

## Neurologic Assessment in Neuro-Oncology (NANO) Scale

Scoring assessment is based on direct observation and testing performed during clinical evaluation and is not based on historical information or reported symptoms. Please check one answer per domain. Please check “Not assessed” if testing for that domain is not done. Please check “Not evaluable” if a given domain cannot be scored accurately because of preexisting conditions, comorbid events, or concurrent medications.

Patient identifier: \_\_\_\_\_

Date assessment performed (day/month/year): \_\_\_\_\_

Study time point (ie, baseline, cycle 1, day 1, etc): \_\_\_\_\_

Assessment performed by (please print name): \_\_\_\_\_

### Domains

### Key Considerations

#### Gait

- 0  Normal
- 1  Abnormal but walks without assistance
- 2  Abnormal and requires assistance  
(companion, cane, walker, etc.)
- 3  Unable to walk
- Not assessed
- Not evaluable

- Walking is ideally assessed by at least 10 steps

#### Strength

- 0  Normal
- 1  Movement present but decreased  
against resistance
- 2  Movement present but none against resistance
- 3  No movement
- Not assessed
- Not evaluable

- Test each limb separately
- Recommend assess proximal (above knee or elbow) and distal (below knee or elbow) major muscle groups
- Score should reflect worst performing area
- Patients with baseline level 3 function in one major muscle group/limb can be scored based on assessment of other major muscle groups/limb

### Ataxia (Upper Extremity)

- 0  Able to finger-to-nose touch without difficulty
- 1  Able to finger-to-nose touch but difficult
- 2  Unable to finger-to-nose touch
- Not assessed
- Not evaluable

- Nonevaluable if strength is compromised
- Trunk/lower extremities assessed by gait domain
- Particularly important for patients with brainstem and cerebellar tumors
- Score based on best response of at least 3 attempts

### Sensation

- 0  Normal
- 1  Decreased but aware of sensory modality
- 2  Unaware of sensory modality
- Not assessed
- Not evaluable

- Recommend evaluating major body areas separately (face, limbs, and trunk)
- Score should reflect worst performing area
- Sensory modality includes but not limited to light touch, pinprick, temperature, and proprioception
- Patients with baseline level 2 function in one major body area can be scored based on assessment of other major body areas

### Visual Fields

- 0  Normal
- 1  Inconsistent or equivocal partial hemianopsia (≥quadrantanopsia)
- 2  Consistent or unequivocal partial hemianopsia (≥quadrantanopsia)
- 3  Complete hemianopsia
- Not assessed
- Not evaluable

- Patients who require corrective lenses should be evaluated while wearing corrective lenses
- Each eye should be evaluated, and score should reflect the worst performing eye

### Facial Strength

- 0  Normal
- 1  Mild/moderate weakness
- 2  Severe facial weakness
- Not assessed
- Not evaluable

- Particularly important for brainstem tumors
- Weakness includes nasolabial fold flattening, asymmetric smile, and difficulty elevating eyebrows

### Language

- 0  Normal
- 1  Abnormal but easily conveys meaning to examiner
- 2  Abnormal and difficulty conveying meaning to examiner
- 3  Abnormal; if verbal, unable to convey meaning to examiner; OR nonverbal (mute/global aphasia)
- Not assessed
- Not evaluable

- Assess based on spoken speech; nonverbal cues or writing should not be included
- **Level 1:** Includes word-finding difficulty; few paraphasic errors/neologisms/word substitutions; but able to form sentences (full/broken)
- **Level 2:** Includes inability to form sentences (<4 words per phrase/sentence); limited word output; fluent but “empty” speech

### Level of Consciousness

- 0  Normal
- 1  Drowsy (easily arousable)
- 2  Somnolent (difficult to arouse)
- 3  Unarousable/coma
- Not assessed
- Not evaluable

- None

### Behavior

- 0  Normal
- 1  Mild/moderate alteration
- 2  Severe alteration
- Not assessed
- Not evaluable

- Particularly important for frontal lobe tumors
- Alteration includes but is not limited to apathy, disinhibition, and confusion
- Consider subclinical seizures for significant alteration