Journal Review

Positional Vertigo: As Occurs Across All Age Groups

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Positional Vertigo: As Occurs Across All Age Groups

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Otolaryngol Clin N Am 44 (2011) 347–360

Outline

Benign Paroxysmal Positional Vertigo (BPPV)

Introducion

Pathogenesis

Diagnosis

Treatment

Cho EI, White JA. Positional vertigo: as occurs across all age groups. Otolaryngol Clin. North Am. 2011 Apr;44(2):347-360.

Introduction

BPPV: 17%~42% of vertigo

Age: 50 Y/O ~ 70 Y/O

Cho EI, White JA. Positional vertigo: as occurs across all age groups. Otolaryngol Clin. North Am. 2011 Apr;44(2):347-360.

Common Causes of Vertigo

Otologic disorders

Benign paroxysmal positional vertigo
Meniere's disease (endolymphatic hydrops)
Vestibular neuronitis (labyrinthitis)

Neurologic disorders

Migraine-associated dizziness
Vertebrobasilar insufficiency
Panic disorder

Furman JM, Cass SP. Benign paroxysmal positional vertigo. N Engl J Med 1999;341:1590–6

BPPV across the lifespan

< 18 Y/O: case reports

minor head trauma

(recurrent) family hx of migraine

18~39 Y/O:

yoga, running, reach high up, aerobic exercise, swim

> 40 Y/O:

head trauma, VN

Cho EI, White JA. Positional vertigo: as occurs across all age groups. Otolaryngol Clin. North Am. 2011 Apr;44(2):347-360.

Pathogenesis

Posterior canal BPPV: 85~95%

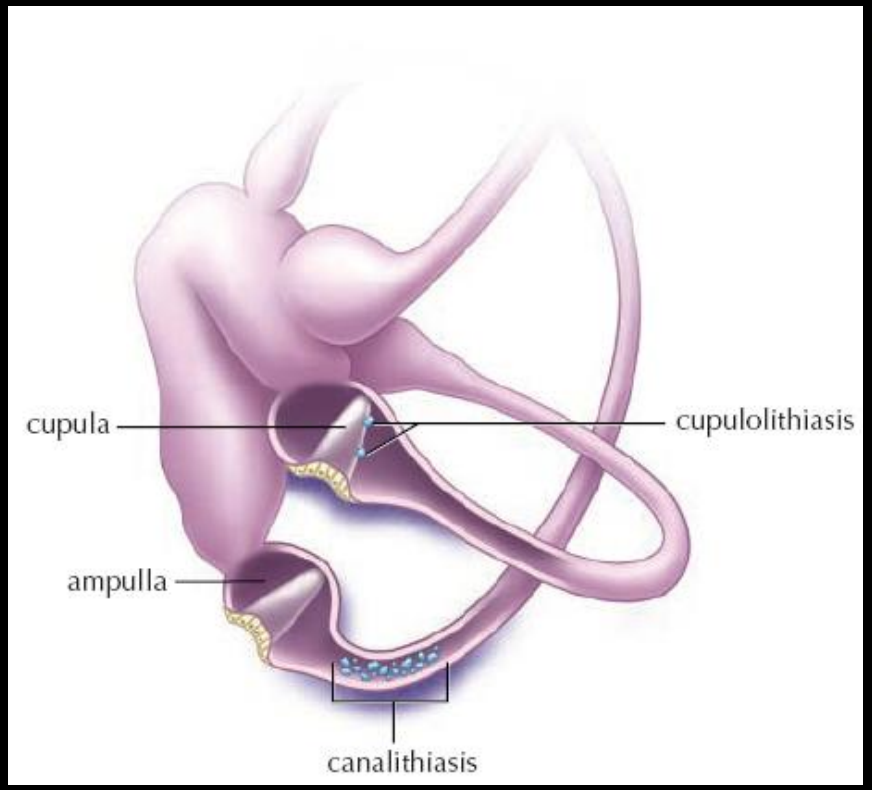
Horizontal canal BPPV: 5~15%

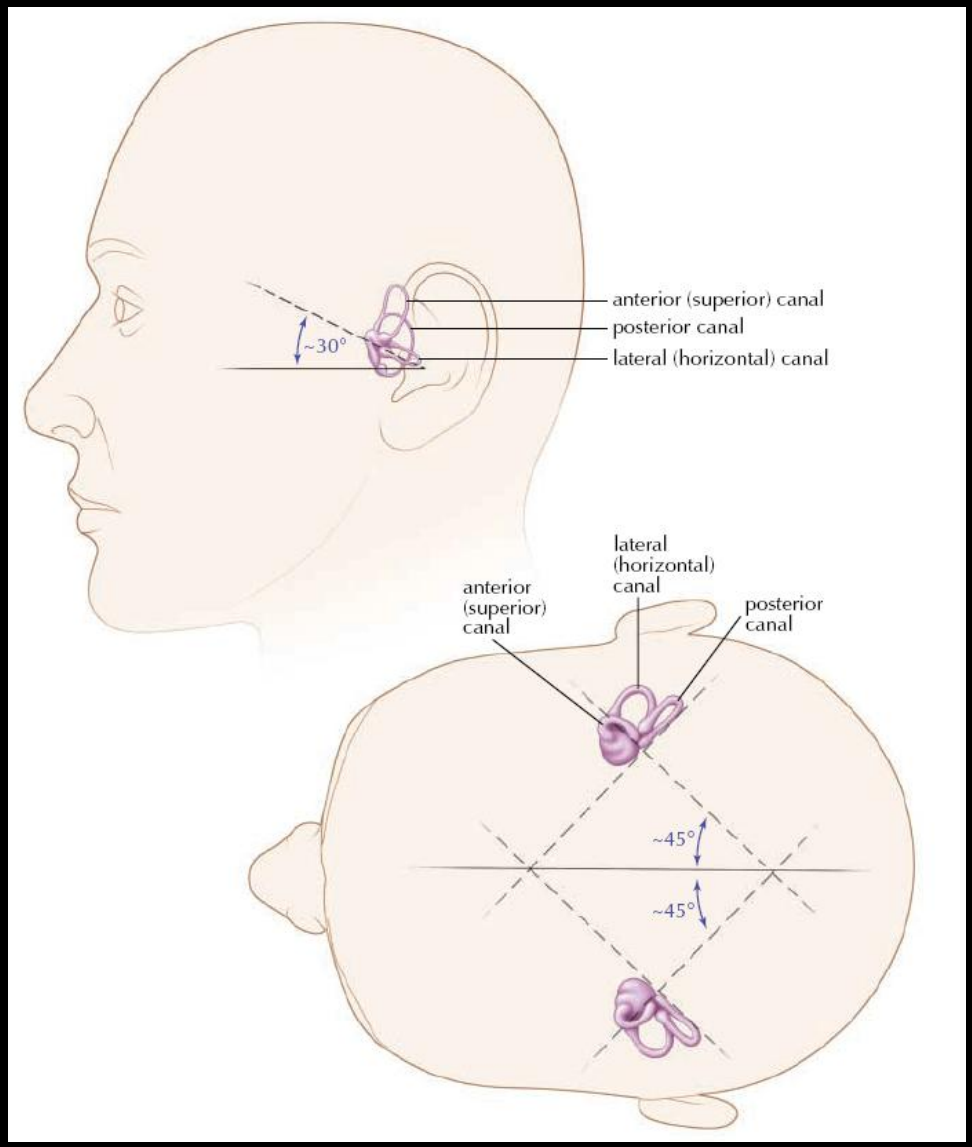
Other (ant. canal, multiple canal): rare

