



# Managing your Dizzy Patients: Vestibular Rehab for the Non-Vestibular PT

Jennifer Stoskus, PT, DPT, NCS  
Co-Chair APTANJ Vestibular SIG  
April 24, 2021

© 2021 Jennifer Stoskus, PT, DPT, NCS

1

1



## Objectives

- ✓ Define Vestibular Rehabilitation
- ✓ Differentiate between components of the general and vestibular- specific physical therapy examination
- ✓ Distinguish red flags from vestibular dysfunction in patient screening process
- ✓ Identify available and ethical solutions when vestibular dysfunction is suspected
- ✓ Review and select appropriate resources available for all physical therapists
  - ✓ Resources available for New Jersey physical therapists

© 2021 Jennifer Stoskus, PT, DPT, NCS

2

2

# Agenda



- Overview of Vestibular Rehabilitation
  - Definitions
  - Anatomy & Physiology
  - Common Symptoms, Diagnoses, and Impairments
  - Efficacy of VRT
- Components of a Physical Therapy Examination and Plan of Care
  - Vestibular Examination
- Screening for Vestibular Dysfunction and Red Flags
- How Every Physical Therapist Can Take Action

3



# Vestibular Rehabilitation

4

# Vestibular Rehabilitation



- Definitions

- Rehabilitation

- The action of restoring someone to health or normal life through training (Oxford English Dictionary)

- Vestibular Rehabilitation

- As it relates to the Vestibular System
    - Exercise-based treatment programs designed to improve overall function related to vestibular system impairment

5

# Vestibular Rehabilitation



- Definitions

- Rehabilitation Process

- Evaluate dysfunction
      - Structure/ Function impairment
      - Activity Limitations
      - Participation Restrictions
    - Treat to improve function
      - Adapt and Habituate remaining function
      - Substitute / Compensate for loss of function
        - Based on unique qualities of the individual

6

# Vestibular Rehabilitation



- Vestibular Anatomy & Physiology

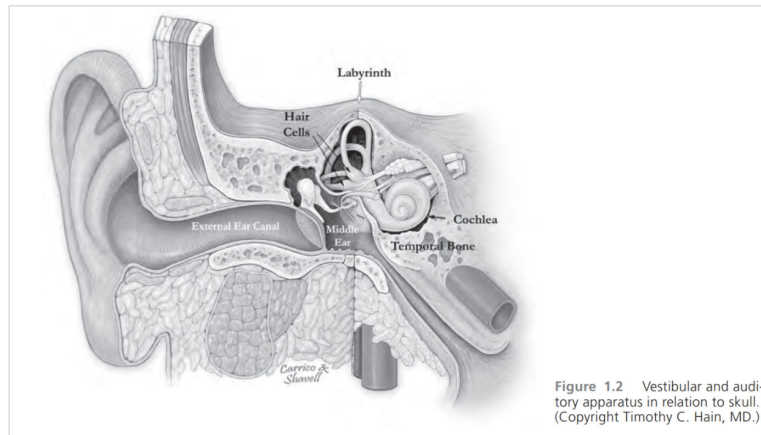


Figure 1.2 Vestibular and auditory apparatus in relation to skull. (Copyright Timothy C. Hain, MD.)

© 2021 Jennifer Stoskus, PT, DPT, NCS

Figure from Herdman:  
Vestibular Rehabilitation 4<sup>th</sup> ed.

7

# Vestibular Rehabilitation



- Vestibular Anatomy & Physiology

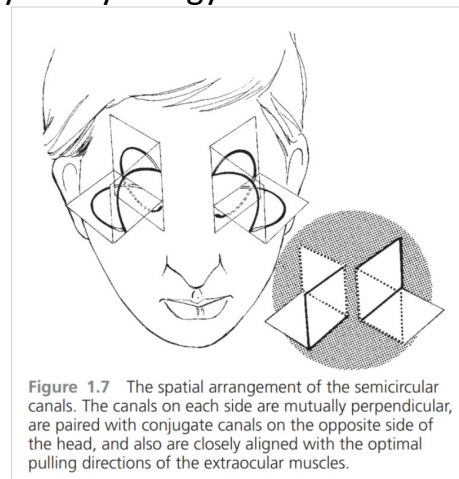


Figure 1.7 The spatial arrangement of the semicircular canals. The canals on each side are mutually perpendicular, are paired with conjugate canals on the opposite side of the head, and also are closely aligned with the optimal pulling directions of the extraocular muscles.

© 2021 Jennifer Stoskus, PT, DPT, NCS

Figure from Herdman:  
Vestibular Rehabilitation 4<sup>th</sup> ed.

8

# Vestibular Rehabilitation



- Vestibular Anatomy & Physiology

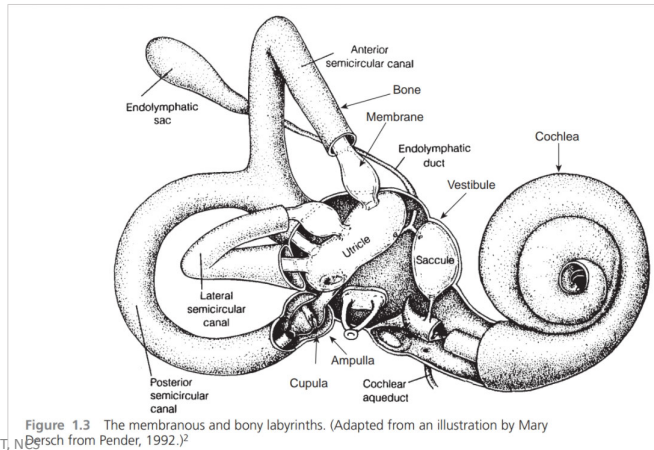


Figure 1.3 The membranous and bony labyrinths. (Adapted from an illustration by Mary Pender, 1992.)<sup>2</sup>

Figure from Herdman: Vestibular Rehabilitation 4<sup>th</sup> ed.

9

# Vestibular Rehabilitation



- Vestibular Anatomy & Physiology

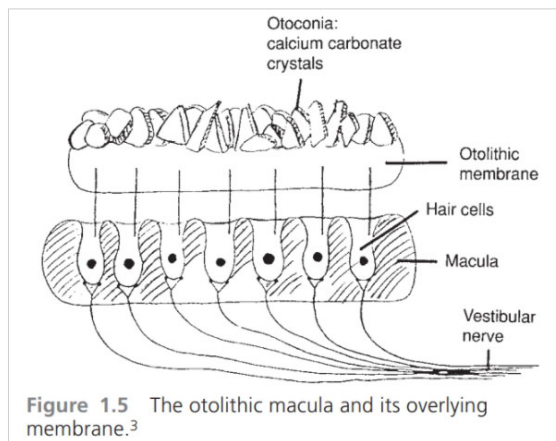


Figure 1.5 The otolithic macula and its overlying membrane.<sup>3</sup>

© 2021 Jennifer Stoskus, PT, DPT, NCS

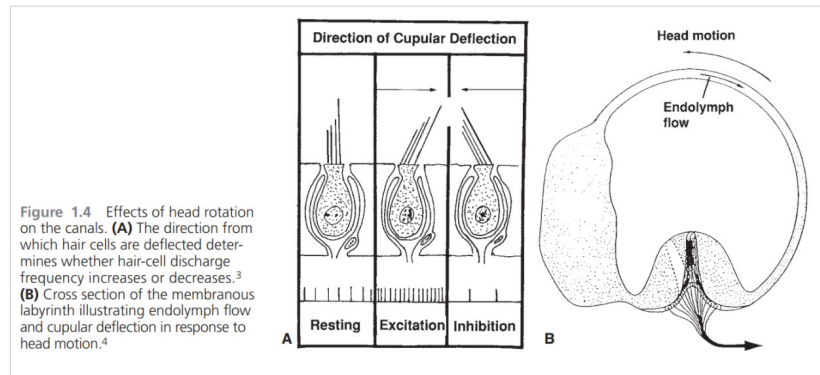
Figure from Herdman: Vestibular Rehabilitation 4<sup>th</sup> ed.

10

# Vestibular Rehabilitation



## • Vestibular Anatomy & Physiology



© 2021 Jennifer Stoskus, PT, DPT, NCS

Figure from Herdman:  
Vestibular Rehabilitation 4<sup>th</sup> ed.

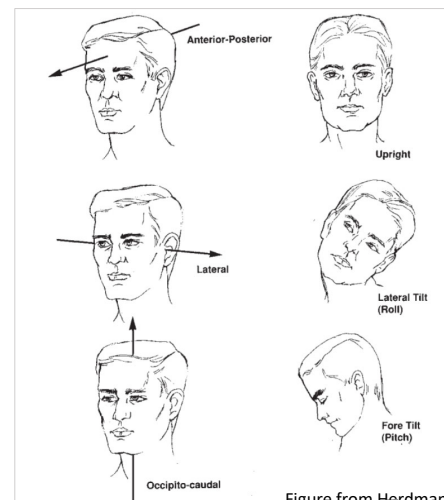
11

# Vestibular Rehabilitation



## • Vestibular Anatomy & Physiology

- Peripheral Sensory Structure
  - Provides input to the brain about head position & head motion via hair cells + CN VIII



© 2021 Jennifer Stoskus, PT, DPT, NCS

Figure from Herdman:  
Vestibular Rehabilitation 4<sup>th</sup> ed.

