The BPPV videos on it along with many other excellent videos can be found on Dr. Timothy C. Hain’s website http://www.dizziness-and-balance.com/sitedvd.htm
BEWARE OF HOW HEALTH CARE WORKERS USE THE WORDS DIZZINESS AND VERTIGO

- Barany Society
  - Vertigo: the sensation of motion when no motion is occurring or a distorted sensation of motion.
  - Dizziness: a general vestibular pathology i.e. not something they treat
- Insurance companies: Dizziness, Giddiness and Vertigo = ICD-10 code R42, ICD-9 Code 780.4
- Some physicians and others healthcare providers: Vertigo = general vestibular pathology i.e. not something they treat
- Dizzy Terms: Spinning or whirling, Rocking, Tilted, Lightheaded, Dizzy, Faint, Giddy, Spooky, Not right, Off, Unsteady, Feeling off balance, Woobly, Unsteady, Head heaviness, Fogginess, Swamminess, Bluiness, Blackness behind my eyes

DOCUMENTATION OF NYSTAGMUS

Rhythmic oscillations of the eyes initiated by a slow phase.

- Patient position
- Direction of the fast phase relative to the patient
- Plane

TYPICAL HISTORY FOR THE MOST COMMON PRESENTATION OF BPPV

- Symptoms: vertigo, may have other dizziness and/or nausea as well.
- Duration: less than a minute.
- Circumstances: large position changes.
  - Sitting up
  - Rolling over
  - Bending forward/coming upright
  - Extending head back

BPPV ANATOMY AND PHYSIOLOGY

**Diagnosis and Treatment of BPPV for PT**

James R. Barsky, PT, DPT  
www.npbtc.com  

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**CANAL ANGLES**

![Image of canal angles]

**SEMICIRCULAR CANALS ARE CURVILINEAR**

![Image of semicircular canals]

**IPSILATERAL HEAD MOVEMENTS CAUSE EXCITATION**

- **Vertical Canals:** Excited by endolymph flow away from the utricle.  
- **Horizontal Canals:** Excited by endolymph flow toward the utricle.  

![Image of ipsilateral head movements]

**VESTIBULAR OCULAR REFLEX AND EWALD'S 1ST LAW**

**Vestibular Ocular Reflex (VOR)**

- Eyes will move in the plane of the canal stimulated.
  - Horizontal canals will produce horizontal movements.
  - Vertical canals (anterior and posterior) will produce vertical and torsional movements.

![Image of vestibular ocular reflex]

**POSTERIOR CANAL CANALITHIASIS: + DIX-HALLPIKES**

![Image of posterior canal canalithiasis]

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**BPPV EXAMPLES OF VOR AND EWALD'S 1ST LAW**

![Image of BPPV examples]

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3/9/2016
Figure Head and horizontal canal position in the geotropic and apogeotropic variants of horizontal canal benign paroxysmal positional vertigo (HC-BPPV) affecting the right side. The curved arrows along the canal show the direction of otolithic debris movement after head turn.

Kevin A. Kerber, and Christoph Helmchen Neurology 2012;78:154-156

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HORIZONTAL SEMICIRCULAR CANAL BPPV

HSC Canalithiasis

HSC Cupulolithiasis

BOW AND LEAN TEST


SIT TO SUPINE TEST

TREATMENT

- Positional maneuvers: which maneuver depends on the type and location of the BPPV.
- Education: along with appropriate treatment can help prevent Chronic Subjective Dizziness (CSD/3PD).
- Balance training: if there is any residual imbalance. In my opinion this can also be helpful in preventing Chronic Subjective Dizziness (CSD/3PD).

“Clinicians should not routinely treat BPPV with vestibular suppressant medications such as antihistamines or benzodiazepines. Recommendation against based on observational studies and a preponderance of benefit over harm.”

“Here is no evidence to support a recommendation of any medication in the routine treatment for BPPV”

“Self-administered modified Epley”

http://npbtc.com/specialties/bppv

NPBTC.COM

Figure 2 Canalith repositioning procedure for right-sided benign paroxysmal positional vertigo Steps 1 and 2 are identical to the Dix–Hallpike maneuver.

T. D. Fife et al. Neurology 2008;70:2067-2074 ©2008 by Lippincott Williams & Wilkins

Figure 6 Semont roll maneuver for right-sided horizontal canal benign paroxysmal positional vertigo (BPPV). When it is determined to be horizontal canal BPPV affecting the right side, the patient is taken through a series of 90-degree turns away from the affected side in Steps 1 through 5, holding each position for 10 to 30 seconds.

T. D. Fife et al. Neurology 2008;70:2067-2074 ©2008 by Lippincott Williams & Wilkins

Figure 5 Lempert roll maneuver for right-sided horizontal canal benign paroxysmal positional vertigo (BPPV) and the Liberatory maneuver proposed by Asprella et al in 1999:


Appiani, Gufoni maneuver for HSC canalithiasis, or the liberatory maneuver proposed by Asprella et al in 1993 for canalithiasis of the posterior (long) arm of the HSC.
Casani maneuver, Gufoni maneuver for HSC cupulolithiasis, modified Semont maneuver: **for HSC cupulolithiasis**

1. From the seated position, the patient quickly lies down on the affected side.
2. The head is quickly rotated downward 45 degrees (nose to floor).
3. This position is maintained for 2-3 minutes and then the patient sits up.

"Kim maneuver": **for HSC cupulolithiasis on the ampullar and/or utricular side of the cupula**

**ANTERIOR CANAL CANALITHIASIS**

**CENTRAL POSITIONAL NYSTAGMUS VS BPPV NYSTAGMUS**

**CENTRAL POSITIONAL NYSTAGMUS (CPN)**
- Can take on any form depending on the cause.
- Does not have to follow Ewald’s first law, but may look like it does.
- Patient may or may not have symptoms with it.
- May often have associated central signs, but not necessarily.
- CPN from lesions in the nodulus and uvula does not have any latency and is at its peak initially and decays over time.

**CANALITHIASIS**
- Nystagmus can have a longer latency.
- Nystagmus typically will build, peak, and decay in under a minute.
- Follows Ewald’s first law.
- Symptoms usually coincide with the nystagmus.

**CUPULOLITHIASIS**
- Latency for nystagmus is brief.
- Nystagmus is persistent, but will gradually start to decay after about a minute.
- Follows Ewald’s first law.
- Symptoms usually coincide with the nystagmus.
CENTRAL POSITIONAL NYSTAGMUS CAUSES

- Vestibular migraine
- Vertebrobasilar insufficiency
- Infarction, hemorrhage, tumor, MS, Chiari malformation, olivopontocerebellar atrophy, etc.


CASE OF CF

- Bow Test: persistent right horizontal nystagmus without symptoms.
- Lean Test: persistent right horizontal nystagmus with symptoms.
- Right Dix-Hallpike Test: persistent second degree right horizontal nystagmus with symptoms.
- Left Dix-Hallpike Test: questionable down beat nystagmus and questionable left and down beat nystagmus with left gaze; increased dizziness with left gaze.
- Sit to Supine Test: right horizontal nystagmus.
- Right Supine Roll Test: persistent second degree right horizontal nystagmus with symptoms.
- Left Supine Roll Test: persistent down beat nystagmus with symptoms.

QUESTIONS?