Supplementary Material 1. Disease diagnostic criteria used in the present study

Acute vestibular neuritis [1]	Acute vestibular neuritis was diagnosed by combining the previously established key signs and laboratory examination results. 1. key signs and symptoms - Rotatory vertigo with an acute onset lasting several days - Horizontal spontaneous nystagmus (with a rotational component) toward the unaffected ear - A pathologic head-impulse test toward the affected ear - A deviation of the subjective visual vertical toward the affected ear - A postural imbalance with falls toward the affected ear - Nausea 2. Laboratory examination results - Head impulse test and caloric tests confirmed an ipsilateral deficit in the VOR
BPPV [2]	All criteria must be fulfilled to make the diagnosis. 1. Canalolithiasis of the posterior canal (pc-BPPV) A. Recurrent attacks1 of positional vertigo or positional dizziness provoked by lying down or turning over in the supine position. B. Duration of attacks <1 minute C. Positional nystagmus elicited after a latency of 1 or few seconds by the Dix-Hallpike maneuver or side-lying maneuver (Semont diagnostic maneuver). The nystagmus is a combination of torsional nystagmus with the upper pole of the eyes beating toward the lower ear combined with vertical nystagmus beating upward (toward the forehead) typically lasting <1 minute. D. Not attributable to another disorder 2. Canalolithiasis of the horizontal canal (hc-BPPV) A. Recurrent attacks of positional vertigo or positional dizziness provoked by lying down or turning over in the supine position. B. Duration of attacks <1 minute C. Positional nystagmus elicited after a brief latency or no latency by the supine roll test, beating horizontally toward the undermost ear with the head turned to either side (geotropic direction changing nystagmus) and lasting <1 minute D. Not attributable to another disorder 3. Cupulolithiasis of the horizontal canal (hc-BPPV-cu) A. Recurrent attacks of positional vertigo or positional dizziness provoked by lying down or turning over in the supine position. B. Positional nystagmus elicited after a brief latency or no latency by the supine roll test, beating horizontally toward the uppermost ear with the head turned to either side (apogeotropic direction changing nystagmus), and lasting >1 minute C. Not attributable to another disorder
Bilateral vestibulopathy [3]	All criteria must be fulfilled to make the diagnosis. 1. Chronic vestibular syndrome with the following symptoms A. Unsteadiness when walking or standing plus at least one of 2 or 3 B. Movement-induced blurred vision or oscillopsia during walking or quick head/body movements and/or C. Worsening of unsteadiness in darkness and/or on uneven ground 2. No symptoms while sitting or lying down under static conditions 3. Bilaterally reduced or absent angular 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° (time constant <5 seconds). 4. Not better accounted for by another disease
Chronic peripheral vestibulopathy [4,5]	Chronic peripheral vestibulopathy refers to a condition in which peripheral vestibular dizziness episodes last for at least 6 months and patients still experience dizziness worsened by head movements, which is an indication of vestibular pathology. The patients should have decreased vestibular function in at least one of the vestibular function tests.
Meniere disease [6]	All criteria must be fulfilled to make the diagnosis. 1. Definite Meniere disease A. Two or more spontaneous episodes of vertigo, each lasting 20 minutes to 12 hours B. Audiometrically documented low to medium frequency sensorineural hearing loss in one ear, defining the affected ear on at least one occasion before, during or after one of the episodes of vertigo C. Fluctuating aural symptoms (hearing, tinnitus or fullness) in the affected ear D. Not better accounted for by another vestibular diagnosis 2. Probable Meniere disease A. Two or more episodes of vertigo or dizziness, each lasting 20 minutes to 24 hours B. Fluctuating aural symptoms (hearing, tinnitus or fullness) in the affected ear D. Not better accounted for by another vestibular diagnosis
Motion sickness [7]	The diagnosis of motion sickness is mainly clinical, based on the history of a triggering situation (imposed or perceived motion) and typical symptoms and signs of motion sickness are malaise, anorexia, nausea, yawning, sighing, increased salivation, burping, headache, blurred vision, non-vertiginous dizziness, drowsiness, spatial disorientation, difficulty concentrating, and occasional vomiting. The diagnosis can be facilitated if there is a prior history of motion sickness, especially following the exposure to similar events.

