Benign Positional Nystagmus (BPN)

- Synonyms:
  - Benign Paroxysmal Positional Nystagmus (BPPN)
  - Benign Paroxysmal Positional Vertigo (BPPV)
  - Benign Positional Vertigo (BPV)

Benign Paroxysmal Nystagmus (BPN)

- Brief attacks of rotatory vertigo +/- nausea (</= 60seconds)
- Triggers include:
  - Lying down/sitting up in bed/getting out of bed
  - Rolling over in bed
  - Bending, as to tie the shoelaces
  - Extending neck eg to look up to a high shelf.
- Treated with specific exercises/manoeuvres
- Relief is obtained in ~80 percent
- No place for labyrinthine sedatives eg prochlorperazine

BPN aetiology

- Debris (“crystals”) in vestibular system
- Usually posterior semi-circular canal.
- Generally accepted explanation is that posterior canal is most dependant, so debris gravitates to this region
- Aetiology: head injury, infection, surgery or out of the blue

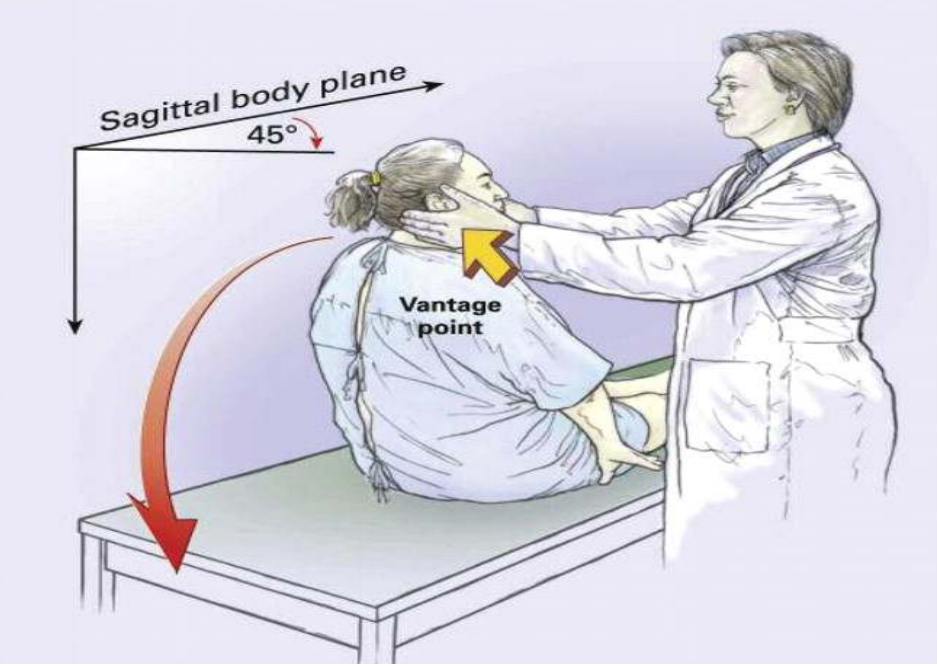
Dix-Hallpike test

- To diagnose BPN
- Explain beforehand
- Ensure no neck/back problems that would be aggravated by sudden change in posture

- See also:

http://www.youtube.com/watch?v=Ew14aZqiUrw&feature=related

- **Dix Hallpike Test**
- Stand to the side of the patient
- Pt sitting with head turned to examiner
- Pt sat so that when supine, the head will be beyond the end of the couch
- Patient lain flat in one quick, smooth movement
- Eyes must stay open
- Repeat on other side



Interpretation of Dix Hallpike Test

- 90% are posterior semicircular canal BPN
  - –Rotatory upbeat nystagmus with the diseased ear down
  - –Fast phase toward undermost ear
  - –reversal of nystagmus direction on sitting up
- If atypical features, consider central problem

Dix-Hallpike test continued

- Positive test:
  - Rotatory nystagmus (& vertigo):
    - Diseased ear downmost
  - 3 features of BPN:
    - **Latency** – delay of up to 20 seconds before onset of nystagmus
    - **Fatigueability** – nystagmus fades if head held in provoking position
    - **Habituation** – Repeating DH test produces less vigorous response