12

# Vestibular Rehabilitation



- Vestibular Anatomy & Physiology
  - Vascular Considerations
    - Blood supply from Brainstem
      - Vertebral-Basilar Artery
        - PICA to central structures and cerebellum
        - AICA peripheral structures and cerebellum

© 2021 Jennifer Stoskus, PT, DPT, NCS

13

13

# Vestibular Rehabilitation



- Vestibular Anatomy & Physiology
  - Vascular Considerations

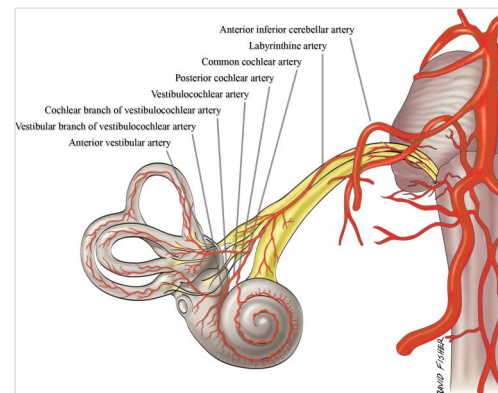
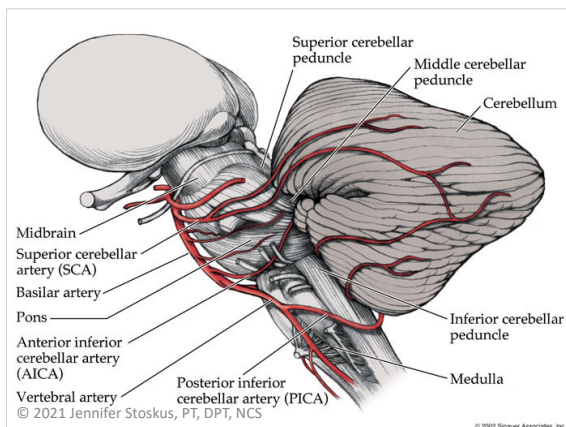


Figure from Herdman:  
Vestibular Rehabilitation 4<sup>th</sup> ed.

14

# Vestibular Rehabilitation



- Vestibular Anatomy & Physiology

- Central Considerations

- Central structures and processes

- Vestibular nuclei
      - Vestibulocerebellum

- Central Reflexes

- Vestibulo-spinal reflex (VSR)
    - Vestibulo-ocular reflex (VOR)
    - Vestibulo-colic reflex (VCR)

15

# Vestibular Rehabilitation



- Vestibular Functions

- Postural Stability

- Ability to maintain, restore, or achieve balance

- Gaze Stability

- Ability to maintain clear visual focus with head movement

- Perceptual Orientation

- Ability to consciously or unconsciously perceive head and body positions (stillness and movement) in relationship to the environment

16



# Vestibular Rehabilitation



- Vestibular Dysfunctions
  - Postural Instability
    - Imbalance & Falls
  - Gaze Instability
    - Jumping & Bouncing Vision
  - Perceptual Orientation
    - Disorientation & Impaired Perception of Movement (self or environment)

© 2021 Jennifer Stoskus, PT, DPT, NCS

17

17

**FEELING DIZZY?** More than **1/3** of adults in the U.S. 40 and older have experienced some sort of vestibular dysfunction.\*

**BALANCE**

Balance is controlled by:

- the inner ear (vestibular system)
- the eyes (vision)
- sense of touch (proprioception)

**DIAGNOSIS**

Vestibular disorders are not easy to diagnose. On average, patients consult 4 or 5 doctors before receiving a diagnosis.\*\*

Your doctor will take a medical history and may order several types of testing, including:

**SYMPTOMS**

You may experience one or several symptoms.

**BALANCE PROBLEMS**

- VERTIGO (sensation of movement)
- DIZZINESS
- IMBALANCE

HEARING      BALANCE      VISION

Getting a diagnosis may mean ruling out other conditions. Your condition may be short-term (acute) or long-term (chronic).

PROBLEMS CONCENTRATING (or cognitive challenges)

VISION DISTURBANCE

HEARING CHANGES

**TREATMENT**

Your treatment will depend on your diagnosis.

- PHYSICAL THERAPY
- POSITIONING MANEUVERS
- DIET & LIFESTYLE CHANGES
- MEDICATION
- SURGERY
- COUNSELING

**WHAT SHOULD I DO?**  
To learn more and find a specialist:  
[vestibular.org](http://vestibular.org)

**VESTIBULAR DISORDERS ASSOCIATION**

© 2021 Jennifer Stoskus, PT, DPT, NCS

18

18



# Vestibular Rehabilitation



- Common Vestibular **Symptoms** (Bisdorff, 2009)
  - Postural Instability
    - Unsteadiness, Falling/ Near-Falls
  - Gaze Instability
    - Blurred, Jumping / Bouncing Vision (Oscillopsia)
  - Perceptual Orientation
    - **Dizziness:** Sensation of disturbed or impaired spatial orientation *without a false or distorted sense of motion*
      - Dizziness examples: lightheadedness, wooziness, off balance, drunk
    - **Vertigo:** *Sensation of self motion* when no self motion is occurring or the *sensation of distorted self motion during an otherwise normal head movement*
      - Rotary examples: spinning or tumbling
      - Linear examples: swaying, rocking, bobbing, falling, floating, tilted

19

# Vestibular Rehabilitation



- Vestibular Disorder Classification
  - Location
    - Peripheral vs Central
    - Unilateral vs Bilateral
  - Chronicity
    - Acute vs Chronic vs Recurrent

20

# Vestibular Rehabilitation



- Common Vestibular Diagnoses
  - Peripheral Vestibular Hypofunction
    - Unilateral Vestibular Hypofunction
      - Acute dysfunction
        - Neuritis/ Labyrinthitis
        - Vestibular Schwannoma/ Neuroma
    - Bilateral Vestibular Hypofunction
      - Chronic loss of function
        - Induced by medication or other global causes

© 2021 Jennifer Stoskus, PT, DPT, NCS

21

21

# Vestibular Rehabilitation



- Common Vestibular Diagnoses
  - Recurring Disorders
    - Peripheral
      - Benign Paroxysmal Positional Vertigo (BPPV)
      - Meniere's Disease
    - Central
      - Vestibular Migraine
  - Chronic Vestibular Disorders
    - Persistent Postural Perceptual Dizziness (3PD/ PPPD) (Staab, 2017)
      - Most common cause of chronic dizziness
      - Chronic functional disorder
        - Not structural nor psychiatric

© 2021 Jennifer Stoskus, PT, DPT, NCS

22

22

# Vestibular Rehabilitation



- Vestibular Rehabilitation Therapy
  - Pathology-Based Approach
    - Knowing something about pathology and prognosis may affect treatment strategy used
  - Impairment-Based Approach
    - Identifying and treating per examination findings

© 2021 Jennifer Stoskus, PT, DPT, NCS

23

23

# Vestibular Rehabilitation



- Vestibular Rehabilitation Therapy
  - Efficacy of Vestibular Rehabilitation (McDonnell, 2015) (Herdman, 2013)
    - Is Vestibular and Balance Rehabilitation Therapy (VBRT) effective?
      - YES!
      - BPPV (Reinink, 2014) (Bhattacharyya, 2017) (Galgon, 2021)
        - Physical Therapists that work in specialty practice have near or almost perfect agreement of diagnosis, side, canal, and mechanism
        - If diagnosed with positioning tests, should have competence in treatment
        - 32% to 90% of patients cleared in the first treatment session
          - 32% of patients cleared in the first treatment session
          - 50% of patients cleared in the first treatment session
          - 60% of patients cleared in the first treatment session
          - 70% of patients cleared in the first treatment session

© 2021 Jennifer Stoskus, PT, DPT, NCS

24

24

# Vestibular Rehabilitation



- Vestibular Rehabilitation Therapy
  - Efficacy of Vestibular Rehabilitation (McDonnell, 2015) (Herdman, 2013)
    - Is Vestibular and Balance Rehabilitation Therapy (VBRT) effective?
      - YES!
      - Moderate to strong evidence that VBRT is safe and effective (Hall, 2016)
        - Acute, Subacute and Chronic Unilateral Vestibular Hypofunction (UVH)
        - Bilateral Vestibulopathy (BVP)
      - Chronic Disorders (Kundakci, 2018)
      - Central Vestibular disorders (Shepherd, 1995)

25



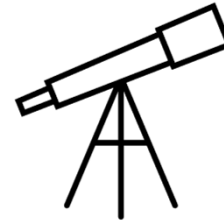
# Physical Therapy Examination and Plan of Care

26

# Examination and Plan of Care



- Scope of Practice
  - Professional
    - Client-Management Model
    - ICF Model
  - Jurisdictional
    - State practice act
  - Personal
    - Education & competency

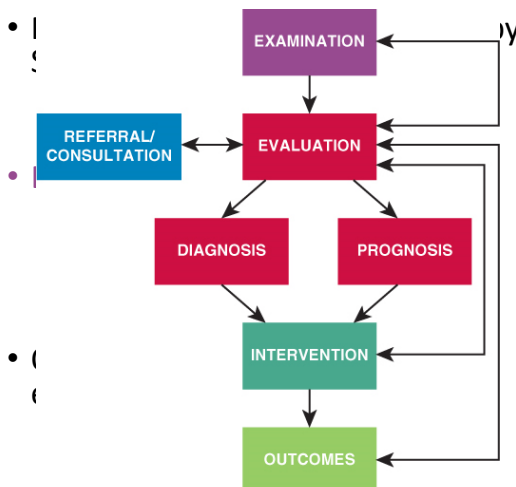


**PHYSICAL THERAPIST'S SCOPE OF PRACTICE HOD**  
**P06-17-09-16/HOD P06-17-08-07\*** [Position]

Updated 09/13/17  
 27

© 2021 Jennifer Stoskus, PT, DPT, NCS

# Examination and Plan of Care



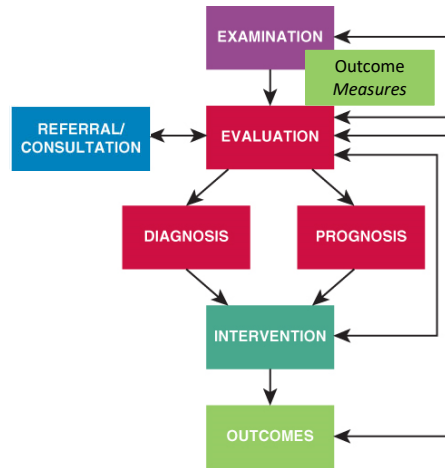
© 2021 Source: Stoskus, Jennifer; Thomas J. Schmitz, George Fulk  
 Physical Rehabilitation, Seventh Edition  
 Copyright © F. A. Davis Company. All right reserved.

