

# **Coding Guidance for Diagnosing Vestibular Disorders in the MHS**

Recommendations from the  
Department of Defense  
Hearing Center of Excellence

Version Date: June 2020

## Table of Contents

---

Introduction .....	1
Background .....	1
Common Terminology .....	1
Symptom Verification .....	2
Summary of Codes.....	3
ICD-10 Coding Guidance .....	4
General Codes.....	4
Peripheral Vestibular Codes .....	7
Central Pathology Codes.....	12
Other Pathology Codes.....	14
References .....	16

## Introduction

---

The goal of this document is to use the 10<sup>th</sup> revision of the International Classification of Diseases (ICD-10) to standardize diagnostic use and provide guidance for diagnosing patients with dizziness in the Department of Defense (DoD). This document was created by the DoD Hearing Center of Excellence (HCE) in collaboration with Tri-Service representatives and subject matter experts. It has been approved by the DHA Coding Workgroup, and the DHA Medical Coding Program Manager, in accordance with IPM 18-016.

If you have questions or concerns regarding information presented in this document, please contact your Otolaryngology Service Consultant, Coding Compliance Consultant, or the Hearing Center of Excellence Clinical Care Branch (dha.ncr.j-9.list.hce-clinical-care@mail.mil).

## Background

---

Diagnosing patients with dizziness can be a confusing process for multiple reasons. One issue is that the human balance system is comprised of inputs from visual, proprioceptive, and vestibular systems. These inputs are analyzed by the cerebral cortex, brainstem, and cerebellum. Dysfunction in any one of these systems or areas can interfere with orientation and balance. Another challenge is that we often use the same language to describe symptoms that are associated with more than one disorder. When a patient complains of dizziness, the clinician's first task is to determine what the patient means by that description. It can be helpful to ask the patient to describe their symptoms without using the word "dizzy." More specific symptom descriptions can help the clinician to determine whether the orientation and balance difficulties are due to the visual, proprioceptive, or vestibular system.

Without understanding the precise cause, misdiagnosis can occur. Early misdiagnosis can shift the treatment paradigm, delay appropriate treatment, and adversely influence a Service member's mission readiness and job performance. It can also affect the Military Health System's ability to track outcomes and assess quality improvements. There are appropriate diagnosis codes for use by primary care clinicians prior to determining a definitive diagnosis. Other codes should only be used after a full, specialty-specific evaluation is complete.

## Common Terminology

---

Below is a list of medical terminology used to describe symptoms reported by patients. It is possible to have just one, some, or all of these symptoms. Get careful descriptions of symptoms.

- **Vertigo** – Patient reports a sensation of motion when no motion is present, or an altered sensation of motion when motion occurs. It is usually described as spinning, typically rotary, but it can also be translational, tilt, swaying, or a linear motion.
- **Oscillopsia** (vestibulovisual) – Patient describes an illusion that the world is jiggling whenever the patient moves.
- **Imbalance** – Patient reports difficulty and unsteadiness when walking.
- **Dysequilibrium** – Patient describes a sensation that they are not quite where they think they should be, that their orientation to the world is off.
- **Near-Syncope** – Patient reports a feeling of almost fainting.
- **Lightheadedness** – Patients reports a vague feeling in the head, as if becoming weightless.

## Symptom Verification

---

To separate peripheral vestibular disorders (diseases of the inner ear or vestibular nerve) from central nervous system (CNS) disorders, a description of the symptoms and a time line of the symptomology are helpful. Questions to ask patients to determine a diagnosis may include:

- Is this a recent or long-term balance issue?
- Do you feel like the room is spinning?
- Do you feel like you are swimming?
- Do you feel like you might fall?
- When you have the symptoms, do you have any ringing in your ears or changes in your hearing?
- Does a particular movement cause the symptoms?
- Have you had any recent flu-like symptoms, viral illness, or head or neck trauma?
- Have you had any recent changes in medication?
- Have you had any headaches associated with your balance symptoms?

