Functional Symptoms

Functional neurological symptoms and malingering

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University of Edinburgh, and Borders General Hospital

(with thanks to Dr Jon Stone, University of Edinburgh)

Functional Symptoms in Neurology

- **Assessment of the patient with**
  - **Weakness**
  - **Movement Disorder**
  - **Dissociative (Non-Epileptic) Seizures**
- **Misdiagnosis and Malingering**
- **Explanation / Treatment**
  - **Making a positive diagnosis**
  - **Carrying forward treatment usefully**

Functional Symptoms in Neurology – 3 things

- **Dissociative (non-epileptic) attacks are a bit like panic attacks – think of them if perioperative or in status**
- **Make a functional diagnosis on positive not negative grounds**
- **Explanation by a physican IS treatment**

Further Reading

Stone. Functional Symptoms – the bare essentials. Practical Neurology 2009;9:179-189

Available at www.neurosymptoms.org

“Symptoms without Disease”
A Conceptual and Linguistic Quagmire

Functional
Dissociative
Psychogenic
Psychosomatic
Stress-related
Abnormal illness behaviour
Hysteria
Medically Unexplained
Non-organic / Non-epileptic

“Mad, nutter, supratentorial etc”

Quagmire – Christopher Mathie

Frequency of Functional Symptoms in Neurology

3781 New Neurology Outpatients.

Headache	**19%**
All functional and 'psychological' diagnoses **- Conversion Symptoms** **(Seizures (n=85), Weakness (n=56), Sensory (n=71))**	**16%** **- 6%**
Epilepsy	**14%**
Peripheral Neuropathy	**11%**
Multiple Sclerosis	**7%**
Movement Disorder	**6%**
Spinal Disorder	**6%**
Syncope	**4%**
Stroke	**3%**

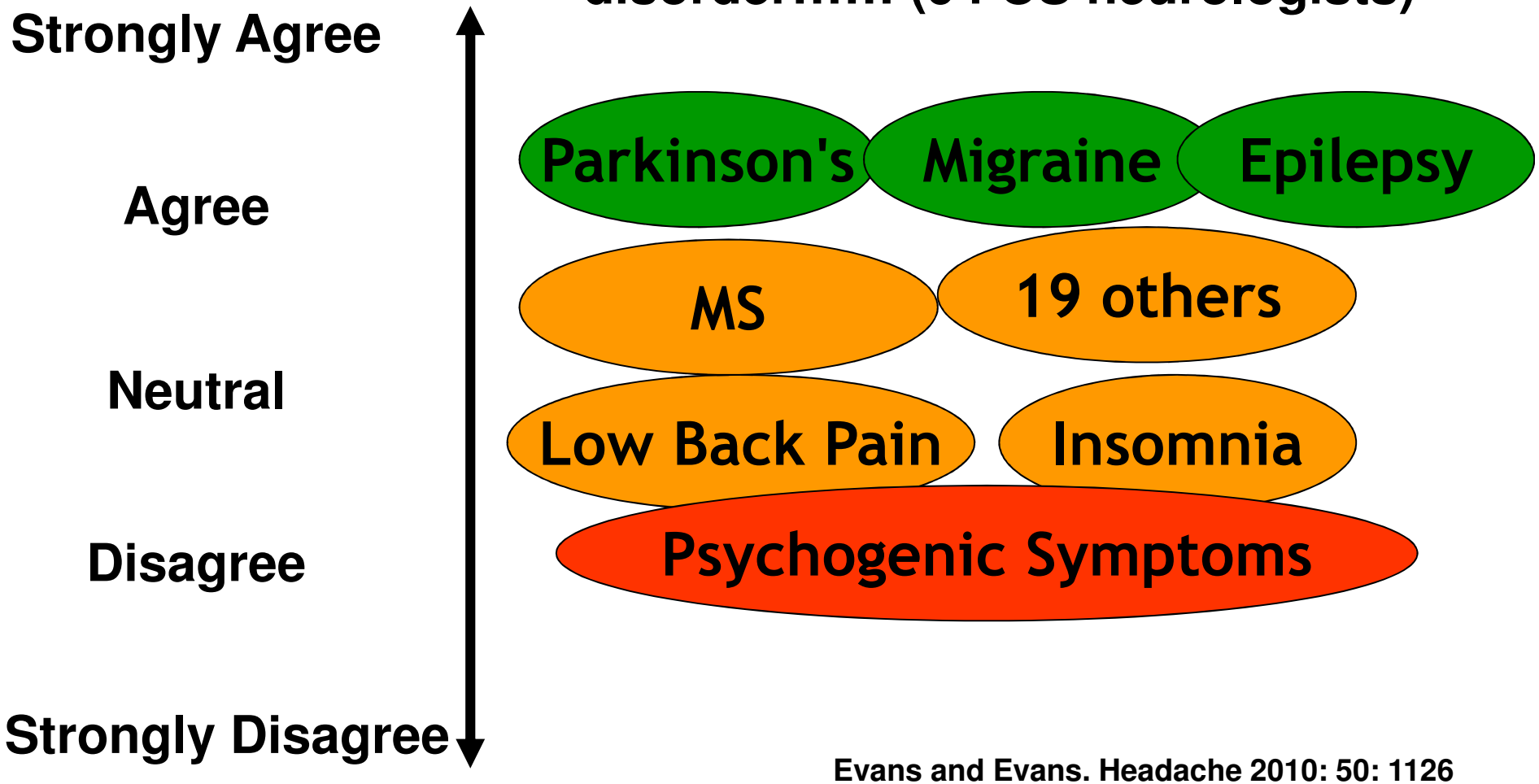
Stone et al. Brain 2009; 132 : 2878-88

Functional Symptoms – Everyone's Problem

Gastroenterology	Irritable bowel syndrome (IBS)
Gynaecology	Chronic Pelvic Pain
Rheumatology	Fibromyalgia (FMG)
Cardiology	Atypical or non-cardiac chest pain
Infectious diseases	(Post-viral) fatigue syndrome (CFS)
ENT	Globus syndrome
Neurology	Tension headache, Non-epileptic attack disorder, motor and sensory symptoms