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Supplementary Material 1. Continued

Orthostatic dizziness [8]	All criteria must be fulfilled to make the diagnosis. 1. Five or more episodes of dizziness, unsteadiness or vertigo triggered by arising (i.e., a change of body posture from lying to sitting/standing or sitting to standing), or present during upright position, which subsides by sitting or lying down 2. OH, POTS or syncope documented on standing or during head-up tilt test 3. Not better accounted for by another disease or disorder
Persistent postural-perceptual dizziness (PPPD) [9]	All criteria must be fulfilled to make the diagnosis. 1. One or more symptoms of dizziness, unsteadiness, or non-spinning vertigo are present on most days for 3 months or more. A. Symptoms last for prolonged (hourslong) periods of time, but may wax and wane in severity. B. Symptoms need not be present continuously throughout the entire day. 2. Persistent symptoms occur without specific provocation, but are exacerbated by three factors: A. Upright posture, B. Active or passive motion without regard to direction or position, and C. Exposure to moving visual stimuli or complex visual patterns. 3. The disorder is precipitated by conditions that cause vertigo, unsteadiness, dizziness, or problems with balance including acute, episodic, or chronic vestibular syndromes, other neurologic or medical illnesses, or psychological distress. A. When the precipitant is an acute or episodic condition, symptoms settle into the pattern of criterion A as the precipitant resolves, but they may occur intermittently at first, and then consolidate into a persistent course. B. When the precipitant is a chronic syndrome, symptoms may develop slowly at first and worsen gradually. 4. Symptoms cause significant distress or functional impairment. 5. Symptoms are not better accounted for by another disease or disorder
Probable BPPV, spontaneously resolved [2]	All criteria must be fulfilled to make the diagnosis. 1. Recurrent attacks1 of positional vertigo or positional dizziness provoked by lying down or turning over in the supine position. 2. Duration of attacks < 1 minute. 3. No observable nystagmus and no vertigo with any positional maneuver 4. Not attributable to another disorder
Recurrent vestibulopathy [10]	Recurrent vestibulopathy was defined as an illness characterized by multiple episodes of vertigo of duration varying from approximately 5 minutes to 24 hours, without auditory or neurological symptoms or signs.
Perilymphatic fistula [11]	Perilymphatic fistula was confirmed by intraoperative visualization of perilymph leakage. The patients were suspected to have fluctuating or non-fluctuating hearing loss, tinnitus, aural fullness, and/or vestibular symptoms that occurred immediately preceded by trauma event.
Superior canal dehiscence syndrome [12]	Superior canal dehiscence syndrome was diagnosed by high-resolution CT demonstrating dehiscence on images.
Vestibular migraine [13]	All criteria must be fulfilled to make the diagnosis. 1. At least 5 episodes with vestibular symptoms [1] of moderate or severe intensity, lasting 5 minutes to 72 hours 2. Current or previous history of migraine with or without aura according to the ICHD 3. One or more migraine features with at least 50% of the vestibular episodes: - Headache with at least two of the following characteristics: one sided location, pulsating quality, moderate or severe pain intensity, aggravation by routine physical activity - Photophobia and phonophobia, - Visual aura 4. Not better accounted for by another vestibular or ICHD diagnosis

BPPV, benign paroxysmal positional vertigo; VOR, vestibulo-ocular reflex; HIT, head impulse test; SPV, slow phase velocity; OH, orthostatic hypotension; POTS, postural orthostatic tachycardia syndrome; CT, computed tomography; ICHD, International Classification of Headache Disorders.

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