28

# Examination and Plan of Care



- **Examination**
  - Patient History
  - Systems Review
  - Test & Measures
    - Outcome measures
- **Evaluation**
  - Diagnosis and Prognosis
    - Outcome measures
    - Plan of Care
    - Short-and-Long term goals
      - Outcome measures
- **Interventions**
  - Outcome measures
- **Outcomes**
  - Test & Measures
    - Outcome measures



Source: Susan B. O'Sullivan, Thomas J. Schmitz, George Fulk  
Physical Rehabilitation, Seventh Edition  
Copyright © F. A. Davis Company. All right reserved.

© 2021 Jennifer Stokus, PT, DPT, NCS

O'Sullivan SB, Schmitz TJ. Physical Rehabilitation. 7th ed. F.A. Davis; 2019.

29

29

# Examination and Plan of Care



**ACTIVITIES AND PARTICIPATION**

- Current and prior role functions (eg, self-care and domestic, education, work, community, social, and civic life)

**FAMILY HISTORY**

- Familial health risks

**GROWTH AND DEVELOPMENT**

- Developmental history
- Hand dominance

**GENERAL DEMOGRAPHICS**

- Age
- Education
- Primary language
- Race/ethnicity
- Sex

**CURRENT CONDITION(S)**

- Concerns that led the patient or client to seek the services of a physical therapist
- Concerns or needs of the patient or client who requires the services of a physical therapist
- Current therapeutic interventions
- Mechanisms of injury or disease, including date of onset and course of events
- Onset and pattern of symptoms
- Patient or client, family, significant other, and caregiver expectations and goals for the therapeutic intervention
- Patient or client, family, significant other, and caregiver perceptions of patient's or client's emotional response to the current clinical situation
- Previous occurrence of current condition(s)
- Prior therapeutic interventions

**GENERAL HEALTH STATUS (SELF-REPORT, FAMILY REPORT, CAREGIVER REPORT)**

- General health perceptions
- Mental functions (eg, memory, reasoning ability, depression, anxiety)
- Physical function (eg, mobility, sleep patterns, restricted bed days)

**LIVING ENVIRONMENT**

- Assistive technology (eg, aids for locomotion, orthotic devices, prosthetic requirements, seating and positioning technology)
- Living environment and community characteristics
- Projected destination at conclusion of care

**MEDICATIONS**

- Medications for current condition
- Medications previously taken for current condition
- Medications for other conditions

**OTHER CLINICAL TESTS**

- Laboratory and diagnostic tests
- Review of available records (eg, medical, education, surgical)
- Review of other clinical findings (eg, nutrition and hydration)

**SOCIAL/HEALTH HABITS (PAST AND CURRENT)**

- Behavioral health risks (eg, tobacco use, drug abuse)
- Level of physical fitness

**SOCIAL HISTORY**

- Cultural beliefs and behaviors
- Family and caregiver resources
- Social interactions, social activities, and support systems

**MEDICAL/SURGICAL HISTORY**

- Cardiovascular
- Endocrine/metabolic
- Gastrointestinal
- Genitourinary
- Gynecological
- Integumentary
- Musculoskeletal
- Neuromuscular
- Obstetrical
- Psychological
- Pulmonary
- Prior hospitalizations, surgeries, and preexisting medical and other health-related conditions

**REVIEW OF SYSTEMS**

- Cardiovascular/pulmonary systems
- Endocrine system
- Eyes, ears, nose, or throat
- Gastrointestinal system
- Genitourinary/reproductive systems
- Hematologic/lymphatic systems
- Integumentary system
- Neurologic/musculoskeletal systems

Source: Susan B. O'Sullivan, Thomas J. Schmitz, George Fulk  
Physical Rehabilitation, Seventh Edition  
Copyright © F. A. Davis Company. All right reserved.

30

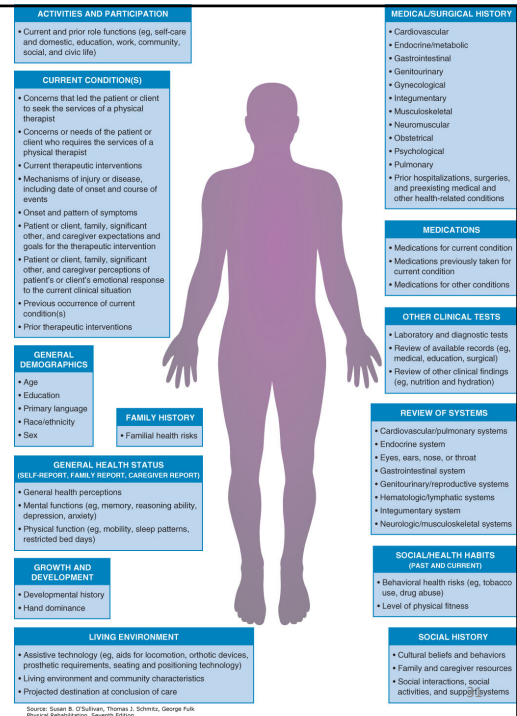
30

# Examination and Plan of Care

## • Screening and Systems Review

- Determine intact function vs dysfunction
  - Referral / Consultation if outside scope of practice
  - Focus the search to discover the origin of symptoms
    - Known vs unknown diagnosis
- Determines additional examination techniques
  - Systems Review
  - Rule out contribution of secondary systems to current presentation
- Prognosis and Goals for Physical Therapy
  - General health and wellness
  - Risk Factors for developing disease

© 2021 Jennifer Stokus, PT, DPT, NCS



31

# Examination and Plan of Care



## • Systems Review

- Musculoskeletal
  - Symmetry in ROM, strength
- Neuromuscular
  - Gross coordination, balance, gait, transfers/mobility, motor function
- Cardiovascular/ Pulmonary
  - HR, RR, BP, Edema
- Integumentary Screening
  - Skin integrity, pliability, scar formation, observations of color, temperature, etc

- Communication ability, affect, language
  - Produce and understand speech, communication thoughts/feelings
- Cognitive Ability
  - Consciousness, Orientation x3, expected emotions/behavior, learning (preferences, barriers, needs)
- Other major body systems:
  - Endocrine
  - Genito-urinary systems
  - Gastrointestinal

Vestibular System?


© 2021 Jennifer Stokus, PT, DPT, NCS

32

32

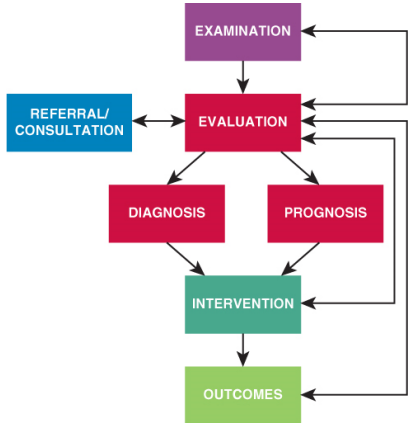


# Examination and Plan of Care



- Examination
  - Patient History
  - Systems Review
  - Test & Measures
- Evaluation
  - Diagnosis
  - Prognosis
  - Plan of Care
    - Goal Setting
- Interventions
- Outcomes


Assessment

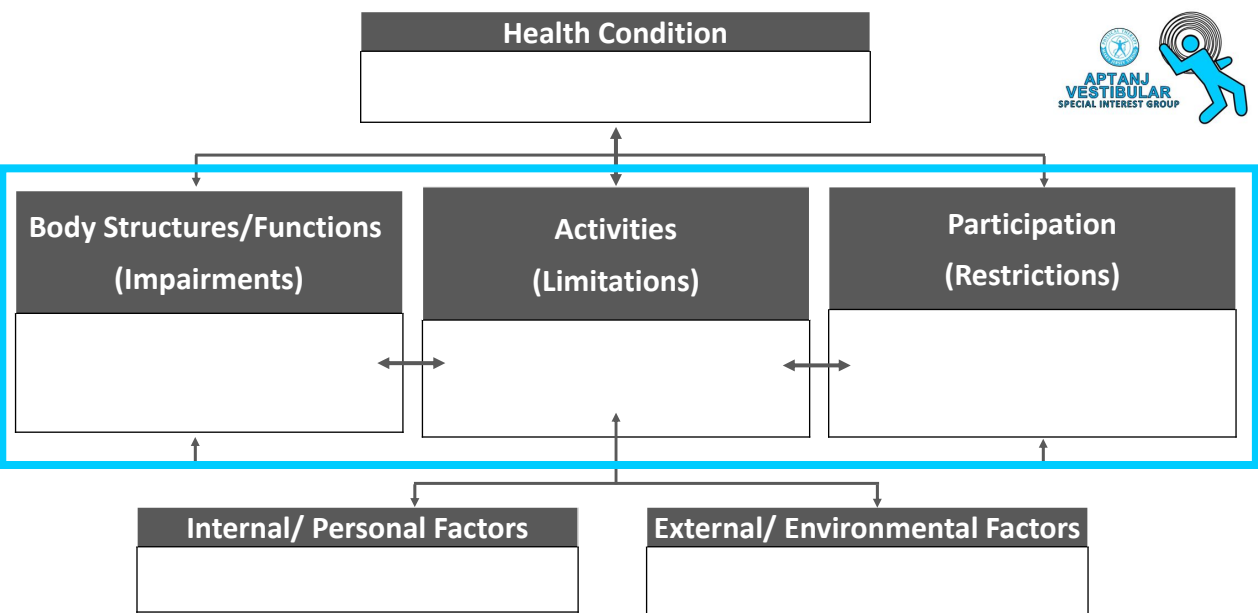


Source: Susan B. O'Sullivan, Thomas J. Schmitz, George Fulk  
Physical Rehabilitation, Seventh Edition  
Copyright © F. A. Davis Company. All rights reserved.