Red flags

- Refer in for need to exclude central cause of positional nystagmus
  - Atypical nystagmus:
    - Non-rotatory nystagmus
    - Triad of latency, fatigueability and habituation not present
  - Other otological/neurological symptoms/signs
  - (Failure to improve with 2-3 Epleys)
  - (Failure to improve with Brandt & Daroff)

BPN treatments

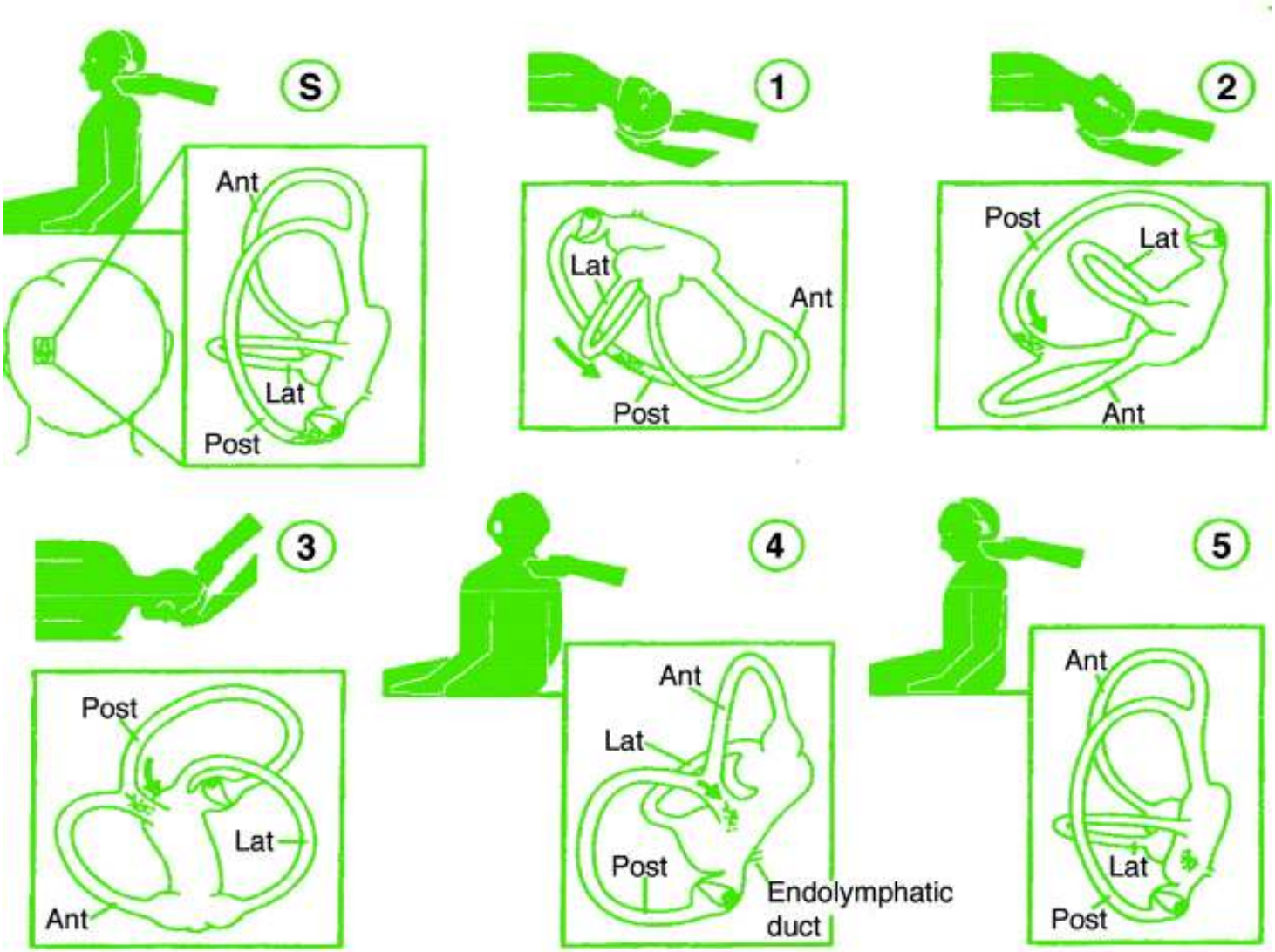
- Epley manoeuvre
- Brandt & Daroff excercises

