

# Distinguishing and Extinguishing Benign Paroxysmal Positional Vertigo

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With high healthcare costs and a patient's quality of life at stake, it is important that audiologists recognize benign paroxysmal positional vertigo (BPPV) during the intake process and provide a repositioning procedure or appropriate referral that can save someone's life.

Benign paroxysmal positional vertigo is a mechanical anomaly in which calcium carbonate crystals, called otoconia, detach from the otolithic organs and find their way into the semicircular canals.

A variety of causes for BPPV are postulated in the healthcare literature, including reduced bone density, cardiovascular and cerebrovascular disease, head and neck trauma, infection, Ménière's disease, vitamin D deficiency, space launch, surgical drilling, and migraine, although most cases remain idiopathic.

In an eight-year study that evaluated 731 patients 70 years of age and older who were seen in a multidisciplinary dizziness clinic, 27.6 percent of the patients had BPPV (*Ear Nose Throat J* 2014;93[4-5]:162,164,166-167).

According to the Centers for Disease Control and Prevention (CDC), one in three adults age 65 and older falls annually, with 20 percent to 30 percent sustaining injuries that prevent them from returning to normal activities and increase their risk for early death.

Furthermore, seniors are hospitalized five times more often for falls than for any other cause, and the direct and indirect costs of fall injuries are expected to reach \$67.7 billion by 2020.

The research on BPPV has yielded a revolution in its treatment, with an 80 percent to 90 percent cure rate. Given the treatable nature of the condition and the financial and health consequences of falls, it is critical that audiologists distinguish and extinguish benign paroxysmal positional vertigo.

## DISTINGUISHING AND DIAGNOSING

The primary diagnosis of BPPV is made from a patient's medical history: namely, a sudden onset of symptoms in the absence of other complications and true vertigo that resolves in less than a



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minute when the patient is motionless. The diagnosis is qualified by a bedside examination revealing the presence of nystagmus with a short delay after a change of position.

Between bouts, the patient may have some sensation of dizziness, but not vertigo.

The most frequent site of lesion is the posterior semicircular canal (80%), with anterior canalolithiasis and horizontal canal involvement occurring five percent and 15 percent of the time, respectively (*Acta Otorhinolaryngol Ital* 2013;33[4]:254-260).

Multifocal variants may occur in combination with other disorders, especially in cranio-cervical trauma. In these cases, a complete balance evaluation is warranted.

The Dix-Hallpike maneuver is used to identify benign paroxysmal positional vertigo in the posterior vertical canal during

bedside testing. The procedure starts with the patient in the sitting position, head turned 45 degrees, and proceeds with the patient reclining to the supine position, with the head in slight retroflexion at 20 degrees.

In anterior vertical canal BPPV, symptoms are often worse when the patient moves from the sitting position to the supine position without head turning. For the diagnosis of horizontal canal BPPV, a simple supine head roll test is used, with the patient's head starting at the center and turning to the right, pausing, returning to the center, pausing, and then repeating on the left.

## EXTINGUISHING BPPV

Benign paroxysmal positional vertigo usually can be extinguished during a single visit. For the common posterior canal BPPV, a simple protocol known as the Epley maneuver is most effective. The maneuver is also used for anterior canal BPPV, with some variation.

For the small population in which posterior canal BPPV is not easily resolved, the patient is instructed to do Brandt-Daroff exercises a few times a day, with results seen in 10 days.

For horizontal BPPV, maneuvers by Lempert (barbecue roll) and Gufoni are highly effective.

The bedside tests and extinguishing procedures are shown on the [American Academy of Neurology YouTube channel](#).

Every audiologist should ask patients about balance, know how to diagnose posterior canal BPPV and other variants, and extinguish the condition or guide patients to balance clinics that specialize in treating this debilitating disorder. 



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