

Using the Tremor
Research Group Tremor
Rating Assessment Scale
(TETRAS)

William Ondo, MD

Overview of Scale

- Activity of Daily Living Questions – 12
 - Speaking, Spoon, Glass, Hygiene, Dressing, Pouring, Carrying, Keys, Writing, Working, Worst disability, Social
- Performance Section (Examination)
 - Head, Face, Voice, Arms (3), Legs (1 of 2 scored), Archimedes spiral, Cursive handwriting, Dot approximation, Standing
- ADL (0-4), Performance (0-4, but allow 0.5 increments for arm assessments)

ADL Section

1. Speaking

0 = Normal.

1 = Slight voice tremulousness, only when "nervous".

2 = Mild voice tremor. All words easily understood.

3 = Moderate voice tremor. Some words difficult to understand.

4 = Severe voice tremor. Most words difficult to understand.

2. Feeding with a spoon

0 = Normal

1 = Slightly abnormal. Tremor is present but does not interfere with feeding with a spoon.

2 = Mildly abnormal. Spills a little.

3 = Moderately abnormal. Spills a lot or changes strategy to complete task such as using two hands or leaning over.

4 = Severely abnormal. Cannot feed with a spoon.

ADL Section

3. Drinking from a glass

0 = Normal.

1 = Slightly abnormal. Tremor is present but does not interfere with drinking from a glass.

2 = Mildly abnormal. Spills a little.

3 = Moderately abnormal. Spills a lot or changes strategy to complete task such as using two hands or leaning over.

4 = Severely abnormal. Cannot drink from a glass or uses straw or sippy cup.

4. Hygiene

0 = Normal.

1 = Slightly abnormal. Tremor is present but does not interfere with hygiene.

2 = Mildly abnormal. Some difficulty but can complete task.

3 = Moderately abnormal. Unable to do most fine tasks such as putting on lipstick or shaving unless changes strategy such as using two hands or using the less affected hand.

4 = Severely abnormal. Cannot complete hygiene activities independently.

ADL

5. Dressing

0 = Normal.

1 = Slightly abnormal. Tremor is present but does not interfere with dressing.

2 = Mildly abnormal. Able to do everything but has difficulty due to tremor.

3 = Moderately abnormal. Unable to do most dressing unless uses strategy such as using Velcro, buttoning shirt before putting it on or avoiding shoes with laces.

4 = Severely abnormal. Cannot dress independently.

6. Pouring

0 = Normal.

1 = Slightly abnormal. Tremor is present but does not interfere with pouring.

2 = Mildly abnormal. Must be very careful to avoid spilling but may spill occasionally.

3 = Moderately abnormal. Must use two hands or uses other strategies to avoid spilling.

4 = Severely abnormal. Cannot pour.

ADL

7. Carrying food trays, plates or similar items

0 = Normal

1 = Slightly abnormal. Tremor is present but does not interfere with carrying food trays, plates or similar items.

2 = Mildly abnormal. Must be very careful to avoid spilling items on food tray.

3 = Moderately abnormal. Uses strategies such as holding tight against body to carry.

4 = Severely abnormal. Cannot carry food trays or similar items.

8. Using Keys

0 = Normal

1 = Slightly abnormal. Tremor is present but can insert key with one hand without difficulty.

2 = Mildly abnormal. Commonly misses target but still routinely puts key in lock with one hand.

3 = Moderately abnormal. Needs to use two hands or other strategies to put key in lock.

4 = Severely abnormal. Cannot put key in lock.

ADL

9. Writing

0 = Normal

1 = Slightly abnormal. Tremor present but does not interfere with writing.

2 = Mildly abnormal. Difficulty writing due to the tremor

3 = Moderately abnormal. Cannot write without using strategies such as holding the writing hand with the other hand, holding pen differently or using large pen.

4 = Severely abnormal. Cannot write.

10. Working. If patient is retired, ask as if they were still working. If the patient is a housewife, ask the question as it relates to housework:

0 = Normal

1 = Slightly abnormal. Tremor is present but does not affect performance at work or at home.

2 = Mildly abnormal. Tremor interferes with work; able to do everything, but with errors.

