

Patient Name: _____ Rater Name and Date: _____

MODIFIED SIMPSON-ANGUS SCALE (MSAS)

Extrapyramidal Side Effects Scale

Each item is rated on a 5-point scale of severity (0 = normal; 4 = most severe; NR = not rated). Circle the rating that best describes the subject's present condition (3 is upper limit for patients without EPS).

1. Gait: The patient is examined as he walks into the examining room: his gait, the swing of his arms, his general posture all form the basis for an overall score for this item. This is rated as follows:

- 0 = Normal
- 1 = Diminution in swing while the subject is walking
- 2 = Marked diminution in swing with obvious rigidity in the arm
- 3 = Stiff gait with arms held rigidly before the abdomen
- 4 = Stooped, shuffling gait with propulsion and retropulsion
- NR = Not ratable

2. Arm Dropping: The patient and the examiner both raise their arms to shoulder height and let them fall to their sides. In a normal subject, a stout slap is heard as the arms hit the sides. In the patient with extreme Parkinson's Syndrome, the arms fall very slowly.

- 0 = Normal, free fall with loud slap and rebound
- 1 = Fall slowed slightly with less audible contact and little rebound
- 2 = Fall slowed, no rebound
- 3 = Marked slowing, no slap at all
- 4 = Arms fall as though against resistance, as though through glue
- NR = Not ratable

3. Shoulder Shaking: The subject's arms are bent at a right angle at the elbow and are taken one at a time by the examiner, who also grasps one hand and also clasps the other around the subject's elbow. The subject's upper arm is pushed to and fro, and the humerus is externally rotated. The degree of resistance from normal to extreme rigidity is scored as follows:

- 0 = Normal
- 1 = Slight stiffness and resistance
- 2 = Moderate stiffness and resistance
- 3 = Marked rigidity with difficulty in passive movement
- 4 = Extreme stiffness and rigidity with almost a frozen joint
- NR = Not ratable

4. Elbow Rigidity: The elbow joints are separately bent at right angles and passively extended and flexed, with the subject's biceps observed and simultaneously palpated. The resistance to this procedure is rated. (The presence of cogwheel rigidity is noted overall but not rated as a separate item.)

- 0 = Normal
- 1 = Slight stiffness and resistance
- 2 = Moderate stiffness and resistance
- 3 = Marked rigidity with difficulty in passive movement
- 4 = Extreme stiffness and rigidity with almost a frozen joint
- NR = Not ratable

5. Wrist Rigidity or Fixation of Position: The wrist is held in one hand and the fingers held by the examiner's other hand, with the wrist moved to extension, flexion, and ulnar and radial deviation, or the extended wrist is allowed to fall under its own weight, or the arm can be grasped above the wrist and shaken to and fro. A "1" score would be a hand that extends easily, falls loosely, or flaps easily upwards and downwards.

- 0 = Normal
- 1 = Slight stiffness and resistance
- 2 = Moderate stiffness and resistance
- 3 = Marked rigidity with difficulty in passive movement
- 4 = Extreme stiffness and rigidity with almost a frozen joint
- NR = Not ratable

6. Head Rotation: The subject sits or stands and is told that the examiner will move his head from side to side, that it will not hurt, and that he should try and relax. (Questions about pain in the cervical area or difficulty in moving his head should be obtained to avoid causing any pain.) Clasp the subject's head between the two hands with the fingers on the back of the neck. Gently rotate the head in a circular motion 3 times and evaluate the muscular resistance to this movement.

- 0 = Loose, no resistance
- 1 = Slight resistance to movement
- 2 = Resistance is apparent and the time of rotation is shortened
- 3 = Resistance is obvious and rotation is slowed
- 4 = Head appears stiff and rotation is difficult to carry out
- NR = Not ratable

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7. Glabella Tap: The subject is told to open his eyes and not to blink. The glabella region is tapped at a steady, rapid speed. Note the number of times that the subject blinks in succession. Take care to stand behind the subject so that he does not observe the movement of the tapping finger. A full blink need not be observed; there may be a contraction of the infraorbital muscle producing a twitch each time a stimulus is delivered. Vary the speed of tapping to assure that the muscle contraction is related to the tap.

- 0 = 0 to 5 blinks
- 1 = 6 to 10 blinks
- 2 = 11 to 15 blinks
- 3 = 16 to 20 blinks
- 4 = 21 or more blinks
- NR = Not ratable

8. Tremor: The subject is observed walking into the examining room and then is re-examined for this item with his arms extended at right angles to the body and the fingers spread out as far as possible.

- 0 = Normal
- 1 = Mild finger tremor, obvious to sight and touch
- 2 = Tremor of hand or arm occurring spasmodically
- 3 = Persistent tremor of one or more limbs
- 4 = Whole body tremor
- NR = Not ratable

9. Salivation: The subject is observed while talking and then asked to open his mouth to elevate his tongue.

- 0 = Normal
- 1 = Excess salivation so that drooling takes place if mouth is opened and tongue is raised
- 2 = Excess salivation is present and might occasionally result in difficulty in speaking
- 3 = Speaking with difficulty because of excess drooling
- 4 = Frank drooling
- NR = Not ratable

10. Akathisia: The subject is observed for restlessness. If restlessness is noted, ask, "Do you feel restless or jittery inside; is it difficult to sit still?" Subjective response is not necessary for scoring, but subject report can help make the assessment.

- 0 = No restlessness reported or observed
- 1 = Mild restlessness observed, e.g., occasional jiggling of the foot occurs when the subject is seated
- 2 = Moderate restlessness observed, e.g., on several occasions, the subject jiggles his foot, crosses and uncrosses his legs, or twists a part of the body
- 3 = Restlessness is frequently observed, e.g., the subject's foot or legs are moving most of the time
- 4 = Restlessness persistently observed, e.g., the subject cannot sit still, might get up and walk
- NR = Not ratable

TOTAL SCORE: _____

Total Score Severity:

- Less than 3 = normal
- 3 to 5 = minimal degree of movement disorder
- 6 to 11 = clinically significant degree of movement disorder
- 12 to 17 = severe degree of movement disorder is present

References:

Simpson GM, Angus JWS. A rating scale for extrapyramidal side effects. *Acta Psychiatrica Scandinavica* 1970;212(Suppl 44): 11-19.

Hawley CJ, Finneberg N, Roberts AG, Baldwin D, Sahadevan A, Sharman V. The use of the Simpson Angus Scale for the assessment of movement disorder: A training guide. *Int J Psych Clin Pract* 2003; 7: 249-257.

Rush J (2000) *Handbook of Psychiatric Measures*. Washington: American Psychiatric Publishing.