It's the least popular problem in neurology

I like to treat patients with this disorder…… (94 US neurologists)



Evans and Evans. Headache 2010: 50: 1126

Clinical Assessment

Clinical Assessment - Do's

- **Make a list of all physical symptoms at the beginning**
- **Look for other functional symptoms / syndromes in the GP letter or hospital notes**
- **What do they think is wrong, do they want explanation, treatment or just a consultation?**
- **Think about the MECHANISM of the symptoms**
  - **Consider other physiological/disease triggers – eg pain, injury, disease**
  - **Look for dissociative and panic symptoms**

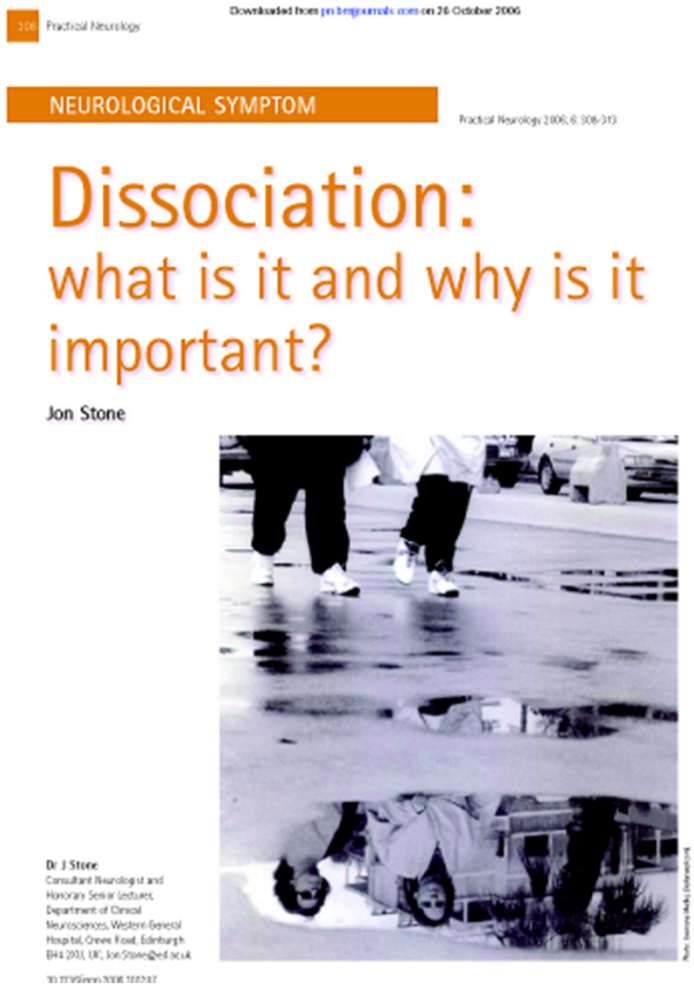
Dissociative Symptoms

DEREALISATION

- "I felt… like I was there but not there….in a place of my own….detached from my surroundings"

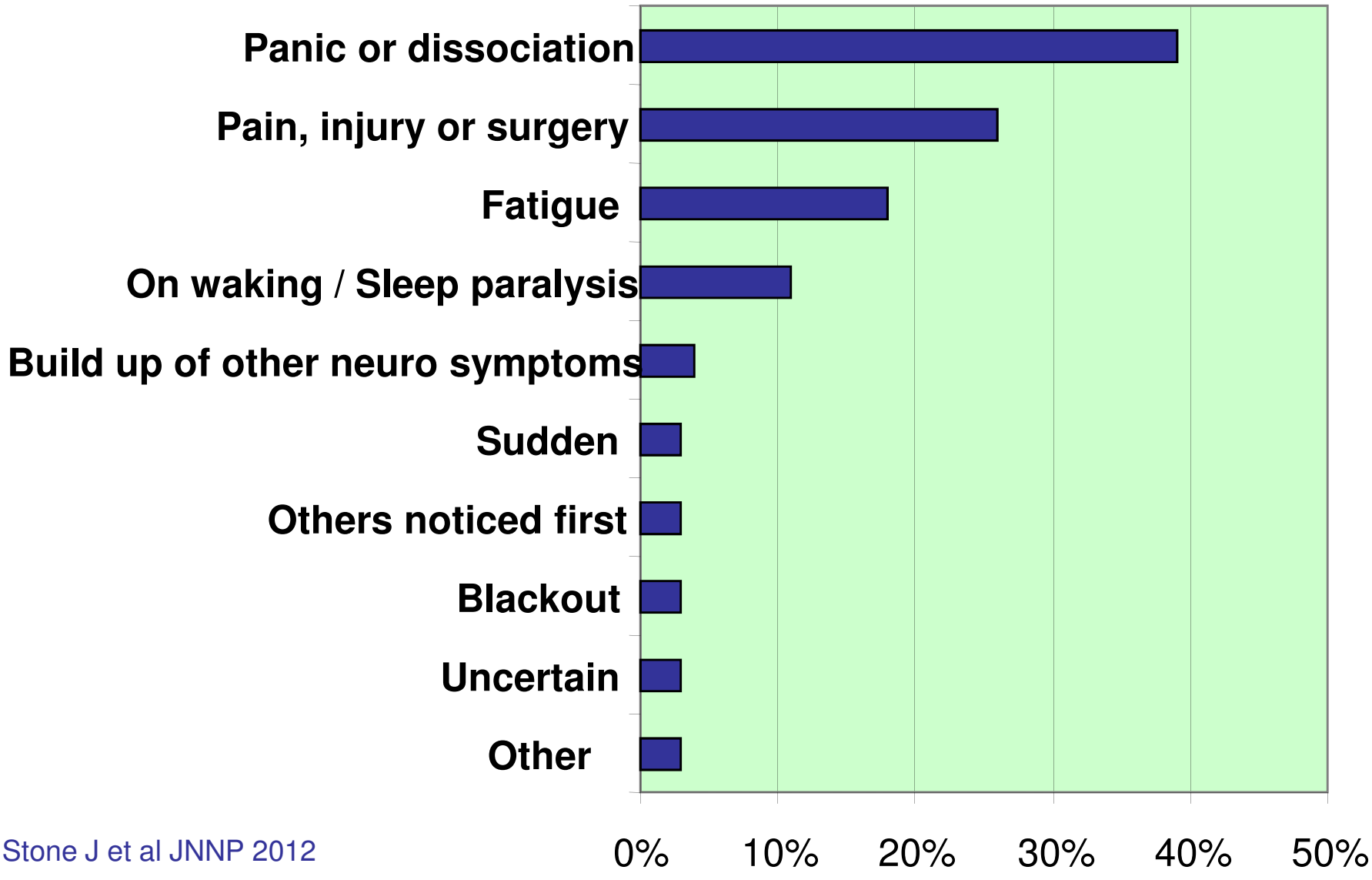
DEPERSONALISATION

- My legs/ body didn't feel like they belonged to me…like I was outside myself?