© 2021 Jennifer Stoskus, PT, DPT, NCS
33

33

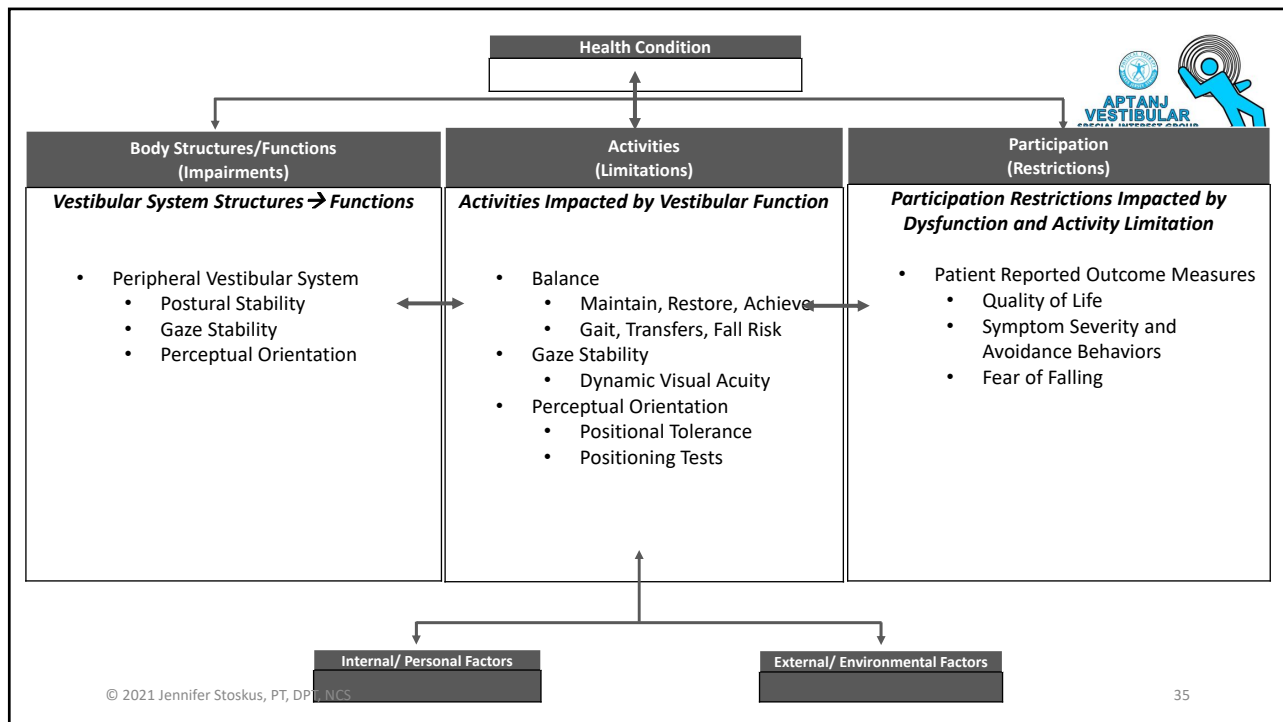




Adapted from: (Jette, 2009)

© 2021 Jennifer Stoskus, PT, DPT, NCS
34

34



35

# Vestibular Examination

© 2021 Jennifer Stoskus, PT, DPT, NCS 36

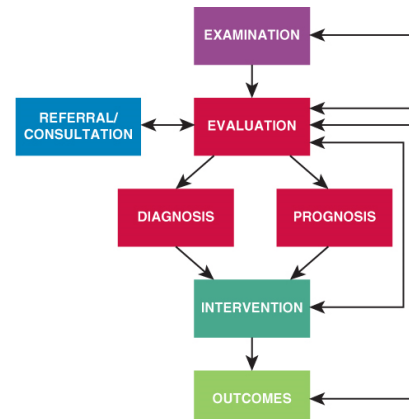
36

# Vestibular Examination



- Examination
  - Patient History
  - Systems Review
  - Test & Measures
- Evaluation
  - Diagnosis
  - Prognosis
  - Plan of Care
    - Goal Setting
- Interventions
- Outcomes

Assessment



Source: Susan B. O'Sullivan, Thomas J. Schmitz, George Fulk  
Physical Rehabilitation, Seventh Edition  
Copyright © F. A. Davis Company. All right reserved.

© 2021 Jennifer Stoskus, PT, DPT, NCS

37

37

# Vestibular Examination



- Examination
  - Patient History
    - Nature of symptoms (Quality, Duration, Timing, Triggers/Relievers, Associated Symptoms, Frequency & Intensity)
      - Is the patient experiencing an acute vestibular crisis
        - Define acute vestibular crisis
        - Dangerous or not?

© 2021 Jennifer Stoskus, PT, DPT, NCS

38

38



# Vestibular Examination

- Examination
  - Patient History
  - Systems Review
    - Rule out other causes of symptoms
      - Cardiac
        - Orthostatic Hypotension, lightheadedness, syncope
      - Central vs Peripheral
      - Psychological
        - Anxiety?
        - Fears/Phobias?
          - Sina#~ «a#i~ n; #l#j#v#e#~ va#e; #l# #a#v# a#e; #i#n#f#i#j# #e; #i#
          - Pn#n#l# #e# #n#n#i# v#n#n#j# #v#n#n#l#

39



## Vestibular Related Impairments & Activity Limitations

History	Tests & Measures	Treatment Goals
c/o bouncing/blurred vision with head movement. Difficulty with or avoids: reading, watching T.V., &/or recognizing objects while walking.	Abnormal VOR results, including DVA	
c/o vertigo and/or dizziness. Difficulty with or avoids: position changes, self-motion, passive motion, &/or visually stimulating environments.	Abnormal DHI, VAS, VVAS, &/or MSQ. Abnormal positioning tests.	
c/o unsteadiness in legs, near falls, falls, &/or fear of falling. Difficulty with, avoids, or not capable of: transferring, turning, bending, reaching, walking, &/or navigating stairs or curbs	Static & dynamic postural instability, gait deviations, & fall risk	



40

# Vestibular Examination



## • Examination

### • Vestibular Examination Components

#### • Subjective → Objective Exam

##### • Patient History:

- Chief Complaints
- Past Medical History
  - Medications
  - Blood Pressure
  - Medical History
- Prior Level of Function
- Patient-Centered Goals

41

# Vestibular Examination



## • Examination

### • Vestibular Examination Components

#### • Subjective → Objective Exam

##### • **Patient Interview Questions**

- Nature of symptoms
  - Onset
  - Frequency
  - Severity
  - Situations that precipitate
  - Associated symptoms
  - Functional impact
- Patient Reported Outcome Measures
  - Patient Reported Symptom Scale
  - Patient Reported Vestibular Symptom Scale

42

# Vestibular Examination



## • Examination

### • Vestibular Examination Components

#### • Nature of symptoms

##### • Quality

- **Dizziness:** *Sensation of disturbed or impaired spatial orientation without a false or distorted sense of motion*

- 0 v' v' nff#...a ~ « } n f d } t u t u n a l n l ; n f f d } e e ' v' n f f d e s s i a } j n } # f i ; |

- **Vertigo:** *Sensation of self motion when no self motion is occurring or the sensation of distorted self motion during an otherwise normal head movement*

- P e t a f e #...a ~ « } n f d } « v ; v t # f i # ~ i } M t

- A v n a f #...a ~ « } n f d } a & v t # f i j | v t # i e i v t # a } M t # e a v t # v } n l

43

# Vestibular Examination



## • Examination

### • Vestibular Examination Components

#### • Duration

- Length of time since onset
- Acute vs Subacute vs Chronic

#### • Timing

- Constant vs intermittent
- Once triggered, how long do symptoms last?

44

# Vestibular Examination



## • Examination

### • Vestibular Examination Components

#### • Triggers

- Spontaneous
- Positional
- Motion/ Self-Motion
- Visual/ Visual-Motion
- Other
  - Sounds, Strain
  - Acute Trauma (Fall, Auto, TBI, etc)

45

# Vestibular Examination



## • Examination


### • Vestibular Examination Components

#### • Associated Symptoms

- Hearing Loss
  - Aural Fullness
  - Tinnitus
  - Pain
- Visual Impairment
  - Blurred Vision
  - Double Vision
  - Loss of Vision
- Somatosensory
  - Loss

- Orthopedic
  - Strength
  - ROM
  - Falls
    - Injury
- Other Neuro History
  - Stroke
  - TBI
  - MS
- Other Disequilibrium
  - Associated vs Premorbid
- Falls/ Near Falls (Fear of Falling)

46



# ABC

“How confident are you that you can maintain your balance and remain steady when you...”

