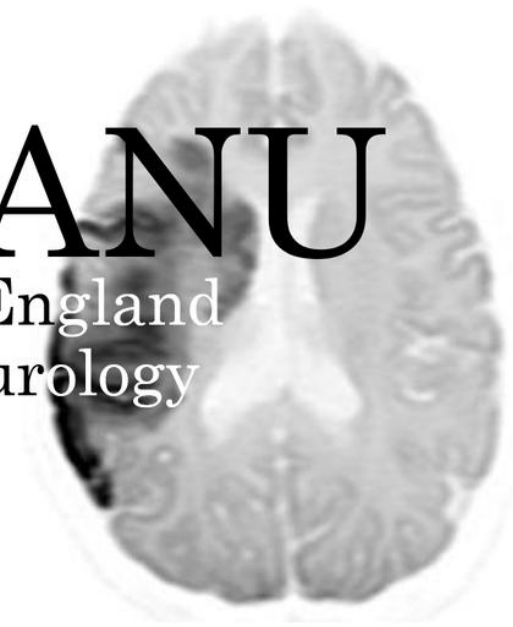


NEANU

North of England
Acute Neurology
Update



Examination Skills

Lilleker & Dodd

(with thanks to Matt Jones)

Disclosures



JBL

- No relevant disclosures

KCD

- Travel expenses and honoraria from UCB
- Research funding from NorthCare, Myaware and Neuromuscular Study Group

What constitutes the Essential Neurological Examination?

The essential neurologic examination

What should medical students be taught?

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ABSTRACT

Background: Graduating medical students often identify the neurologic examination (NE) as one of the clinical skills with which they are least comfortable. We hypothesized that this is because they are unsure about which elements of the NE are important, and conducted a study 1) to identify whether neurologists agree about the essential elements of the NE and 2) to determine whether the views of medical students about what is essential differ from those of neurologists.

Methods: Using a Delphi process, we asked McGill University neurologists which elements of the NE they would perform at least 80% of the time in a common clinical scenario. We confirmed the results in a sample of Canadian neurologists, and then compared the results of the McGill neurologists to a sample of graduating McGill University medical students.

Results: The neurologists surveyed rated 22 items of the NE as essential, and there was a high degree of consensus about which items were essential. Medical student ratings of the importance of NE items were largely similar to those of the neurologists, although there were some noteworthy discrepancies.

Conclusions: The anxiety felt by medical students regarding the neurologic examination (NE) seems unlikely to be solely due to uncertainty about which elements of the NE are important. Expert consensus about the essential elements of the NE and awareness of areas where neurologist and student views differ should be used to guide teaching of the NE. *Neurology*® 2009;72:2020-2023

- 
- Visual Fields
 - Fundoscopy
 - Pupillary light reflexes
 - Eye movements (pursuit and saccadic)
 - Facial power
 - Palatal movements
 - Tongue movements

- 
- Pronator drift
 - Upper limb tone
 - Upper limb power
 - Reflexes (biceps, triceps, supinator)
 - Finger nose coord
 - Vibration sensation
 - Pinprick sensation

- 
- Gait
 - Tandem gait
 - Romberg's
 - Lower limb tone
 - Lower limb power
 - Reflexes (Knee, ankle, plantars)
 - Vibration sensation
 - Pinprick sensation

Consultant Neurologists n=15

- Visual Fields
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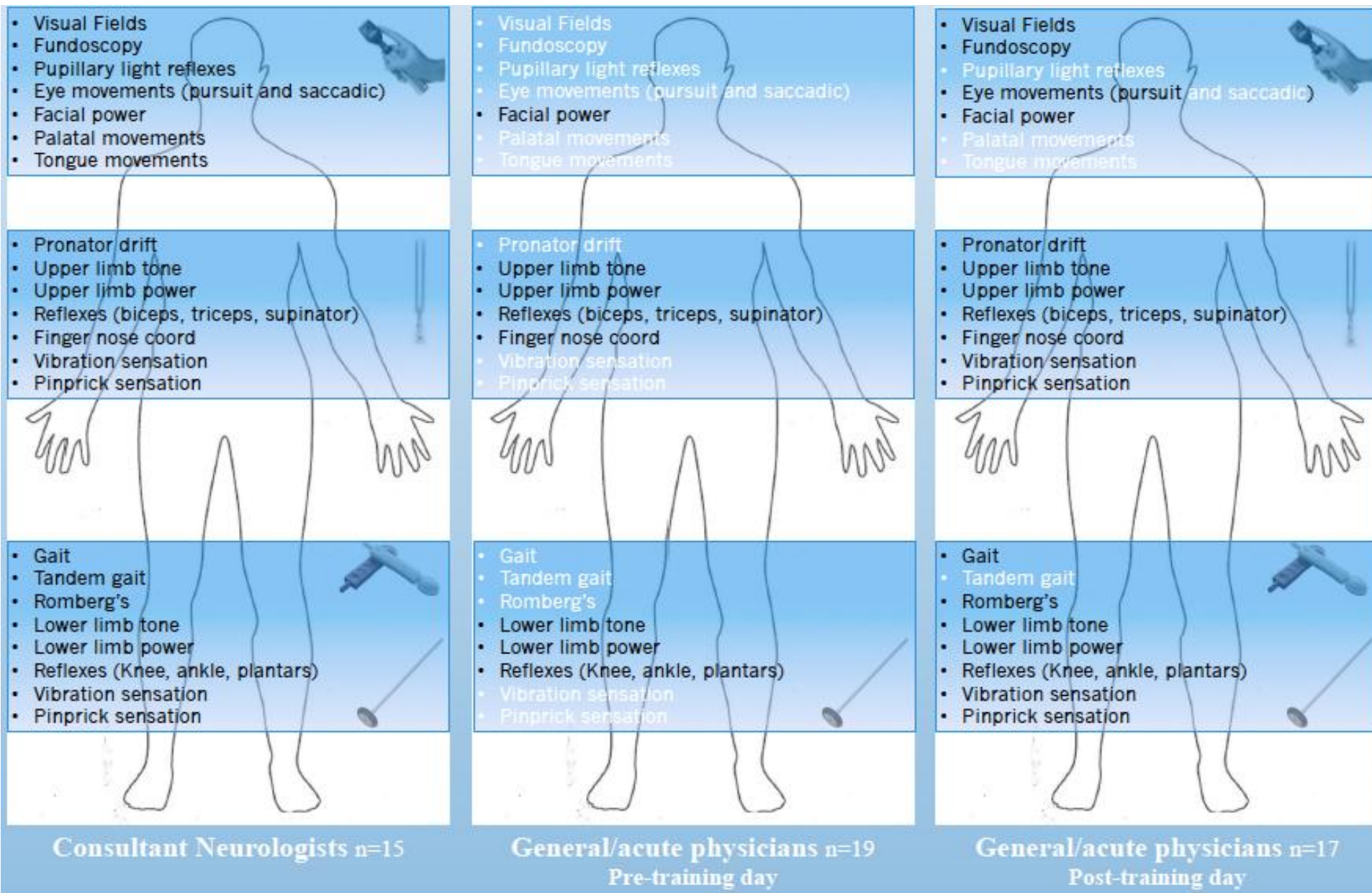
Consultant Neurologists n=15

