

The Chronic Dizzy Patient

Prof Adolfo M. Bronstein PhD FRCP

Neuro-otology Unit (Department of Brain Sciences)

Imperial College London

Charing Cross Hospital

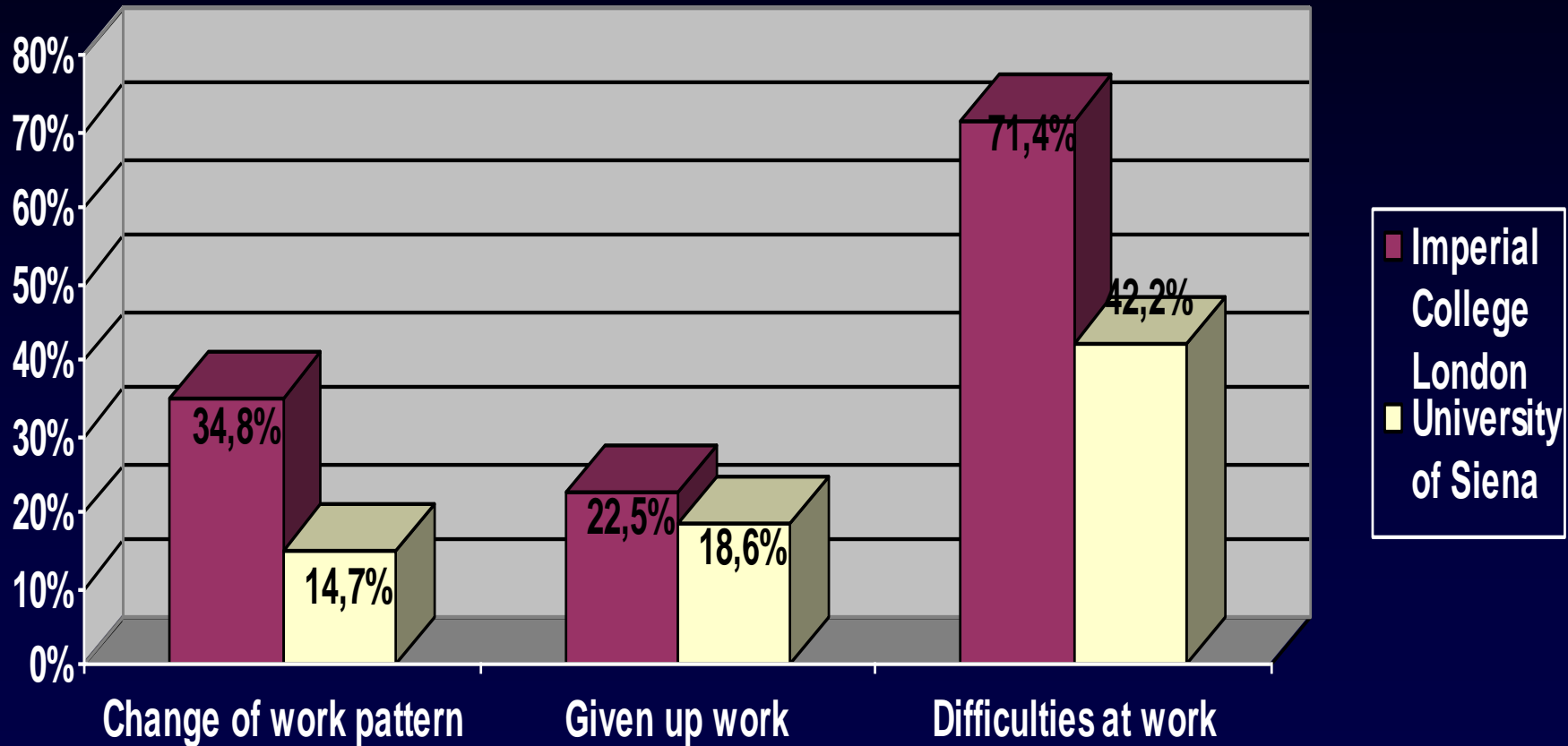
London

a.bronstein@imperial.ac.uk

Chronic dizziness – lecture content

- Differential Dx of chronic dizziness
- Vestibular compensation – good and bad
- Principles of visuo-vestibular rehabilitation
- Bilateral vestibular failure
- Downbeat nystagmus syndrome (DBN)
- Positional DBN syndrome
- Small vessel white matter disease (+/- postural hypotension)
- Beware of psychogenic dizziness - PPPD

