



EM CASES SUMMARY

Episode 224 Vertigo Part 1: Approach to Episodic Vertigo

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Intro

Dizziness and vertigo account for approximately 2–5% of emergency department (ED) visits¹. The assessment can be challenging because patients use imprecise and shifting descriptions, and red flags may be subtle. The vast majority of vertigo we see in the ED is due to non-life-threatening peripheral causes (eg. Benign Paroxysmal Positional Vertigo, BPPV, or vestibular neuritis), but about 3-6% of cases¹ can have a serious central cause, of which posterior circulation ischemic stroke is the most dangerous diagnosis to miss.

¹ Edlow et al. Guidelines for reasonable and appropriate care in the emergency department 3 (GRACE-3): Acute dizziness and vertigo in the emergency department. *Acad Emerg Med*. 2023;30:442-486.

Dizzying Definitions

“Dizziness” is a highly non-specific term that can mean many different things to different patients. While we are often taught to ask “what do you mean by dizzy?”, literature shows that ~50% of ED patients with dizziness will change their description of the dizziness within the same visit²!

For consistency of understanding, there *are* official definitions of dizziness, vertigo, disequilibrium, and ataxia according to the International Classification of Vestibular Disorders (ICVD)³:

- **DIZZINESS:** *the sensation of disturbed or impaired spatial orientation* (However, patients often also use this non-specific terminology when describing lightheadedness, feeling faint, “brain fog”, or even nausea).
- **VERTIGO:** *the sensation of self-motion (head or body) when no self-motion is occurring or the sensation of distorted self-motion during an otherwise normal head movement.*
- **DYSEQUILIBRIUM (UNSTEADINESS):** the feeling of being unstable when seated, standing, or walking.
- **ATAXIA:** *a lack of voluntary coordination of muscle movements* (can be truncal or limb-involving).

² Wang et al. ACR Appropriateness Criteria Dizziness and Ataxia: 2023 Update. *J of Amer Coll of Rad*. 2024;21:S100-S125.

³ Kaski et al. The International Classification of Vestibular Disorders: Achievements, challenges, and future directions. *J Vestib Res*. 2025;35(3):105-112.

Tips for Defining Dizziness Characteristics

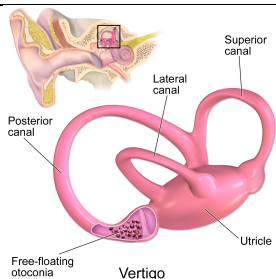
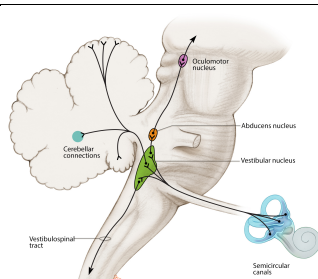
Two broad categories of dizziness that *are* helpful to characterize:

- **Sensation of movement:** spinning or imbalance sensation – potentially more suggestive of vestibular pathology
- **Sensation of loss of consciousness:** lightheaded, faint, or tunnel-vision – potentially more suggestive of presyncope

Instead of relying on descriptor labels of the dizziness alone, also ask about:

- **Timing:** When did symptoms begin? Are they still present now? How long does the intense episode last? Have there been prior episodes?
- **Triggers:** What was the patient doing immediately before onset? Do symptoms begin with rolling over in bed, lying down, bending forward, sitting up, standing, or another position change?
- **Episode Duration/Between-Episode Symptoms:** Are the symptoms persistent over time, even when the patient is holding still/not moving? Or does the patient return to normal/baseline, remain vaguely unwell, nauseated, or unsteady between episodes? Distinguish the duration of the spinning itself from the longer period of residual nausea or malaise.
- **Associated features:** Ask about vomiting, gait difficulty, hearing change, headache, neck pain, focal neurologic symptoms, and non-neurologic symptoms that may suggest a systemic cause.

Peripheral vs Central Causes of Vertigo & Dizziness

PERIPHERAL CAUSES	CENTRAL CAUSES
 Semicircular Canals + Utricle/Sacculle + CN 8	 Brainstem CN 8 Nuclei + Cerebellum/Pathways
Benign Paroxysmal Positional Vertigo (BPPV)* Vestibular Neuritis/Labyrinthitis* Meniere Disease Ototoxicity (eg. Drugs) Vestibular Schwannoma (Acoustic Neuroma) Ramsay-Hunt Syndrome (VZV Infection of CN7/8)	Posterior Circulation Stroke (Brainstem/Cerebellum)* Cerebellar Hemorrhage Craniocervical/Vertebral Artery Dissection Posterior Fossa Tumor Multiple Sclerosis Wernicke Syndrome/Metabolic Disturbance

Summary table created by Dr. Katie Lin (2026).