See separate documents for quick view and patient leaflets

- Other manoeuvres for rarer forms of BPN
  - Probably best carried out in specialist balance clinic
- Surgery:
  - Posterior semi-circular canal obliteration
  - No longer commonly undertaken

Epley manoevre

- 80% quoted success rate
- Easy to perform
- Repositions “crystals”
- Explain to patient beforehand
- Some post-manoeuvre instructions also



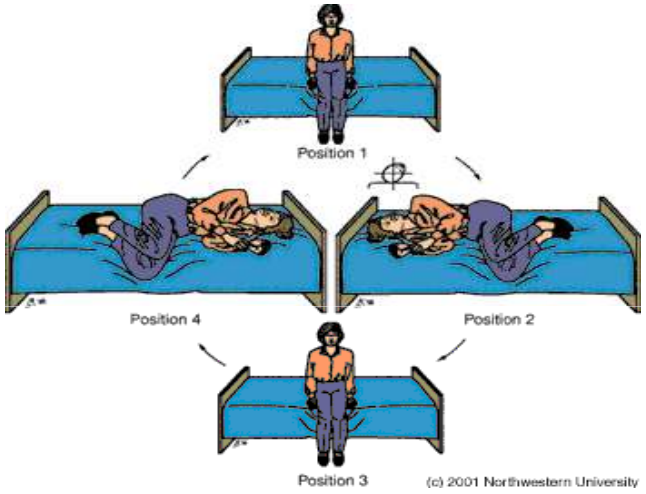
EPLEY Manoeuvre – see following slides

Epley manoeuvre
Post-manoeuvre instructions

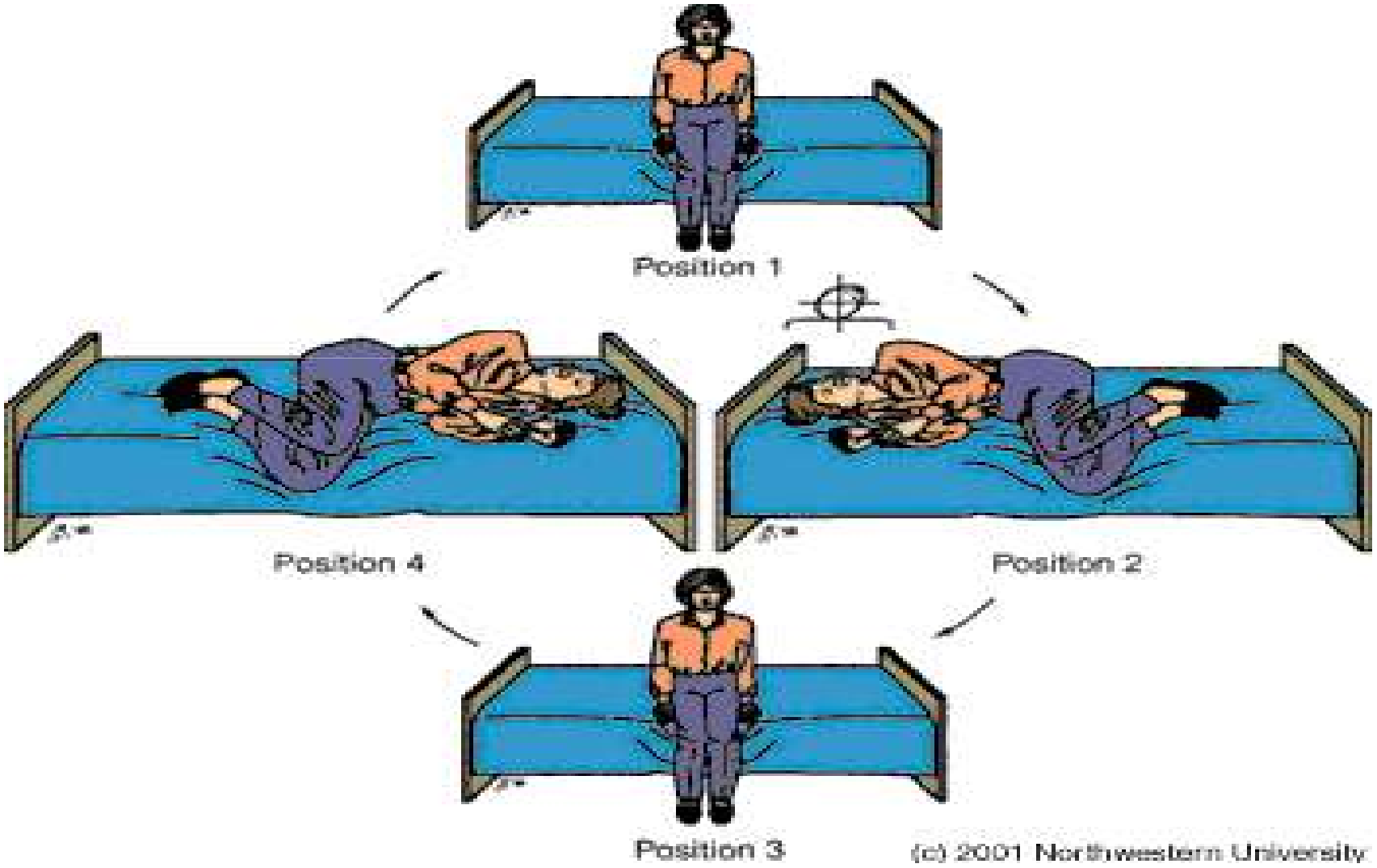
- Patient not to drive home after Epley
- Patient to avoid lying flat for 2 nights after
- For a further 5 nights, avoid lying on bad side:
  - Sleep on good side with pillow behind back to act as a barrier to rolling over