Acute spinning vertigo (sensation of room spinning or patient spinning), hearing, and tinnitus symptoms are generally signs of peripheral pathology. Patients should be referred to otolaryngology (ENT) and audiology for a vestibular work-up and diagnosis. They can also be referred for vestibular rehabilitation with a physical therapy (PT) clinician specializing in treatment of vestibular and balance disorders.

Imbalance, chronic or slow developing headache, and other neurological symptoms are typically signs of central nervous system pathology. Patients should be referred to neurology for diagnosis. They may also be referred to ENT or audiology for vestibular testing, in addition to a PT clinician, who specializes in treatment of vestibular and balance disorders.

Lightheadedness or near-syncope may be associated with cardiovascular pathology. Patients should be evaluated by the primary care team to determine the proper specialty referral.

Other codes should only be used after a full, specialty-specific evaluation is complete. Below are diagnosis codes with common symptoms, test indicators, diagnostic requirements, and referral recommendations for vestibular disorders. This is not an exhaustive list of pathologies that may contribute to balance disorders. The codes are grouped by specialty type required for diagnosis, beginning with primary care.

## Summary of Codes

Please note that this summary of codes is for quick reference purposes. It is recommended that providers carefully review symptoms and results of appropriate examinations prior to selecting the proper diagnosis.

<input checked="" type="checkbox"/> Diagnosis	ICD-10 Code
---	-------------

### General Codes

These codes to be used by a primary care clinician, prior to diagnostic exams.

<input type="checkbox"/> Other Peripheral Vertigo	H81.39*
<input type="checkbox"/> Vertigo of Central Origin	H81.4*
<input type="checkbox"/> Unspecified Disorder of Vestibular Function	H81.9*
<input type="checkbox"/> Motion Sickness	T75.3XXz

### Peripheral Vestibular Codes

These codes to be used after diagnostic exams have been completed.

<input type="checkbox"/> Benign Paroxysmal Positional Vertigo (BPPV)	H81.1*
<input type="checkbox"/> Meniere's Disease	H81.0*
<input type="checkbox"/> Vestibular Neuronitis	H81.2*
<input type="checkbox"/> Labyrinthitis	H83.0*
<input type="checkbox"/> Labyrinthine Fistula/Perilymphatic Fistula	H83.1*
<input type="checkbox"/> Superior Semicircular Canal Dehiscence Syndrome	H83.8x9
<input type="checkbox"/> Acoustic Nerve Disorders	H93.3X
<input type="checkbox"/> Vestibular Schwannoma	D33.3

### Central Pathology Codes

These codes to be used after a neurological evaluation and diagnosis have been completed.

<input type="checkbox"/> Cervical Vertigo	169.998
<input type="checkbox"/> Vertebrobasilar Artery Syndrome	G45.0*
<input type="checkbox"/> Migraine with Aura (formerly known as Basilar Migraine or Vestibular Migraine)	G43.1*

### Other Pathology Codes

Clinicians should replace these codes with similar codes, as these should rarely be used, or should be used secondary to other disease processes.

<input type="checkbox"/> Dizziness/Giddiness	R42
<input type="checkbox"/> Vertiginous Syndrome in Diseases Classified Elsewhere	H82.*
<input type="checkbox"/> Labyrinthine Dysfunction	H83.2*
<input type="checkbox"/> Other Disorders of Vestibular Function	H81.8X3
<input type="checkbox"/> Aural Vertigo	H81.31*

# ICD-10 Coding Guidance

## General Codes

These codes to be used by a primary care clinician, prior to diagnostic exams.

