“Doctor, I get these dizzy spells”

– a history-based diagnostic algorhythm

Faints, fits and funny turns for the physician

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Bristol Marriott Royal Hotel

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The Key Question
(to ask the dizzy patient)…..

What do you mean by “DIZZY”?

Vestibular disorders cause **Vertigo**
(= an illusion of **movement**, not necessarily rotational)

and

**Imbalance**

As the vestibular system senses **acceleration**, vestibular symptoms TEND to be provoked or exacerbated by (head) movement.
1. Is this vestibular, or something else?

   *and, if it IS vestibular,*

2. Is it peripheral or central?
   (inner ear, VIII nerve) (brainstem, cerebellum)
   *and, related,*

3. Is it benign, or potentially serious?
   (“Red flags”)
Doctor, I get these dizzy spells

This is vertigo and implies a vestibular problem

Do you feel that you or the world is moving?

YES

Not vertiginous less likely to be vestibular

NO

Do you feel faint (as though about to pass out)?

YES

Consider middle ear disease

Suggests Cardiovascular disease (pan-cerebral ischaemia)

NO

Do you feel faint (as though about to pass out)?

NO

Consider Epilepsy

Do you ever lose consciousness?

YES

What do you mean by "DIZZY"?

Start again!

NO

Consider:

Neurological disorder
Multisensory dizziness
Bilateral vestibular failure
Psychological overlay

Do you get:
palpitations?
dizzy on getting up quickly?
dizzy on prolonged standing?
Consider arrhythmias, postural or orthostatic hypotension, vaso-vagal attacks, hyperventilation, anaemia

NO

Do you feel off-balance or clumsy?

NO

Sudden deafness: vascular or auto-immune cause or viral labyrinthitis. Exclude vestibular Schwannoma (= acoustic neuroma)
Progressive deafness: MUST be referred for scan to exclude vestibular Schwannoma.
Fluctuating deafness with episodic vertigo (1/2 to 12 hours): likely to be Meniere's.

Consider middle ear disease

Examine for:
discharge
perforation
cholesteatoma
conductive hearing loss (use tuning forks)

Implies inner ear disease

NO

Is the VERTIGO…?

CONTINUE ON NEXT PAGE

YES

Consider:

Neurological disorder
Multisensory dizziness
Bilateral vestibular failure
Psychological overlay

Ask about:
Neurological symptoms including ataxia / incoordination.
Oscillopsia: neurological, or symptom of bilateral vestibular failure.
Symptoms of Hyperventilation syndrome: shortness of breath, chronic exhaustion, pins & needles, sense of unreality, panic attacks.
Other sensory impairment (eg visual, tactile, joint position sense).
Diabetes.

Not vertiginous less likely to be vestibular

Do you feel faint (as though about to pass out)?

NO

Consider Epilepsy

There may be a vertiginous aura (or other sensory auras) in complex partial seizures

NO

Do you ever lose consciousness?

YES

What do you mean by "DIZZY"?

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NB: These distinctions are not absolute: vestibular symptoms can cause or be caused by vaso-vagal attacks

NO

Do you get a painful or discharging ear?

YES

NO

Yes

Do you ever lose consciousness?

Consider:
Neurological disorder
Multisensory dizziness
Bilateral vestibular failure
Psychological overlay

NO

Do you get:
palpitations?
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Is the VERTIGO…?

**CONSTANT VERTIGO**

Exclude neurological causes:
- Look for abnormal eye movements or central pattern of nystagmus.
- Full neurological examination
- Consider hyperventilation, “Chronic Subjective Dizziness” – are symptoms affected by movement?

**SINGLE EPISODE OF VERTIGO**

Vascular or viral (vestibular neuritis) labyrinthine damage is likeliest, depending on duration of episode (and age of patient). This may take weeks or months for full recovery, with persisting movement-provoked symptoms. BUT, consider neurological cause (ie CVA) by looking for central nystagmus.

**MULTIPLE EPISODES OF VERTIGO**

Ask if the episodes are …. ?

**SPONTANEOUS**

Recurrent peripheral vestibulopathy (vestibular neuritis, labyrinthitis)
- Vestibular migraine (migraine-related vertigo, basilar migraine, benign recurrent vertigo, benign paroxysmal vertigo of childhood)
  - Ask about past or family history of migraine. Vestibular migraine may be unaccompanied by headache.
  - Vestibular Meniere’s (?)
  - Neurological causes
  - Any other neurological symptoms or unusual nystagmus? Think about MS.

**MOVEMENT PROVOKED**

Dizziness provoked by head movement: may be a sign of incompletely compensated (or decompensated) peripheral vestibular impairment.
  - Ask about past history of vertigo.
  - Look for nystagmus in absence of optic fixation (ophthalmoscope) or provoked by head-shaking.

**POSITIONAL**

Dizziness on looking up (ie extending neck), lying down, turning over or sitting up in bed.
- Commonest cause is Benign Paroxysmal Positional Vertigo (BPPV). Diagnostic findings on Hallpike Test:
  - Latent period 2-40 secs
  - Upbeat, rotatory nystagmus
  - Severe vertigo
  - Fatigues in < 30 secs
  - Nystagmus / vertigo reduced or absent on repeating test.