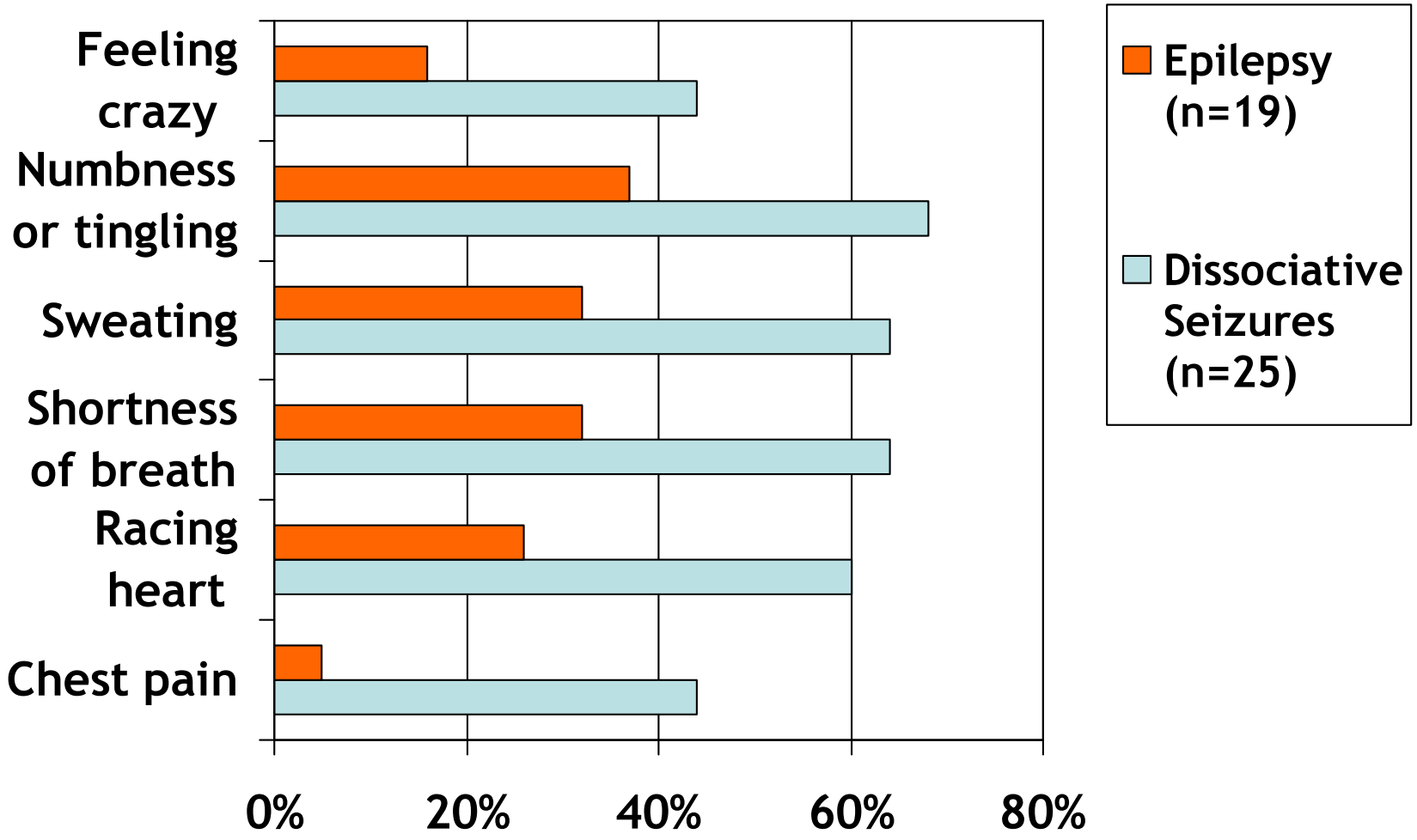
Stone J. Dissociation: what is it and why is it important? Practical Neurology 2006:6:308-13

Immediate factors at onset of functional weakness (n=107)



Stone J et al JNNP 2012

Dissociative (non-epileptic) Attacks – Panic Symptoms



Mellers and Goldstein – JNNP 2006;77;616-621

Clinical Assessments – Don'ts

- **Don't believe all the physical diagnoses in notes**
- **Don't wade in with blunt questions about 'Depression', 'Anxiety'**
- **Don't make a diagnosis of functional symptoms because someone is 'nuts'**
- **Don't avoid a diagnosis of a functional problem because someone is 'normal'**