ICD-10 Codes In This Section	Page #
H81.39* — Other Peripheral Vertigo	4
H81.4* — Vertigo of Central Origin	5
H81.9* — Unspecified Disorder of Vestibular Function	6
T75.3XXS — Motion Sickness	6

Other Peripheral Vertigo	
ICD-10 Code	H81.39*
Symptoms	<p>Typically, a true vertigo/spinning. Symptoms may include:</p> <ul style="list-style-type: none"> <li>■ Sudden onset</li> <li>■ Concurrent hearing loss</li> <li>■ Nausea</li> <li>■ Nystagmus is horizontal or torsional</li> <li>■ Nystagmus is inhibited by fixation</li> <li>■ Nystagmus does not change direction</li> <li>■ Increased nystagmus intensity with gaze towards the fast phase (Alexander’s law)</li> </ul>
Diagnostic Requirements/ Referral Recommendations	<p>Code to be used when symptoms suggest peripheral origin but testing is inconclusive or has not been completed to determine cause.</p> <p>This is an appropriate diagnosis code <b>for use by primary care before referral to ENT or audiology for differential diagnosis and to PT for vestibular rehabilitation.</b></p>
Differential Diagnoses	<p>ENT/audiology specific diagnoses may include:</p> <ul style="list-style-type: none"> <li>■ Benign paroxysmal positional vertigo (BPPV)</li> <li>■ Meniere’s disease</li> <li>■ Vestibular neuronitis</li> <li>■ Labyrinthitis</li> <li>■ Perilymphatic fistula</li> <li>■ Superior semicircular canal dehiscence syndrome</li> <li>■ Acoustic neuroma/vestibular schwannoma</li> </ul>

## Vertigo of Central Origin<sup>8,9</sup>

ICD-10 Code	H81.4*
Symptoms	<p>Often a feeling of disequilibrium, swimming, or imbalance. It is unlikely to have nausea or vomiting. Symptoms may include:</p> <ul style="list-style-type: none"> <li>■ Progressive onset</li> <li>■ Purely vertical nystagmus</li> <li>■ Nystagmus that does not abate with gaze fixation</li> <li>■ Nystagmus may be direction-changing with gaze toward fast phase</li> <li>■ Other neurological signs or symptoms such as nausea, movement illusion, imbalance, hearing loss, and oscillopsia</li> </ul> <p>May have other risk factors for migraine, stroke, multiple sclerosis (MS), etc.</p>
Diagnostic Requirements/ Referral Recommendations	<p>Code to be used when symptoms suggest central origin but testing is inconclusive or has not been completed to determine cause.</p> <p>This is an appropriate diagnosis code <b>for use by primary care before referral to neurology or ENT for differential diagnosis, and to PT for vestibular rehabilitation.</b></p>
Differential Diagnoses	<p>Specialty specific diagnoses may include:</p> <ul style="list-style-type: none"> <li>■ Migraine with aura (formerly known as Basilar migraine or Vestibular migraine)</li> <li>■ Multiple sclerosis</li> <li>■ Vertebrobasilar artery syndrome/insufficiency</li> <li>■ Central nervous system tumors</li> <li>■ Central positional nystagmus</li> <li>■ Epilepsy</li> <li>■ Cerebellar or brainstem abnormalities</li> <li>■ Medication or alcohol</li> </ul>

### Unspecified Disorder of Vestibular Function

ICD-10 Code	H81.9*
Diagnostic Requirements/ Referral Recommendations	This diagnosis code should be used as a general dizziness code. It is an <b>appropriate primary care code if you are uncertain</b> of peripheral versus central origin. Consider <b>referring the patient to ENT or audiology</b> for testing and diagnosis, followed by vestibular rehabilitation.

### Motion Sickness

ICD-10 Code	T75.3XXS
Symptoms	Nausea caused by motion, particularly when traveling by car, airplane, boat, or train.
Diagnostic Requirements	This is an appropriate diagnosis code <b>for use by primary care.</b>
Differential Diagnoses	Consider the following differential diagnoses: <ul style="list-style-type: none"> <li>■ Migraine</li> <li>■ Mal de débarquement syndrome</li> </ul>



## Peripheral Vestibular Codes

These codes to be used after diagnostic exams have been completed.