*Dr. Peter Johns Pearl: Focus on recognizing the "Big 3" Diagnoses: BPPV, VN, PCS

A simplified four-step approach to episodic vertigo

STEP 1 — Identify red flags. Screen for abnormal vital signs, focal neurologic deficits, dangerous Ds, new hearing or visual field deficits, central nystagmus at rest, severe new headache/neck pain, significant trauma, and inability to sit/stand/walk unaided. Consider systemic causes.

STEP 2 — Establish timing and triggers. Clarify onset, duration of the intense symptoms, whether symptoms persist at rest, what provokes them, and how the patient feels between attacks. Classify the presentation as generally episodic or continuous.

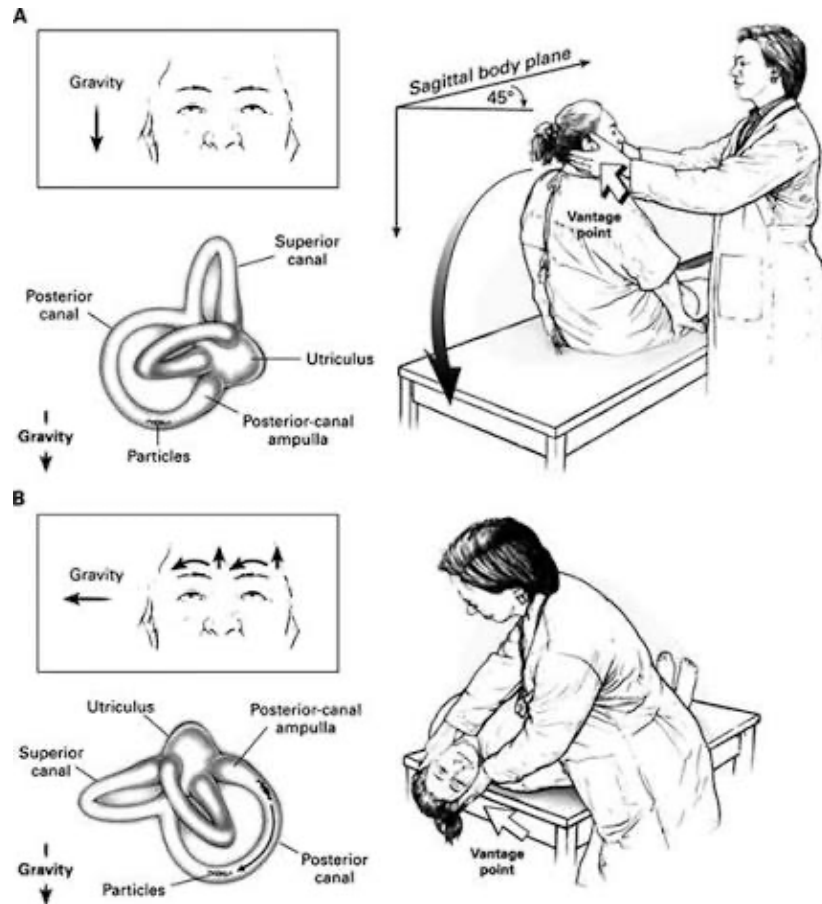
STEP 3 — Perform the appropriate vertigo test. For episodic, position-triggered symptoms without spontaneous nystagmus at rest, use the **Dix-Hallpike test**. Do not use HINTS Plus as a routine test for episodic positional vertigo (we'll review more about HINTS Plus in the Vertigo Pt 2 episode on continuous vertigo, where HINTS Plus testing comes into play).

STEP 4 — Treat and disposition. Treat confirmed posterior canal BPPV with an **Epley** maneuver. If the diagnosis is uncertain, broaden the differential, investigate when indicated, and provide safe disposition and explicit return precautions. Routine neuroimaging is NOT indicated or helpful unless you are worried about central TIA or vertebral artery dissection features and/or risk factors on history/physical exam.

