



Calculator, Specialty, Condition



Pediatric NIH Stroke Scale (NIHSS)



Quantifies stroke severity using a child-specific version of the NIH Stroke Score.

Instructions



Administer the questions in the order below. In order to improve score accuracy, emphasize with family members the need to refrain from hinting at the correct responses to questions asked.

When to Use ▾**Pearls/Pitfalls** ▾**Why Use** ▾

1A. Level of consciousness

Alert; keenly responsive	0
Not alert but arousable by minor stimulation to obey, answer, or respond	+1
Not alert, requires repeated stimulation, or is obtunded and requires strong/painful stimulation to make movements (not stereotyped)	+2
Responds only with reflex motor or autonomic effects or totally unresponsive, flaccid, areflexic	+3

1B. Ask age and to point out family member

Ask the child “how old are you?”, give credit if child states correct age or shows correct number of fingers for age; ask the child “where is X?” (X = parent or other familiar family member present), give credit if child correctly points/gazes purposefully in the direction of the family member

Answers both questions correctly	0
Answers one question correctly	+1
Answers neither question correctly	+2

1C. Command to blink eyes and touch nose

Performs both tasks correctly	0
Performs one task correctly	+1
Performs neither task correctly	+2

2. Horizontal extraocular movements

Only assess horizontal gaze

Normal	0
Partial gaze palsy (abnormal gaze in one or both eyes but no forced deviation or total gaze paresis)	+1
Forced deviation or total gaze paresis not overcome by oculoccephalic maneuver	+2

3. Visual fields

Use finger counting (if >6 years old) or visual threat (if 2-6 years old) as appropriate

No visual loss	0
Partial hemianopia	+1
Complete hemianopia	+2
Bilateral hemianopia (blind including cortical blindness)	+3

4. Facial palsy

Normal symmetrical movement	0
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0 points

Higher scores correspond with worse prognosis

Copy Results 

Next Steps >>

uncooperative, grade power by observation of spontaneous or elicited movement

No drift, limb holds 90 (or 45) degrees for full 10 seconds	0
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Drift, limb holds 90 (or 45) degrees, but drifts down before full 10 seconds; does not hit bed or other support	+1
Some effort against gravity, limb cannot get to or maintain (if cued) 90 (or 45) degrees, drifts down to bed, but has some effort against gravity	+2
No effort against gravity, limb falls	+3
No movement	+4
Amputation, joint fusion	+9

5B. Right arm motor drift

Drift is scored if the arm falls before 10 sec; for children too young to follow precise directions or uncooperative, grade power by observation of spontaneous or elicited movement

No drift, limb holds 90 (or 45) degrees for full 10 seconds	0
Drift, limb holds 90 (or 45) degrees, but drifts down before full 10 seconds; does not hit bed or other support	+1
Some effort against gravity, limb cannot get to or maintain (if cued) 90 (or 45) degrees, drifts down to bed, but has some effort against gravity	+2
No effort against gravity, limb falls	+3
No movement	+4
Amputation, joint fusion	+9

6A. Left leg motor drift

Drift is scored if the leg falls before 5 sec; for children too young to follow precise directions or uncooperative, grade power by observation of spontaneous or elicited movement

No drift, leg holds 30 degrees position for full 5 seconds	0
Drift, leg falls by the end of the 5 second period but does not hit bed	+1
Leg falls to bed by 5 seconds, but has some effort against gravity	+2
No effort against gravity, leg falls to bed immediately	+3
No movement	+4

Amputation, joint fusion**+9****6B. Right leg motor drift**

Drift is scored if the the leg falls before 5 sec; for children too young to follow precise directions or uncooperative, power in each limb should be graded by observation of spontaneous or elicited movement

No drift, leg holds 30 degrees position for full 5 seconds**0****Drift, leg falls by the end of the 5 second period but does not hit bed****+1****Leg falls to bed by 5 seconds, but has some effort against gravity****+2****No effort against gravity, leg falls to bed immediately****+3****No movement****+4****Amputation, joint fusion****+9****7. Limb ataxia**

Ask child to reach for a toy, or ask child to kick a toy or the examiner's hand in children <5 years or otherwise uncooperative for the standard exam

Absent**0****Present in one limb****+1****Present in two limbs****+2****8: Sensation**

Pin-prick test; for children too young or otherwise uncooperative for reporting gradations of sensory loss, observe for any behavioral response to pin prick

Normal; no sensory loss**0****Mild to moderate sensory loss; patient feels pinprick is less sharp or dull on the affected side, or there is a loss of superficial pain with pinprick but patient is aware he/she is being touched****+1****Severe to total sensory loss; patient is not aware of being touched in the face, arm, and leg****+2****9. Best language**

If age ≥ 6 years with normal language development before onset of stroke, ask child to describe picture, to name items, repeat words, read sentences (see below); for children age 2-6 years, score item based on observations of language comprehension and speech during the examination