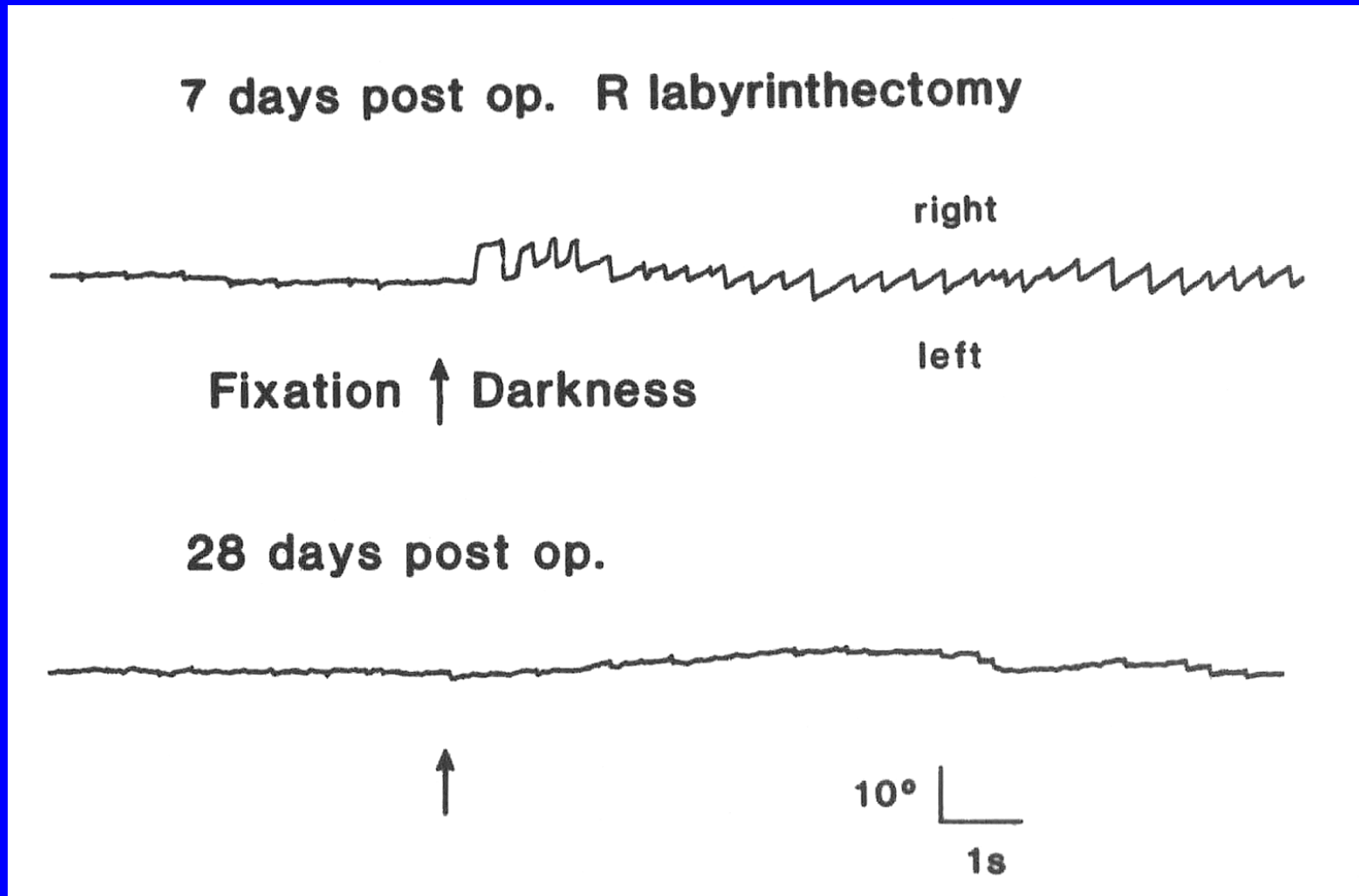
IMPACT OF DIZZINESS ON WORKING ABILITY



Vertiginous syndromes

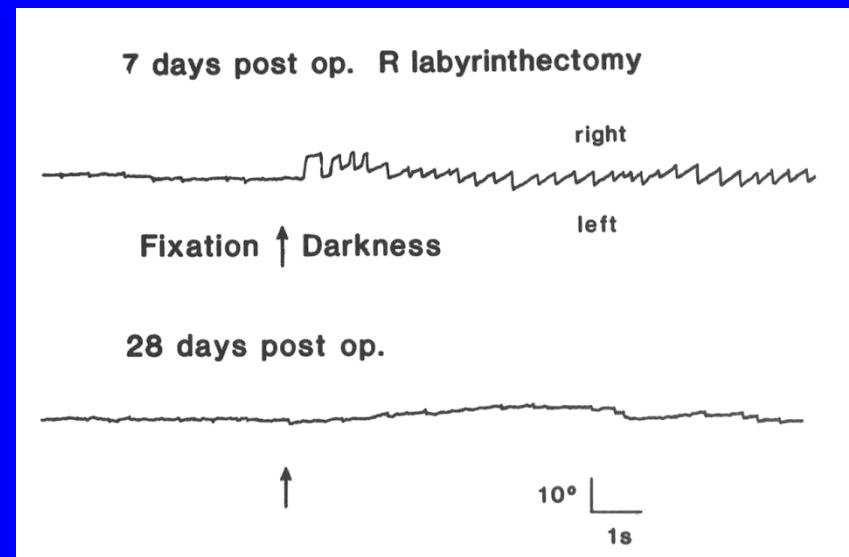
- **Single episode**
 - (eg vestibular neuritis)
- **Episodic (or recurrent) vertigo**
 - (eg bppv; migraine; Meniere's)
- **Chronic dizzy/off balance**
 - Poorly compensated vestibular lesion

The 'magical' process of vestibular compensation



Factors delaying vestibular compensation

- Fluctuating vestibular disorder
- Additional disorder:
 - CNS
 - Peripheral nerve
 - Cervical spine
 - Visual
- Lack of mobility
- Drugs
- Psychosocial
- Visual dependence (“Visual Vertigo”)



VISUAL VERTIGO:

- Dizziness triggered by rich visual surroundings
(visually-induced dizziness)