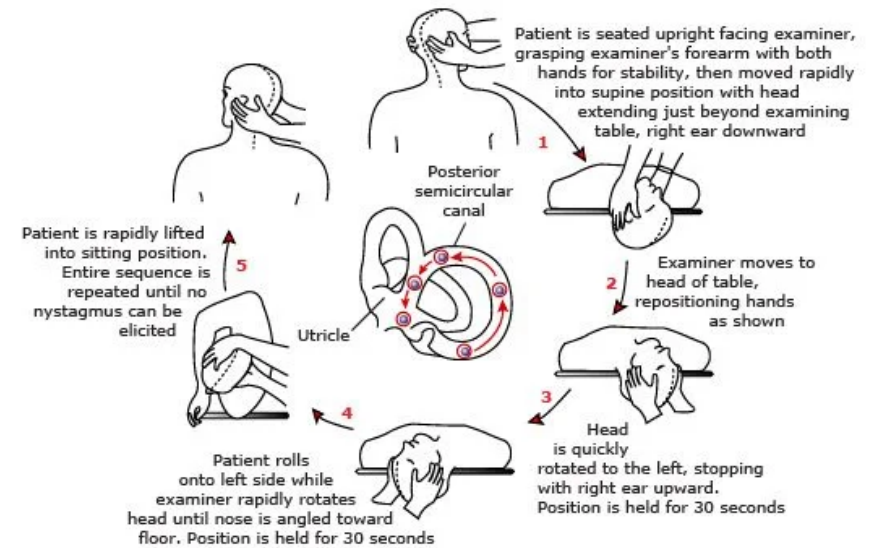
Key Clinical Take-Home Pearls for Episodic Vertigo

- Do NOT overly rely on the patient's word choice/descriptor alone (eg. "spinning," "light-headed," or "off balance") to rule diagnoses in or out. **Clarify timing, triggers, associated symptoms, and what the patient was doing at onset.**
- Symptomatic worsening with movement does NOT distinguish peripheral from central vertigo. Dizziness from any cause typically worsens with movement.
- Start with a focused but thorough neurologic screening exam and don't forget to assess gait. New inability to sit, stand, or walk unaided is concerning for a central cause and should not be dismissed.
- Choose the right vertigo test depending on whether the vertigo is episodic or continuous. Choosing the wrong test will lead you astray. For brief, triggered episodes **without** spontaneous nystagmus at rest, use positional testing (Dix Hallpike) and NOT HINTS testing to assess.
- A characteristic positive Dix-Hallpike test supports posterior canal BPPV. Treat with an otolith-repositioning maneuver such as Epley rather than routinely prescribing vestibular suppressants.
- If BPPV cannot be confidently diagnosed, keep the differential open and base investigation and disposition on the whole clinical picture, not a single negative test.

Diagrams and Figures



Ref: Diagram of Dix-Hallpike test for posterior canal BPPV:
https://www.researchgate.net/figure/Diagrammatic-representation-of-performance-of-the-Dix-Hallpike-maneuver-for-the-diagnosis_fig4_283739258. Retrieved Oct 13, 2026.



Ref: Diagram of Epley repositioning maneuver for RIGHT ear symptomatic posterior canal BPPV. <https://evolvevy.com/blogposts/2018/8/29/what-is-bppv-and-how-can-pt-help-it>. Retrieved Oct 13, 2026.

References

1. Edlow et al. Guidelines for reasonable and appropriate care in the emergency department 3 (GRACE-3): Acute dizziness and vertigo in the emergency department. *Acad Emerg Med*. 2023;30:442-486.
2. Puissant et al. Approach to Acute Dizziness/Vestigo in the Emergency Department: Selected Controversies Regarding Specialty Consultation. *Stroke*. 2024;55(10):2584-2588.
3. Edlow et al. A New Diagnostic Approach to the Adult Patient with Acute Dizziness. *J Emerg Med*. 2018 Apr;54(4):469-483.
4. Kaski et al. The International Classification of Vestibular Disorders: Achievements, challenges, and future directions. *J Vestib Res*. 2025;35(3):105-112.
5. Wang et al. ACR Appropriateness Criteria Dizziness and Ataxia: 2023 Update. *J of Amer Coll of Rad*. 2024;21:S100-S125.
6. Dr. Peter Johns & Dr. Scott Weingart. Spin Class Vertigo Course. Accessible here: <https://emneuro.com/spinclass/>
7. Dr. Katie Lin. SYNAPSE: EM Neuro Essentials Course. Accessible here: <https://synapsecourse.com/>