Lippincott Clinical Leaders: Neuro Assessment

*Lisa Bonsall:* Hi, I'm Lisa Bonsall, Senior Clinical Editor for Lippincott NursingCenter. Welcome to the Lippincott Clinical Leaders Podcast.Today, I'm joined by Robin Coyne. Robin is the Content Editing Manager for Lippincott Procedures. Her background includes working as the neurology consult nurse practitioner for Penn Presbyterian Medical Center, as well as working as a research assistant, supporting students as a teaching assistant for advanced physiology classes, and lab faculty for physical assessment courses.Thanks for joining me, Robin.

*Robin Coyne:* Thanks for having me, Lisa.

*Lisa Bonsall:* Today, we're going to talk about the NIH Stroke Scale. So let's start with, what is the NIH Stroke Scale?

*Robin Coyne:* The NIH Stroke Scale is a standardized way to quantify neurologic deficits. It's used in the acute care setting when a patient comes in with a stroke alert, or if a stroke alert is called on the floor. It is a way to systematically evaluate the severity of the deficits, plan treatment, predict outcomes, and also to monitor progress as a patient progresses through that acute stroke phase. Each item on the scale is graded. Each item has a different scale, but they are graded with lower numbers being more normal, higher numbers, more impairment. A score of zero is someone who has no neurological deficits.

We use the NIH Stroke Scale to determine eligibility for thrombolytic administration, or tPA, or endovascular treatment and then in post-administration monitoring. That can be done by nurses, providers, or practitioners, depending on your facility’s policies, who does that monitoring after administration.

A couple of important things to remember about the NIH Stroke Scale is you must follow the instructions exactly. There are different booklets and downloads, and PDFs that you can have. If this is something you're doing often, I recommend that until it becomes second nature and you know it very well. This is because the inter-rater reliability is very important. If you're asking the question in a different way, that could change the outcome of the scale. It's important to grade the patient based on what they do, not what you think they can do. If you think the patient's not really trying and they could probably keep their arm up for 5 seconds, you're not going to grade them for that. You're going to grade them for the fact that they only kept their arm up for 2 seconds. You're going to grade quickly because as we all know, time is brain.

It's important to do this quickly but accurately. That's why it's really important that if this is something that you're going to be doing or something that you do do, often, you really take the time to look at it, understand it, and know it like the back of your hand.

And then the last thing is: don't coach the patient except where it's allowed on the form and it will say you can encourage the patient. You always want to administer the stroke scale items in the order listed, because some of them do depend on a previous assessment. You're going to record the patient's score in each category and then at the end you will add all those up together.

Never go back and change your score, even if the patient does do something later on without you asking, they didn't do it when you asked them a question. Don't go back and change it, and follow the directions provided for each exam technique.

Scores should reflect what the patient does. Record the answers while you're administering it. It's a lot to remember, so make sure you're writing it down; it’ll make it much easier to add things up in the end, I promise. And then don't repeat the request multiple times. Don't coach the patient. Don't say, “just do a little bit more. Just do this, just do that”. Just give them the prompt, see what they do, and then score them.

*Lisa Bonsall:* That's so helpful, Robin. Thank you. So what are the components of the scale?

*Robin Coyne:* The first component is level of consciousness. For a level of consciousness, we have a scale from 0 to 3. The first being alert, responsive. And then a score of three would be response only with reflex, motor, or autonomic effects, or totally unresponsive: no reflexes, no muscle tone. To assess the level of consciousness, you're going to ask two questions: what's the month, and what's the patient's age. They'll get zero points if they get both of those questions right, they'll get two points if they got both of them wrong.

And then the third part of level of consciousness is to ask the patient to follow two commands. First one being: open and close your eyes. The second one is to grip and release a hand. If they have weakness in one hand or have a hemiparesis, you will ask them to do the non-paretic hand. And that again is 0 to 2, zero meaning that they do both commands correctly, two meaning that they do neither one.

Section number two is gaze. We're going to be assessing horizontal eye movements only. Zero would be normal eye movement, normal gaze. One would be a partial gaze palsy. Two points would be a forced deviation or a total gaze paresis that is not overcome by oculocephalic maneuvers.

The third section is visual fields. You're going to test either finger counting or confrontation in your uppers and lowers, and that is on a scale of 0 to 3. Zero being normal visual fields, no field loss, and then a three would be a bilateral hemianopia, which would be blindness or cortical blindness.

Number four is facial palsy: facial weakness, facial drooping. Zero is normal, symmetric. One would be minor paralysis which is some flattening of the nasolabial fold or asymmetry in smiling. Two is partial paralysis, a total paralysis of the lower face. And then three is complete paralysis that extends up into the forehead. They're going to lose these wrinkles in their forehead if they have weakness up there.

Then we move on to the motor scale. First we have arms. You're going to have the patient hold each arm up. They're going to test separately for the right and left arm, hold it up and ask them to hold it up for a full 10 seconds. You can count out loud. And then, depending on how long they're able to hold it up, you're going to grade it from zero, which is no drift, they're able to hold it there, to four, which is they're not able to hold that arm up at all. And then, the same thing with the leg. Ask them to hold their leg up at a 30-degree angle for a full 5 seconds. Again, 0 to 4, zero being no drift down back to the bed. And four is no movement at all. You're going to do that both for the left and the right leg.

Number seven is going to be limb ataxia. This is where you're going to test finger-nose-finger to see if they can touch their nose to your finger, back to their nose. There are conditions for this. If a patient is blind or if they have amputations, there are other ways to test this, but we won't get into that right now. And then for the lower extremity, you're going to have them take their heel, put it on the opposite leg at the knee, slide it down to the toe and back up again.

And then your scale for this one is 0 to 2 and zero being absent, no ataxia, they're able to do all this correctly. Two, meaning that they have ataxia in two limbs. Number eight is sensory. Again, on a scale of 0 to 2, zero being normal, one is a mild sensory loss, and two is severe total sensory loss. They're not aware of being touched at all on that side of their body. And then anyone who is not able to respond, they're going to get the two points for that one as well, because they're not able to tell you where they are feeling or not feeling.

The next section is language, so that is a 0 to 3 scale and a zero would be no aphasia: normal fluency, normal reception. There's a picture that's in the NIH Stroke Scale booklet that you show them. You'll ask them to describe it to you and tell you what's going on in that picture, and then you'll give them a picture of some items for them to name. If they’re able to name them, then that you'll know that there's no aphasia. You will also ask them to read a sentence, tell you what that sentence means. This one's on a scale of 0 to 3, three being mute and globally aphasic. They cannot speak and they don't have any auditory comprehension. And a score of zero would be no aphasia.

Number ten is dysarthria. You can ask the patient to repeat words from a list that's within the NIH Stroke Scale booklet, or if they're able to talk in a cohesive manner, you can just have them talk. Zero would be normal, and then up to two would be severe dysarthria, their speech is slurred, unintelligible. You can’t really understand what the patient is saying.

Extinction and inattention is the next one. This is also known as neglect. You may be able to identify this during your previous testing, depending on what you've found. You may not need to confrontationally test neglect. You may be able to use what you already know: if they have any kind of inattention to one side, visual neglect, tactile neglect. A zero would be no abnormality and then a two would be inattention to one side or extinction to more than one modality. They're not recognizing things on that side of the body. They might not even recognize their arm or their leg, or they are orienting only to one side of their body.

*Lisa Bonsall:* Robin thank you so much for breaking down that NIH scale for us.

*Robin Coyne:* Any time, Lisa.