- Visual Fields
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General/acute physicians n=19
Pre-training day



What data do we need to localize?

Cranial Nerves

- Fields
- Pupils and fundus
- Eye mvmts
- Facial power and sensation
- Speech
- Tongue movements



Limbs x 4

- Wasting /fasciculation
- Tone
- Power
- Reflexes
- Coordination
- Pin prick
- Vibration +/- JPS





Basic neurological examination demo

16,592 views

113 2 SHARE SAVE ...

Google: Nick Smith YouTube , https://www.youtube.com/watch?v=DkrH_6VKPSE



brief neuro exam

680,615 views

👍 2.2K 💬 121 ➦ SHARE ⌵+ SAVE ...

Google: David Nicholl Neuro Exam , <https://www.youtube.com/watch?v=q56WgXvn0iU>

Is this always enough?

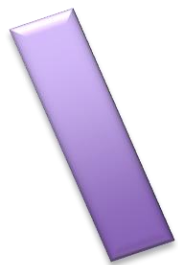
Where's the lesion?



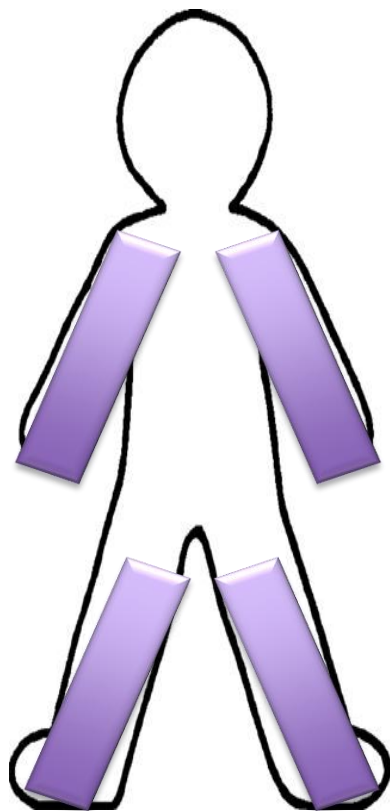


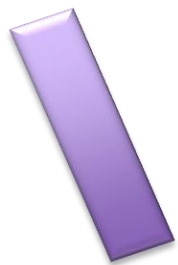
Now where's the lesion?



