

# Office Evaluation of Dizziness



James D. Hogue, DO

## KEYWORDS

- Dizziness • Vertigo • Presyncope • Syncope • Disequilibrium
- Nonspecific dizziness • Dix-Hallpike maneuver • Nystagmus

## KEY POINTS

- Patients presenting to primary care with complaints of dizziness are common.
- Differentiating the cause of dizziness can be made easier by considering 4 main categories of dizziness: vertigo, presyncope/syncope, disequilibrium, and nonspecific symptoms.
- Differentials should immediately include the most common causes of dizziness, such as benign paroxysmal positional vertigo and orthostatic hypotension.
- Diagnostic tests should be ordered for patients who have abnormal findings on physical examination that may indicate a more serious cause of dizziness.

## INTRODUCTION

Dizziness is a common concern in primary care practice. Dizziness will affect 20% to 30% of the general population of patients seen in a primary care setting.<sup>1-4</sup> Patients' complaints of dizziness can be both challenging and time-consuming because of the vagueness and ambiguity of the symptoms and the wide variety of possible diagnoses.<sup>5,6</sup> As a complaint, "dizziness" is a nonspecific term used by patients to describe a wide variety of symptoms. Differentiating the type of dizziness can be difficult but is essential in the course of an evaluation.<sup>7</sup> It is most helpful to try to categorize dizziness into one of the following groups:

- Vertigo
- Presyncope/syncope
- Disequilibrium
- Non-specific

Peripheral vestibular disease, vertigo, is the most common diagnosis in dizzy patients.<sup>5,8,9</sup> The most common of the peripheral vestibular disorders is benign

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Georgia Campus, Philadelphia College of Osteopathic Medicine, 625 Old Peachtree Road NW, Suwanee, GA 30024, USA

E-mail address: [jdhogue@charter.net](mailto:jdhogue@charter.net)

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paroxysmal positional vertigo (BPPV) followed by Meniere disease and vestibular neuritis (labyrinthitis).<sup>5,6,8,9</sup> The second most common disorder is orthostatic hypotension.<sup>5</sup> Multiple sensory deficits are common in the elderly and lead to problems with disequilibrium that are often described as “dizziness.”

Brain tumors are rare findings in patients with dizziness.<sup>1,10</sup> Fewer than 10% of patients complaining of dizziness have been affected by serious cardiac or neurologic disorders such as arrhythmias or stroke.<sup>5</sup> By categorizing the symptoms and physical findings, a diagnosis for the cause of the dizziness can be made more than 80% of the time.<sup>5</sup> The first important step is to fit the patient into one of the categories. The next section describes the pathophysiology of each category.

## **PATHOPHYSIOLOGY**

### ***Vertigo***

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Vertigo occurs when there is an asymmetry in the vestibular system.<sup>11</sup> This asymmetry causes an illusion of motion that can be described as self-motion or motion of the environment. The most common description is a “spinning sensation.” The illusion of motion is usually brought on by and exaggerated by head movement.<sup>11</sup> The vestibular system pathway controls balance and eye movements. Impairment of the pathway causes a sensory overload leading the brain to misinterpret the data. Peripheral vertigo (most common) is usually caused by a disturbance in the inner ear that affects the labyrinth or the vestibular nerve, such as BPPV, Meniere disease, and labyrinthitis. Central vertigo (uncommon) is usually caused by an underlying medical disorder, such as cerebrovascular disease, brain stem lesions, stroke, multiple sclerosis, possible tumors, and migraine headaches.<sup>7,12–15</sup> BPPV (the most common peripheral cause) is caused by displaced otoliths from the utricle and saccule. The displaced otoliths tend to settle in the most dependent portion of the ear, the posterior semicircular canal, and occasionally in the lateral semicircular canal. Movement of the otoliths in the canal cause exaggerated movement of the endolymph, creating an imbalance in the signal resulting in vertigo. Meniere disease is poorly understood in terms of the cause and pathophysiology.<sup>5,16</sup> A common finding is dilated endolymph channels thought to be caused by an obstruction that results in increased endolymph pressure that creates breaks in the intralabyrinthine membranes, resulting in vertigo, tinnitus, and hearing loss.<sup>5,16–18</sup> Vestibular neuritis is more commonly known as labyrinthitis. The problem is thought to be virally mediated causing a mononeuropathy of the vestibular division of the eighth cranial nerve on one side. Many patients complain of a preceding viral illness. There is also evidence that some cases of labyrinthitis are caused by reactivation of latent herpes simplex virus type 1 infection.<sup>5,19</sup> Migraine headaches causing a sensation of vertigo are fairly common.

### ***Presyncope/Syncope***

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Presyncope is described as a near faint or the prodromal symptom of fainting,<sup>11</sup> which typically results from cerebral hypoperfusion or cardiac irregularities.<sup>7</sup> Patients with cardiovascular disease are at risk for orthostatic hypotension and cardiac arrhythmias.<sup>1,20</sup> Orthostatic hypotension has been found to be the second most common cause of complaints of dizziness.<sup>5</sup> Dizziness during the act of standing can point to symptoms associated with orthostatic hypotension when the cardiovascular system cannot react appropriately to gravitational changes that occur when going from supine to standing erect. Cardiac rate-controlling medications may blunt the necessary heart rate response when standing up, leading to orthostatic hypotension. Diuretic medications may lead to degrees of hypovolemia, a common cause of orthostatic

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