)

## 5. Walking

1. Stands on affected leg and steps forward with other leg. (Weight-bearing hip must be extended. Therapist may give stand-by help.)
2. Walks with stand-by help from one person.
3. Walks 3 m (10 ft) alone or uses any aid but no stand-by help.
4. Walks 5 m (16 ft) with no aid in 15 seconds.
5. Walks 10 m (33 ft) with no aid, picks up a small sandbag from floor, turns around and walks back in 25 seconds. (May use either hand.)
6. Walks up and down four steps with or without an aid but without holding on to the rail three times in 35 seconds.

## 6. Upper Arm Function

1. Supine, protract shoulder girdle with arm in 90 degrees of shoulder flexion. (Therapist places arm in position and supports elbow in extension.)
2. Supine, hold arm in 90 degrees of shoulder flexion for 2 seconds. (Therapist places arm in position and patient must maintain position with some [45 degrees] external rotation. Elbow must be held within at least 20 degrees of full extension.)
3. Supine, hold arm in 90 degrees of shoulder flexion, flex and extend elbow to take palm to forehead. (Therapist may assist supination of forearm.)
4. Sitting, hold extended arm in forward flexion at 90 degrees to body for 2 seconds. (Therapist should place arm in position and patient maintains position. Patient must hold arm in mid-rotation [thumb pointing up]. Do not allow excess shoulder elevation.)
5. Sitting, patient lifts arm to above position, holds it there for 10 seconds and then lowers it. (Patient must maintain position with some external rotation. Do not allow pronation.)
6. Standing, hand against wall. Maintain hand position, while turning body toward wall. (Arm is abducted to 90 degrees with palm flat against the wall.)

## 7. Hand Movements

1. Sitting, extension of wrist. (Patient sits at a table with forearm resting on the table. Therapist places cylindrical object in palm of patient's hand. Patient is asked to lift object off the table by extending the wrist. Do not allow elbow flexion.)
2. Sitting, radial deviation of wrist. (Therapist places forearm in mid pronation-supination, ie, resting on ulnar side, thumb in line with forearm and wrist in extension, fingers around a cylindrical object. Patient is asked to lift hand off table. Do not allow elbow flexion or pronation.)
3. Sitting, elbow into side, pronation and supination. (Elbow unsupported and at a right angle. Three-quarter range is acceptable.)
4. Sitting, reach forward, pick up large ball of 14cm (5in) diameter with both hands and put it down. (Ball should be placed on table at a distance that requires elbow extension. Palms should be kept in contact with the ball.)
5. Sitting, pick up a polystyrene cup from table and put it on table across other side of body. (Do not allow alteration in shape of cup.)
6. Sitting, continuous opposition of thumb and each finger more than 14 times in 10 seconds. (Each finger in turn taps the thumb, starting with index finger. Do not allow thumb to slide from one finger to the other, or to go backwards.)

## 8. Advanced Hand Activities

1. Pick up the top of a pen and put it down again. (Patient reaches forward to arm's length, picks up pen top, releases it on table close to body.)
2. Pick up one jellybean from a cup and place it in another cup. (Teacup contains eight jellybeans. Both cups must be at arms' length. Left hand takes jellybean from cup on right and releases it in cup on left.)
3. Draw horizontal lines to stop at a vertical line 10 times in 20 seconds. (At least five lines must touch and stop at the vertical line. Lines should be approximately 10cm in length.)
4. Hold a pen, make rapid consecutive dots on a sheet of paper. (Patient must do at least 2 dots a second for 5 seconds. Patient picks pen up and positions it without assistance. Pen must be held as for writing. Dots not dashes.)
5. Take a dessert spoon of liquid to the mouth. (Do not allow head to lower towards spoon. Liquid must not spill.)
6. Hold a comb and comb hair at back of head. (Shoulder must be externally rotated, abducted at least 90°. Head erect.)

## GENERAL RULES FOR ADMINISTERING THE MAS

1. The test should preferably be carried out in a quiet private room or curtained-off area, with standardised test procedures and materials (see 13).
2. The test should be carried out when patient is maximally alert. For example, not when under the influence of hypnotic or sedative drugs. Record should be made if patient is under the influence of one of these drugs.
3. Patient should be dressed in suitable day clothes. Items 1 to 3 inclusive may be scored if necessary with patient in night clothes.
4. Each item is recorded on a scale of 0 to 6.
5. All items are to be performed independently by the patient unless otherwise stated. "Stand-by help" means that the therapist stands by and may steady the patient but must not actively assist.
6. Patient should be scored on the best performance out of three unless other specific instructions are stated.
7. Since the scale is designed to score best performance, the therapist should give general encouragement but should not give specific feedback on whether response is correct or incorrect. Sensitivity to the patient is necessary to enable the production of best performance.
8. Instructions should be repeated and demonstrations given to patient if necessary.
9. The order of administration of items 1 to 8 can be varied according to convenience.
10. If patient becomes emotionally labile at any stage during scoring, the therapist should wait 15 seconds before attempting the following procedures:
  - (1) ask the patient to close the mouth and take a deep breath;
  - (2) hold patient's jaw closed and ask the patient to stop crying.If patient is unable to control behaviour, the examiner should cease testing, and rescore this item and any other items unscored at a more suitable time.
11. If performance is scored differently on left and right side, the therapist may indicate this by dividing the box into L and R.
12. The patient should be informed when being timed.
13. You will need the following equipment which should be standardised: a low wide plinth, a stopwatch, a polystyrene cup, eight jellybeans, two teacups, a rubber ball approximately 14cm (5in) diameter, a stool, a comb, a pen top, a table, a dessert spoon and water, a pen, a prepared sheet for drawing lines with one vertical line on the right of the sheet, and a cylindrical object such as a jar.