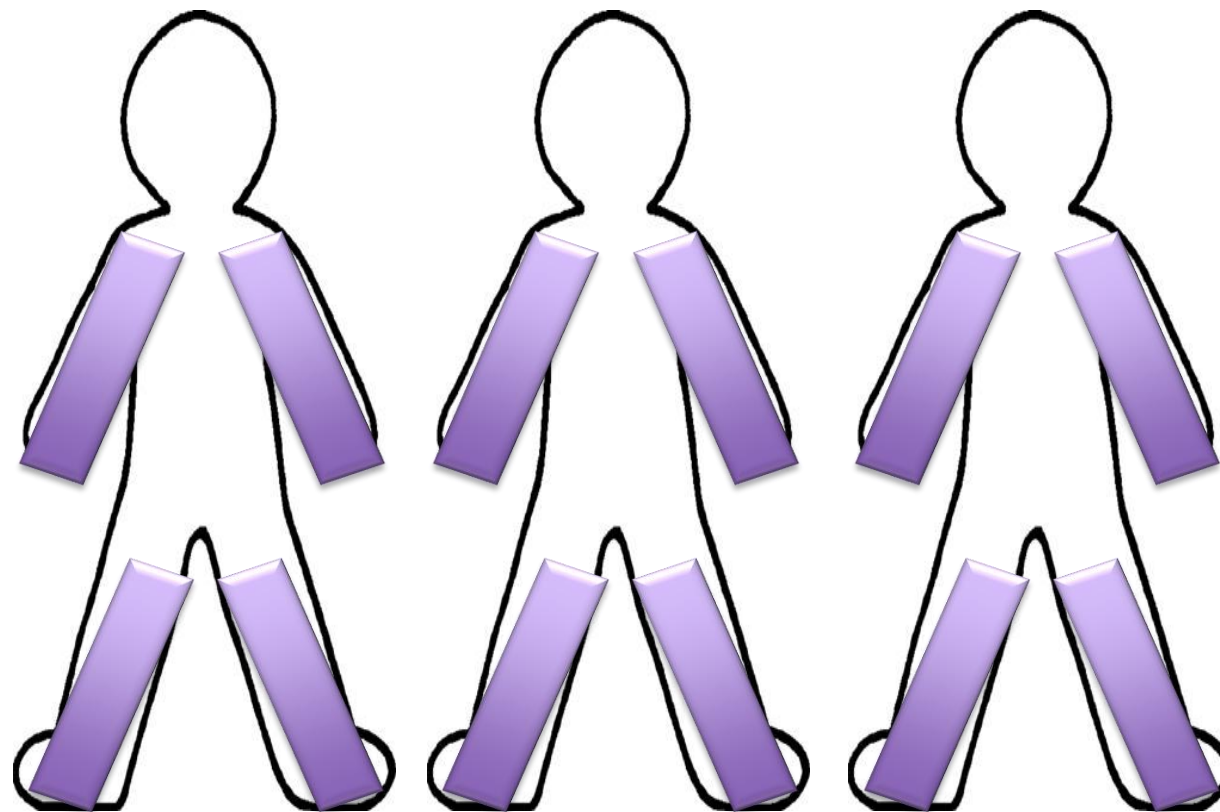


= Ataxia





= Ataxia





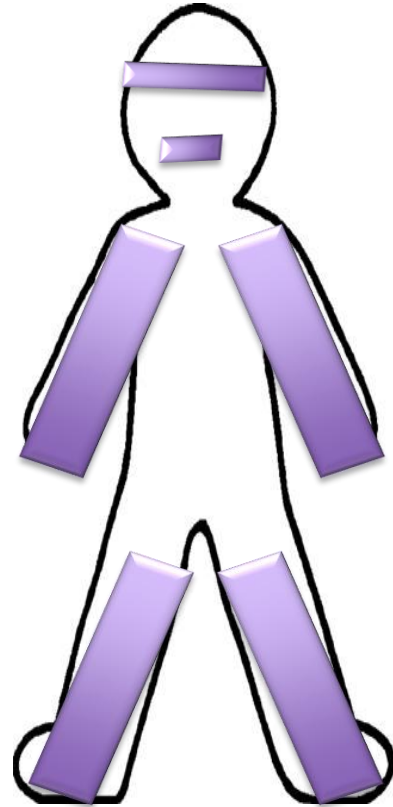
= ↑Tone, reflexes
+/- weakness



= weak/wasting
+/- ↓Tone, reflexes



= ↓JPS/vibr



Cerebellar
ataxia



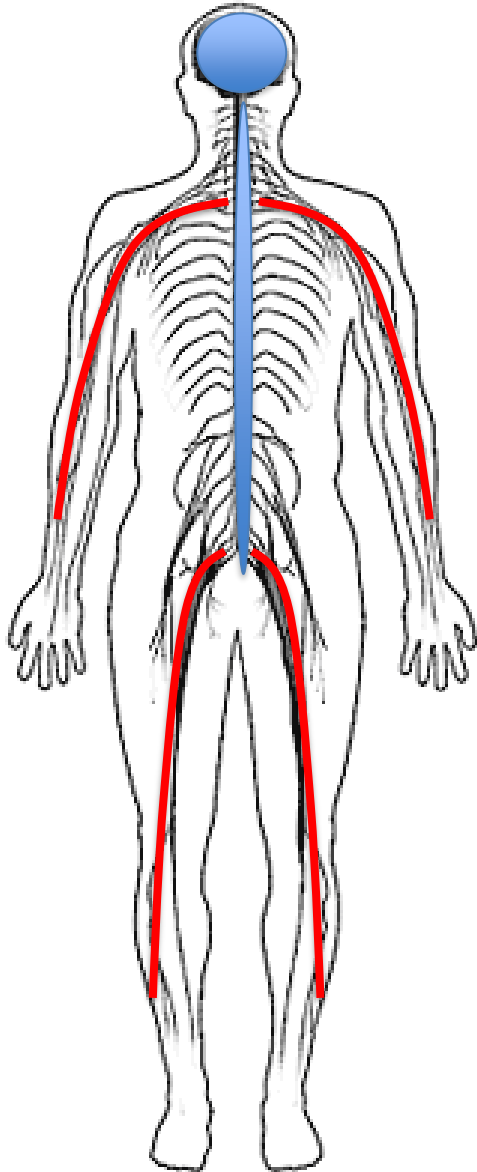
Spinal
Cord



Peripheral
nerve

Sensory
ataxia

Ataxia localisation



Cerebellum

Spinal cord
(posterior column)

Peripheral nerve
(large fibre)