- o 1: ... walk around the house? \_\_\_%
- o 2: ... walk up or down stairs? \_\_\_%
- o 3: ... bend over and pick up a slipper from the front of a closet floor? \_\_\_%
- o 4: ... reach for a small can off a shelf at eye level? \_\_\_%
- o 5: ... stand on tip toes and reach for something above your head? \_\_\_%
- o 6: ... stand on a chair and reach for something? \_\_\_%
- o 7: ... sweep the floor? \_\_\_%
- o 8: ... walk outside the house to a car parked in the driveway? \_\_\_%
- o 9: ... get into or out of a car? \_\_\_%
- o 10: ... walk across a parking lot to the mall? \_\_\_%
- o 11: ... walk up or down a ramp? \_\_\_%
- o 12: ... walk in a crowded mall where people rapidly walk past you? \_\_\_%
- o 13: ... are bumped into by people as you walk through the mall? \_\_\_%
- o 14: ... step onto or off of an escalator while you are holding onto a railing? \_\_\_%
- o 15: ... step onto or off an escalator while holding onto parcels such that you cannot hold onto the railing? \_\_\_%
- o 16: ... walk outside on icy sidewalks? \_\_\_%


**ACKNOWLEDGEMENT**  
Dr. Anita M. Myers is the primary developer and copyright holder. She is a Distinguished Professor Emerita at the School of Public Health and Health Systems at the University of Waterloo, 200 University Avenue West, Waterloo, ON, Canada N2L 3G1. Email: [amyers@uwaterloo.ca](mailto:amyers@uwaterloo.ca)

© 2021 Jennifer Stoskus, PT, DPT, NCS

[https://neuropt.org/docs/default-source/cpgs/core-outcome-measures/core-measure-activities-specific-balance-confidence-scale-\(abc-scale\)-final-2020af1837a5390366a68a96ff00001fc240.pdf?sfvrsn=6f1b5143\\_0](https://neuropt.org/docs/default-source/cpgs/core-outcome-measures/core-measure-activities-specific-balance-confidence-scale-(abc-scale)-final-2020af1837a5390366a68a96ff00001fc240.pdf?sfvrsn=6f1b5143_0)

47

47



# ABC

**Scoring:<sup>1</sup>**

- Items are rated on a 0% to 100% whole number rating scale.
- Scores reflect overall perceived confidence.
- Scores of zero represent no confidence; scores of 100 indicate complete confidence.
- Total the ratings (possible range = 0-1600) and divide by 16 (number of items) to get the patient's ABC score or overall percent of balance confidence.  
*Total ÷ 16 = \_\_\_\_\_ % of self-confidence (ABC score)*
- At least 12 of the 16 items must be answered to calculate an ABC score. If items are skipped, only divide by the number of items completed.

**What Does My Patient's Score Mean?:**

Cut-off scores and normative values may be used in conjunction with a complete evaluation to interpret the meaning of a patient's ABC score.

- Parkinson's Disease
  - o Cut-off score of < 69% is predictive of recurrent falls.<sup>2</sup>
- Stroke (chronic, > 6 months post)
  - o Cut-off score of 81.1% indicates relative certainty that the patient does not have a history of falls.<sup>3</sup>
- Older Adults
  - o Scores < 67% indicate risk for falling; accurately classify people who fall 84% of the time<sup>4</sup>
- Older Adults<sup>5</sup>
  - o >80% = high level of physical functioning
  - o 50-80% = moderate level of physical functioning
  - o < 50% = low level of physical functioning

**ACKNOWLEDGEMENT**  
Dr. Anita M. Myers is the primary developer and copyright holder. She is a Distinguished Professor Emerita at the School of Public Health and Health Systems at the University of Waterloo, 200 University Avenue West, Waterloo, ON, Canada N2L 3G1. Email: [amyers@uwaterloo.ca](mailto:amyers@uwaterloo.ca)

© 2021 Jennifer Stoskus, PT, DPT, NCS

[https://neuropt.org/docs/default-source/cpgs/core-outcome-measures/core-measure-activities-specific-balance-confidence-scale-\(abc-scale\)-final-2020af1837a5390366a68a96ff00001fc240.pdf?sfvrsn=6f1b5143\\_0](https://neuropt.org/docs/default-source/cpgs/core-outcome-measures/core-measure-activities-specific-balance-confidence-scale-(abc-scale)-final-2020af1837a5390366a68a96ff00001fc240.pdf?sfvrsn=6f1b5143_0)

48

48




# DHI

### The Dizziness Handicap Inventory (DHI)

*Instructions: The purpose of this scale is to identify difficulties that you may be experiencing because of your dizziness or unsteadiness. Please answer "yes", "no" or "sometimes" to each question. Answer as it applies to your dizziness or unsteadiness only.*

Question	NO	Sometimes	Yes
1 Does looking up increase your problem?			
2 Because of your problem, do you feel frustrated?			
3 Because of your problem, do you restrict your travel for business or recreation?			
4 Does walking down the aisle of a supermarket increase your problem?			
5 Because of your problem, do you have difficulty getting into or out of bed?			
6 Does your problem significantly restrict your participation in social activities such as going out to dinner, going to the movies, dancing or to parties?			
7 Because of your problem, do you have difficulty reading?			
8 Does performing more ambitious activities such as sports, dancing, household chores (sweeping or putting dishes away) increase your problems?			
9 Because of your problem, are you afraid to leave your home without someone accompanying you?			
10 Because of your problem, have you been embarrassed in front of others?			
11 Do quick movements of your head increase your problem?			
12 Because of your problem, do you avoid heights?			
13 Does turning over in bed increase your problem?			
14 Because of your problem, is it difficult for you to do strenuous housework or yard work?			
15 Because of your problem, are you afraid people may think you are intoxicated?			
16 Because of your problem, is it difficult for you to walk by yourself?			
17 Does walking down a sidewalk increase your problem?			
18 Because of your problem, is it difficult for you to concentrate?			
19 Because of your problem, is it difficult for you to walk around your house in the dark?			
20 Because of your problem, are you afraid to stay home alone?			
21 Because of your problem, do you feel handicapped?			
22 Has your problem placed stress on your relationships with members of your family or friends?			
23 Because of your problem, are you depressed?			
24 Does your problem interfere with your job or household responsibilities?			
25 Does bending over increase your problem?			



**Scoring Instructions**  
 No= 0  
 Sometimes= 2  
 Yes= 4  
 (Jacobson, 1990)

© 2021 Jennifer Stoskus, PT, D

<https://www.healphysicaltherapy.com/pdfs/DHI.pdf>


49

# DHI

### The Dizziness Handicap Inventory (DHI)

*Instructions: The purpose of this scale is to identify difficulties that you may be experiencing because of your dizziness or unsteadiness. Please answer "yes", "no" or "sometimes" to each question. Answer as it applies to your dizziness or unsteadiness only.*

Question	NO	Sometimes	Yes
1 Does looking up increase your problem?			
2 Because of your problem, do you feel frustrated?			
3 Because of your problem, do you restrict your travel for business or recreation?			
4 Does walking down the aisle of a supermarket increase your problem?			
5 Because of your problem, do you have difficulty getting into or out of bed?			
6 Does your problem significantly restrict your participation in social activities such as going out to dinner, going to the movies, dancing or to parties?			
7 Because of your problem, do you have difficulty reading?			
8 Does performing more ambitious activities such as sports, dancing, household chores (sweeping or putting dishes away) increase your problems?			
9 Because of your problem, are you afraid to leave your home without someone accompanying you?			
10 Because of your problem, have you been embarrassed in front of others?			
11 Do quick movements of your head increase your problem?			
12 Because of your problem, do you avoid heights?			
13 Does turning over in bed increase your problem?			
14 Because of your problem, is it difficult for you to do strenuous housework or yard work?			
15 Because of your problem, are you afraid people may think you are intoxicated?			
16 Because of your problem, is it difficult for you to walk by yourself?			
17 Does walking down a sidewalk increase your problem?			
18 Because of your problem, is it difficult for you to concentrate?			
19 Because of your problem, is it difficult for you to walk around your house in the dark?			
20 Because of your problem, are you afraid to stay home alone?			
21 Because of your problem, do you feel handicapped?			
22 Has your problem placed stress on your relationships with members of your family or friends?			
23 Because of your problem, are you depressed?			
24 Does your problem interfere with your job or household responsibilities?			
25 Does bending over increase your problem?			



**Severity:**  
 0-30 = Mild  
 31-60 = Moderate  
 61-100 = Severe  
 (Whitney, 2004)

© 2021 Jennifer Stoskus, PT, D

<https://www.healphysicaltherapy.com/pdfs/DHI.pdf>

50

# Vestibular Examination



## Examination

### Vestibular Examination Components

- Subjective → Objective
- Tests and Measures
  - Baseline Vitals\*
  - Neck ROM\*
    - Modified VBI testing?
  - Oculomotor Examination
    - Visual Pathways\*
      - E j . af# }t i ~ n i †
      - B £ t v# # P E B ½
      - Q ~ £ £ t u# . ffl . v †
      - Q a j j a l n f l
      - Y n f t n ; j n
      - Y E P # a i j n } a t £ i

Ê:;j}·lnl#q#AA#nfl#i·}af#  
n..a~ v i a t £ i fl

ÊÊSnfl#n l # f i v a f i } # n f # a t n ; # n « f f i #  
a i l # £ t u n f # l . a ~ v i a t £ i # q l v t f l

### Oculomotor Examination

- Vestibular Pathways
  - Q « £ i ; t a i n £ . f i # C % f l a t ~ · f l
  - 8 a ~ n # £ } l v t # C % f l a t ~ · f i #
  - Y E P
    - 9 n a l # . « · } i n # n f l # Ê
    - 0 % i a ~ v j # v l · a } # j · v # ÊÊ
  - M e f l v £ i v t # S n f l # ÊÊ
    - 0 v . E D a } « v j n
    - Q v l n E v t # S n f l #
    - Q · « v j n # £ } # S n f l #
  - M e f l # f a # £ i # £ # a } a i j n ÊÊ

© 2021 Jennifer Stoskus, PT, DPT, NCS

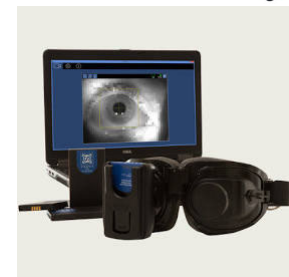
# Vestibular Examination



## Examination

### Vestibular Examination Components

- Subjective → Objective
- Tests and Measures
  - Vision Denied Vestibular Pathways\*
    - Spontaneous Nystagmus
    - Gaze Holding Nystagmus
    - VOR
      - 9 n a l # Q u a | v t # C % f l a t ~ · f l
  - Positioning Tests
    - 0 v . E D a } « v j n
      - Q v l n E v t # S n f l #
    - Q · « v j n # £ } # S n f l #