3 = Moderately abnormal. Unable to continue working without using strategies such as changing jobs or using special equipment.

4 = Severely abnormal. Cannot perform any job or household work.

ADL

11. Overall disability with the most affected task (Name task, e.g. using computer mouse, writing, etc)

Task _____

0 = Normal

1 = Slightly abnormal. Tremor present but does not affect task.

2 = Mildly abnormal. Tremor interferes with task but is still able to perform task.

3 = Moderately abnormal. Can do task but must use strategies.

4 = Severely abnormal. Cannot do the task.

12. Social Impact

0 = None

1 = Aware of tremor, but it does not affect lifestyle or professional life.

2 = Feels embarrassed by tremor in some social situations or professional meetings.

3 = Avoids participating in some social situations or professional meetings because of tremor.

4 = Avoids participating in most social situations or professional meetings because of tremor.

Performance

1. Head tremor: The head is rotated fully left and right and then observed for 10s in mid position. Patient then is instructed to gaze fully to the left and then to the right with the head in mid position. The nose should be used as the landmark to assess and rate the largest amplitude excursions during the examination.

0 = no tremor

1 = slight tremor (< 0.5 cm)

2 = mild tremor ($0.5 - < 2.5$ cm)

3 = moderate tremor ($2.5 - 5$ cm)

4 = severe or disfiguring tremor (> 5 cm)

Performance

2. Face (including jaw) tremor: Smile, close eyes, open mouth, purse lips. The highest amplitude of the most involved facial anatomy is scored, regardless of whether it occurs during rest or activation. Repetitive blinking or eye fluttering should not be considered as part of facial tremor.

0 = no tremor

1 = slight; barely perceptible tremor

2 = mild: noticeable tremor

3 = moderate: obvious tremor, present in most voluntary facial contractions

4 = severe: gross disfiguring tremor

Performance

3. Voice tremor: First ask subject to produce an extended “aaah” sound and eee” sound for 5 seconds each. Then assess speech during normal conversation by asking patients “How do you spend your average day?”

0 = no tremor

1 = slight: tremor during aaah, and eee and no tremor during speech

2 = mild: tremor in “aaah” and “eee” and minimal tremor in speech

3 = moderate: obvious tremor in speech that is fully intelligible

4 = severe: some words difficult to understand

Performance: 4. Arm Tremor

- 3 postures:
 - forward, wing-beating, kinetic
- Arms should be examined individually one at a time
- Rate the maximally displaced anatomy

For all three hand tremor ratings (maximum amplitude)

0 = no tremor

1 = tremor is barely visible (< 0.5 cm)

1.5 = tremor is visible, less than 1 cm

2 = tremor is 1- < 3 cm

2.5 = tremor is 3- < 5 cm

3 = tremor is 5- < 10 cm

3.5 = tremor is 10- < 20 cm

4 = tremor is > 20 cm

Forward Position

- 10 Seconds
- Subjects should bring their arms forward, slightly lateral to midline and parallel to the ground. The wrist should also be straight and the fingers abducted so that they do not touch each other, but not forcefully.



Wing-beating Position

- 20 Seconds
- Subjects will abduct their arms parallel to the ground and flex the elbows so that they are at the level of the chin. The fingers are abducted so that they do not touch each other, but not forcefully.



Kinetic Tremor

- **4 times**
- Subjects extend only their index finger. They then touch a set object or the examiners finger located to the full extent of their reach, which is located at the same height (parallel to the ground) and slightly lateral to the midline. Subjects then touch their own chin. The of greatest tremor amplitude is assessed. Make sure slow enough to rate.



5. Leg Tremor

- You will assess both legs (L and R) in two positions (extended and heel to shin) BUT give only a single score, which is the highest single score of the 4 total scores.
- Rate the greatest amplitude within the leg/foot
 - 0 = no tremor
 - 1 = slight: barely perceptible (< 0.5 cm)
 - 2 = mild, less than 1 cm at any point
 - 3 = moderate tremor, less than 5 cm at any point
 - 4 = severe tremor, greater than 5 cm

Leg Posture

Raise each lower limb horizontally parallel to the ground for 5 seconds each.

Toes should be pointing forward.