Possible neurological (usually cerebellar) cause if any of these features not present.
- Cervical vertigo (disorder of joint position sense) can (rarely) present in this way.
- Vertebrobasilar ischaemia is rare and should only be considered if there are other posterior fossa signs / symptoms.
A Classification of recurrent Vertigo

1. SPONTANEOUS
   Migraine – 25% of my practice

2. MOVEMENT PROVOKED
   Peripheral vestibular imbalance - 25% of my practice

3. POSITIONAL
   BPPV – 25% of my practice
A Practical Classification of recurrent Vertigo

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**TYPE OF VERTIGO**

- **SPONTANEOUS**
  - **TYPE OF TREATMENT**
    - PROPHYLACTIC (eg Betahistine, Propranolol)
    - SYMPTOMATIC (eg Cinnarizine, Prochlorperazine)

- **MOVEMENT PROVOKED**
  - **EXERCISES**
    - (Cawthorne-Cooksey, Gaze Stabilization)

- **POSITIONAL**
  - **EXERCISES** (Brandt-Daroff)
  - **CANALITH REPOSITIONING MANOEUVRES** (Epley, Semont, BBQ)
GP Referral:

- “Labyrinthitis” 6 mths ago: acute vertigo / vomiting for 1 week
- Still off-balance and off work.
- Some relief from prochlorperazine/cinnarizine: symptoms return whenever he tries to stop them.
- Copes by avoiding movement: has given up badminton and tennis.
- Becoming anxious and depressed.
- O/E: “I can’t find anything wrong.”

“I’m getting more reluctant to label this as chronic labyrinthitis. Am I missing something more serious? Or is this all in his mind?”
Is this peripheral vestibular?
Could it be “serious” (ie central)?
Is it all in his mind?

How do you distinguish?
Features of peripheral vestibular nystagmus: which are the CORRECT statements?

Peripheral nystagmus is:

1. Conjugate.
2. “Saw-tooth” with slow (pathological) and fast phases.
3. Predominantly horizontal; acutely, may have a torsional component but never vertical.
4. Usually beats (L) on looking to (L) and (R) on looking to (R).
Features of \textit{peripheral} vestibular nystagmus: which are the CORRECT statements?

Peripheral nystagmus is:

1. Conjugate.
2. “Saw-tooth” with slow (pathological) and fast phases.
3. Predominantly horizontal; acutely, may have a torsional component but never vertical.
4. Unidirectional: does \textbf{NOT} change direction with direction of gaze. (Enhanced by looking in direction of fast phase.)
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5. Accompanied by vertigo.
6. Temporary: usually disappears within a week of an acute vestibular episode.
7. Suppressed by removing optic fixation.
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Frenzel’s
(or Blessing)
Glasses
(20 diopter illuminated lenses)
MUST be used in the DARK
Infra-red Video-Frenzel’s
Instant comparison of fixation versus no fixation
New!

Wireless video-Frenzel’s

• use anywhere
• WiFi connection to iPad / iPhone
• real-time slow-phase velocities
“Video-Frenzel's goggles should be used in all clinics with substantial numbers of balance-impaired patients. Traditional Frenzel's glasses have no place in clinical practice unless formal black-out facilities are available.”

Comparison of techniques for identification of peripheral vestibular nystagmus

P D B West, Z A Sheppard and E V King


A (bright) ophthalmoscope may be as effective as Frenzel’s glasses in the dark, detecting peripheral nystagmus in around 30% of cases, with the other eye covered.
CASE: 49 year old man (2)

Seen in Audiovestibular Medicine Clinic:

**History:** (as above.)
Consistent with acute vestibular failure (vestibular neuritis) 6 months before.
Persistent symptoms related to head movement. OK if still.

**Examination:**

**Nystagmus to (L) on removal of optic fixation**

Unless nystagmus is looked for in the dark, with Frenzel’s or an ophthalmoscope,

“O/E: No nystagmus” really means

“O/E: No neurological nystagmus”
**Diagnosis:**

*Vestibular Neuritis* with incomplete central vestibular compensation.

Compensation process affected by anxiety state, avoidance of movement and doctors repeatedly telling him it there was nothing wrong and that it was “all in his mind”.

**Treatment:**

1. Explanation and reassurance
2. Vestibular rehabilitation exercises

*(Cawthorne-Cooksey, Gaze-Stabilisation)*
"Vestibular Compensation"

Occurs at brainstem reflex level - affected by:

- **Movement**
  
  *Lack of head movement prevents compensation*

- **Drugs**
  
  *Stemetil (prochlorperazine) is worst*

- **Psychological factors**
  
  *Reduction in social activities*
  
  *Inability to work*
  
  *Fear of falls*

(- **Age**)
Psychological and vestibular interactions

- Vertigo
- Anxiety
- Failure of compensation
- Depression
- Immobility
- Reduction in social activities
- Lack of exercise
- Inability to work

Arrows indicate interactions and dependencies between these conditions.
Vertigo is a symptom, NOT a diagnosis.

Vertigo is an illusion of movement. It does not have to be rotational.

Vertigo is much more commonly due to inner ear than to neurological disorders.

Unilateral hearing loss implies the likelihood of an inner ear disorder.

It is not always possible to distinguish inner ear from neurological problems from history alone. Multiple Sclerosis and CVA may present like Labyrinthitis. Always examine for nystagmus and other eye movement disorders.

Migrainous vertigo is often misdiagnosed as Meniere’s Disease.

Vertigo on head movement is more likely to be vestibular than cervical in origin. Vertigo on neck extension is usually BPPV, not vertebro-basilar ischaemia.

Many drugs cause or exacerbate dizziness. The commonest offenders are: Prochlorperazine (!), Hypotensives and Antidepressants.

Dizziness may be due to systemic disease: think about haematological, metabolic and autoimmune disorders.
“Sorry, Kong - Height Vertigo is normal physiology and doesn't respond to vestibular rehab”

Vestibular vertigo is defined as an illusion of movement, and is not fear of heights.