Ê#n>·vfnH<njva}#&#2·v~n;†



© 2021 Jennifer Stoskus, PT, DPT, NCS

# DVA

1. Static Acuity
2. Dynamic Acuity
3. Line Loss
  - $\leq 2$  = WNL
  - $\geq 3$  = Abnormal



**ETDRS Chart**  
<http://www.i-see.org/etdrs/etdrs-1.pdf>

© 2021 Jennifer Stoskus, PT, DPT, NCS

53



53

## Vestibular Related Impairments & Activity Limitations

History	Tests & Measures	Treatment Goals
c/o bouncing/blurred vision with head movement. Difficulty with or avoids: reading, watching T.V., &/or recognizing objects while walking.	Abnormal VOR results, including DVA	Gaze Stabilization
c/o vertigo and/or dizziness. Difficulty with or avoids: position changes, self-motion, passive motion, &/or visually stimulating environments.	Abnormal DHI, VAS, VVAS, &/or MSQ. Abnormal positioning tests.	Canalith Repositioning Maneuvers and/or Habituation
c/o unsteadiness in legs, near falls, falls, &/or fear of falling. Difficulty with, avoids, or not capable of: transferring, turning, bending, reaching, walking, &/or navigating stairs or curbs	Static & dynamic postural instability, gait deviations, & fall risk	Postural Control & Balance

© 2021 Jennifer Stoskus, PT, DPT, NCS

54



54

# Management of Vestibular Disorders



## • Interventions

- Vestibular Rehabilitation (VRT/ VBRT) (Dunlap, 2019) (ALMohiza, 2016) (Hall, 2016) (Herdman, 2014) (Han, 2011)
  - Impairment & Activity Limitation Goals
    - Gaze Stabilization
    - Postural Stabilization and Balance Systems Re-training
    - Perceptual Re-orientation (Symptom-Improvement)
      - Canalith Repositioning Maneuver

55

# Management of Vestibular Disorders



## • Interventions

- Vestibular Rehabilitation (VRT/ VBRT) (Dunlap, 2019) (ALMohiza, 2016) (Hall, 2016) (Herdman, 2014) (Han, 2011)
  - Treatment Techniques
    - Adaptation
      - Retraining any remaining function
    - Substitution
      - Substitute for loss or lack of function
    - Habituation
      - Graduated exposure to *provocative stimuli* to reduce pathological response over time

56



# Screening for Vestibular Dysfunction and Red Flags

© 2021 Jennifer Stoskus, PT, DPT, NCS

57

57



## Screening for Vestibular Dysfunction

- Goals:
  - **Screening**
    - Nature of symptoms (Quality, Duration, Timing, Triggers/Relievers, Associated Symptoms, Frequency & Intensity)
    - Acute vestibular syndrome
      - Peripheral vs Central vestibular dysfunction
        - Known vs unknown cause or diagnosis
    - Non-Vestibular
      - Vitals
      - Other

© 2021 Jennifer Stoskus, PT, DPT, NCS

58

58

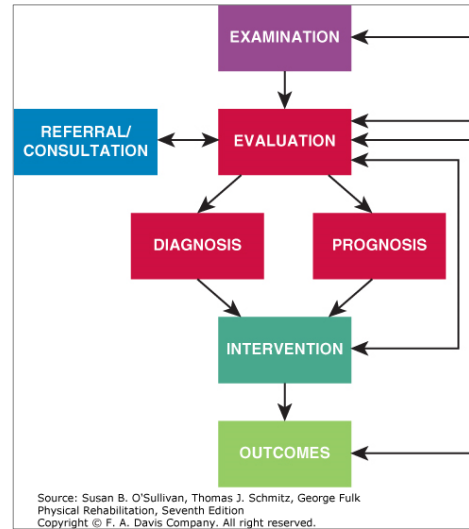
# Screening for Vestibular Dysfunction



- Examination
  - Patient History
  - Systems Review

Yva)0t ;fl°

- Oxygen Saturation
  - PMH?
  - Low to mid-90s?
- Heart Rate / Rhythm
  - High vs Low?
  - Regular vs Irregular?
- Temperature
  - Infectious process?
- Blood Pressure
  - High vs Low?



Source: Susan B. O'Sullivan, Thomas J. Schmitz, George Fulk  
Physical Rehabilitation, Seventh Edition  
Copyright © F. A. Davis Company. All right reserved.

© 2021 Jennifer Stoskus, PT, DPT, NCS

59

# Screening for Vestibular Dysfunction



- Examination
  - Patient History
  - Systems Review

- Orthostatic Hypotension (Lanier, 2011)
  - Nature of Symptoms:
    - Dizziness, lightheadedness, blurred vision, weakness, fatigue, nausea, palpitations, and headache
  - Cardiovascular Systems Review
    - Baseline Vitals
    - Vitals with position change (within 3 minutes)
      - - )ε l #mfnfl· fnc0#fl# }j# fl <#ε# ~ #εv #f#f# εfn# ~ 9 t #f#0 vafle }j# ff <# ε#f ~ #εv #f#f# εfn# ~ 9 t
      - 9 P#j jfnafnfl# &# #nafl# ~ # <~ #f#nfnln; #aju&jafil v# " ~ # <~

© 2021 Jennifer Stoskus, PT, DPT, NCS

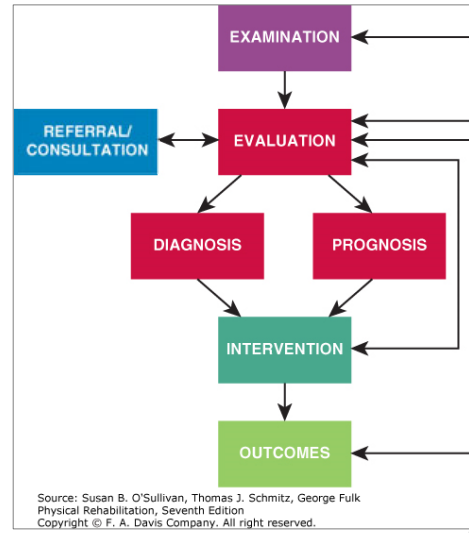
60

60

# Screening for Vestibular Dysfunction



- Acute vertigo (dizziness) is a common symptom for patients presenting to the Emergency Room
  - 25% will have a potentially life-threatening diagnoses
  - 75% are appropriate for Vestibular Rehab!
- Importance for strong **screening** techniques to make the right **referral**



© 2021 Jennifer Stoskus, PT, DPT, NCS

# Screening for Vestibular Dysfunction



- **Examination**
  - Vestibular Examination Components
    - Subjective → Objective Exam
      - **Patient Interview Questions**
        - Nature of symptoms
          - Onset
          - Duration
          - Severity
          - Site
          - Frequency
          - Triggers
        - Patient Reported Outcome Measures
          - Balance
          - Dizziness

© 2021 Jennifer Stoskus, PT, DPT, NCS

# DHI

## The Dizziness Handicap Inventory (DHI)

Instructions: The purpose of this scale is to identify difficulties that you may be experiencing because of your dizziness or unsteadiness. Please answer "yes", "no" or "sometimes" to each question. Answer as it applies to your dizziness or unsteadiness only.

	NO	Sometimes	Yes
1 Does looking up increase your problem?			
2 Because of your problem, do you feel frustrated?			
3 Because of your problem, do you restrict your travel for business or recreation?			
4 Does walking down the aisle of a supermarket increase your problem?			
5 Because of your problem, do you have difficulty getting into or out of bed?			
6 Does your problem significantly restrict your participation in social activities such as going out to dinner, going to the movies, dancing or to parties?			
7 Because of your problem, do you have difficulty reading?			
8 Does performing more ambitious activities such as sports, dancing, household chores (sweeping or putting dishes away) increase your problems?			
9 Because of your problem, are you afraid to leave your home without someone accompanying you?			
10 Because of your problem, have you been embarrassed in front of others?			
11 Do quick movements of your head increase your problem?			
12 Because of your problem, do you avoid heights?			
13 Does turning over in bed increase your problem?			
14 Because of your problem, is it difficult for you to do strenuous housework or yard work?			
15 Because of your problem, are you afraid people may think you are intoxicated?			
16 Because of your problem, is it difficult for you to walk by yourself?			
17 Does walking down a sidewalk increase your problem?			
18 Because of your problem, is it difficult for you to concentrate?			
19 Because of your problem, is it difficult for you to walk around your house in the dark?			
20 Because of your problem, are you afraid to stay home alone?			
21 Because of your problem, do you feel handicapped?			
22 Has your problem placed stress on you relationships with members of your family or friends?			
23 Because of your problem, are you depressed?			
24 Does your problem interfere with your job or household responsibilities?			
25 Does bending over increase your problem?			