Leg: Heal to Shin

Standard heel to shin maneuver with each leg, three times, with patient in supine position.



6. Archimedes Spiral

Demonstrate how to draw Archimedes spiral that approximately fills $\frac{1}{4}$ of an unlined page of standard (letter) paper. The lines of the spiral should be approximately 1.3 cm (0.5 inch) apart.

Use a ballpoint pen. The pen should be held such that no part of the limb touches the table. Secure the paper on the table in a location that is suitable for the patient's style of drawing. Score the tremor in the spiral, not the movement of the limb.

0 = normal

1 = slight: tremor barely visible

2 = mild: obvious tremor

3 = moderate: portions not recognizable

4 = severe: not recognizable



7. Handwriting

Have patient write the standard sentence "This is a sample of my best handwriting" using the dominant hand only. Patients must write cursively (i.e., no printing). They cannot hold or stabilize their hand with the other hand. Use a ballpoint pen. Secure the paper on the table in a location that is suitable for the patient's style of writing.

0 = normal

1 = slight: untidy due to tremor that is barely visible.

2 = mild: legible, but with considerable tremor.

3 = moderate: some words illegible.

4 = severe: completely illegible



8.Dot Approximation

The examiner makes a small “X” and instructs the subject to hold the tip of the pen “as close as possible to the dot (or center of an X) without touching it, (ideally 1 mm) for 10 seconds”. Each hand is score separately.

0 = no tremor

1 = tremor is barely visible (< 0.5 cm)

1.5 = tremor is visible, but less than 1 cm

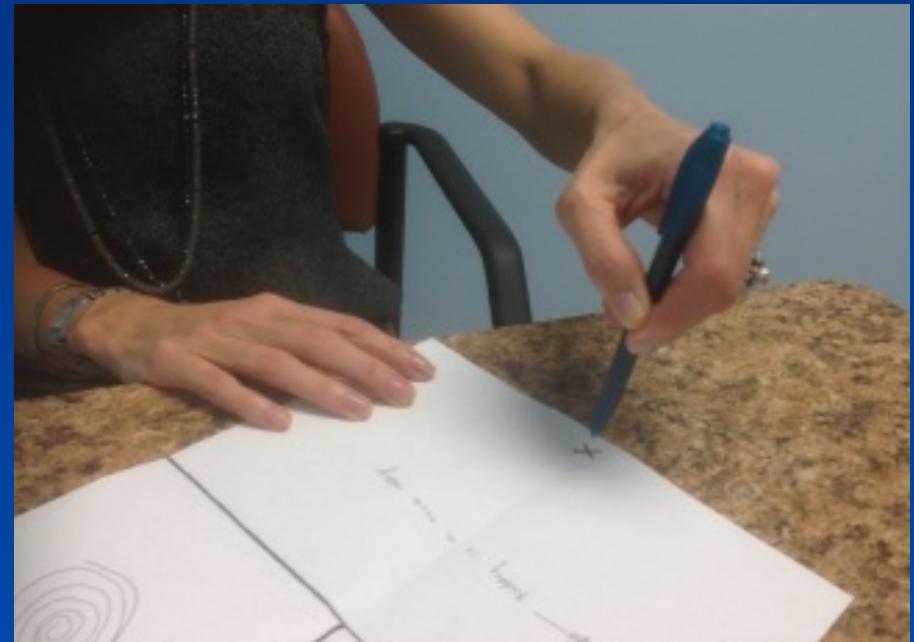
2 = tremor is 1- < 3 cm amplitude

2.5 = tremor is 3- < 5 cm amplitude

3 = tremor is 5- < 10 cm amplitude

3.5 = tremor is 10- < 20 cm amplitude

4 = tremor is > 20 cm amplitude



9. Standing Tremor

Subjects are standing, unaided if possible. The knees are 10-20 cm apart and are flexed 10-20°. The arms are down at the subject's side. Tremor is assessed at any point on the legs or trunk

0 = no tremor

1 = barely perceptible tremor

2 = obvious but mild tremor, does not cause instability

3 = moderate tremor, impairs stability of stance

4 = severe tremor, unable to stand without assistance



TETRAS (Video)



TETRAS Scale (lower def)