ICD-10 Codes in this Section	Page #
H81.1* — Benign Paroxysmal Positional Vertigo (BPPV)	7
H81.0* — Meniere's Disease	8
H81.2* — Vestibular Neuronitis	9
H83.0* — Labyrinthitis	9
H83.1* — Labyrinthine Fistula/ Perilymphatic Fistula	10
H83.8x9 — Superior Semicircular Canal Dehiscence Syndrome	10
H93.3X — Acoustic Nerve Disorders	11
D33.3 — Vestibular Schwannoma	11

Benign Paroxysmal Positional Vertigo (BPPV) <sup>7</sup>	
ICD-10 Code	H81.1*
Symptoms	Episodic, short duration (<1 min) true spinning vertigo following position changes (typically after rolling over in bed, getting out of bed, or looking up). May feel slight imbalance between episodes, but no true vertigo without position change.
Vestibular Test Results	Positive Dix-Hallpike or supine roll test.
Audiometric Test Results	No changes in hearing or tinnitus associated with BPPV.
Diagnostic Requirements/ Referral Recommendations	Patient must have positive Dix-Hallpike to use this code.  <b>Consider referring the patient to PT, audiology, ENT, or neurology for repositioning maneuvers, if needed. If experience dictates, repositioning maneuvers can be performed by PCP.</b>

## Meniere's Disease<sup>6</sup>

ICD-10 Code	H81.0*
Symptoms	<p>Must have all four (4) of the following symptoms:</p> <ul style="list-style-type: none"> <li>■ Spontaneous episodes of vertigo</li> <li>■ Fluctuating hearing loss</li> <li>■ Tinnitus</li> <li>■ Aural fullness (typically unilateral)</li> </ul>
Vestibular Test Results	<p>Videonystagmography (VNG)/ Electronystagmography (ENG) testing may show normal function or may show hypofunction in the affected ear.</p> <p>Electrocochleography (ECOG) may show elevated summing potential (SP) and action potential (AP) ratios in the affected ear.</p> <p>Vestibular evoked myogenic potential (VEMP) may be abnormal if tested during an attack or as disease process progresses.</p>
Audiometric Test Results	<p>Low- to mid-frequency sensorineural hearing loss (SNHL) that fluctuates, gradually worsening</p> <p>Normal tympanogram and present reflexes, despite SNHL</p> <p>Poor speech discrimination in affected ear as disease process progresses</p>
Diagnostic Requirements	<p>Patient must have all four (4) classic symptoms.</p> <p><b>Consider referring the patient to ENT</b> for evaluation, diagnosis, and treatment plan.</p>

### Vestibular Neuronitis<sup>14</sup>

ICD-10 Code	H81.2*
Symptoms	Sudden, severe vertigo lasting several days, improving over days to weeks, with continued imbalance for up to months after initial onset of vertigo.
Vestibular Test Results	VNG/ENG shows absent or reduced caloric response in the affected ear, sometimes improving over time.  Rotary chair test shows evidence of a unilateral weakness or abnormally low vestibuloocular reflex (VOR) gain.
Audiometric Test Results	No change in hearing sensitivity. No new or worsening tinnitus.
Diagnostic Requirements	<b>Consider referring the patient to ENT, audiology, or PT</b> for evaluation, diagnosis, and treatment plan.

### Labyrinthitis

ICD-10 Code	H83.0*
Symptoms	Sudden, severe vertigo and accompanying hearing loss. Vertigo lasts several days, improving over days to weeks, with continued imbalance for up to months after initial onset of vertigo; however, hearing loss persists.
Vestibular Test Results	VNG/ENG shows no or reduced caloric response in the affected ear.  Rotary chair test shows evidence of a unilateral weakness.
Audiometric Test Results	New, typically unilateral, sensorineural hearing loss
Diagnostic Requirements	<b>Consider referring the patient to ENT and audiology</b> for evaluation, diagnosis, and treatment plan.