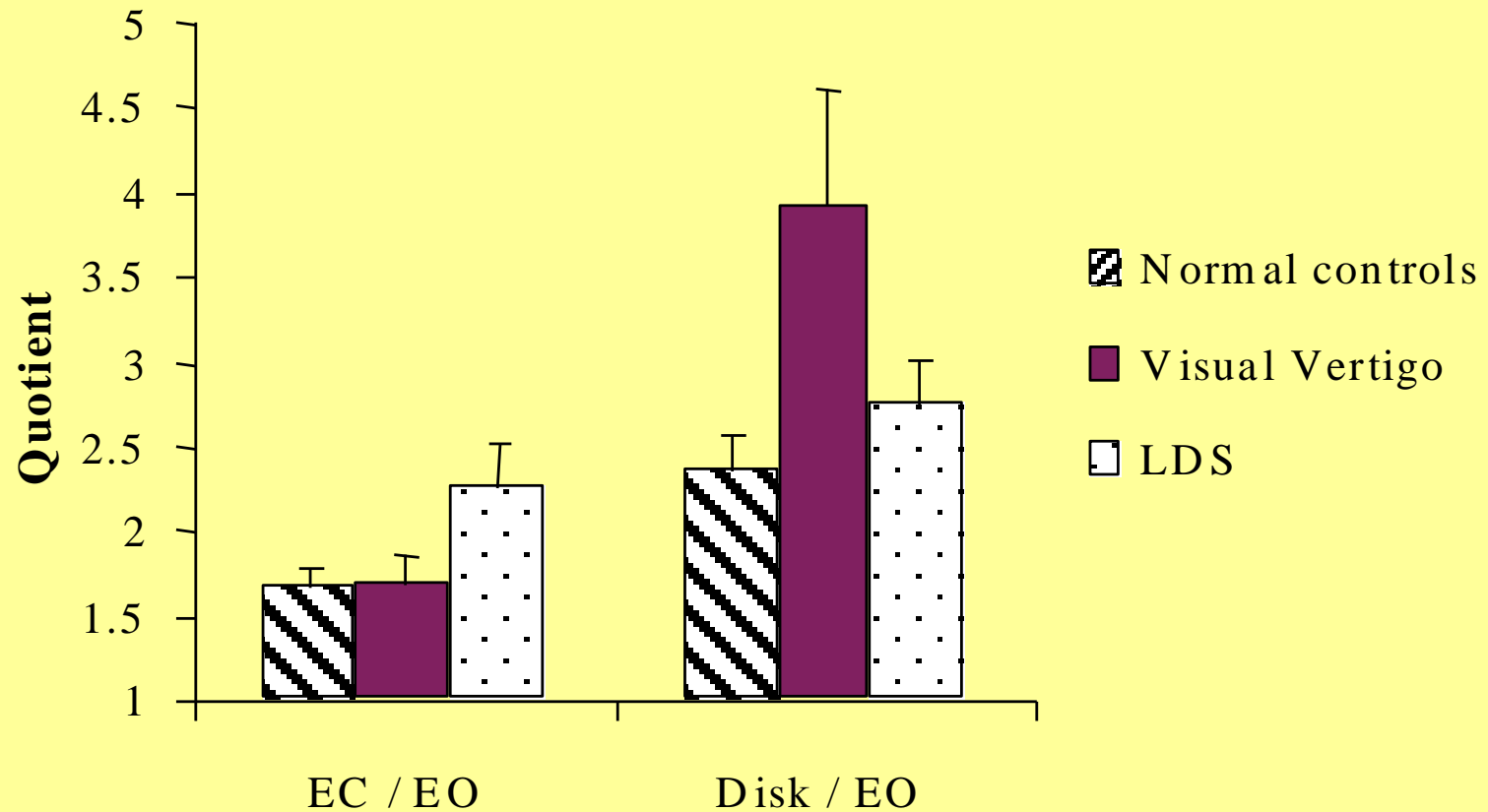
Dizziness worsened by *visual* stimuli

- ***One of the ‘Underrated neuro-otological symptoms’***
(Hoffman and Brookler 1978).
- ***‘Motorist’s vestibular disorientation syndrome’***
(Page and Gresty 1985).
- ***‘Space and motion discomfort’***
(Jacob et al 1993).
- ***‘Visual vertigo syndrome’***
(Bronstein 1995).
- ***‘Visual vestibular mismatch’***
(Longridge et al 2002).

Peripheral Vestibular Symptoms

- Vertigo and nausea
- Dizziness
- Motion intolerance:
 - Head motion
 - Visual motion → VISUAL VERTIGO

Stabilising and Destabilising effects of Vision



Visual Motion treatment:



Optokinetic disk

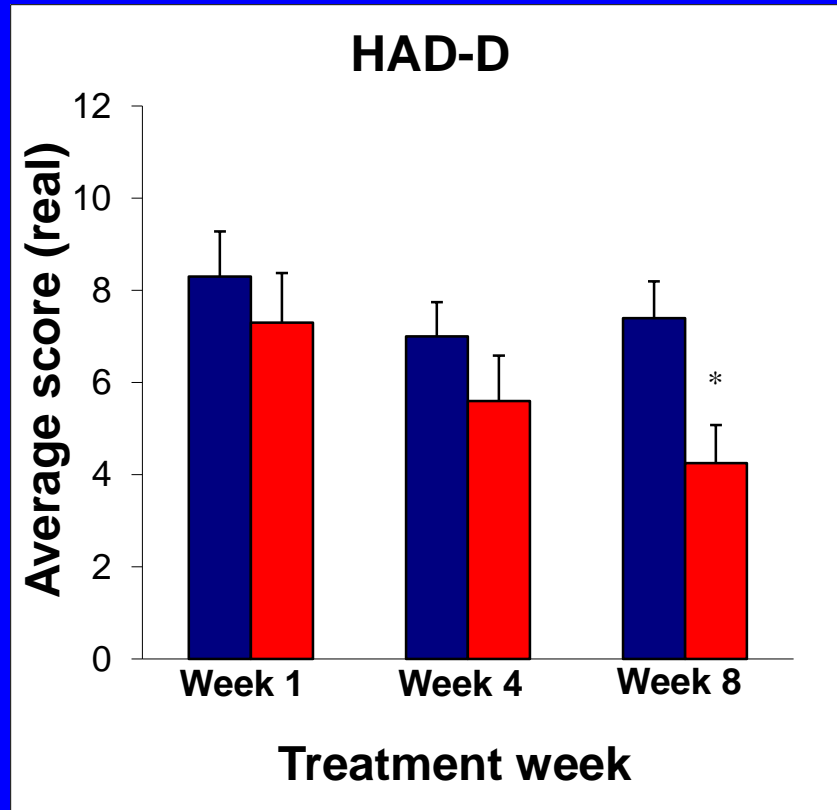


Eyetrak



Optokinetic drum and rotating chair

Depression (D) scores:



 customized
machine-based

Score key :

0 -7 normal levels

8 -10 borderline levels

11-18 clinical depression
or anxiety

SUMMARY:

- Visual motion stimulation helps the rehabilitation of difficult dizzy patients
- Beware that some patients with psychogenic dizziness can also report sensitivity to “complex visual surroundings”
- Fortunately, there is a nice overlap between good vestibular therapy and cognitive-behavioural therapy

Vertiginous syndromes

- **Single episode**
 - (eg vestibular neuritis)
- **Episodic (or recurrent) vertigo**
 - (eg bppv; migraine)
- **Chronic dizzy/off balance**
 - Poorly compensated vestibular lesion
 - Gait disorder? Orthostatic BP? Psychological?

Chronic dizziness/unsteadiness

- ... is there **Oscillopsia**?
 - **Constant: DBN (Chiari, Cerebellar, idiopathic)**
 - **When moving: BVF (idiopathic, gentamicin)**

Bilateral loss of VOR

53 cases - Rinne et al (1998) J Neurol 245:314

- Neurological 1/4
 - including cerebellar, neuropathies, meningitis
- Ototoxic 1/4
- Idiopathic 1/4
- Miscellaneous 1/4
 - including autoimmune, trauma, Meniere's

Chronic dizziness/unsteadiness

- ... is there Oscillopsia?
 - Constant: DBN (Chiari, Cerebellar, idiopathic)
 - When moving: AVF (idiopathic, gentamicin)
- ... is there Gait Disorder?