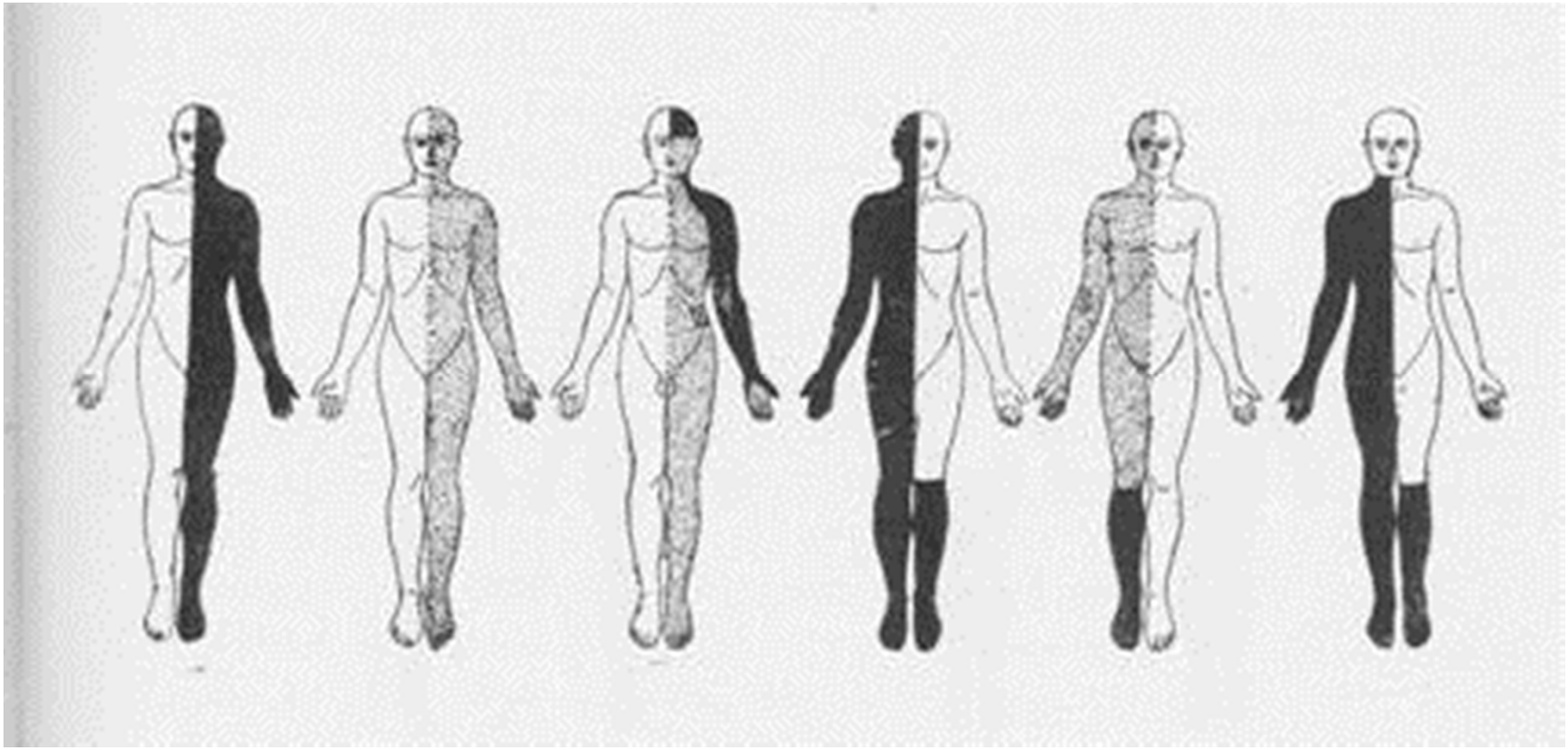
Examination

- **Make a diagnosis of a functional symptoms**
  - **on the basis of positive physical signs and a familiar history**
  - **not because the scan is normal and**
  - **not because the symptoms are unfamiliar / weird**

