



Benign Paroxysmal Positional Vertigo (BPPV)

BPPV is the most common form of positional vertigo and it accounts for nearly half of all people with a peripheral vestibular system dysfunction. The prevalence of BPPV in the general population is thought to be 2.4% but the prevalence increases with age. It is seven times more common in persons over the age of 60 compared to persons from 18 to 39 years of age. In people over the age of 65, the incidence may be as high as 35% to 40%. BPPV is more common in women than men in all age groups.

What is the vestibular system?

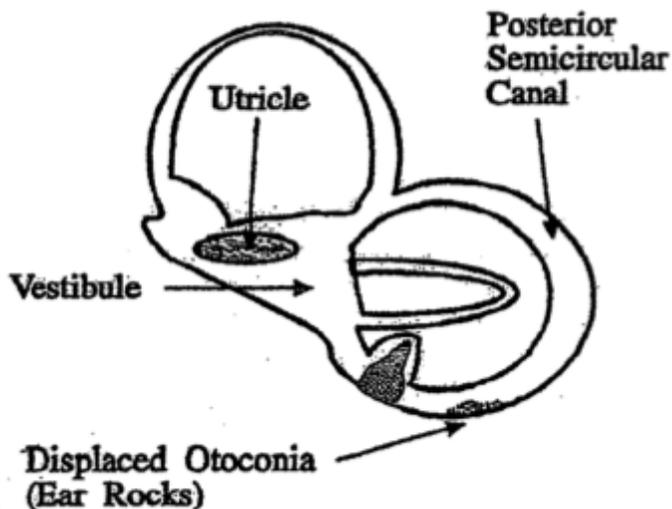
The vestibular system comprises five sensory organs that provide your brain with information about head position and movements. The five organs include three semicircular canals and two otoliths (the saccule and utricle). This system, there is one on each side, is also termed the 'inner ear' as it is connected to the cochlea which is part of the hearing mechanism. The vestibular system provides information to your brain about head rotational movements, linear movements as well as static positions of the head relative to gravity.

What is BPPV?

In the otoliths, there are calcium carbonate crystals or otoconia that occur naturally. These 'ear rocks' are fixed to a membrane within the saccule and utricle. If they dislodge, they can migrate into one of the semicircular canals where they don't belong (see diagram). If this

happens, then the problem that is caused is termed BPPV.

In BPPV, the dislodged otoconia can move when the individual moves their head into certain positions. This movement of the crystals can trigger a nerve to send offerroneous information to the brain, creating the sensation of vertigo (spinning), abnormal eye movements (nystagmus) and usually nausea.



The head movements that typically provoke the vertigo are looking up, looking down, lying down flat quickly and rolling over while lying down. The vertigo is usually short in duration (less than 60 seconds) and goes away if the person stays in the provoking position. Common movements in everyday life that can provoke the vertigo associated with BPPV involve turning over in bed, looking up into a cupboard as well as tilting your head back in a dentist's chair or having your hair washed at the salon.

What causes BPPV?

In the majority of cases (35%) there is no known cause for the BPPV (idiopathic onset). Prior head trauma, which can be minor, is present in approximately 15% of cases. In the remainder of cases, BPPV occurs in relationship with a variety of vestibular dysfunctions such as Meniere's disease, vestibular neuritis/labyrinthitis (15%) and ear surgeries. There is a higher incidence of BPPV in persons who experience migraine headache.

How is BPPV assessed?

Typically, two tests will be performed in the clinic to look for the presence of otoconia in one or more of the semicircular canals. These tests are the Dix-Hallpike and Head Roll tests. Sometimes a different test, the Side Lying test will be conducted.

How is BPPV treated?

Most BPPV involves loose or free floating otoconia in the posterior semicircular canal of the vestibular system. Sometimes the otoconia can be in the horizontal semicircular canal. The basis of all of the treatment techniques is to move or 'float' the loose otoconia around the semicircular canal in order to reposition them in the saccule where they belong. The treatment usually takes about 10 minutes. If the otoconia are in the posterior canal ((80% to 90%) of all BPPV, then the Epley maneuver will likely be used. There are other techniques that can be used if necessary.