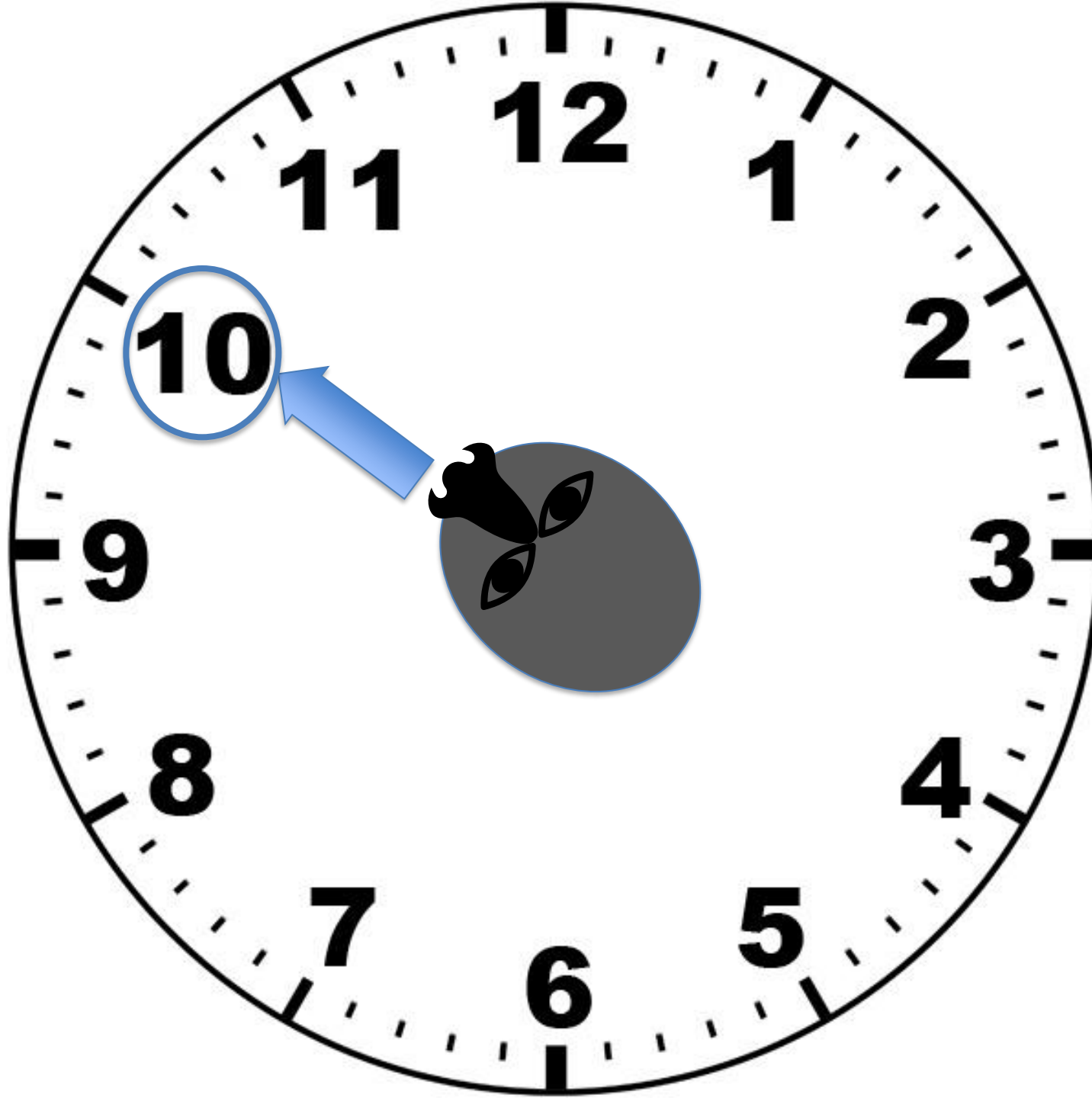
Vertigo

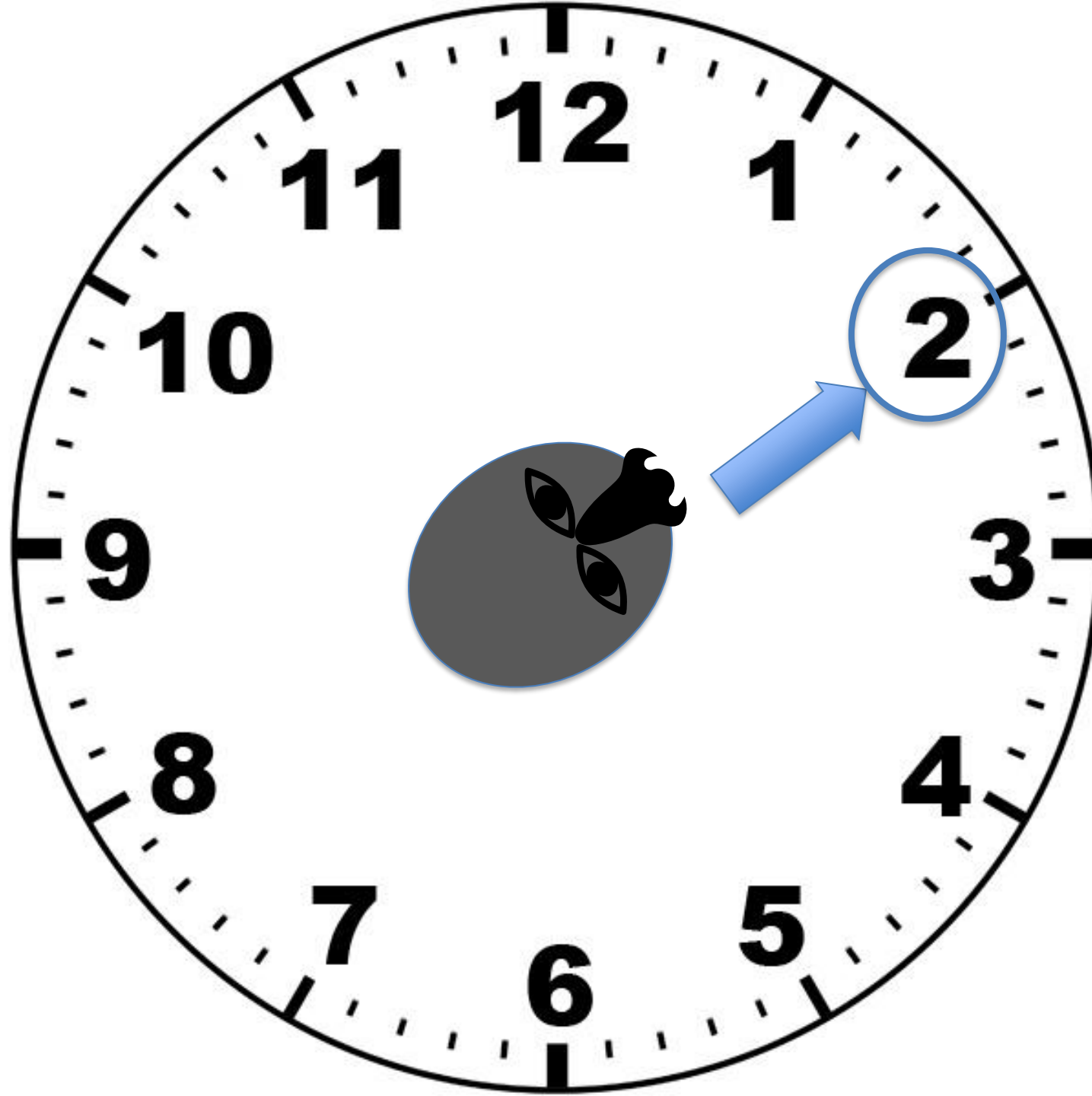
- The patient with episodes of acute vertigo and unsteadiness...
- When seen in MAU they have mild dysequilibrium but basic neuro exam is normal