Bhattacharyya et al. Clinical practice guideline: Benign paroxysmal positional vertigo. Otolaryngology–Head and Neck Surgery (2008) 139, S47-S81

Pathogenesis

Posterior canal BPPV: canalithiasis





Parnes et al. Diagnosis and management of benign paroxysmal positional vertigo (BPPV). CMAJ • SEPT. 30, 2003; 169 (7)

Pathogenesis

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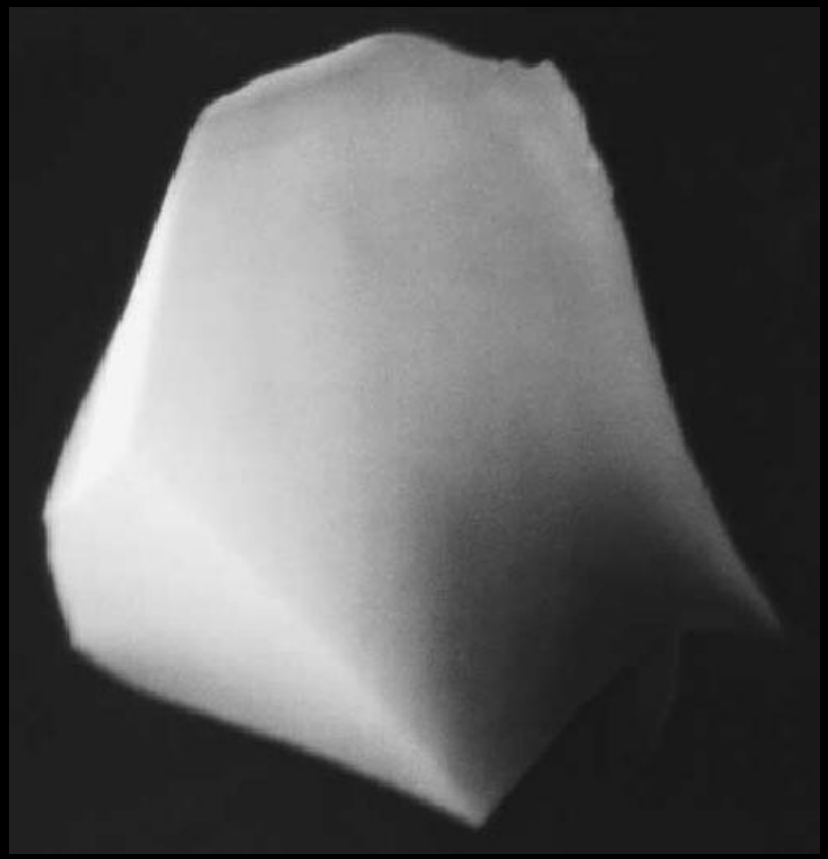

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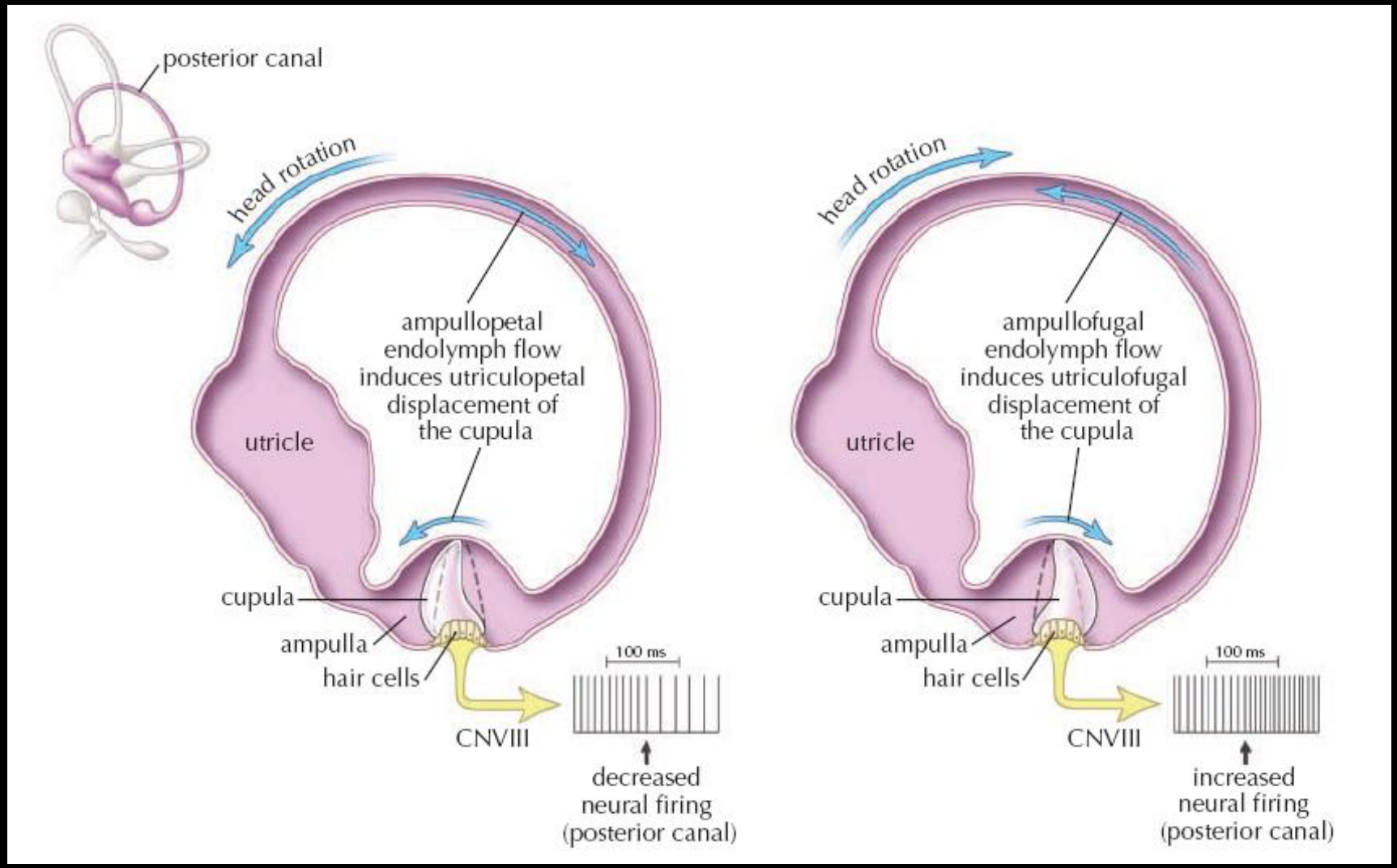
Pathogenesis



Parnes et al. Diagnosis and management of benign paroxysmal positional vertigo (BPPV). CMAJ • SEPT. 30, 2003; 169 (7)