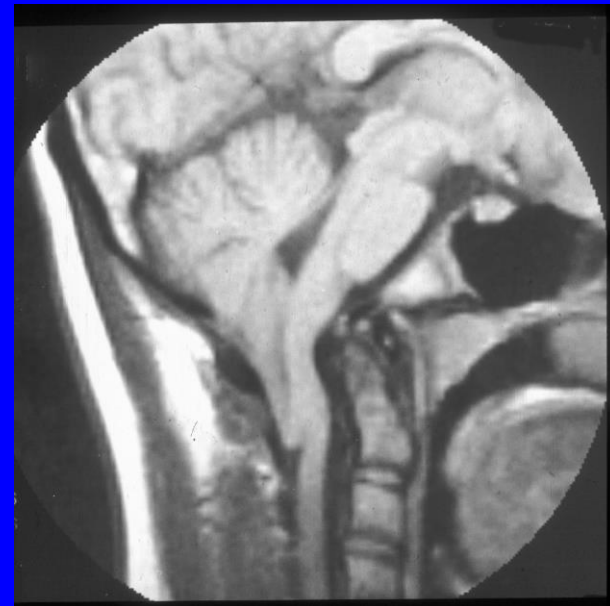
The Down-Beat Nystagmus syndrome



Bronstein & Lempert, “Dizziness”, 2007; 2017

Causes of DBN

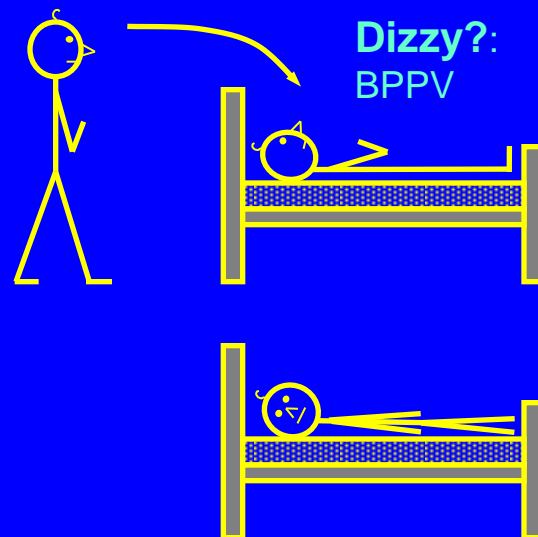
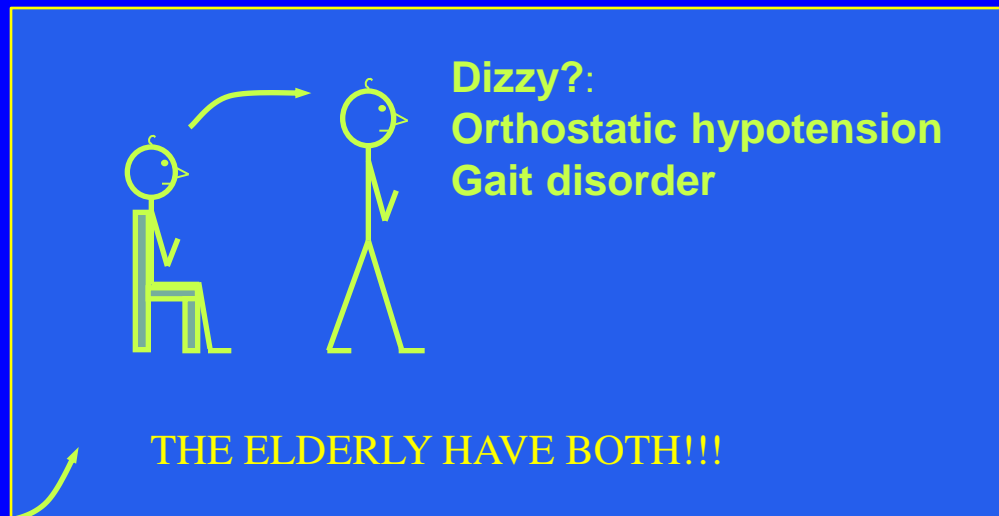
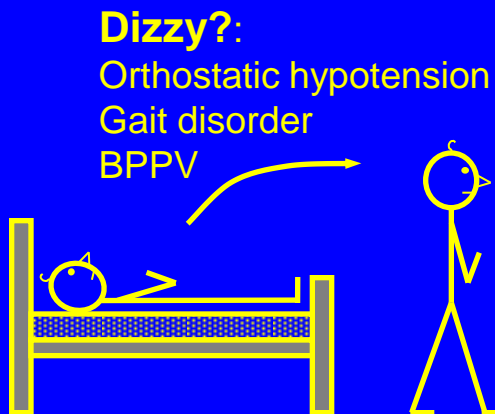
- Arnold-Chiari Malformation $\frac{1}{4}$
- Cerebellar Degeneration $\frac{1}{4}$
- Idiopathic $\frac{1}{4}$
- Miscellaneous $\frac{1}{4}$
 - Vascular, MS, Tumours, Toxic



Positional downbeat nystagmus (pDBN)

- MSA - 1/4
- Other cerebellar degenerations - 1/4
- Miscellaneous (eg vascular, MS) - 1/4
- Idiopathic (anterior canal BPPV?) - 1/4