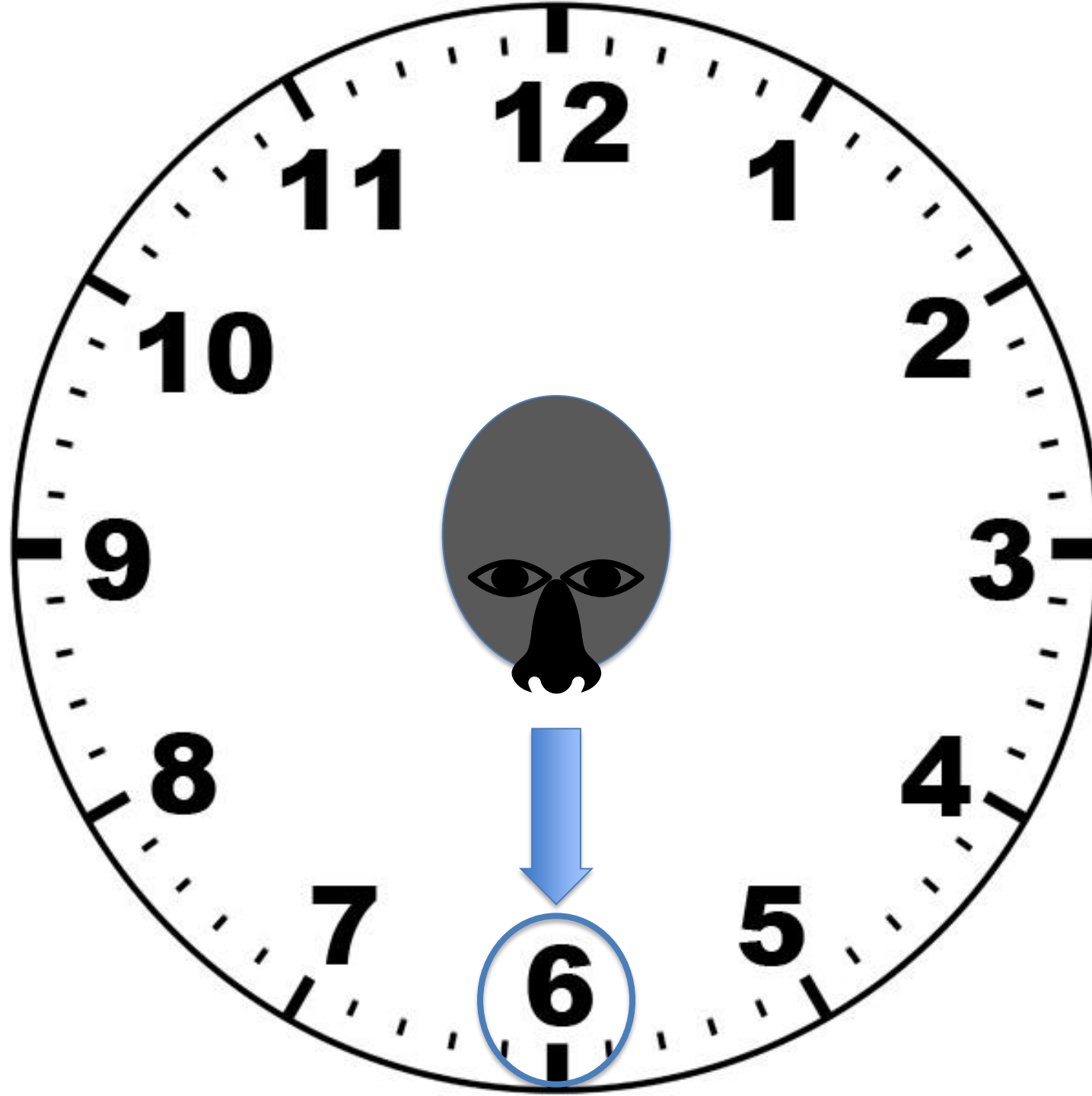
Vertigo



Google: Peter Johns YouTube







More Vertigo

- The patient with persistent vertigo and unsteadiness for 12 hours...
- When seen in MAU they complain of vertigo, are unsteady and have some nystagmus on horizontal gaze

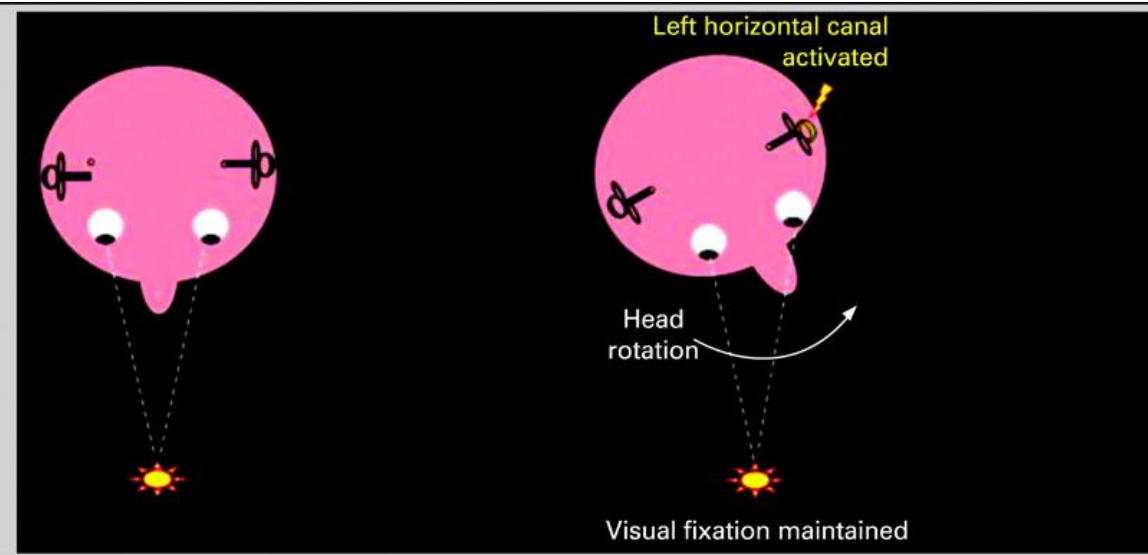
More Vertigo