Clinical Manifestation

Vertigo: changes head position relative to gravity

Roll over in bed

Tilt the head to look upward <1min

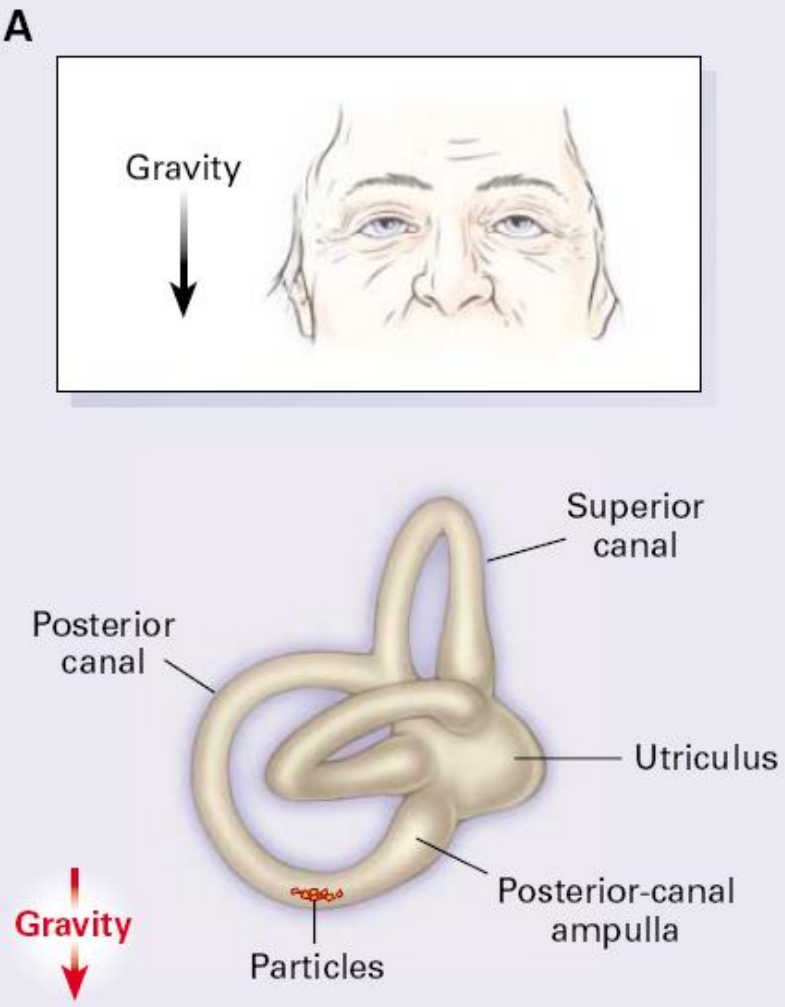
Bend forward

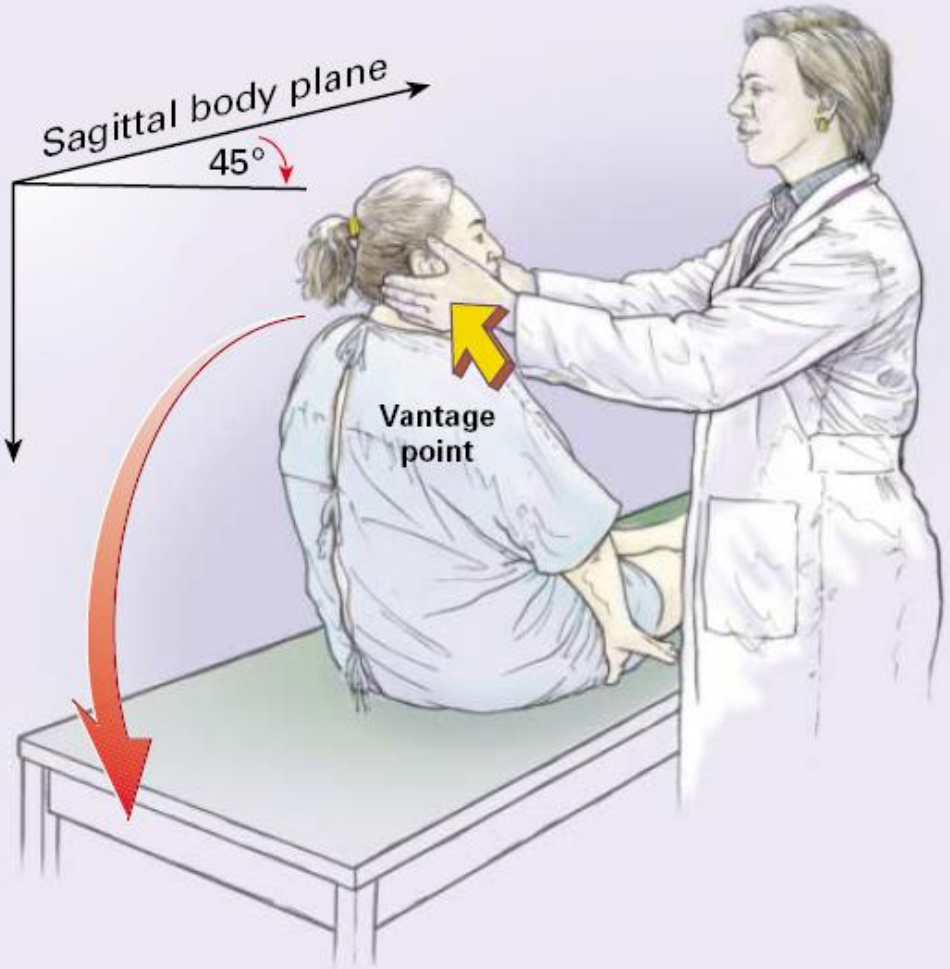
Dizziness

Nausea

Loss of balance

Dix-Hallpike Test





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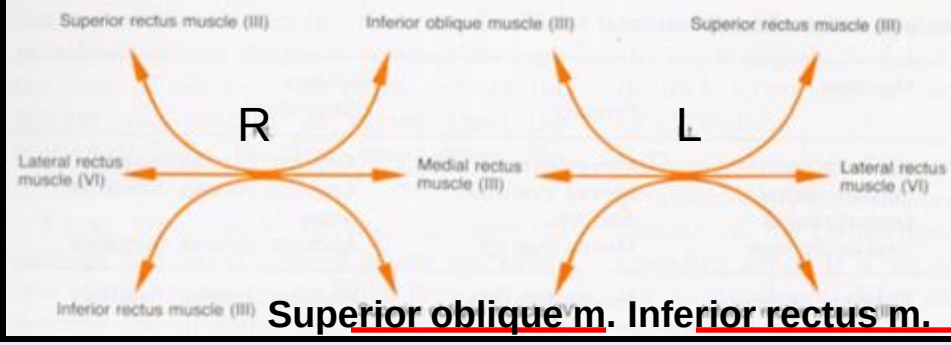
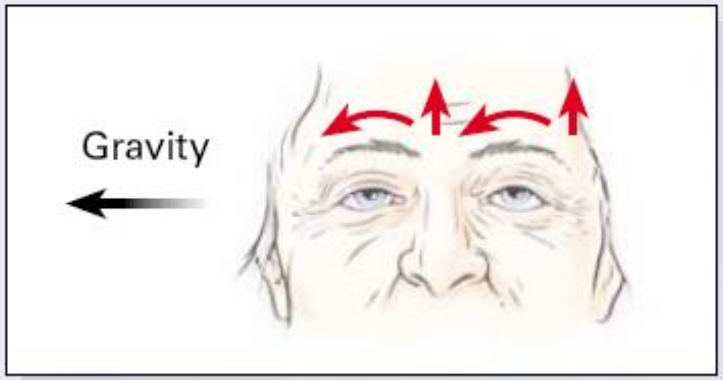
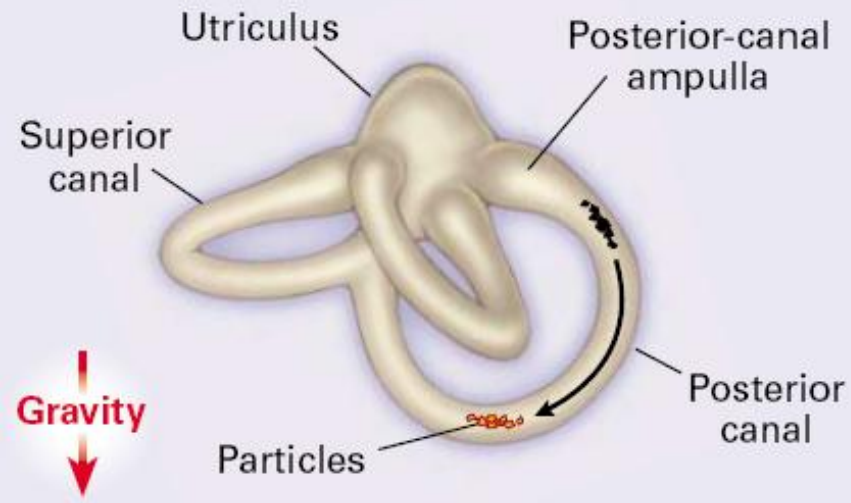
Dix-Hallpike Test