Weakness

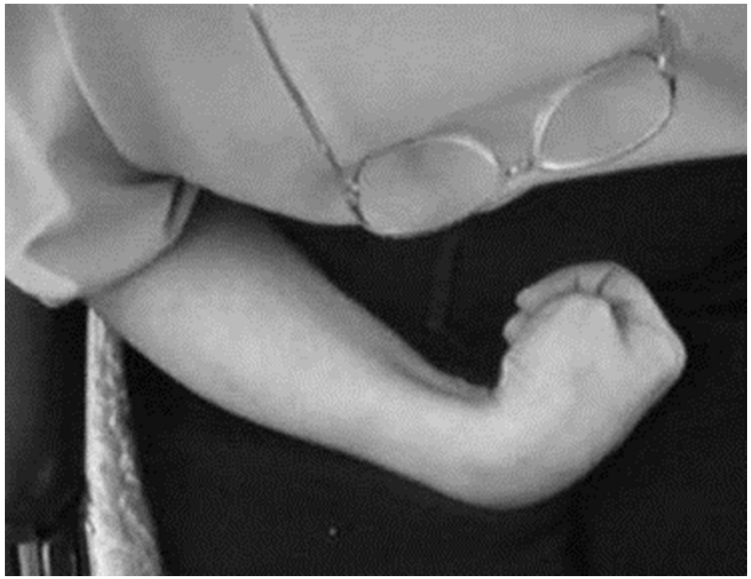
Sensory Disturbance

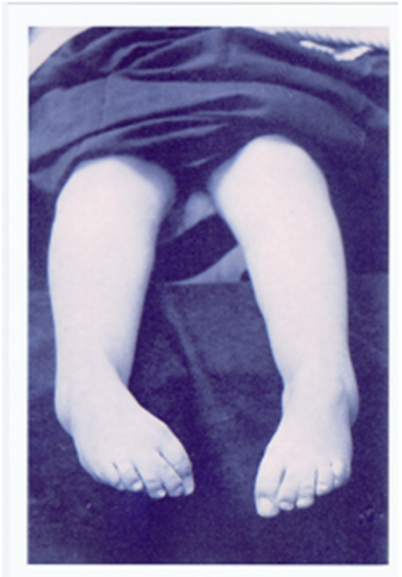
Functional Sensory Disturbance

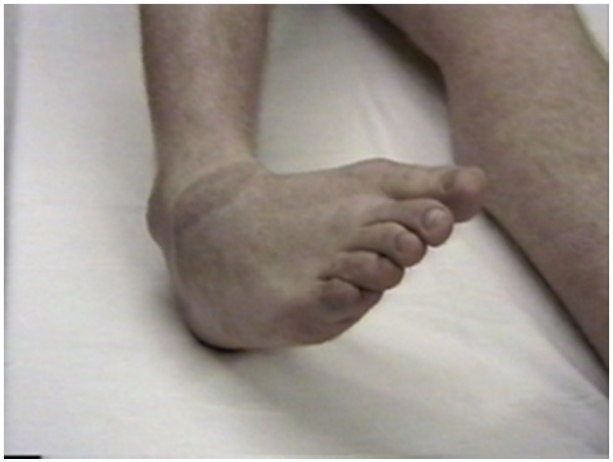


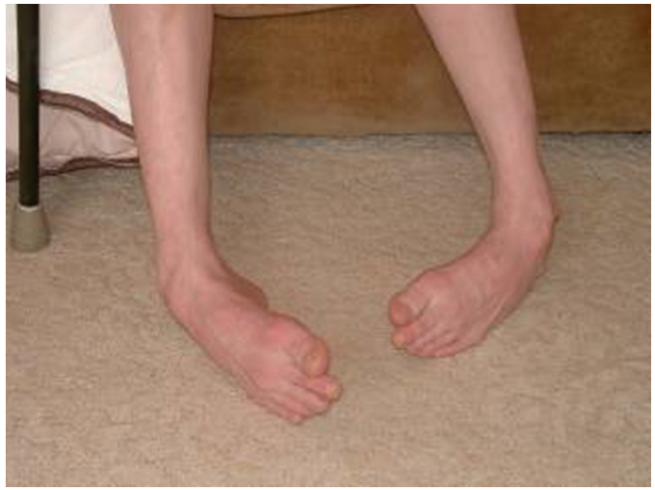
Functional Tremor and Dystonia

Functional / Fixed Dystonia



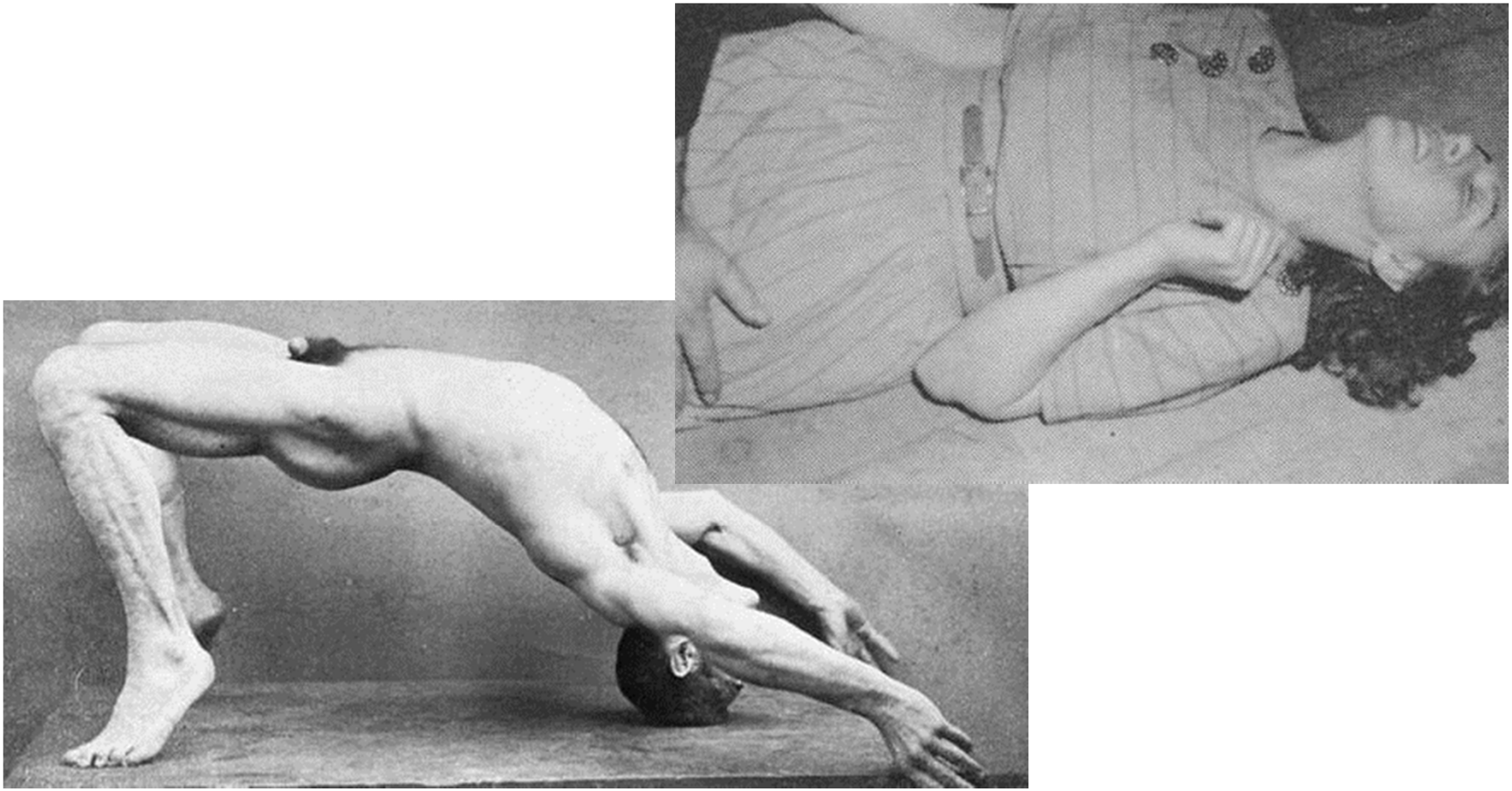






Schrag et al. Brain 2004; 127 : 2360-72

Dissociative / Non-Epileptic Attacks - semiology



Non-epileptic attacks - Semiology

- **Thrashing ~60%**
- **Motionless ~30%**

Non-epileptic attacks – Diagnosis – Helpful

PUBLIC HEALTH WARNING – Do not use in isolation!