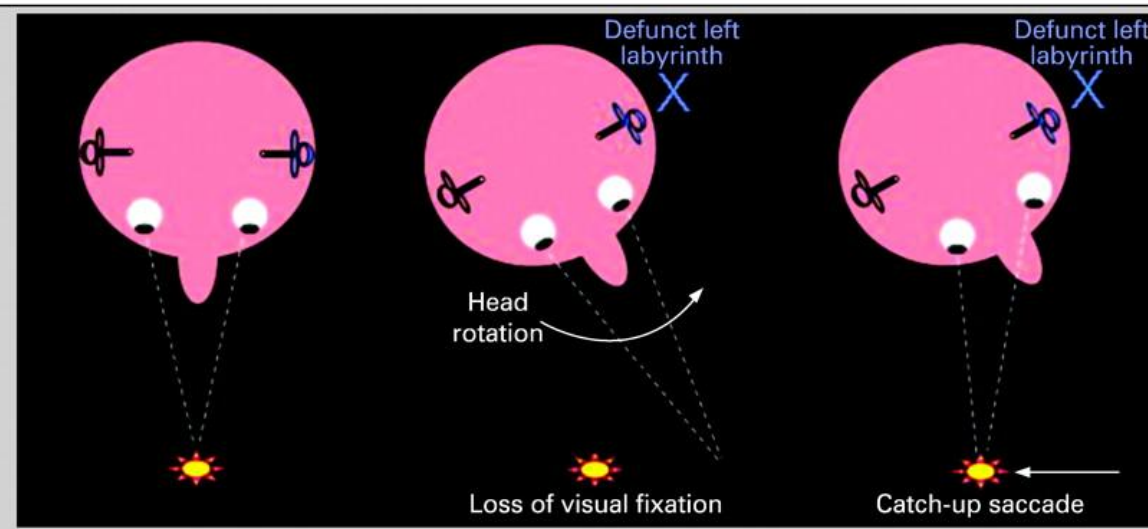
Google: Peter Johns YouTube

Vestibular-ocular reflex (VOR) physiology made simple.

The normal state. Head movement towards a canal (yellow in figure) will cause (i) activation of that canal (ii) reflex movement of the eyes in the opposite direction—that is, away from the canal.