### Labyrinthine Fistula/Perilymphatic Fistula

ICD-10 Code	H83.1*
Symptoms	<p>Leakage of perilymph from the perilymphatic space of the bony labyrinth causing disequilibrium or vertigo, or unilateral changes in hearing (SNHL) or tinnitus.</p> <p>Hearing loss may be sudden and profound or fluctuating. The symptoms may follow physical trauma. Patient may report vertigo to loud noise or to changes in pressure (bearing down, suppressed sneeze, diving, or flying).</p>
Vestibular Test Results	Positive fistula test (nystagmus with negative middle ear pressure)
Audiometric Test Results	Unilateral sensorineural hearing loss
Diagnostic Requirements	<b>Consider referring the patient to ENT and audiology</b> for evaluation, diagnosis, and treatment plan.

### Superior Semicircular Canal Dehiscence Syndrome

ICD-10 Code	H83.8x9 (other specified diseases of the ear)
Symptoms	Vertigo or oscillopsia in response to loud noises or changes in middle ear pressure or intracranial pressure (coughing, sneezing, straining, diving, flying, bearing down); possible changes in hearing, autophony (hearing own voice); hearing eyes moving, breathing, joints moving.
Vestibular Test Results	<p>VEMP shows lower than normal thresholds and increased waveform amplitude compared to ear without dehiscence.</p> <p>Noise-induced and pressure-induced nystagmus</p>
Audiometric Test Results	May have apparent conductive, low-frequency hearing loss with present acoustic reflexes.
Diagnostic Requirements	<b>Consider referring the patient to ENT and audiology</b> for diagnosis, including high-resolution computerized tomography (CT) scans of the temporal bones, and for possible treatment options.

### Acoustic Nerve Disorders

ICD-10 Code	H93.3X (code should not be used for acoustic neuroma [9D33.3] or syphilitic acoustic neuritis [A52.15])  A non-neoplastic or neoplastic disorder affecting the acoustic nerve (eighth cranial nerve). Pathological processes of the vestibulocochlear nerve, including the branches of cochlear nerve and vestibular nerve. Common examples are vestibular neuritis and cochlear neuritis.
Symptoms	Clinical signs are varying degree of hearing loss, vertigo, and tinnitus.
Diagnostic Requirements	This code <b>should NOT be used by primary care</b> . This code is <b>for use by neurology and ENT</b> .

### Vestibular Schwannoma

ICD-10 Code	D33.3 (benign neoplasm of brain and other parts of central system) Excludes: <ul style="list-style-type: none"> <li>■ Angioma (D18.0)</li> <li>■ Benign neoplasm of meninges (D32.-)</li> <li>■ Benign neoplasm of peripheral nerves and autonomic nervous system (D36.1-)</li> <li>■ Hemangioma (D18.0-)</li> <li>■ Neurofibromatosis (Q85.0-)</li> </ul>
Symptoms	Clinical signs are varying degree hearing loss, tinnitus, vertigo (late finding), or nystagmus.
Audiometric Test Results	Asymmetrical hearing loss
Diagnostic Requirements	This code is <b>for use by ENT, neurology, or neurosurgery</b> after diagnostic confirmation with magnetic resonance imaging (MRI) of internal auditory canal (IAC).

## Central Pathology Codes

These codes to be used after a neurological evaluation and diagnosis have been completed.

ICD-10 Codes in this Section	Page #
169.998 — Cervical Vertigo	12
G45.0* — Vertebrobasilar Artery Syndrome	12
G43.1* — Migraine with Aura (formerly known as Basilar Migraine or Vestibular Migraine)	13

Cervical Vertigo <sup>2-5,13</sup>	
ICD-10 Code	169.998 (other sequelae following unspecified cerebrovascular disease)
Symptoms	Dizziness associated with neck movement, may mimic BPPV. May have history of arthritis, surgery, chiropractic manipulation, major trauma, or sports injury.
Diagnostic Requirements	<b>Consider referring the patient to neurology, ENT, or PT</b> for evaluation, diagnosis, and treatment plan.