Superior oblique m. Inferior rectus m.

B





Furman JM, Cass SP. Benign paroxysmal positional vertigo. N Engl J Med 1999;341:1590–6

Dx of Post. BPPV

Vertigo + mixed torsional and vertical **nystagmus**

Latency (1~20 seconds) between the completion of the Dix–Hallpike test and the onset of vertigo and nystagmus

Vertigo and nystagmus **increase and then resolve** within 10~60 seconds from onset of nystagmus

Fatigability

Furman JM, Cass SP. Benign paroxysmal positional vertigo. N Engl J Med 1999;341:1590–6

If clinical c/w BPPV

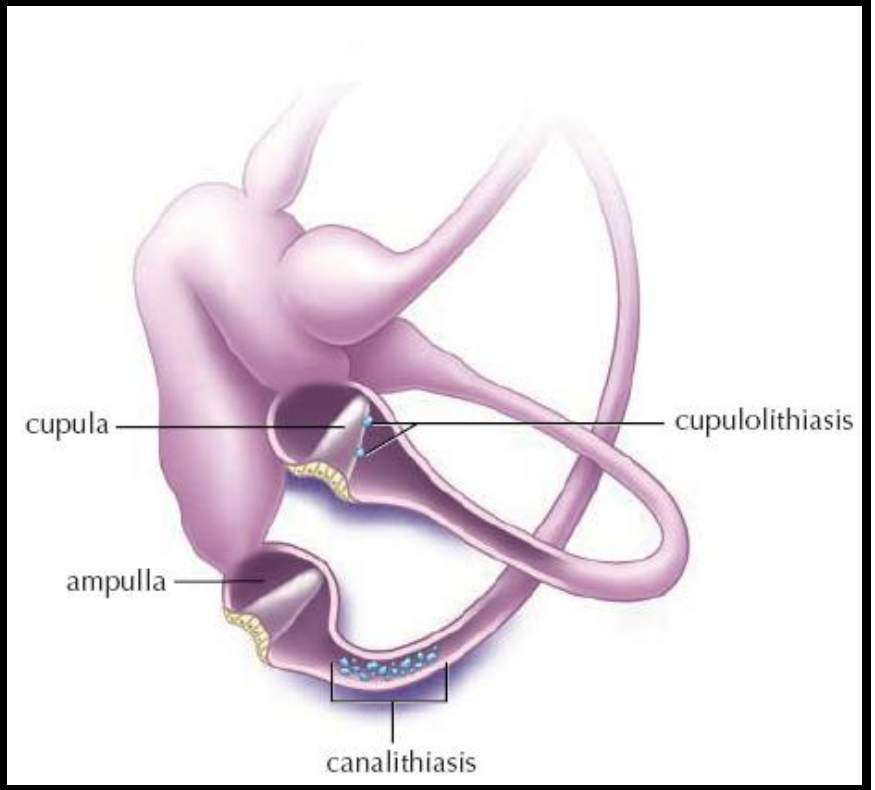
Dix-Hallpike Test (-)

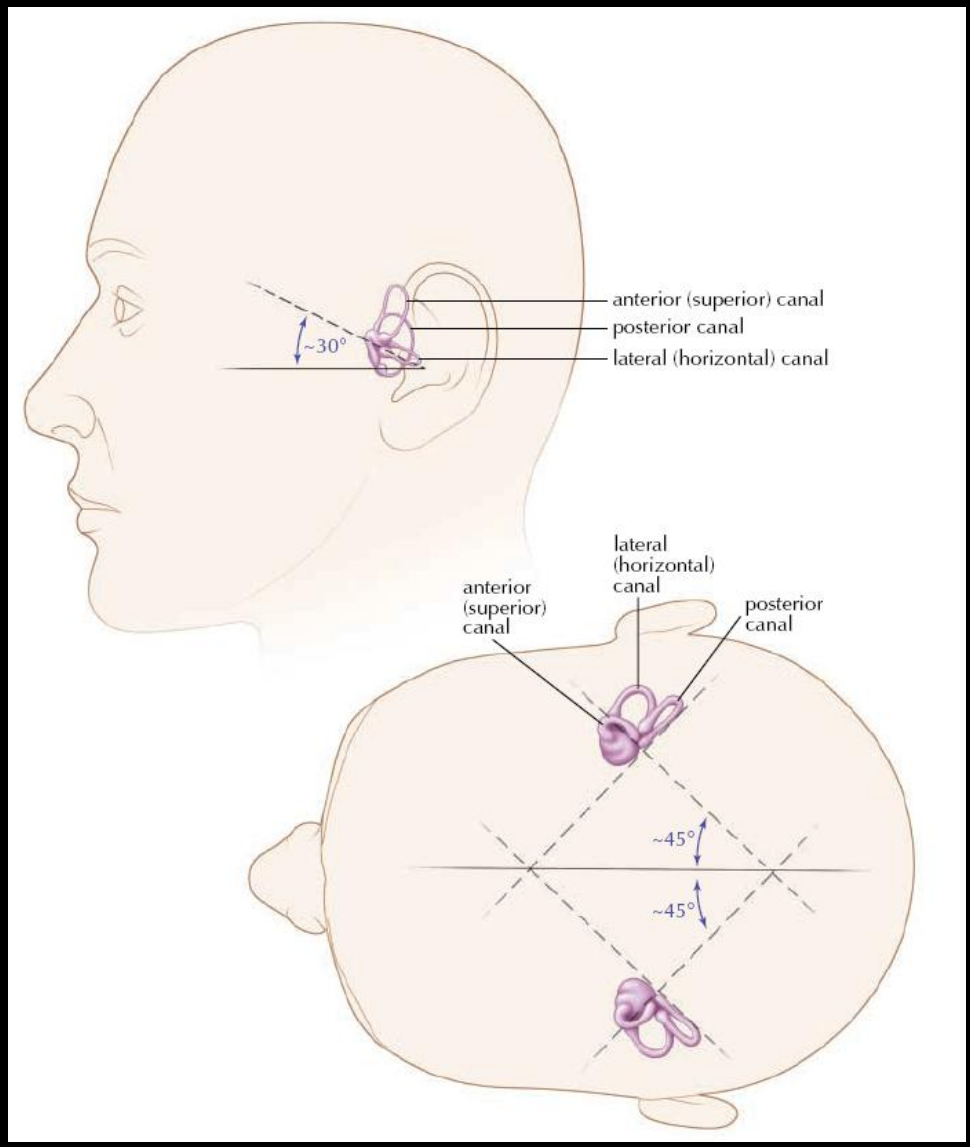
Horizontal (lateral) canal BPPV?

