



Creekside
PHYSIOTHERAPY
& Multi-Service Center



VESTIBULAR PHYSIOTHERAPY

Physiotherapy

Massage Therapy

Custom Foot Orthotics

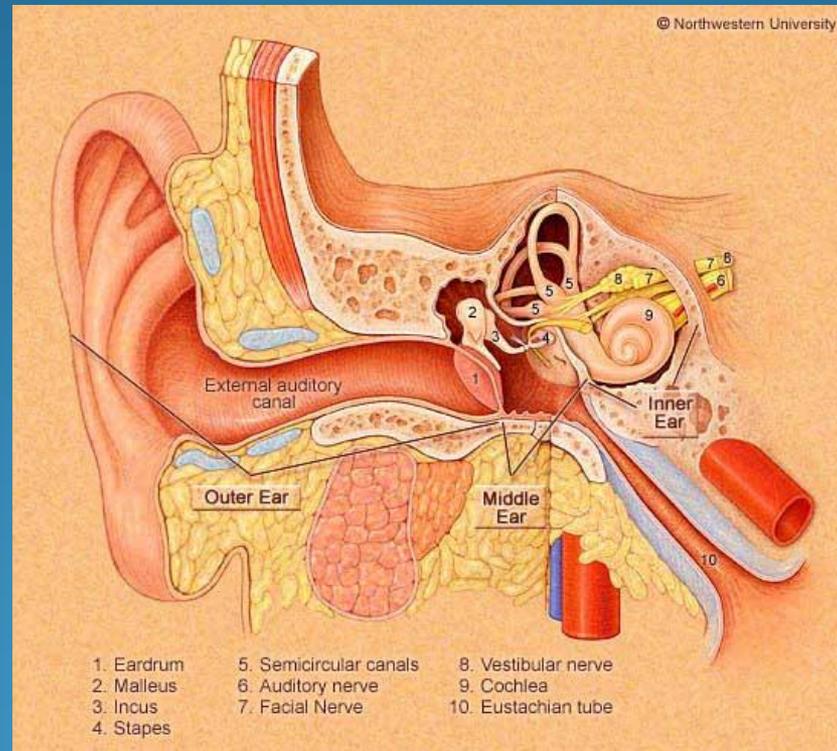
Acupuncture

Pelvic Health



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Vestibular Rehabilitation



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“He’s complaining of chest pain,
shortness of breath, cramps and
dizziness. Do you sell earplugs?”

- Does looking up, bending over or rolling over in bed increase your problem?
- Do quick head movements increase your problem?
- Do you sway while walking ?
- Do you feel off-balance , dizzy or light-headed?



Shayla Moore BMR (PT)

- Dizziness is the #1 reason people over the age of 65 visit their doctor
- 10% of doctor visits are for “dizziness”
- 50-60% of people experience vertigo over their lifetime
- BPPV is the #1 reason for “dizziness”

- 90% of people on >12 meds experience dizziness
- 65% of people >65 yrs are on 12 or more meds
- Dizziness commonly leads to falls and is the leading cause of wrist/hip fractures
- Vestibular dysfunction leads to a 12x increase in falls risk
- Falls are the leading cause of not returning home from the hospital and cause of death in >65 yrs

What Can Cause Dizziness?

1. Vestibular Dysfunction (inner ear)
2. Cardiogenic (heart)
3. Neurological (nerves)
4. Visual dysfunction (eyes)
5. Cervical (neck)
6. Medications
7. Others...



Dizziness

The Vestibular System

The Vestibular System has three main functions:

- 1) Gaze Stabilization- keeping our eyes on the target as we turn our head
- 2) Postural Stabilization-balance and equilibrium
- 3) Resolution of Sensory-Motor Mismatch-ie. Sea-sickness

