

Bilateral Vestibular Hypofunction

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Provider Fact Sheet

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What is Bilateral Vestibular Hypofunction?

Bilateral vestibular hypofunction (BVH) is an impairment of the vestibular system affecting the peripheral vestibular apparatus and/or vestibular nerves bilaterally. The clinical features are oscillopsia and imbalance. Imbalance may present as gait ataxia and a widened base of support. This combination of instability and visual impairment can result in poor activity tolerance, fear of falling and a more sedentary lifestyle.

The cause of BVH often can be unclear and idiopathic in nature. However, the literature suggests that in 49-80% of cases a cause such as ototoxicity, bilateral Meniere's disease (MD), and meningitis could be identified.¹ Other causes include autoimmune disorders, neurodegenerative, genetic, vascular, neoplastic, and trauma.¹

What is Ototoxicity?

Ototoxicity is the leading idiopathic cause of BVH. It can be a side effect of multiple drug groups such as aminoglycosides, anti-neoplastics, environmental chemicals, or loop diuretics. The most common cause of BVH is from ototoxic medication such as gentamicin, which may damage the hair cells of the ampulla.² The effects of ototoxicity can vary from hearing loss and ringing in the ear to severe imbalance and impaired walking. Loss of function may be gradual, and patients can continue to lose function even after the medication has been discontinued.² The damage caused cannot be reversed, but the resulting impairments can be assessed and treated.

Diagnostic Criteria

In 2017, the Bárány Society described the diagnostic criteria for bilateral vestibulopathy, which includes the following:³

- A. Chronic vestibular syndrome with the following symptoms:
 1. Unsteadiness when walking or standing plus at least one of 2 or 3
 2. Movement-induced blurred vision or oscillopsia during walking or quick head/body movements and/or
 3. Worsening of unsteadiness in darkness and/or on uneven ground
- B. No symptoms while sitting or lying down under static conditions
- C. Bilaterally reduced or absent angular vestibular ocular reflex (VOR) function documented by:
 - bilaterally pathological horizontal angular VOR gain <0.6, measured by the video-HIT or scleral-coil technique and/or
 - reduced caloric response (sum of bithermal max. peak SPV on each side <6°/sec) and/or
 - reduced horizontal angular VOR gain <0.1 upon sinusoidal stimulation on a rotatory chair (0.1 Hz, Vmax = 50°/sec) and a phase lead >68 degrees (time constant <5 sec).
- D. Not better accounted for by another disease

Recovery Starts with Physical Therapy

There is evidence to support that individualized exercise can improve outcomes in this patient population.⁴ Referral to a physical therapist who specializes in vestibular rehabilitation is indicated to improve the patient's quality of life and reduce fall risk. Patients benefit from static and dynamic balance exercises along with gaze stabilization exercises to improve functional mobility and reduce symptoms.⁴ It should be noted that vestibular suppressants, such as Meclizine can limit the success of therapy and should be avoided.⁴

References:

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