Vertebro-Basilar Artery Syndrome <sup>1,12</sup>	
ICD-10 Code	G45.0*
Symptoms	Dizziness, loss of balance, changes in vision, numbness or tingling in extremities, slurred speech, changed mental status, weakness, difficulty swallowing. Symptoms are similar to stroke (e.g., Wallenberg's syndrome or Bowhunter's syndrome).
Vestibular Test Results	Positive vertebrobasilar artery insufficiency test
Diagnostic Requirements	<b>Consider referring the patient to neurology or neurosurgery</b> for evaluation (computed tomography angiogram, magnetic resonance angiogram), diagnosis, and a treatment plan.

## Migraine with Aura<sup>10,15</sup>

ICD-10 Code	G43.1* (formerly known as Basilar Migraine or Vestibular Migraine)
Symptoms	<p>Posterior circulation manifestations include:</p> <ul style="list-style-type: none"> <li>■ Dizziness</li> <li>■ Dysarthria</li> <li>■ Tinnitus</li> <li>■ Hyperacusis</li> <li>■ Diplopia</li> <li>■ Ataxia</li> <li>■ Decreased level of consciousness</li> </ul>
Diagnostic Requirements (International Classification of Headache Disorders, 3rd Edition [ICHD-3], 2018)	<p>1. At least two attacks fulfilling criteria A through C.</p> <p style="margin-left: 40px;">A. Aura consisting of visual, sensory and/or speech/language symptoms, each fully reversible, but no motor or retinal symptoms</p> <p style="margin-left: 40px;">B. At least two of the following brainstem symptoms:</p> <ol style="list-style-type: none"> <li>1. Dysarthria</li> <li>2. Vertigo</li> <li>3. Tinnitus</li> <li>4. Hyperacusis</li> <li>5. Diplopia</li> <li>6. Ataxia</li> <li>7. Decreased level of consciousness</li> </ol> <p style="margin-left: 40px;">C. At least two of the following four characteristics:</p> <ol style="list-style-type: none"> <li>1. At least one aura symptom spreads gradually over <math>\geq 5</math> min, and/or two or more symptoms occur in succession.</li> <li>2. Each individual aura symptom lasts 5-60 min.</li> <li>3. At least one aura symptom is unilateral.</li> <li>4. The aura is accompanied, or followed within 60 min by headache.</li> </ol> <p>2. Not better accounted for by another ICHD-3 diagnosis, and transient ischemic attack has been excluded.</p> <p><b>Consider referring the patient to neurology or ENT for evaluation, diagnosis, and treatment plan.</b></p> <p><i>For a comprehensive overview of diagnosing migraine disorders, please consult the International Classification of Headache Disorders, 3rd Edition (ICHD-3), 2018).</i></p>

## Other Pathology Codes

Clinicians should replace these codes with similar codes, as these should rarely be used, or should be used secondary to other disease processes.

ICD-10 Codes in this Section	Page #
R42 — Dizziness/Giddiness	14
H82.* — Vertiginous Syndrome in Diseases Classified Elsewhere	14
H83.2* — Labyrinthine Dysfunction	15
H81.8X3 — Other Disorders of Vestibular Function	15
H81.31* — Aural Vertigo	15

Dizziness/Giddiness	
ICD-10 Code	R42
Diagnostic Use	When possible symptoms should point to central vertigo, peripheral vertigo, or unspecified disorder of vestibular function. This code is <b>for use by primary care, ENT, audiology, neurology, neurosurgery, and PT</b> when a specific vestibular disorder cannot be differentiated from medication side-effects. Refer to the General Codes section for more information about these codes.

Vertiginous Syndromes in Diseases Classified Elsewhere	
ICD-10 Code	H82.*
Diagnostic Use	This code <b>must be used secondary</b> to another disease process. This code <b>should only be used by ENT or neurology</b> when a specific diagnosis is unclear.