The pathological state and the basis of the head-impulse test. Head movement towards a defunct canal (blue in figure) will result in failure of activation of the VOR and thus the visual target will be lost from fixation during sudden head movements. In the head impulse test, the examiner turns the patient's head with a high acceleration but low amplitude head thrust, in this case to the patient's left. A positive test is observed when the patient makes a catch-up saccade to re-fixate the visual target (usually towards the examiner's nose).

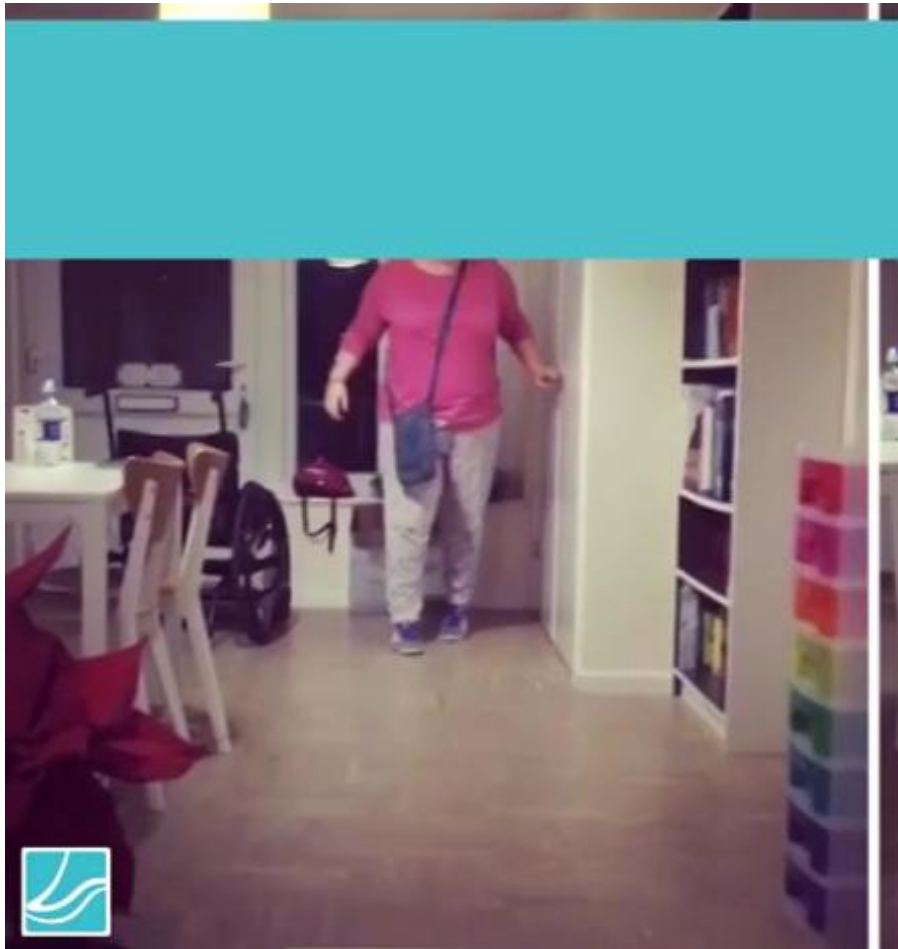


More Vertigo

Summary of The Big 3 of Vertigo **An initial approach to the undifferentiated vertigo patient**

Peter Johns MD, FRCPC
Assistant Professor
Department of Emergency Medicine
University of Ottawa

Even more vertigo...



Admitted 3 months ago with
acute vertigo

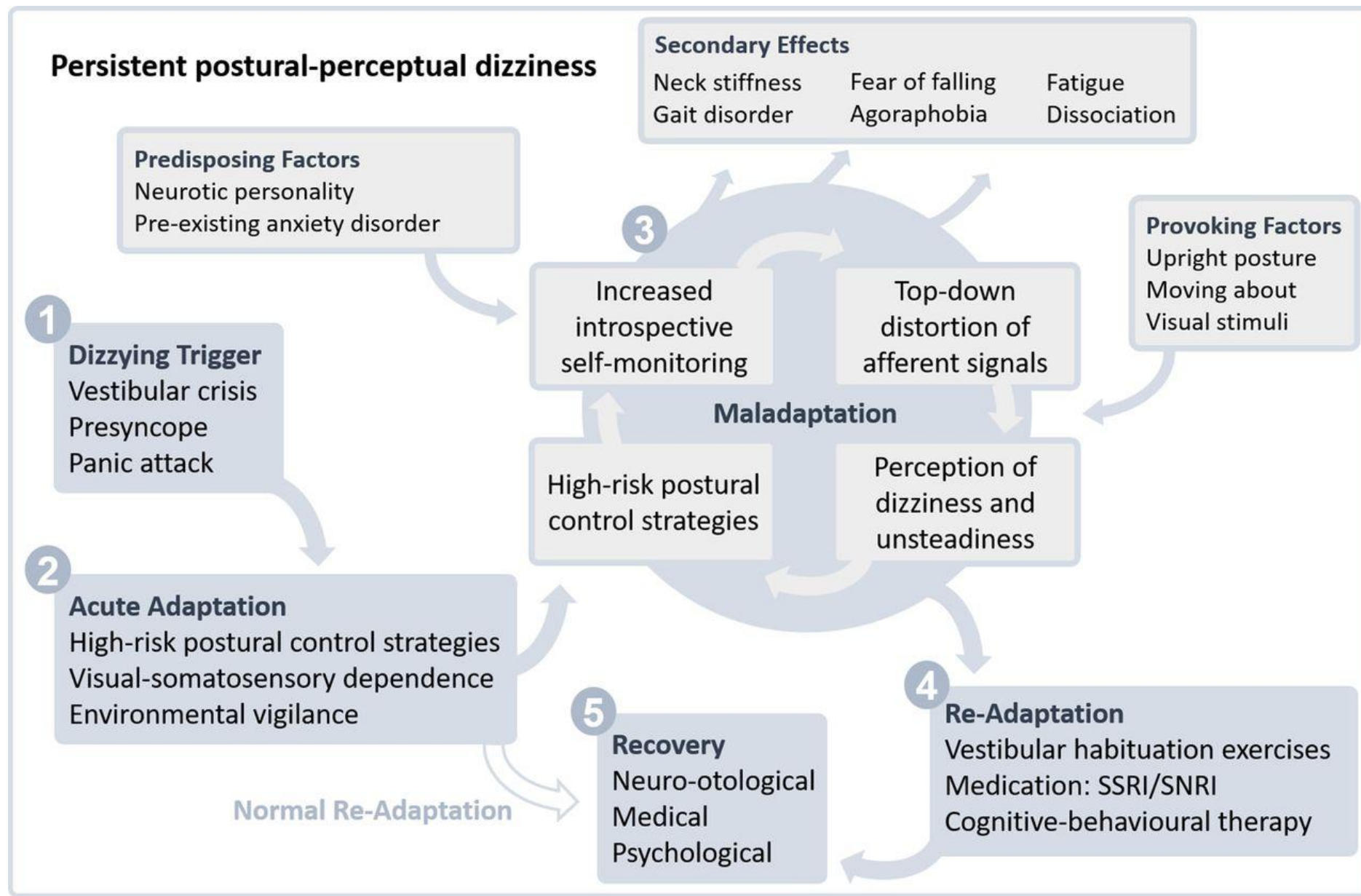
Diagnosed with Vestibular
Neuritis (HIT +ve)