	Non-Epileptic	Epilepsy
Resistance to Eye Opening	Common	Rare
Eyes shut during attack	Common	Rare
Patient who is responsive during generalised shaking attack	Often	Rare
Memory of seizure	Often	Rare
Weeping during a seizure	Occasional	Rare
Duration > 3 min	Common	Rare
Rapid respiration during generalised shaking attack	Common	Rare

Non-epileptic attacks - Unhelpful

- Tongue biting (except if lateral or visible bite mark)
- Injury (except burns requiring prolonged contact)
- Urinary incontinence
- Attack appearing from ‘sleep’
- Presence of an aura or post-ictal confusion
- Pelvic thrusting
- “Status Epilepticus”
- Alone during a seizure
- ‘La belle indifference’

Non-epileptic attacks - Investigations

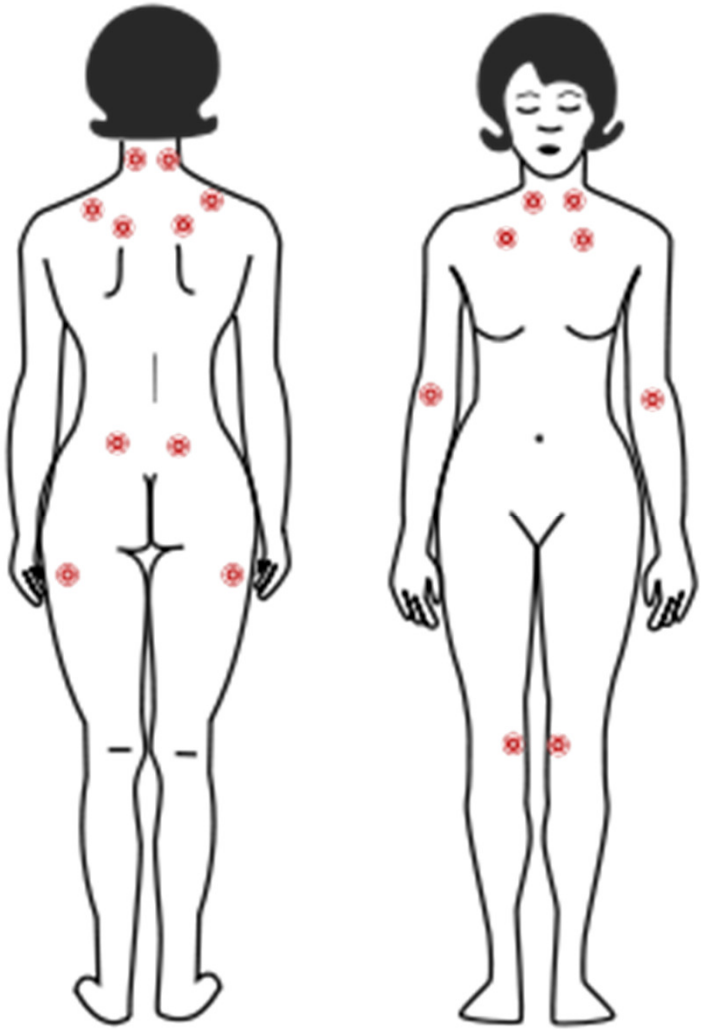
- **Video EEG is the gold standard**
  - **induction by suggestion / simple methods is ethically sound[1] (Have you induced the normal seizure ?)**
  - **Interictal EEG not helpful**
- **Prolactin (10-20 mins after generalised attack)**
  - **Not reliable**

[1]McGonigal et al. JNNP 2002; 72:549-51)

Other Functional Symptoms

Fibromyalgia - ARC criteria - 1990

- A history of widespread pain lasting more than three months—affecting all four quadrants of the body, i.e., both sides, and above and below the waist.
- 11 out of Tender points—there are 18 designated possible tender points
- Typically associated with sleep disturbance and fatigue



Chronic Fatigue Syndrome – Oxford Criteria

- Fatigue is the principal symptom:
  - it is severe, disabling and affects physical and mental functioning;
  - it should have been present for a minimum of 6 months during which it was present for more than 50% of the time.
- other symptoms may be present: particularly myalgia, mood swings and sleep disturbances.
- No other cause

Review

Functional somatic syndromes: one or many?

S Wessely, C Nimnuan, M Sharpe

We review the concept and importance of functional somatic symptoms and syndromes such as irritable bowel syndrome and chronic fatigue syndrome. On the basis of a literature review, we conclude that a substantial overlap exists between the individual syndromes and that the similarities between them outweigh the differences. Similarities are apparent in case definition, reported symptoms, and in non-symptom association such as patients' sex, outlook, and response to treatment. We conclude that the existing definitions of these syndromes in terms of specific symptoms is of limited value; instead we believe a dimensional classification is likely to be more productive.

THELANCET • Vol 354 • September 11, 1999

- **Pain, tiredness, sleep, concentration symptoms**
- **F:M = 3:1**
- **Common comorbidities /antecedents**

Functional Tremor and Dystonia

Hang on…maybe they're having me on?

Malingering and Factitious Disorder

Abdul Esfandmozd, 51 claimed that he had been in an electric wheelchair for

10 years and was incapable of standing or walking without crutches

Malingering and Factitious Disorder

- **Malingering – ‘faking’ symptoms for material gain**
- **Factitious disorder – ‘faking’ symptoms for medical attention only**
- **The only ways to definitively separate Conversion from Malingering / Factitious Disorder are**
  - **Major discrepancy between reported and observed function**
  - **Confession**
  - **Clear cut evidence of factitious behaviour – eg tourniquet, tampering with blood tests.**

Malingering and Factitious Disorder

- **Clues to exaggeration**
  - **Failure of effort tests during neuropsychology**
  - **Inconsistent HISTORY (not examination)**
  - **Evidence of lying**

- **Even when exaggeration is present in NHS or DWP situation**
  - **Exaggeration to convince the doctor?**
  - **Exaggeration to deceive the doctor?**