'Postural dizziness'



Small vessel disease = leucoaraiosis = white matter changes



...make sure the 'chronic dizziness' is not due to a neurological gait disorder

- MRI useful:
 - hydrocephalus, white matter disease
 - cervical cord compression
 - cerebellar pathology
 - the Down Beat Nystagmus syndrome

Things to do with your **Chronic Dizzy Patient**

Enquire about **vestibular** symptoms

Examine the **eyes**

Do the head **impulse** test

Do the **positional** manoeuvre

Examine **gait**

Measure **orthostatic** blood pressure

Consider **psychological** presentations

Send them for **rehabilitation**

Treat **depression**

Cervical Vertigo

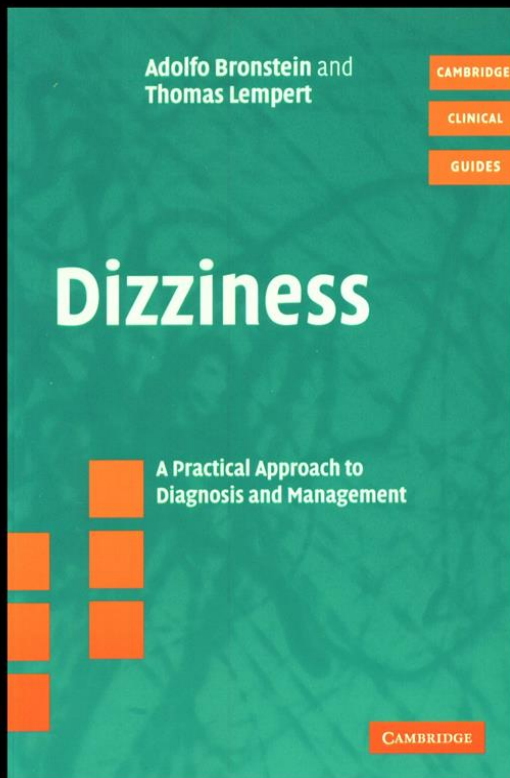
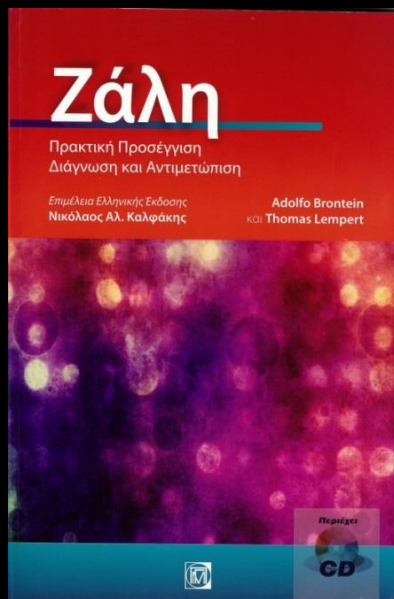
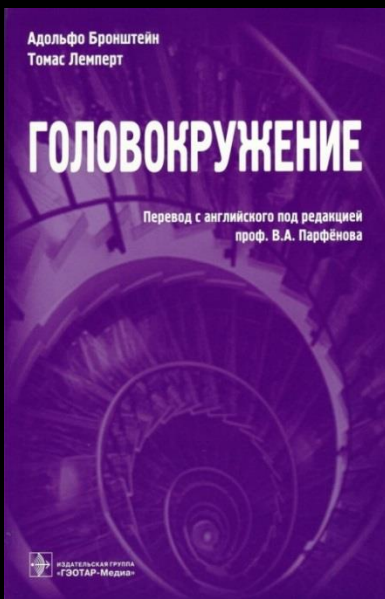
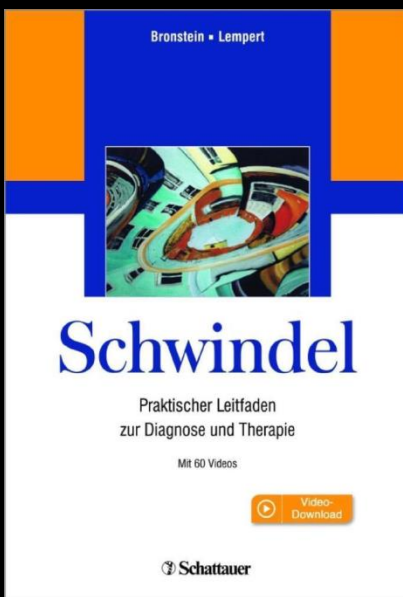
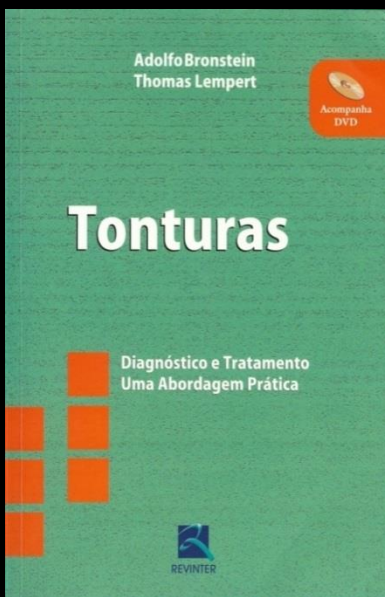
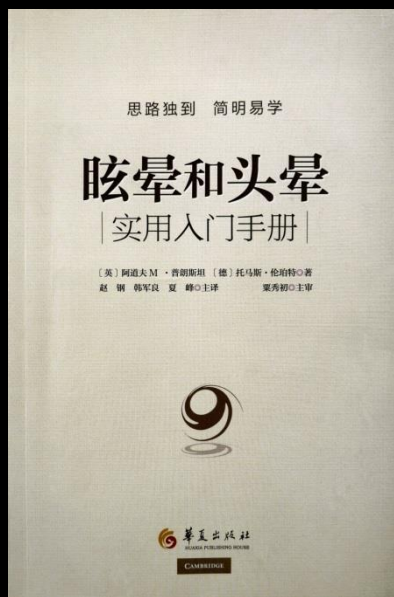
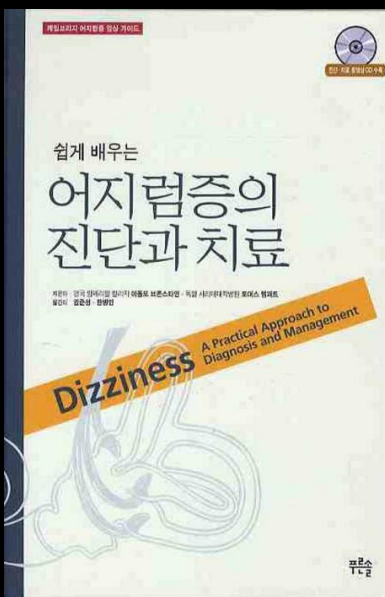
- It is not proven to exist
- Vestibular disorders are the main cause of vertigo on ‘neck’ movements
- Many vestibular patients have neck tension and pain – treat it!

Development of vestibular rehabilitation

- Does it work? → Yes!
- Is physiotherapy better than an instruction sheet? → Yes!
- Is customised PT better than generic PT? → Yes!
- Does instrumental (‘hi tech’) PT work further? → Yes!

Persistent Postural and Perceptual Dizziness (PPPD)

- **Definition** – ICD-11 style, 100-word narrative definition
- Persistent non-vertiginous dizziness, unsteadiness, or both lasting three months or more. Symptoms are present most days, often increasing throughout the day, but may wax and wane. Momentary flares may occur spontaneously or with sudden movement. Affected individuals feel worst when upright, exposed to moving or complex visual stimuli, and during active or passive head motion. These situations may not be equally provocative. Typically, the disorder follows occurrences of acute or episodic vestibular or balance-related problems (e.g., peripheral or central vestibular disorders, migraine, concussion, orthostatic intolerance, panic attacks with dizziness). Symptoms may begin intermittently, and then consolidate. Gradual onset is uncommon.
- **Synonyms** – Phobic postural vertigo, Chronic subjective dizziness
- **Narrower Terms** – Visual vertigo, Space motion discomfort



Declaration of interest