Vestibular Assessment

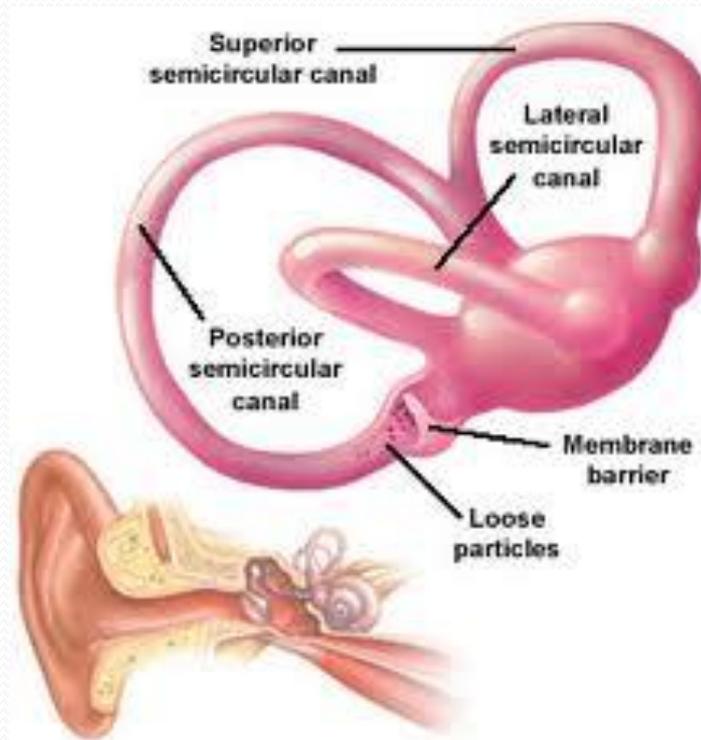
- Subjective: symptoms, past medical history, medications, Dizziness Handicap Inventory, investigative tests (ENG, MRI, CT)
- Objective: vestibular tests to locate the source of dysfunction
 - BPPV, benign paroxysmal positional vertigo
 - Gaze stability; Vestibular-ocular reflex (VOR)
 - Postural stability/balance
 - Central based tests

BPPV

Benign Paroxysmal Positional Vertigo

- Most common form of dizziness
- Due to **misplaced crystals** (otoconia) inside a semi-circular canal of the inner ear which weight the fluid; the motion feels exaggerated
- **Position dependent:** laying down to bed, leaning over, putting head backward to wash, rolling over in bed to affected side
- **Vertigo** experienced is short-lived: **seconds to a minute at most**; illusion of movement because the eyes move involuntarily called **nystagmus**
- Symptoms may include nausea, light-headedness, dysequilibrium

Diagram of the inner ear



Why does BPPV occur?

- >60 years of age, most common, insidious onset
- After trauma ie. motor vehicle accidents
- After an ear infection
- BPPV usually resolves on its own BUT 25-50% report years of recurring bouts

VERTIGO

BPPV

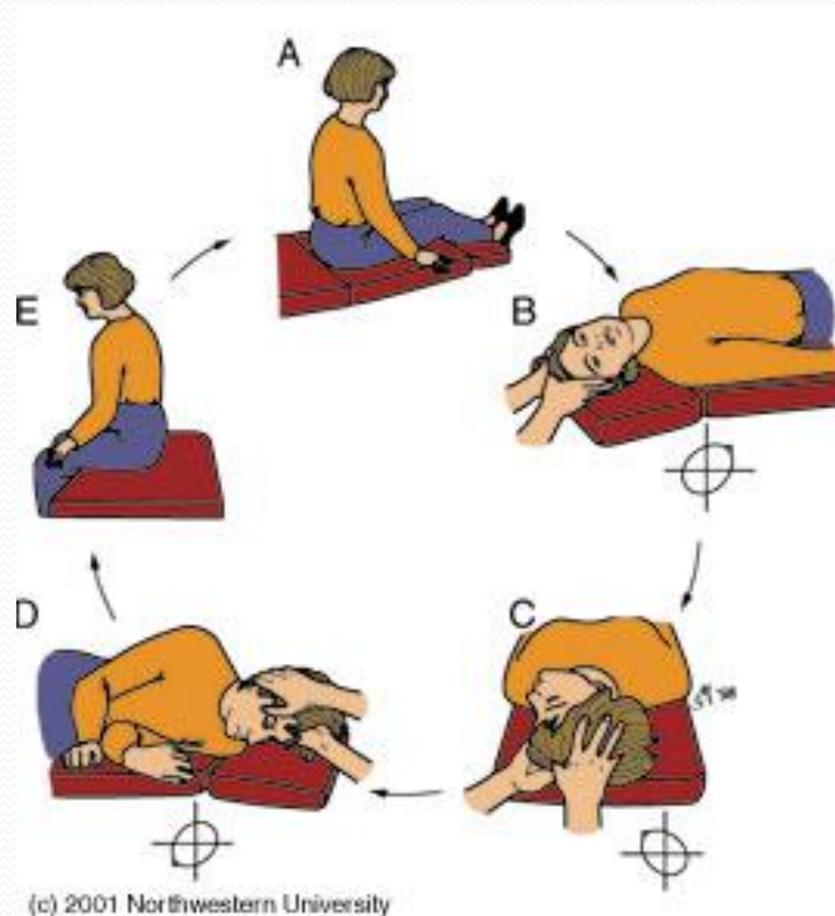
- The Dix-Hallpike is used to assess the posterior canal
- Both the left and right ear are tested
- Any symptoms of vertigo are noted and the tester watches the eyes for nystagmus
- If nystagmus is seen and/or the client reports vertigo, the tester proceeds directly into the treatment using a Canalith Repositioning Technique
- The patient can do self-treatment