Pathogenesis

Horizontal canal BPPV: **canalithiasis**

cupulolithiasis





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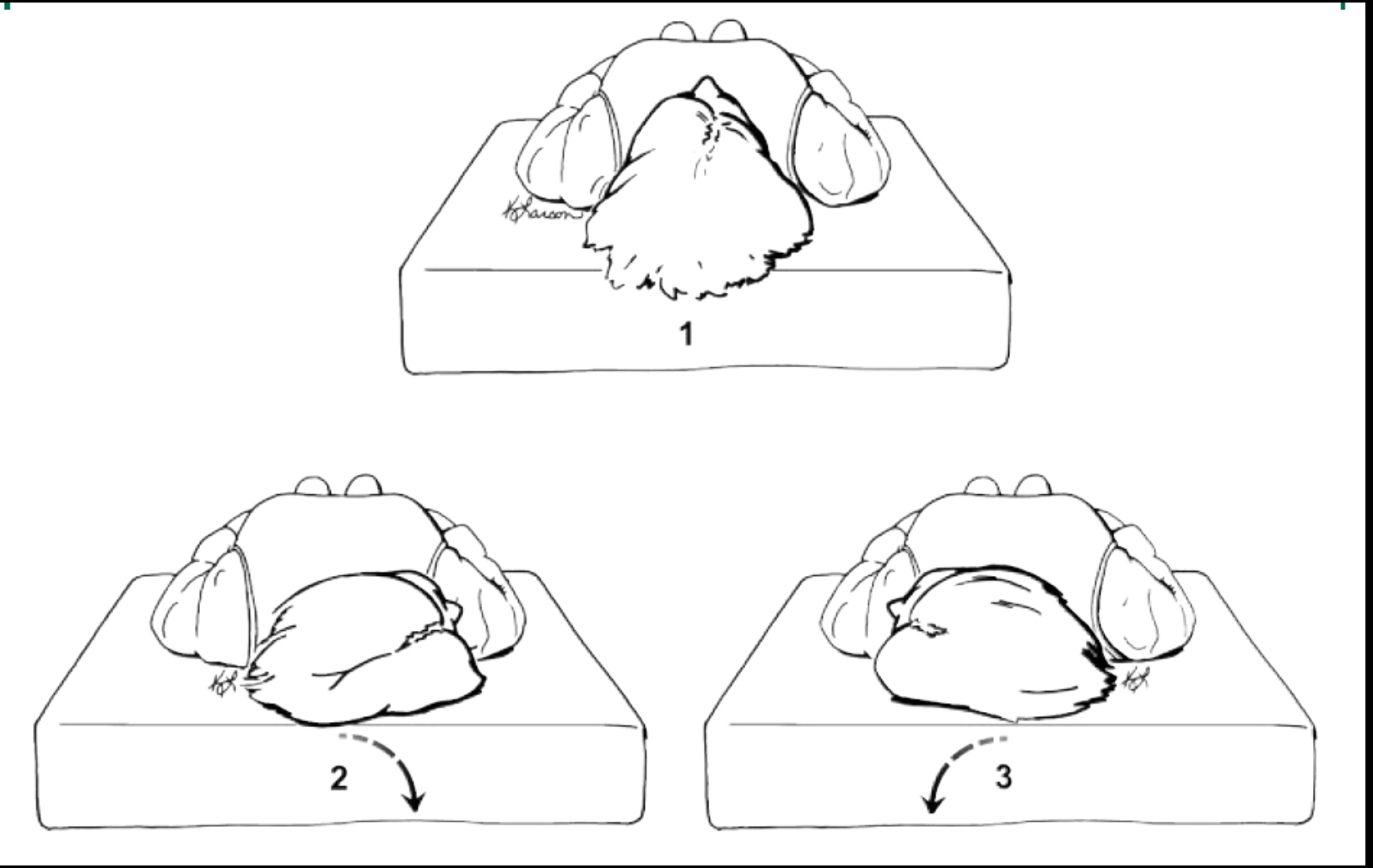
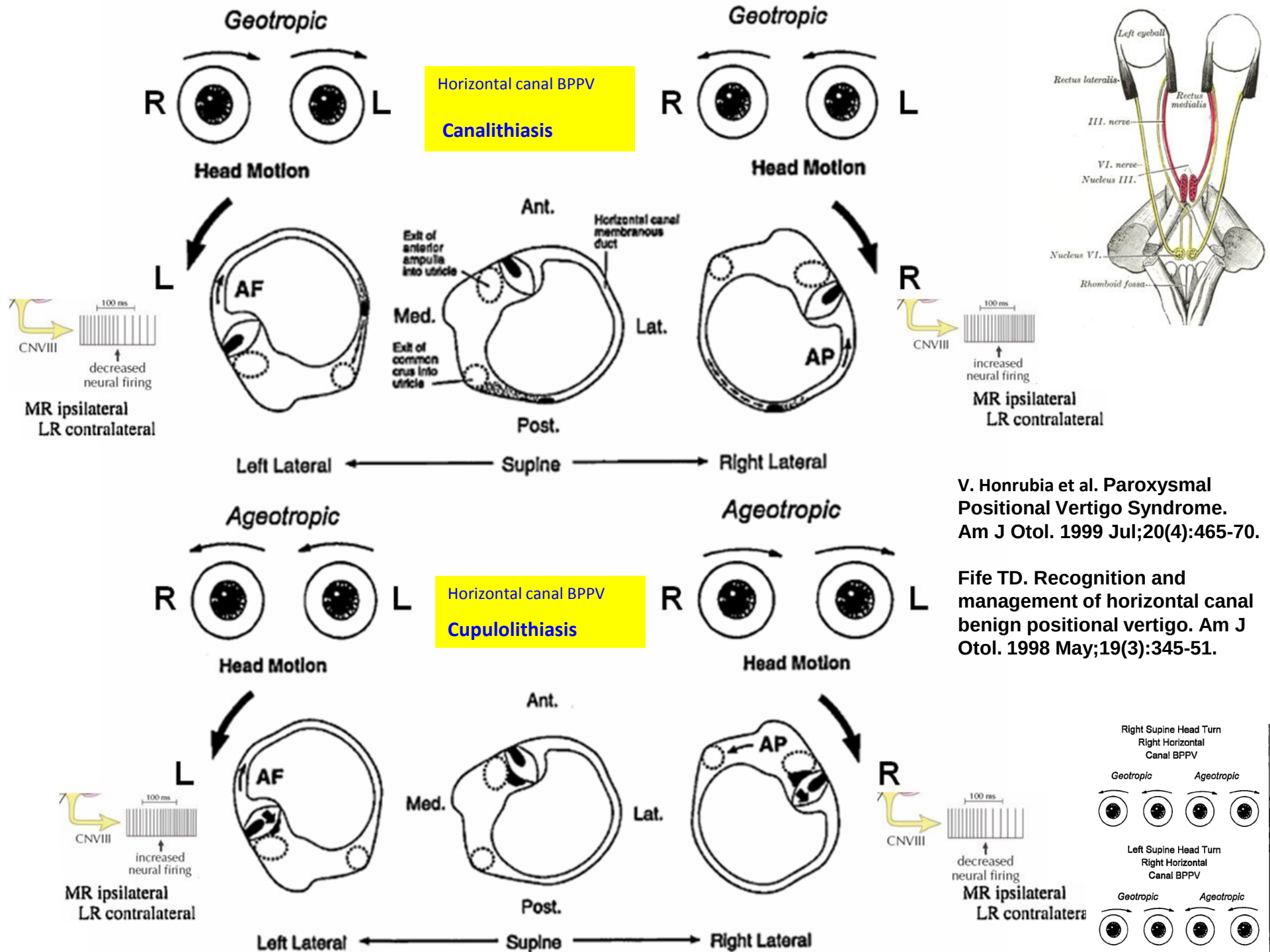
Supine roll Test