**5-Item Subscore**

*Significant predictor in likelihood of BPPV*

(Whitney, 2005)

© 2021 Jennifer Stoskus, PT, DPT, NCS

<https://www.healphysicaltherapy.com/pdfs/DHI.pdf>

63

# Screening for Vestibular Dysfunction

- Examination
  - Patient History
    - Nature of symptoms (Quality, Duration, Timing, Triggers/Relievers, Associated Symptoms, Frequency & Intensity)
    - Is the patient experiencing an *acute vestibular syndrome* (Newman-Toker, 2009)
      - Continuous vertigo > 24 hours
        - Lasts hours → days
      - Sudden onset
      - Triggers/Relievers?
      - Associated symptoms
        - Nausea/vomiting
        - Head-motion intolerance
        - Unsteady gait

© 2021 Jennifer Stoskus, PT, DPT, NCS

64

64



# Screening for Vestibular Dysfunction



- Examination

- Tests & Measures

- HINTS has been found to be more accurate than MRI to rule out stroke in first 24-48 hours in patients reporting symptoms consistent with acute continuous vertigo (Newman-Toker, 2009)
      - 100% Sensitivity
      - 96% Specificity

65

# Screening for Vestibular Dysfunction




- Examination

- Tests & Measures

- HINTS (Newman-Toker, 2009)
      - Head Impulse
        - Horizontal Head Impulse Test
      - Nystagmus
        - Gaze Holding Nystagmus
      - Test of Skew
        - Alternate Cover (Cover-Cross Cover Test)

66

# Screening for *RED FLAGS*



0 vsfn; ta+€ ; # # j · n#nflvi · }af#%; lff ~ n# vu# C SQ

### Peripheral

- Examination
  - Test & Measures
    - Visual observation of gait
      - Unsteady
    - Bedside examination/ oculomotor screen
      - Visual Pathways
        - Ocular alignment
          - Normal
      - Vestibular Pathways
        - + Spontaneous Nystagmus
        - + Gaze-evoked Nystagmus
          - Direction-Fixed
        - + Head Impulse Test
          - Corrective Saccade

### Central


- Examination
  - Test & Measures
    - Visual observation of gait
      - ATAXIC
        - Requires assistance to stand/walk
    - Bedside examination/ oculomotor screen
      - Visual Pathways
        - Ocular alignment
          - + Skew Deviation (vertical)
      - Vestibular Pathways
        - + Spontaneous Nystagmus
        - + Gaze-evoked Nystagmus
          - Direction-Changing
        - Head Impulse Test
          - NORMAL

© 2021 Jennifer Stoskus, PT, DPT, NCS

67

67

# Screening for *RED FLAGS*



0 vsfn; ta+€ ; # # j · n#nflvi · }af#%; lff ~ n# vu# C SQ

### Peripheral

- Examination
  - Test & Measures
    - Visual observation of gait
      - Unsteady
    - Bedside examination/ oculomotor screen
      - Visual Pathways
        - Ocular alignment
          - Normal
      - Vestibular Pathways
        - + Spontaneous Nystagmus
        - + Gaze-evoked Nystagmus
          - Direction-Fixed
        - + Head Impulse Test
          - Corrective Saccade

### Central

- Examination
  - Test & Measures
    - Visual observation of gait
      - ATAXIC
        - Requires assistance to stand/walk
    - Bedside examination/ oculomotor screen
      - Visual Pathways
        - Ocular alignment
          - + Skew Deviation (vertical)
      - Vestibular Pathways
        - + Spontaneous Nystagmus
        - + Gaze-evoked Nystagmus
          - Direction-Changing
        - Head Impulse Test
          - NORMAL

© 2021 Jennifer Stoskus, PT, DPT, NCS

68

68

## Screening for *RED FLAGS*



Q%~ « # ~ fl s Qnif · flMa tu£ } t%# } » avk# ~ ~ ½

- Slurred speech
  - Hearing loss (unilateral) that is sudden or gradual
- Visual abnormality
  - Double vision
  - Visual field loss
  - Color vision loss
- Sensory abnormality
  - Bilateral paresthesia or numbness
    - Non-dermatomal pattern or facial paresthesia or numbness
- Memory loss
- Unexplained weight loss
- Increasing and expanding severe pain

© 2021 Jennifer Stoskus, PT, DPT, NCS

69

69

## Screening for *RED FLAGS*



Q%~ « # ~ D- nua" ~ fl s Qnif · flMa tu£ } t%# } » avk# ~ ~ ½

- Constant
- Chronic and worsening
- Triggered only with change in body position (sit to stand)
- Prodromal symptoms
  - Lightheadedness, pallor, salivation, blurred vision or increased heart rate
- Other Neurologic Findings
  - Unexplained Weakness
  - Ataxic gait
  - Positive Babinski

© 2021 Jennifer Stoskus, PT, DPT, NCS

70

70

# Screening for RED FLAGS



## Examination

### Tests and Measures

#### Oculomotor Examination

##### Visual Pathways

- E j · j f f # t i ~ n i t
- Y n f i v j a # £ " n ~ n i t
- B £ t v # £ P E B ½
- A f f i f f # £ t £ i
- Q ~ £ £ t u # · f f l · v t
- C £ # l ~ £ £ t u # f a j j a l v j # · f f l · v t # l £ »
- Q a j j a l n f l
- 9 % « n f i u % « £ ~ n f i j
- Y n f t n i j n
- A f f i f f # £ t £ i
- Y E P # a i j n } a t £ i
- ~ « a v i n l # l ~ £ £ t u # · f f l · v t

- Y n f l t i · j a f # M a t u » a a f l
- Q « £ i t a i n £ · f f # £ f l a t ~ · f f #
- O £ n f i # £ # j u a i t n # v u # s r a t £ i
- T « D i n a t v t # £ » ; D i n a t v t # £ f # · f i n # £ f f i n £ ; a # £ f l a t ~ · f f # » v u £ · # j u a i t n # £ s t u n a l # « £ f l v t £ i
- 8 a ´ n # £ | n l # £ f l a t ~ · f l
- O v i n j t £ i ; D j u a i t v t #

© 2021 Jennifer Stoskus, PT, DPT, NCS

71

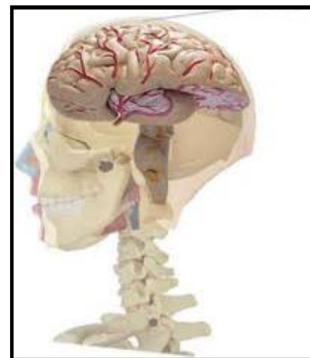
71

# Screening for RED FLAGS



## 8 Deadly D's And 3 Nasty Ns

- D1 - Dizziness
- D2 - Diplopia - double vision and/or visual field loss
- D3 - Dysarthria/dysphasia
- D4 - Dysphagia
- D5 - Dysmetria (poor coordination)
- D6 - Drop attacks (sudden loss of consciousness)
- D7 - Dysesthesia (especially around the face)
- D8 - Down is up distortions (room inverted)
- And - Ataxia of gait
- N1 - Nystagmus
- N2 - Nausea/vomiting
- N3 - Numbness



Eid E, Dastan S, Heckmann JG. Acute dizziness in rural practice: Proposal of a diagnostic procedure. *J Neurosci Rural Pract.* 2015;6(2):272-276.

Esmond H, Gutierrez M, Rasmussen C. Triage Guide to Dizzy Patients: Should they stay or should they go? From APTA CSM online 2021

APTA Combined Sections Meeting

72

72



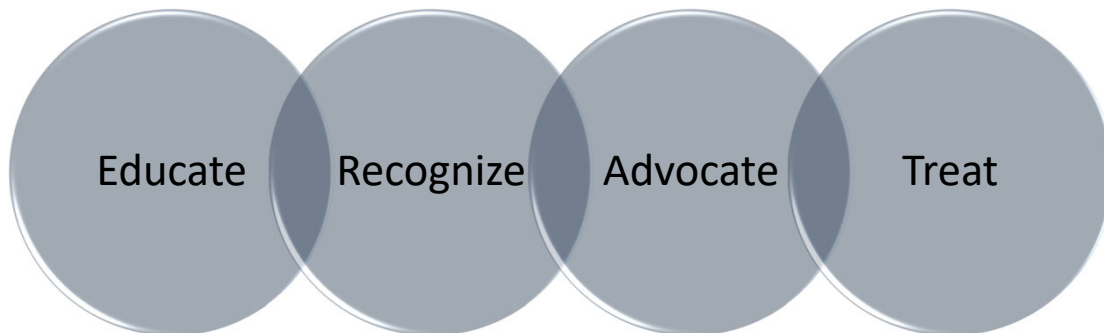
# How Every Physical Therapist Can Take Action

© 2021 Jennifer Stoskus, PT, DPT, NCS

73

73


## How to Take Action



© 2021 Jennifer Stoskus, PT, DPT, NCS

74

74



## Non-Vestibular Physical Therapist

### How to Take Action

© 2021 Jennifer Stoskus, PT, DPT, NCS 75

75

## How to Take Action

- Vestibular Physical Therapist
  - Novice
  - Intermediate
  - Advanced





© 2021 Jennifer Stoskus, PT, DPT, NCS 76

76




**APTANJ  
VESTIBULAR  
SPECIAL INTEREST GROUP**

# Patient and Provider Resources

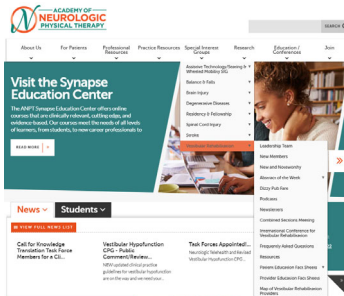
© 2021 Jennifer Stoskus, PT, DPT, NCS

77



## Patient and Provider Resources

- [www.NeuroPT.org](http://www.NeuroPT.org)
- <https://neuropt.org/maps/Vestibular-Map.html>



**Patient Education Fact Sheets**

The NeuroPT team has developed patient education fact sheets to assist with patient education. These NeuroPT Education Fact Sheets focus on patient education and are available in English, Spanish, Persian, and Urdu. These fact sheets are available on the NeuroPT website at [neuropt.org](https://neuropt.org). Please contact the NeuroPT team if you need these fact sheets in another language.

[Visit the Synapse Education Center](#)

**Vestibular Hypofunction Clinic: Public Comment Review**


Public comment review period for vestibular hypofunction and other vestibular disorders.

**Task Panel Appointment**

Appointment information for Vestibular Hypofunction Clinic.