Minimal improvement

Increasingly disabled by
unsteadiness whilst walking

Now: no nystagmus, HIT -ve

- What is the clinical sign?
- What is the diagnosis?
- **Persistent Postural Perceptual Dizziness**
 - **With Functional Gait Disorder**



Stoyan Popkirov et al. Pract Neurol 2018;18:5-13



Diagnosing Functional Disorders

Don't

- Assume that anything weird is functional
- Assume that anything you've never seen before is functional
- Rely on presence of psychiatric comorbidity
- Confuse it with malingering
- Make it a diagnosis of exclusion

Do

- Use positive signs to make a diagnosis
- Explain the diagnosis to patients – they want to know...

Functional Weakness



Test hip extension – it's weak

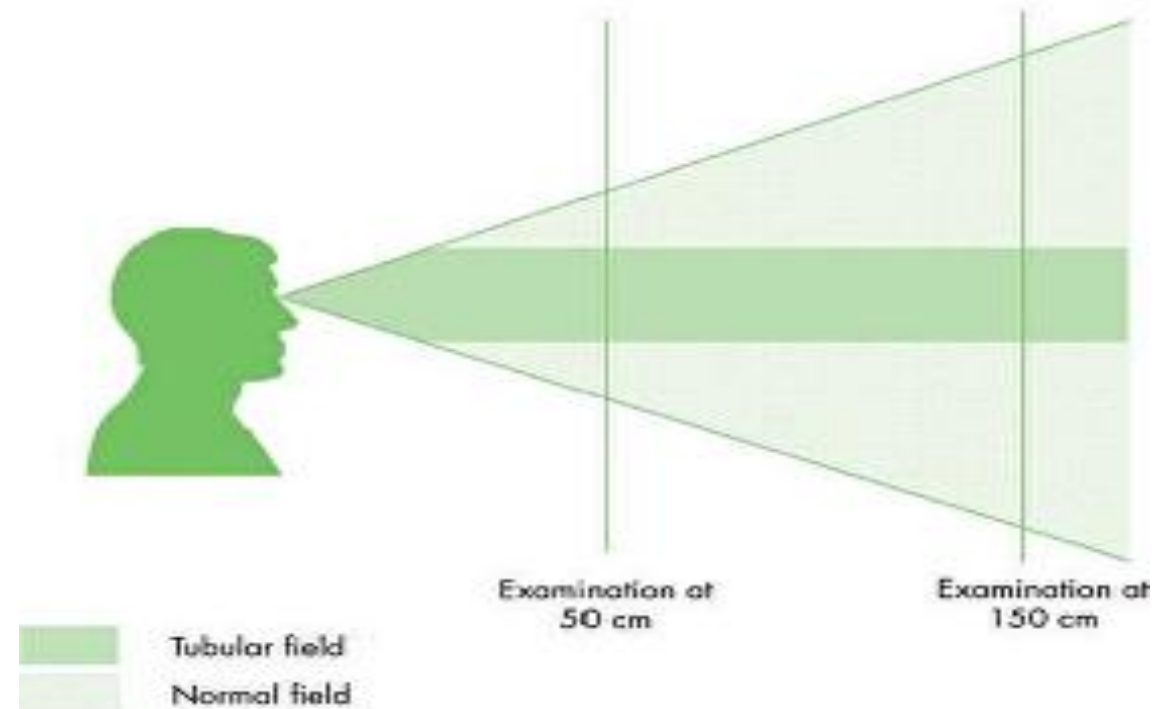


Test contralateral hip flexion against

Functional Tremor



Functional eye problems



Questions