Bhattacharyya et al. Clinical practice guideline: Benign paroxysmal positional vertigo. Otolaryngology–Head and Neck Surgery (2008) 139, S47-S81



V. Honrubia et al. Paroxysmal Positional Vertigo Syndrome. Am J Otol. 1999 Jul;20(4):465-70.

Fife TD. Recognition and management of horizontal canal benign positional vertigo. Am J Otol. 1998 May;19(3):345-51.

Causes of BPPV

Primary or Idiopathic (50%~70%)

Secondary (30%~50%)

- Head trauma (7%~17%)
- Viral labyrinthitis (15%)
- Ménière's disease (5%)
- Migraines (<5%)
- Inner ear surgery (<1%)

Parnes et al. Diagnosis and management of benign paroxysmal positional vertigo (BPPV). CMAJ • SEPT. 30, 2003; 169 (7)

Treatment

Vestibular suppressant medication should be avoided

Repositioning maneuver is recommended

Posterior canal BPPV

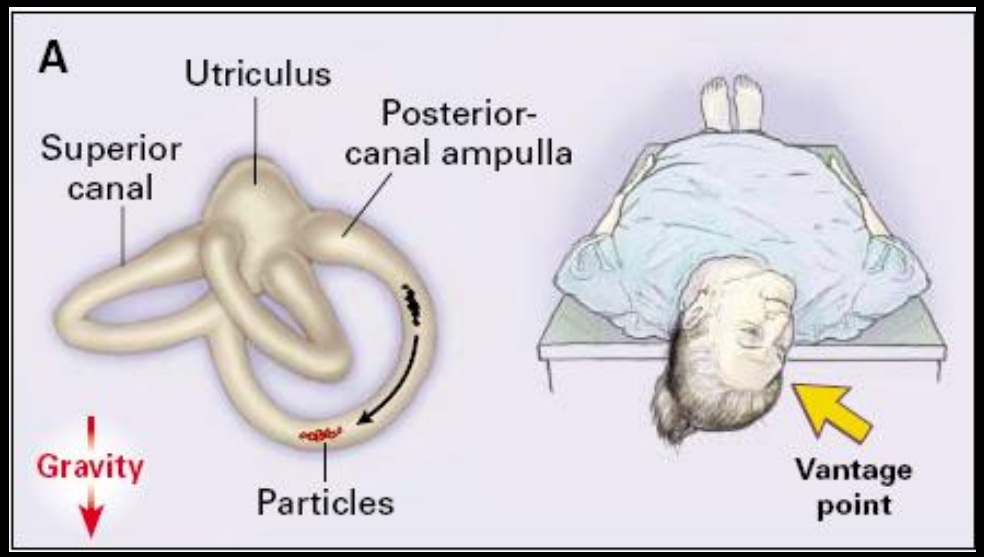
Canalith repositioning procedure (Epley's maneuver)
Liberatory maneuver (Semont's maneuver)

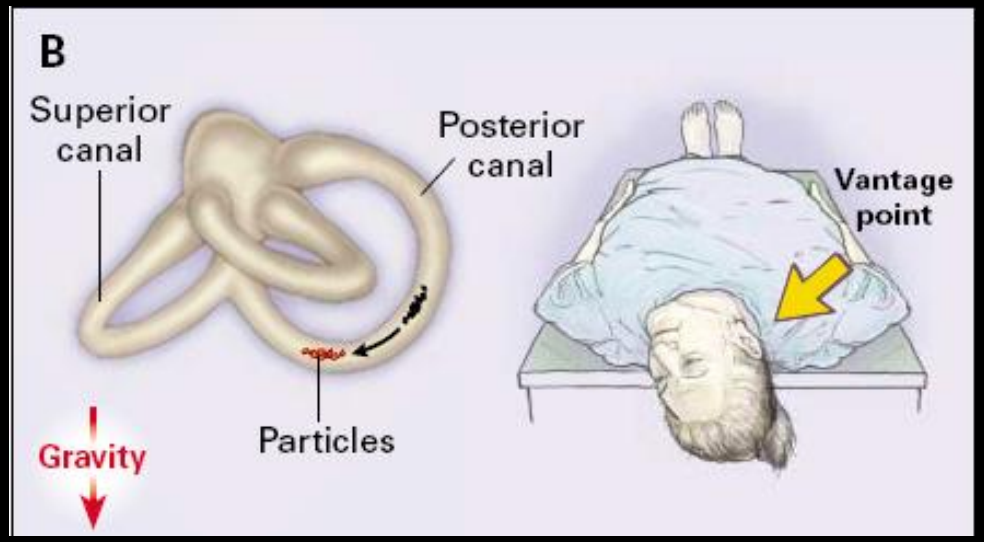
Horizontal canal BPPV

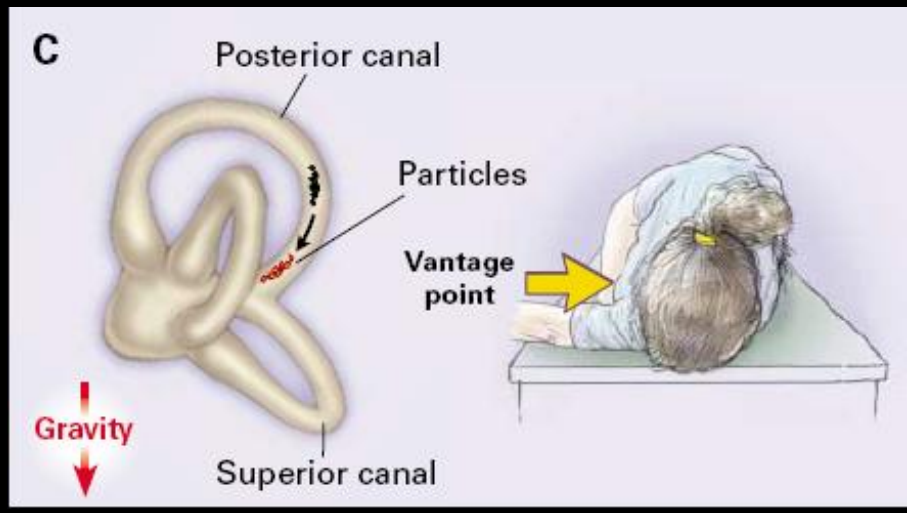
Roll maneuver (Lempert maneuver or barbecue roll maneuver)