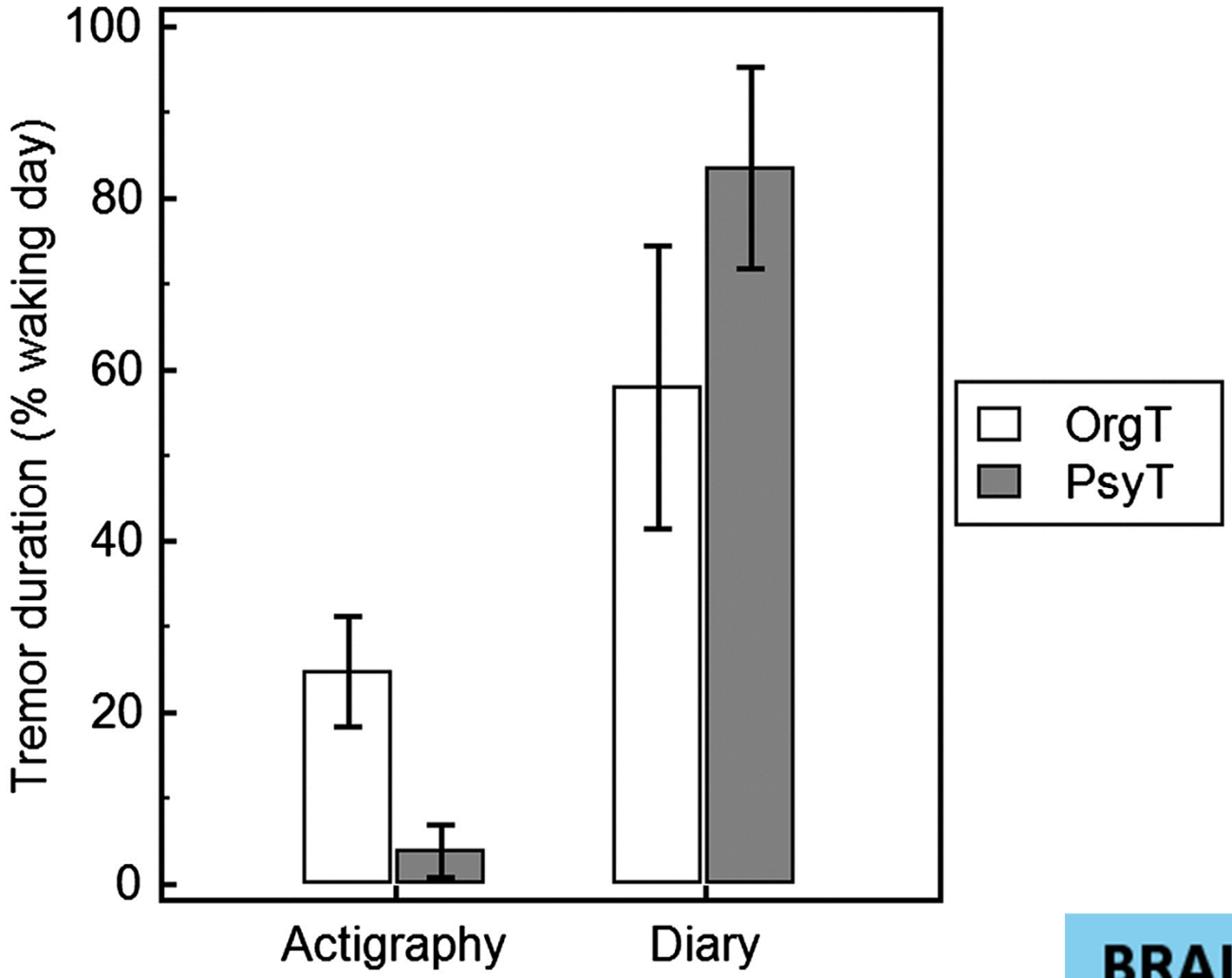

arte

Common errors regarding malingering

- “all functional symptoms are exaggerated / factitious”
- “I can tell this patient is genuine”
- “This person’s inconsistent examination is proof of exaggeration”
- Assuming that discrepancies between the severity of patients report of their symptoms and their day to day function is evidence of malingering
- Failure to ask what the patient does all day rather than what they don’t.
- Effort tests cannot definitively distinguish “conscious” from “subconscious” poor effort

Believing is perceiving: mismatch between self-report and actigraphy in psychogenic tremor

Isabel Pareés, Tabish A. Saifee, Panagiotis Kassavetis, Maja Kojovic, Ignacio Rubio-Agusti, John C. Rothwell, Kailash P. Bhatia and Mark J. Edwards