Frenzel Goggles



- Frenzel goggles magnify and illuminate the eyes allowing the examiner to detect abnormal eye movement
- The patient is unable to fixate their eyes

Right BPPV



PT Rehab for BPPV

- Even after the nystagmus and thus the symptom of vertigo resolves, the patient may still require treatment for:
 - Imbalance
 - Fear of falling
 - Motion sensitivity
 - Neck/jaw tightness, pain
 - Light-headedness

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"I feel on top of the world, panicky, dizzy and nauseated. I'm afraid of heights."

When it's not BPPV...

- Unilateral or bilateral vestibular dysfunction
- Labyrinthitis, vestibular neuritis
- Trauma-MVA, vestibular concussion or other TBIs
- Age-related changes
- Ménière's Disease
- Acoustic neuroma

- Result: gaze and postural instability



What causes vestibular imbalance?

- *Acute*=eg. inner ear infection
 - a few hours to days of intense vertigo, reduced gaze stabilization, dizziness, blurred vision , imbalance, vomiting
 - Usually function recovers in 1-2 weeks
- *Chronic*=eg. vestibular nerve damage due to disease, trauma, age-related changes
 - degrees of dizziness, blurred vision, imbalance, motion sensitivity depending on compensation
 - no nystagmus

Vestibular Rehab? Why?

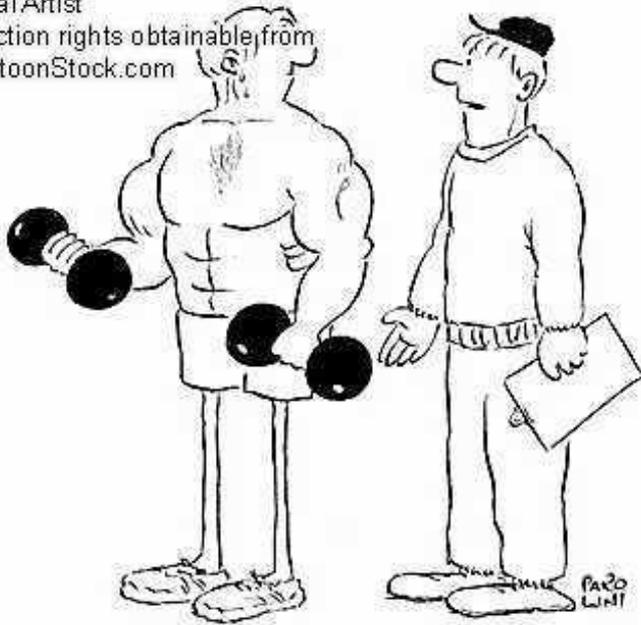
- Physiotherapists trained in vestibular rehab:
- Assess for an acute vestibular loss or determine the level of function with a chronic loss
- Gaze stability (Head Thrust Test, Dynamic Visual Acuity) and Balance
- Design custom exercises including a home program
- Provide education for safety, gait aides

Home Exercises

- Practice...Practice...Practice
- Repetition helps to compensate for the loss
- Adaptation can occur similar to getting a new pair of glasses
- Degree of recovery depends on the health of the other systems which all work together (visual, sensory)

My vestibular system seems normal-why do I feel off-balance?

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"LET'S FACE IT. YOUR LOWER BODY ISN'T RESPONDING."

- Muscle weakness
- Deconditioning
- Motion sensitivity
- Changes to your visual system-the other systems need "ramping up" (they work as a whole)

- Balance and equilibrium are optimal with 3 systems working together:
- Visual (eyes)
- Sensorimotor-how we feel the surface we are on, how our muscles work
- Vestibular system of the inner ear

Balance/Fall Risk

- **Fallproof™**
 - This program is based on a model developed and validated at the Center for Successful Aging, California State University, Fullerton.
 - Fullerton Advanced Balance Scale; Berg Balance Scale
 - Interpretation of each task score allows individualization of balance and mobility training
 - Aspects include: Center of Gravity Control, Multisensory, Gait Pattern Enhancement & Variation, Postural Strategy, Strength, Endurance, and Flexibility Training

THANK YOU !

QUESTIONS ??



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