

The Motricity Index for Motor Impairment After Stroke

Overview: The Motricity Index can be used to assess the motor impairment in a patient who has had a stroke.

Tests for Each Arm:

(1) pinch grip: using a 2.5 cm cube between the thumb and forefinger

- 19 points are given if able to grip cube but not hold it against gravity
- 22 points are given if able to hold cube against gravity but not against a weak pull
- 26 points are given if able to hold the cube against a weak pull but strength is weaker than normal

(2) elbow flexion from 90° so that the arm touches the shoulder

- 14 points are given if movement is seen with the elbow out and the arm horizontal

(3) shoulder abduction moving the flexed elbow from off the chest

- 19 points are given when the shoulder is abducted to more than 90° beyond the horizontal against gravity but not against resistance

Tests for Each Leg:

(1) ankle dorsiflexion with foot in a plantar flexed position

- 14 points are given if there is less than a full range of dorsiflexion

(2) knee extension with the foot unsupported and the knee at 90°

- 14 points are given for less than 50% of full extension
- 19 points are given for full extension yet it can be easily pushed down

(3) hip flexion with the hip bent at 90° moving the knee towards the chin

- 14 points are given if there is less than a full range of passive motion
- 19 points are given if the hip is fully flexed yet it can be easily pushed down

MRC Grade	MRC Score	Points for Pinch Grip	Points for Other Tests
no movement	0	0	0
palpable flicker but no movement	1	11	9
movement but not against gravity	2	19	14
movement against gravity	3	22	19
movement against resistance	4	26	25
normal	5	33	33

arm score for each side = SUM(points for the 3 arm tests) + 1

leg score for each side = SUM(points for the 3 leg tests) + 1

side score for each side = ((arm score for side) + (leg score for side)) / 2

Interpretation:

- minimum score: 0
- maximum score: 100

References:

Collin C Wade D. Assessing motor impairment after stroke: a pilot reliability study. J Neurology Neurosurg Psychiatry. 1990; 53: 576-579.