**Vestibular Rehabilitation SIG Podcasts**

The Academy of Neurologic Physical Therapy Vestibular Rehabilitation Special Interest Group is a component of the American Physical Therapy Association. The Vestibular Rehabilitation SIG provides a network of collaboration and education to its members that fosters opportunities to highlight and build solid foundations of clinical practice to provide care and management of persons with vestibular deficits and related balance and movement disorders. Its membership focus is centered on supporting the practice of physical therapists and physical therapist assistants who treat patients with vestibular-related disorders.



**Vestibular Rehab Education**


© 2021 Jennifer Stoskus, PT, DPT, NCS

78

# VEDA



## Patient and Provider Resources

 <p><b>COMMON SYMPTOMS</b> Explain the causes, symptoms, why you experience, or something else? <a href="#">MORE →</a></p>	 <p><b>WHAT CAN I DO?</b> Explore vestibular disorder diagnosis, and treatment resources. <a href="#">MORE →</a></p>
 <p><b>LIFE WITH VESTIBULAR SYMPTOMS</b> Discuss coping strategies and a community of support. <a href="#">MORE →</a></p>	 <p><b>HEALTHCARE PROFESSIONALS</b> Resources for those working with vestibular patients. <a href="#">MORE →</a></p>

- [www.Vestibular.org](http://www.Vestibular.org)

© 2021 Jennifer Stoskus, PT, DPT, NCS

79

79



# APTANJ Vestibular SIG

Danit Macklin, PT, DPT, ITPT  
 Founder and Chair APTANJ Vestibular SIG

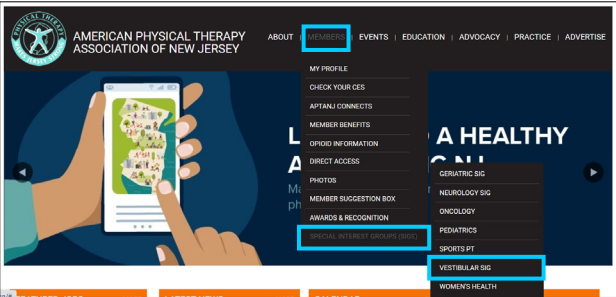
APTANJ VESTIBULAR SIG  
 APTANJ VESTIBULAR SIG

© 2021 Jennifer Stoskus, PT, DPT, NCS


80

80





<https://aptanj.org/page/VestibularSIG>





**ABOUT US**

The membership of this Vestibular SIG aims to provide support for the best practice of physical therapists and physical therapy assistants working with patients with dizziness and balance disorders. By creating a network for collaboration and education, we aim to provide opportunities for our colleagues, our greater medical community and our patients to benefit from this specialized area of physical therapy practice.

**MISSION STATEMENT**

The Vestibular Special Interest Group members are in collaboration to promote education, increased awareness of, and access to vestibular rehabilitation and concussion management. The NJ Vestibular SIG empowers New Jersey Physical Therapists by providing resources for accessible, reliable education, and mentorship opportunities that build solid foundations for evidence based clinical practice. We further aim to provide education and resources to the community at large and coordination of care within the networks of medical and mental health providers to promote increased awareness and appropriate referrals.






APTANJ Vestibular Special Interest Group

NJVestibularSIG@gmail.com

© 2021 Jennifer Stoskus, PT, DPT, NCS 81

81

# APTANJ Vestibular SIG



**CALENDAR OF EVENTS**

January	Vestibular SIG Meeting
February	Combined Sections Meeting APTA (Virtual)
March	Vestibular Pathologies Webinar Vestibular SIG Meeting – March 11
April	Vestibular for Non-vestibular Therapists Webinar (APTANJ Spring Conference – April 24th)
May	Screening for Vestibular Dysfunction Webinar – May 4 (presented by Lisa Farrell) Vestibular SIG Meeting The Neck and Dizziness Webinar – May 20 (presented by Paul Vidal)
June	Concussion Clinical Practice Guidelines Webinar
July	Concussion Webinar Series Vestibular SIG Meeting
August	
September	Concussion Awareness Day Fall Prevention Day Vestibular SIG Meeting
October	Vestibular Evaluation and Treatment Seminar (Postural Control Webinar Series)
November	Vestibular SIG Meeting
December	

© 2021 Jennifer Stoskus, PT, DPT, NCS 82

- **Discovering your Clinical Superpower: Screening for Vestibular Dysfunction**
  - Tuesday May 4, 2021
  - <https://aptanj.org/events/EventDetails.aspx?id=1502889&group=>
- **Understanding and Implementing the Peripheral Vestibular Hypofunction CPG**
  - Wednesday May 12, 2021
  - <https://aptanj.org/events/EventDetails.aspx?id=1511734&group=>
- **The Neck and Dizziness: What the Neck is Going On?**
  - Thursday May 20, 2021
  - <https://aptanj.org/events/EventDetails.aspx?id=1511440&group=>

82



# Thank You!

[NJVestibularSIG@gmail.com](mailto:NJVestibularSIG@gmail.com)

© 2021 Jennifer Stoskus, PT, DPT, NCS

83

83

## References



- ALMohiza MA, Sparto PJ, Marchetti GF, Delitto A, Furman JM, Miller DL, Whitney SL. A Quality Improvement Project in Balance and Vestibular Rehabilitation and Its Effect on Clinical Outcomes. *J Neurol Phys Ther.* 2016 Apr;40(2):90-9.
- Alrwaily M, Whitney S, Holmber J. A physical therapist classification system for person with complaints of dizziness and balance dysfunction. *Physical Therapy Reviews.* 2015;20(2):110-121.
- Bhattacharyya N, Gubbels SP, Schwartz SR, Edlow JA, El-Kashlan H, Fife T, Holmberg JM, Mahoney K, Hollingsworth DB, Roberts R, Seidman MD, Steiner RW, Do BT, Voelker CC, Waguespack RW, Corrigan MD. Clinical Practice Guideline: Benign Paroxysmal Positional Vertigo (Update). *Otolaryngol Head Neck Surg.* 2017 Mar;156(3\_suppl):S1-S47.
- Bisdorff A, Von Brevern M, Lempert T, Newman-Toker DE. Classification of vestibular symptoms: towards an international classification of vestibular disorders. *J Vestib Res.* 2009;19(1-2):1-13.
- Dunlap PM, Holmberg JM, Whitney SL. Vestibular rehabilitation: advances in peripheral and central vestibular disorders. *Curr Opin Neurol.* 2019 Feb;32(1):137-144

© 2021 Jennifer Stoskus, PT, DPT, NCS

84

84

## References



- Edlow JA, Gurley KL, Newman-Toker DE. A new diagnostic approach to the adult patient with acute dizziness. *J Emer Med.* 2018;54(4):469-483.
- Esmond H, Gutierrez M, Rasmussen C. Triage Guide to Dizzy Patients: Should they stay or should they go? Educational Presentation at APTA CSM online 2021.
- Galgon AK, Tate A, Fitzpatrick M, Schoenewald WW. Agreement Between Physical Therapists in Diagnosing Benign Paroxysmal Positional Vertigo. *J Neurol Phys Ther.* 2021 Apr 1;45(2):79-86.
- Hall CD, Herdman SJ, Whitney SL, et al. Vestibular Rehabilitation for Peripheral Vestibular Hypofunction: An Evidence-Based Clinical Practice Guideline. *J Neurol Phys Ther.* 2016;40(2):124-155.

85

## References



- Hall CD, Herdman SJ, Whitney SL, Cass SP, Clendaniel RA, Fife TD, Furman JM, Getchius TS, Goebel JA, Shepard NT, Woodhouse SN. Treatment for Vestibular Disorders: How Does Your Physical Therapist Treat Dizziness Related to Vestibular Problems? *J Neurol Phys Ther.* 2016 Apr;40(2):156.
- Han BI, Song HS, Kim JS. Vestibular Rehabilitation Therapy: Review of Indications, Mechanisms, and Key Exercises. *J Clin Neurol.* 2011. Dec;7(4):184-196.
- Herdman SJ. Vestibular rehabilitation. *Curr Opin Neurol;* 2013;26:96-101.
- Herdman SJ, Clendaniel RA, eds. Vestibular Rehabilitation, 4e. New York, NY: McGraw-Hill; 2014.
- Kundakci B, Sultana A, Taylor AJ, Alshehri MA. The effectiveness of exercise-based vestibular rehabilitation in adult patients with chronic dizziness: A systematic review. *F1000Research.* 2018;7.

86

## References



- Jacobson GP, Newman CW. The development of the Dizziness Handicap Inventory. *Arch Otolaryngol Head Neck Surg.* 1990;116(4):424-427.
- Lanier JB, Mote MB, Clay EC. Evaluation and management of orthostatic hypotension. *Am Fam Physician.* 2011;84:527-36.
- McDonnell MN, Hillier SL. Vestibular rehabilitation for unilateral peripheral vestibular dysfunction. *Cochrane Database Syst Rev.* 2015 Jan 13;1:CD005397.
- Newman-Toker DE, et al. HINTS to diagnose stroke in the acute vestibular syndrome – Three step bedside oculomotor exam more sensitive than early MRI DWI. *Stroke.* 2009;40:3504-3510.
- Reinink H, Wegner I, Stegeman I, et al.. Rapid systematic review of repeated application of the epley maneuver for treating posterior BPPV. *Otolaryngol Head Neck Surg.* 2014;151:399-406.

© 2021 Jennifer Stoskus, PT, DPT, NCS

87

87

## References



- Shepard NT, Telian SA. Programmatic vestibular rehabilitation. *Otolaryngol Head Neck Surg.* 1995;112(1):173–182.
- Whitney SL, Wrisley DM, Brown KE, Furman JM. Is perception of handicap related to functional performance in persons with vestibular dysfunction?. *Otol Neurotol.* 2004;25(2):139-143.
- Whitney SL, Alghwiri A, Alghadir A. Physical therapy for persons with vestibular disorders. *Curr Opin Neurol.* 2015 Feb;28(1):61-8.

© 2021 Jennifer Stoskus, PT, DPT, NCS

88

88