No aphasia, normal	0
Mild to moderate aphasia	+1
Severe aphasia	+2
Mute, global aphasia; no usable speech or auditory comprehension	+3

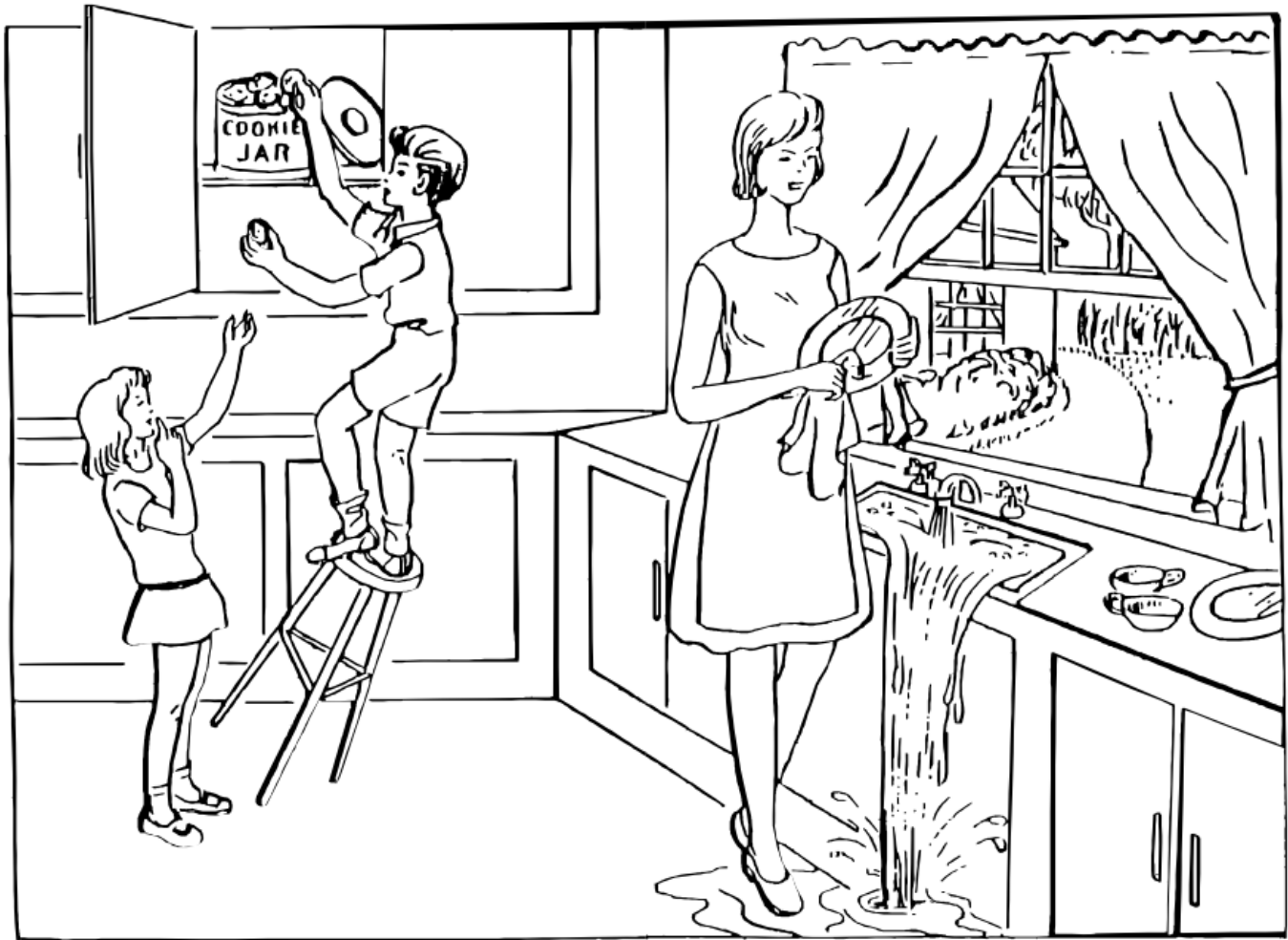
Repetition test:

- a. Stop
- b. Stop and go
- c. If it rains we play inside
- d. The President lives in Washington