### Labyrinthine Dysfunction

ICD-10 Code	H83.2*
Diagnostic Use	This code <b>can be used by audiology after vestibular testing</b> reveals hypofunction and the clinical diagnosis is still in question, <b>or when waiting for referral to ENT, neurology, or PT.</b> This code <b>should NOT be used by primary care.</b>

### Other Disorders of Vestibular Function

ICD-10 Code	H81.8X3
Symptoms	This diagnosis code should be transitioned to Unspecified Disorder of Vestibular Function (H81.9*), Peripheral Vertigo (H81.39*), or Central Vertigo (H81.4*). This code is <b>for use by audiology, ENT, neurology, and PT.</b>

### Aural Vertigo

ICD-10 Code	H81.31*
Diagnostic Requirements	This diagnosis code should be transitioned to Peripheral Vertigo (H81.39*). <b>This code should NOT be used.</b>

## References

1. Ausman JI. Vertebrobasilar Insufficiency. *Archives of Neurology*. 1985;42(8):803. doi:10.1001/archneur.1985.04210090071021
2. Borg-Stein J, Rauch SD, Krabak B. Evaluation and Management of Cervicogenic Dizziness. *Critical Reviews in Physical and Rehabilitation Medicine*. 2001;13(2-3):10. doi:10.1615/critrevphysrehabilmed.v13i2-3.70
3. Brandt T. Cervical Vertigo. *Journal of Neurology, Neurosurgery & Psychiatry*. 2001;71(1):8-12. doi:10.1136/jnnp.71.1.8
4. Brandt T, Huppert D. A new type of cervical vertigo: Head motion-induced spells in acute neck pain. *Neurology*. 2016;86(10):974-975. doi:10.1212/wnl.0000000000002451
5. Cherchi M, Hain TC. Provocative maneuvers for vestibular disorders. *Vertigo and Imbalance: Clinical Neurophysiology of the Vestibular System Handbook of Clinical Neurophysiology*. 2010:111-134. doi:10.1016/s1567-4231(10)09009-x
6. Monsell EM, Balkany TA, Gates GA, et al; Committee on Hearing and Equilibrium. Committee on Hearing and Equilibrium Guidelines for the Diagnosis and Evaluation of Therapy in Meniere's Disease. *Otolaryngology-Head and Neck Surgery*. 1995;113(3):181-185. doi:10.1016/s0194-5998(95)70102-8
7. Furman JM, Cass SP. Benign paroxysmal positional vertigo. *New England Journal of Medicine*. 1999;341:1590.
8. Kahky A, Kader H, Rizk M, Mostafa B. Central Vestibular Dysfunction in an Otorhinolaryngological Vestibular Unit: Incidence and Diagnostic Strategy. *International Archives of Otorhinolaryngology*. 2014;18(03):235-238. doi:10.1055/s-0034-1370884
9. Karatas M. Central Vertigo and Dizziness. *The Neurologist*. 2008;14(6):355-364. doi:10.1097/nrl.0b013e31817533a3
10. Kirchmann M, Thomsen LL, Olesen J. Basilar-type migraine: Clinical, epidemiologic, and genetic features. *Neurology*. 2006;66(6):880-886. doi:10.1212/01.wnl.0000203647.48422.dd
11. Lempert T, Olesen J, Furman J, et al. Vestibular migraine: Diagnostic criteria. *J Vest Res*. 2012;22:167-172.
12. Lima Neto AC, Bittar R, Gattas GS, Bor-Seng-Shu E, Oliveira MD, Monstanto RD, Bittar LF. Pathophysiology and Diagnosis of Vertebrobasilar Insufficiency: A Review of the Literature. *International Archive of Otorhinolaryngology*. 2017;21(3):302-307.
13. Reiley AS, Vickory FM, Funderburg SE, Cesario RA, Clendaniel RA. How to diagnose cervicogenic dizziness. *Archives of Physiotherapy*. 2017;7(12):1-12. doi:10.1186/s40945-017-0040-x
14. Strupp M, Brandt T. Vestibular Neuritis. *Seminars in Neurology*. 2009;29(05): 509-519. doi:10.1055/s-0029-1241040
15. The International Classification of Headache Disorders, 3rd edition. *Cephalalgia*. 2018;38(1):1-211. doi:10.1177/0333102417738202