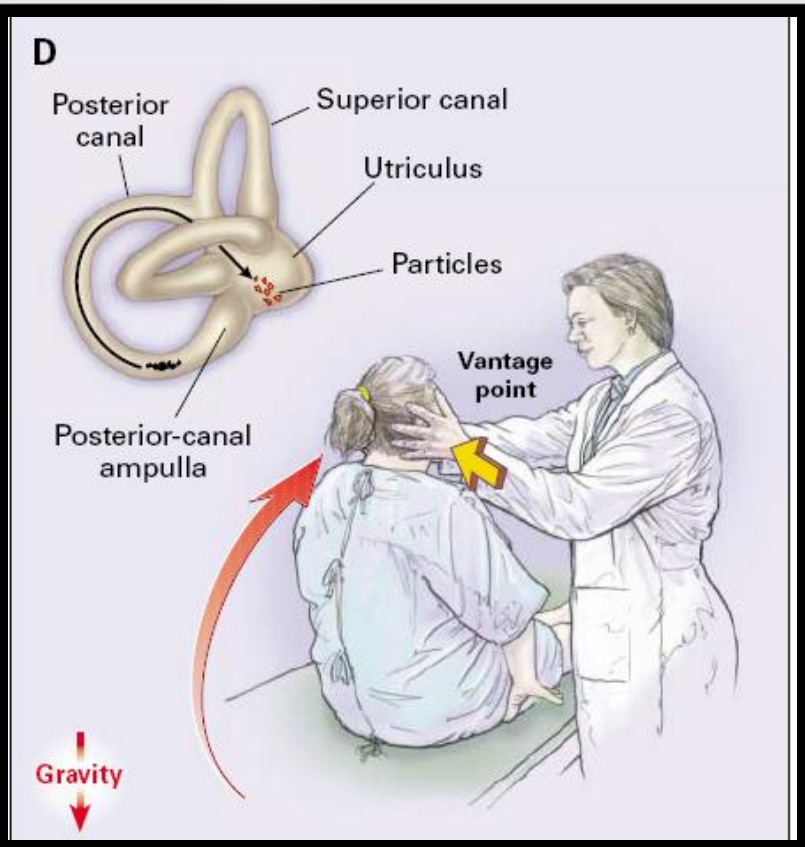
Bhattacharyya et al. Clinical practice guideline: Benign paroxysmal positional vertigo. Otolaryngology–Head and Neck Surgery (2008) 139, S47-S81