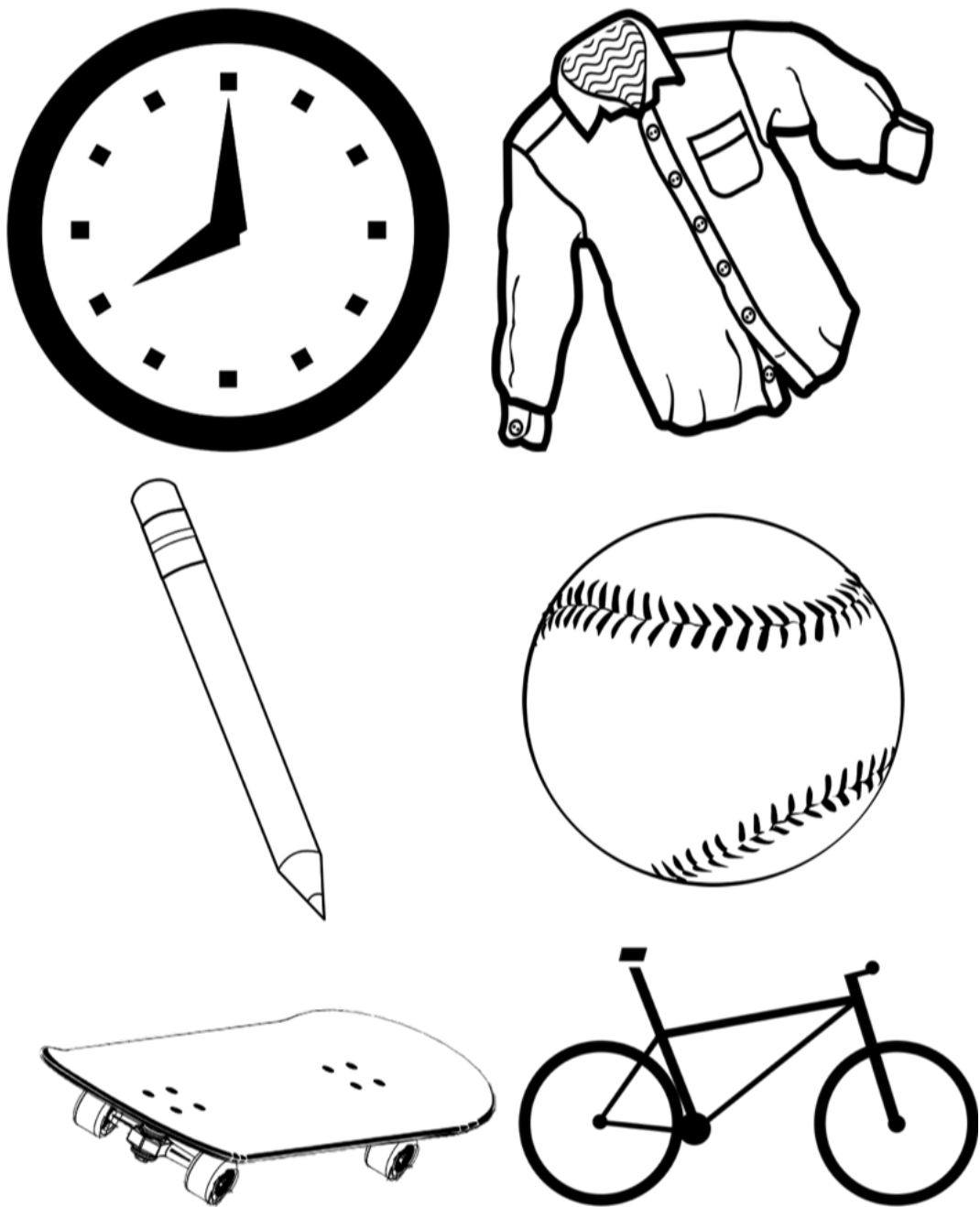
Reading test:

- a. Stop
- b. See the dog run
- c. Little children like to play outdoors

Fluency test:



Naming test:



10. Dysarthria

Ask patient to read or repeat words (as above)

Normal	0
Mild to moderate; patient slurs at least some words and, at worst, can be understood with some difficulty	+1
Severe; patient's speech is so slurred as to be unintelligible in the absence of or out of proportion to any dysphasia, or is mute/anarthric	+2

Intubated or other physical barrier	+9
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11. Extinction and inattention

No abnormality	0
Visual, tactile, auditory, spatial, or personal inattention or extinction to bilateral simultaneous stimulation in one of the sensory modalities	+1
Profound hemi-inattention or hemi-inattention to >1 modality; does not recognize own hand or orients to only one side of space	+2

Next Steps	 Evidence	 Creator Insights
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ADVICE

Pediatric stroke is overall rare, and the true predictive value of the PedNIHSS is subject to change as the scale continues to be studied. Retrospective application of the PedNIHSS has been shown to be valid and reliable in one cross-sectional study (see [Beslow 2012](#)).

MANAGEMENT

- This score has not been validated in hemorrhagic stroke; in such cases, the need for emergent neurosurgical consult is clear.
- Given the overall rarity of pediatric stroke, the benefit of tPA is not well defined in the literature, emphasizing the importance of expert consultation.

CRITICAL ACTIONS

Children with sickle cell disease presenting with acute ischemic stroke will likely benefit from emergent blood transfusion to reduce hyperviscosity caused by sickled cells. Early consultation with a pediatric hematologist is recommended in addition to child neurology consult.

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NIH Stroke Scale (NIHSS)

Quantifies stroke severity and monitors for neurological changes over time.

HAT Score

Assesses hemorrhage risk after tPA.

Content Contributors



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