Brandt & Daroff Exercises

- Can be done at home
- High success rate
- Breaks up “crystals”
- Arduous:
  - 3 sets per day for 2 weeks
  - 1 set = 5 repetitions of the exercise
  - Each set takes 10 minutes
- See following slides for detail



Brandt & Daroff Exercises



Brandt & Daroff Exercises

- Begin by sitting upright on bed (**position 1** above)
- Lie down onto side. Take no more than 1-2 seconds to do this
- Keep head looking up at 45 degree angle. Imagine someone standing about six feet in front of you, and keep looking at the person's head at all times (**position 2**)
- Remain on this side for thirty seconds, or until dizziness subsides.
- Return to an upright position and wait for thirty seconds (**position 3**)
- Now lie down onto the other side. Again, it should take one or two seconds to get into position
- Keep the head at a 45 degree angle (**position 4**)
- Stay down for another thirty seconds, or until vertigo subsides
- Return to an upright position and wait for another thirty seconds.

Atypical BPN

- Not common - 10%
  - Lateral Canal
  - Anterior (Superior) Canal
  - Cupulo-lithiasis
  - Vestibulo-lithiasis
  - Multi-canal patterns
- May arise following Epley or Brandt & Daroff (migration of debris)
  - These may resolve spontaneously within days

Because of need to exclude central cause, refer on to ENT for assessment

Lateral Canal BPN

- Least rare variant
  - Often severe and prolonged vertigo
- Horizontal nystagmus
  - Changes direction depending which ear is downmost

The best position to see this nystagmus is not the Dix-Hallpike manoeuvre.
Rather one starts with the body supine, head inclined forward 30 degrees, and then turns the head to either side.
This is called the "supine roll test".

Because of need to exclude central cause, refer on to ENT for assessment

Anterior (Superior) canal BPN

- Downbeating and/or torsional nystagmus
- May be worse with head straight back
- Uppermost ear may be affected side (cf Posterior canal BPN)

Because of need to exclude central cause, refer on to ENT for assessment

Other rare forms of BPN

- Cupolulithiasis
  - Persistant Nystagmus
  - Debris stuck onto cupula of any of the 3 semicircular canals
  - No general agreement on Rx
- Vestibuloithiasis
  - Persistant Nystagmus
  - Hypothetical variant of above where debris stuck on vestibular side of cupula
- Multi-canal BPN
  - Typical nystagmus of posterior canal BPN plus other variants in same side and contralateral ear
  - Theoretically possible

Because of need to exclude central cause, refer on to ENT for assessment