HINTS Exam

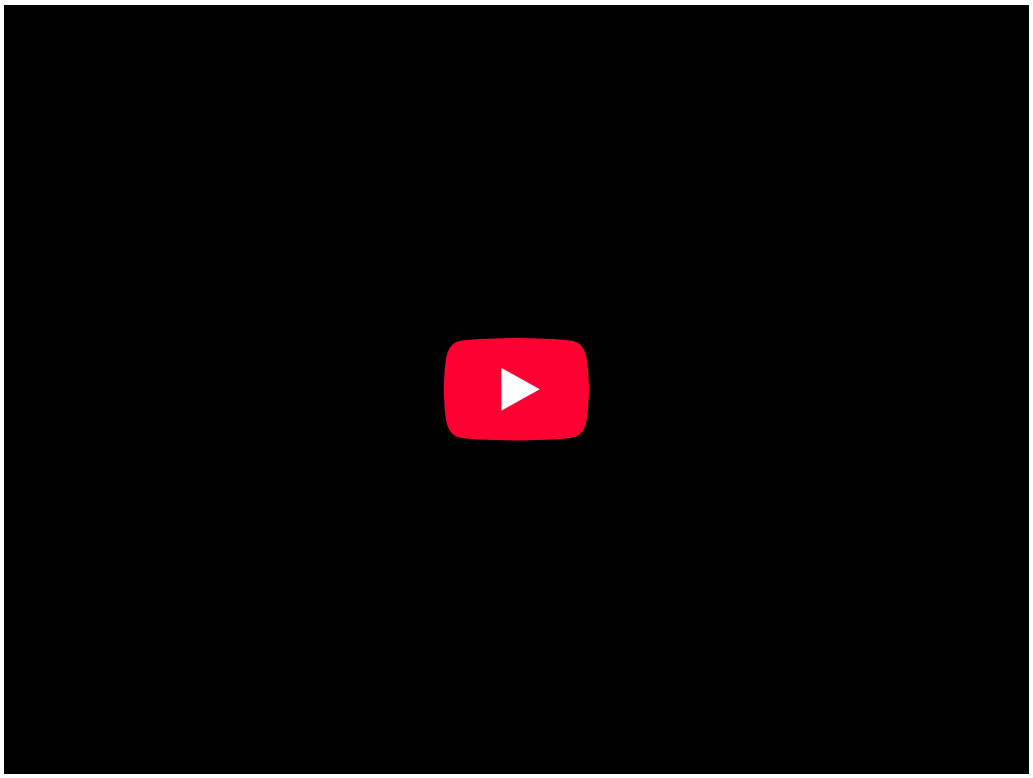
Purpose

The HINTS exam is a cluster of three bedside clinical tests that aim to assess individuals presenting with acute-onset dizziness, vertigo, nystagmus, head motion intolerance, and nausea/vomiting, also known as acute vestibular syndrome (AVS). HINTS is an acronym for the three tests included:

1. The Head Impulse Test (HI-)
2. Characterization of Spontaneous Nystagmus (-N-)
3. Test of Skew (-TS)

The goal of the HINTS is to guide the practitioner to determine whether the AVS is peripheral or central in origin, and also determine the need for further examination including neuroimaging.[1][2]

Technique



[3]

Head Impulse Test:

1. Hold the patient's head with both hands on either side and tilt the head slightly downward
2. Encourage the patient to let their head relax in your hands to allow you to move back and forth and direct them to keep their eyes on your nose at all times
3. Quickly move the head a small amplitude from central to the left of the right and back to the center again
4. Try to randomly test left and right directions, as to not let the patient predict the movement
5. Look for the patient's loss of visual focus on your nose and a corrective saccade

*Contraindications: neck pain or immobility that would not allow quick motions of the neck

Nystagmus:

1. Observe the patient's eyes at rest for nystagmus and the direction of the nystagmus
2. Ask the patient to gaze to the left and then to the right and observe for nystagmus

Skew Deviation:

1. Have the patient sit in front of you and focus their gaze on your nose
2. Cover one eye with an object or your hand for a couple of seconds and then uncover the eye
3. Observe for the eye realigning from a drift once the eye is uncovered or if the eye is able to stay focused [4]

Interpretation

Test	Central Origin	Peripheral Origin
Head Impulse Test	Normal test result -patient keeps visual focus with quick head movement	Abnormal test result - patient loses focus with quick head movement indicating VOR is not intact
Nystagmus	Bidirectional or vertical	None or unidirectional
Test of Skew	Abnormal correction (98% specific[3])	Normal, no skew

[1]

In conjunction with complaints of AVS symptoms, if any of the three tests are indicative of central vertigo, the patient should be referred for further evaluation and neuroimaging. If all three tests are indicative of peripheral origin, the patient most likely has vestibular neuritis.

Evidence

A 2009 cross-sectional study found the HINTS exam was 100% sensitive and 96% specific for a cerebral vascular accident. 17% of patients presented with a skew deviation and was found to be

associated with brainstem lesions. As this exam takes 1-2 minutes at bedside, this article highly recommends practitioners in the emergency department and direct-access rehab professionals be trained and familiar with the HINTS exam.[1]

References

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2. Kattah JC, Talkad AV, Wang DZ, Hsieh YH, Newman-Toker DE. HINTS to diagnose stroke in the acute vestibular syndrome: three-step bedside oculomotor examination more sensitive than early MRI diffusion-weighted imaging. Stroke. 2009 Nov;40(11):3504-10.
3. Medmastery. Vertigo maneuvers: Performing the HINTS exam. Available from: http://www.youtube.com/watch?v=VwmrjYuvqtQ [last accessed 12/13/2023]
4. MD Simpson, E Kalivoda, MD. Emergency Medicine Residents' Association. Take a HINT on Central Vertigo in the Emergency Department. Available from:https://www.emra.org/emresident/article/hints-exam(accessed 13/Dec/2023)