Epley's maneuver



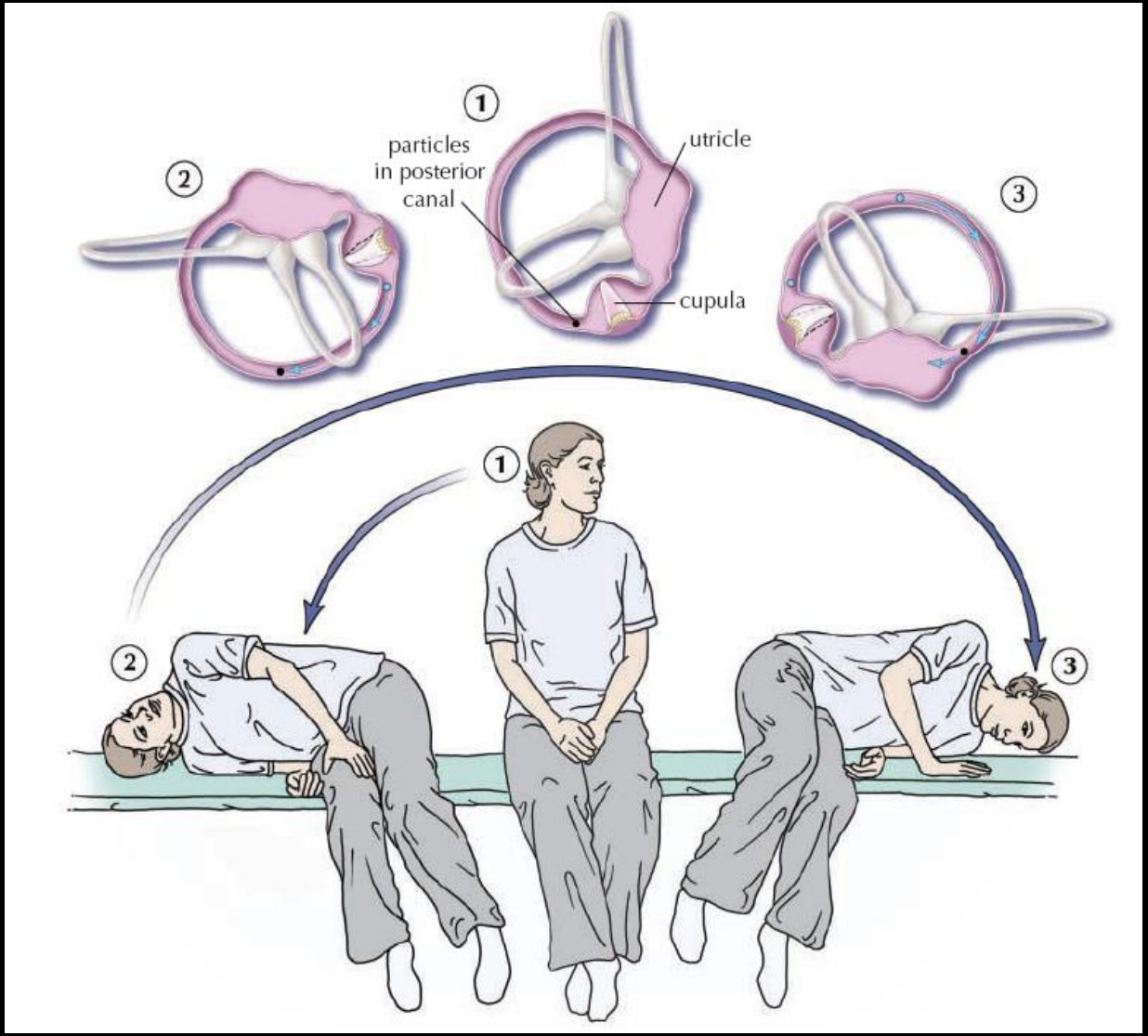






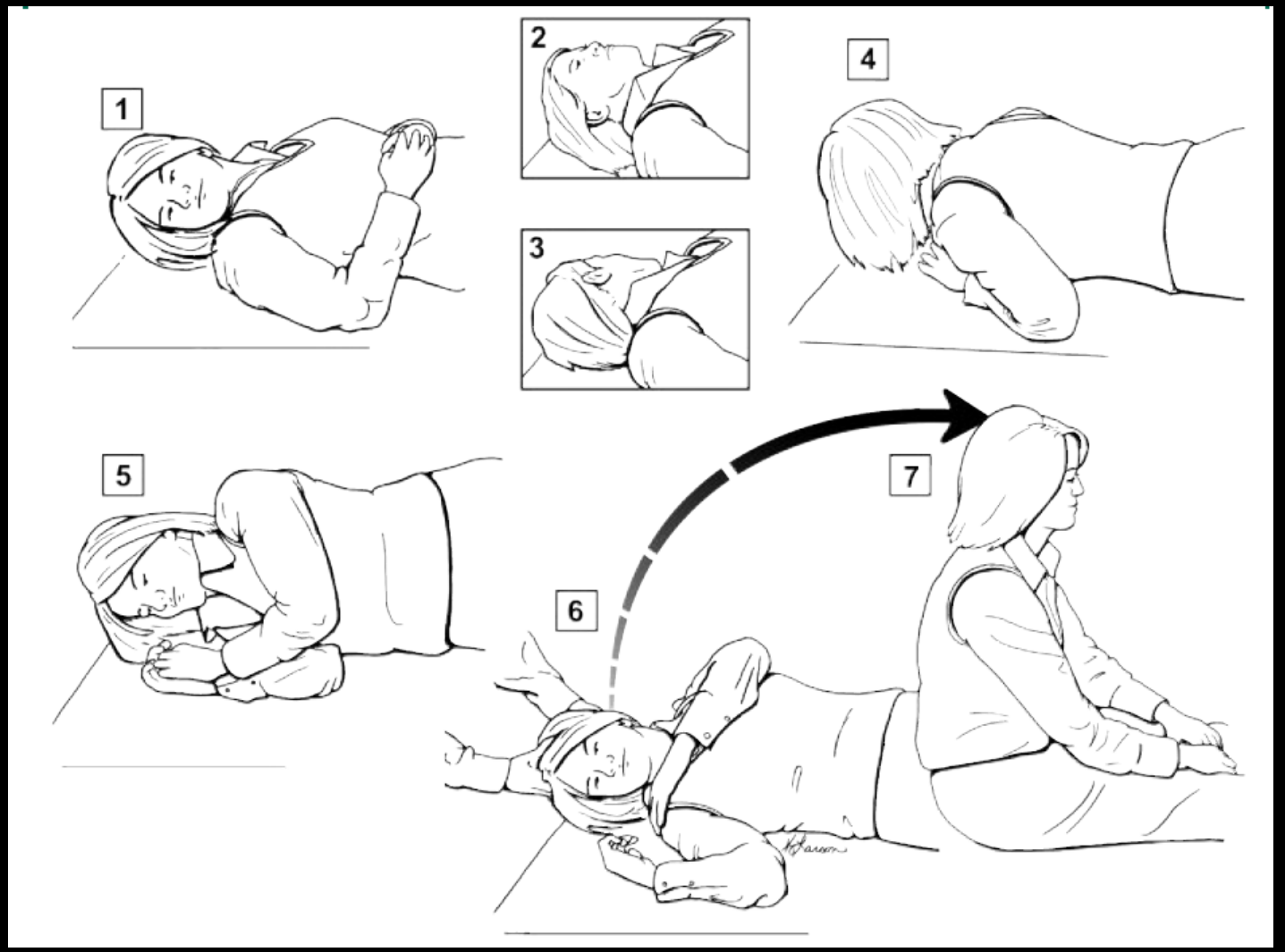
Furman JM, Cass SP. Benign paroxysmal positional vertigo. N Engl J Med 1999;341:1590–6

Semont's maneuver



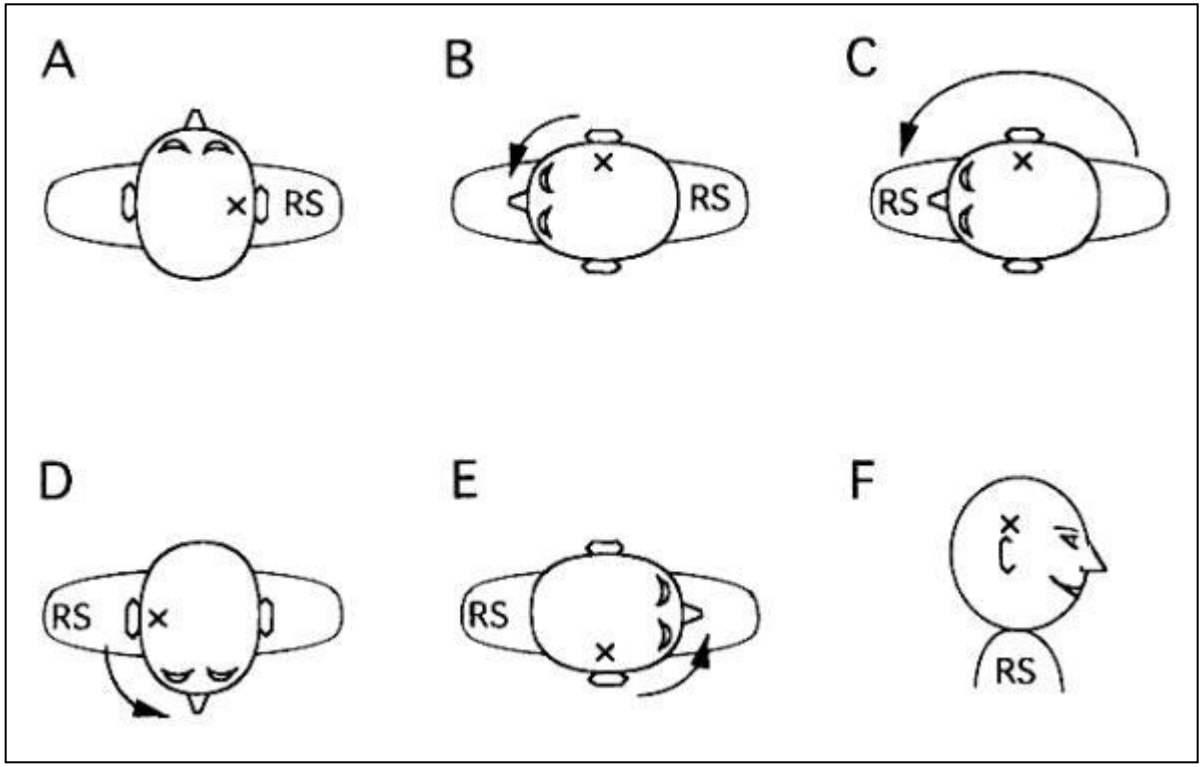
Parnes et al. Diagnosis and management of benign paroxysmal positional vertigo (BPPV). CMAJ • SEPT. 30, 2003; 169 (7)

Lempert maneuver



Fife TD, Iverson DJ, Lempert T, et al. Practice parameter: therapies for benign paroxysmal positional vertigo (an evidencebased review): report of the Quality Standards Subcommittee of the American Academy of Neurology. *Neurology.* 2008; 70:2067–2074.

Fig. 2



A Positional Maneuver for Treatment of Horizontal-Canal Benign Positional Vertigo.
Lempert, Thomas; Tiel-Wilck, Klaus

Laryngoscope. 106(4):476-478, April 1996.

Fig. 2 . Positional maneuver for treatment of HC-BPV. Each 90-degree head rotation is performed rapidly within a half second. Head positions are maintained for between 30 and 60 seconds until all nystagmus has subsided. A. Starting position: supine. B. Head rotation toward the unaffected ear. C. Body turn from supine to prone while head position is maintained. D. Head rotation to nose-down position.E. Final head turn to affected-ear-down position. F. Sitting-up position. X = affected ear (right side); RS = right shoulder.

Complication

Vertigo (~100%)

Heaviness in head (65.52%)

Nausea (37.93%)

Vomiting (3.45%)

Imbalance (37.93%)

Palpitation (34.5%)

Conversion to lateral canal BPPV (6~7%)

Sridhar and Panda. Safety of Particle Repositioning Manoeuvre in Benign Paroxysmal Positional Vertigo: Is It Really Safe? *The Journal of Otolaryngology, Volume 34, Number 1, 2005*

Contraindication

Significant vascular disease
Cervical stenosis
Severe kyphoscoliosis
Limited cervical range of motion
Down syndrome
Severe rheumatoid arthritis
Cervical radiculopathies
Paget's disease
Ankylosing spondylitis
Low back dysfunction
Spinal cord injuries
Morbid obesity

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