

associated with neurovascular compression of the eighth cranial nerve, vestibular schwannoma, Arnold Chiari malformation, and a variety of cerebellar disorders.¹⁴²⁻¹⁴⁴

In contrast to BPPV, such conditions are quite rare and typically present with additional neurologic symptoms in conjunction with the vertigo. Routine neuroimaging has not been recommended to discern these conditions from the more common causes of vertigo.¹⁴⁵ The costs of routine imaging in cases of BPPV are not justified, given that it does not improve diagnostic accuracy in the majority of BPPV cases. Therefore, neuroimaging should not be routinely used in the diagnosis of BPPV.

STATEMENT 3b. VESTIBULAR TESTING: Clinicians should not order vestibular testing in a patient who meets diagnostic criteria for BPPV in the absence of additional vestibular signs and/or symptoms inconsistent with BPPV that warrant testing. *Recommendation against vestibular testing based on diagnostic studies with limitations and a preponderance of benefit over harm.*

Action Statement Profile for Statement 3b

- Quality improvement opportunity: Reduce unnecessary testing and costs (National Quality Strategy domains: safety, affordable quality care)
- Aggregate evidence quality: Grade C based on diagnostic studies with limitations in referred patient populations and observational studies for vestibular testing
- Level of confidence in evidence: Medium
- Benefits: Facilitate timely treatment by avoiding unnecessary testing associated with low-yield and potential false-positive diagnoses; avoid patient discomfort from nausea and vomiting from vestibular testing; reduced costs from unnecessary testing
- Risks, harms, costs: None
- Benefits-harm assessment: Preponderance of benefit over harm
- Value judgments: None
- Intentional vagueness: None
- Role of patient preferences: None
- Exceptions: Patients who have separate indications for vestibular testing aside from confirming a diagnosis of BPPV
- Policy level: Recommendation against
- Differences of opinion: None

Supporting Text. The purpose of this statement is to emphasize that patients with a history and symptoms consistent with BPPV should not routinely undergo comprehensive vestibular testing unless there are other factors or concerns that would necessitate such testing.

Vestibular function testing involves a battery of specialized tests that primarily record nystagmus in response to labyrinthine stimulation and/or voluntary eye movements. The components of

the vestibular function test battery identify abnormalities in ocular motility, as well as deficits in labyrinthine response to position change, caloric stimulation, rotational movement, and static positions (sitting and supine). Caloric testing is an established, widely accepted technique that is particularly useful in determining unilateral vestibular hypofunction. Rotational chair testing is considered the most sensitive and reliable technique for quantifying the magnitude of bilateral peripheral vestibular hypofunction.¹⁴⁶ There are other tests that may be considered. Postural stability testing allows for assessment of the impact of vestibular dysfunction on balance. Vestibular evoked myogenic potentials (ocular and cervical) provide information about the utricle and saccule, respectively. Video head impulse testing allows for assessment of the function of each semicircular canal. Some or all of these test components may be included in a vestibular test battery. These tests are useful in the evaluation of vestibular disorders that may not be evident from the history and clinical examination, and they may provide information for quantification, prognostication, and treatment planning.¹⁴⁷

The diagnosis of BPPV is based on the clinical history and physical examination with a positive result on the Dix-Hallpike test. Fortunately, this can be accomplished by a trained clinician without specialized testing equipment, and an appropriate CRP can be implemented immediately. In a retrospective chart review of 100 consecutive patients referred for vestibular assessment, Phillips et al estimated that a 9% reduction in referrals for this specialized testing could be realized if the initial provider obtained a thorough case history and completed a Dix-Hallpike test.¹⁴⁸ Comprehensive vestibular testing is unnecessary for patients who already meet clinical criteria for the diagnosis of BPPV (**Table 6**). This does not imply that use of video-oculographic technology with or without recording should not be used when available to help in identification and differentiation of types of BPPV.

Comprehensive vestibular testing may have a role in diagnosis if the clinical presentation is felt to be atypical, if Dix-Hallpike testing elicits equivocal or unusual nystagmus findings, if the diagnosis is unclear, or if additional symptoms aside from those attributable to BPPV are present, suggesting an accompanying modifying CNS or otologic disorder. It may also be beneficial when multiple concurrent peripheral vestibular disorders are suspected.^{5,93,149}

In cases of BPPV where the nystagmus findings are suggestive but not clear, there may be benefit to using video-oculographic recordings of nystagmus associated with posterior canal BPPV, as the eye can be enlarged on a screen for detail and may be replayed for further study or second opinion. In a small percentage of cases, patients with a history of positional vertigo but unclear nystagmus findings may undergo vestibular function testing. Among complex patients referred for subspecialty evaluation of BPPV, such atypical or unclear nystagmus findings may approach 13% among patients with diagnoses suspicious for BPPV.¹⁵⁰

BPPV is relatively frequently associated with additional vestibular pathology. Symptoms associated with an underlying,