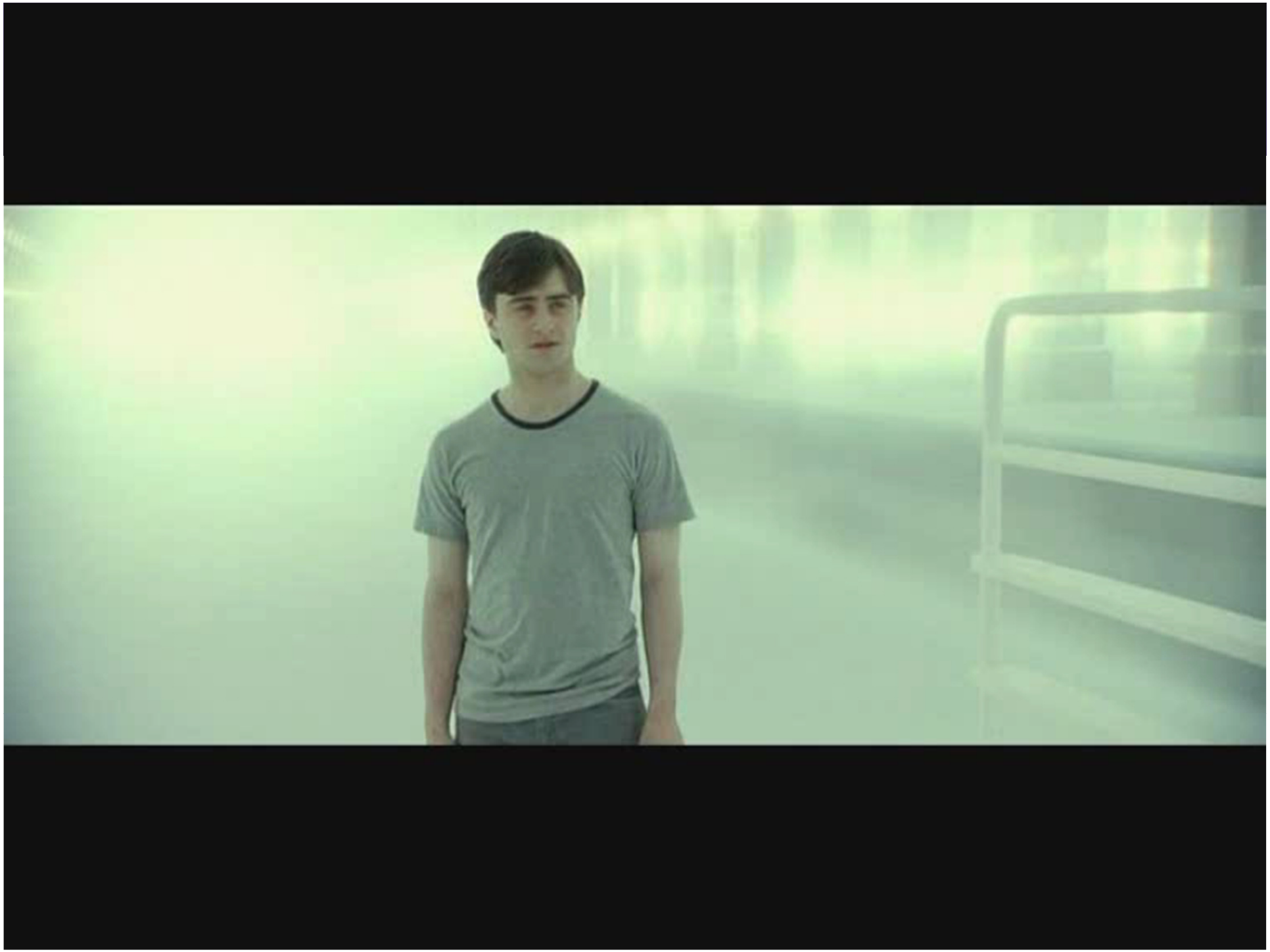


Pareés I et al. Brain 2011;brain.awr292

BRAIN A JOURNAL OF NEUROLOGY

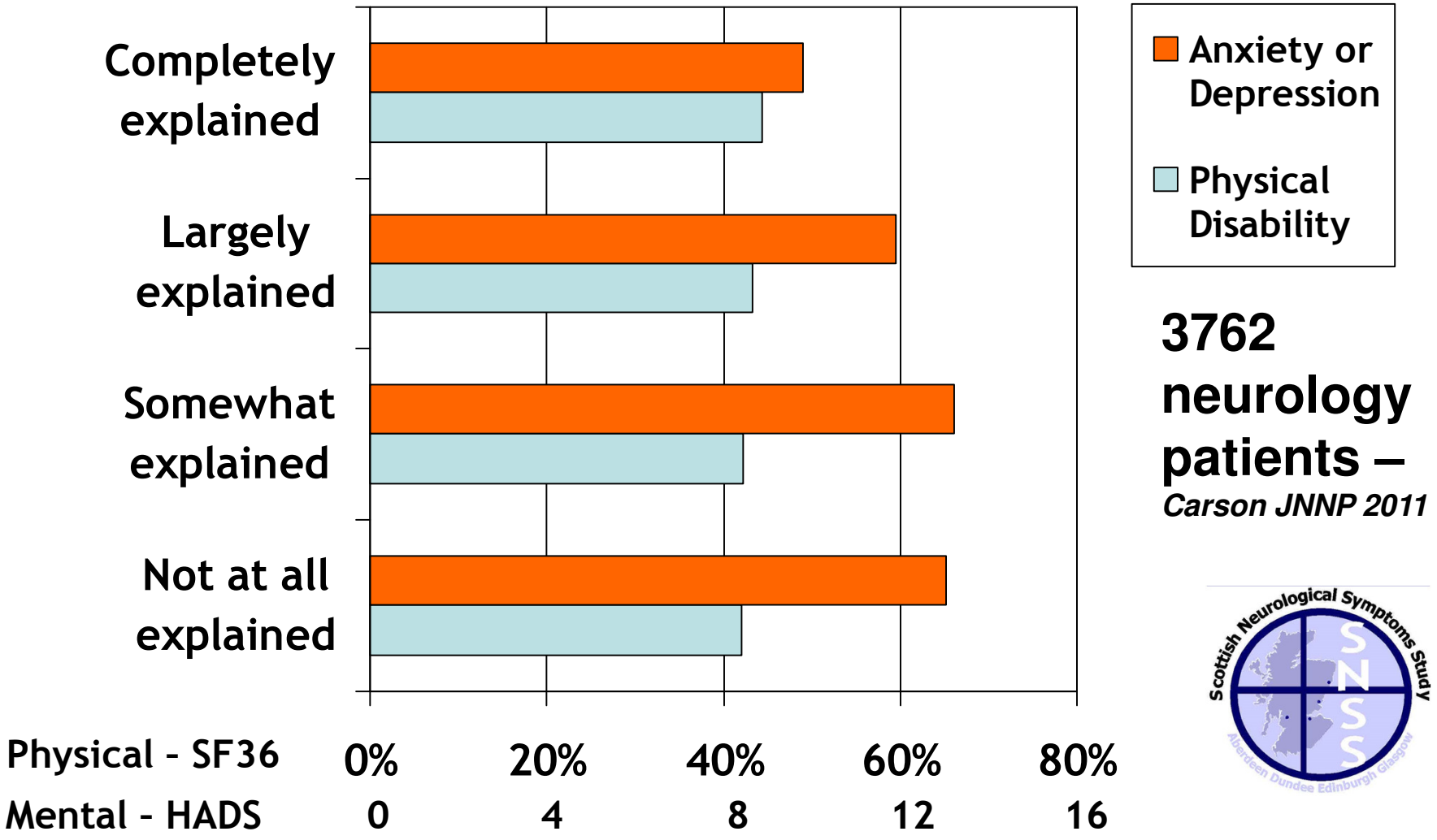
So is it all in the mind? Real? Not real?

Dumbledore explains …..



OK they might not be malingering but perhaps I’m best leaving them to their own devices…

Patients with functional symptoms just as disabled but more distressed than those with disease



3762 neurology patients –
Carson JNNP 2011

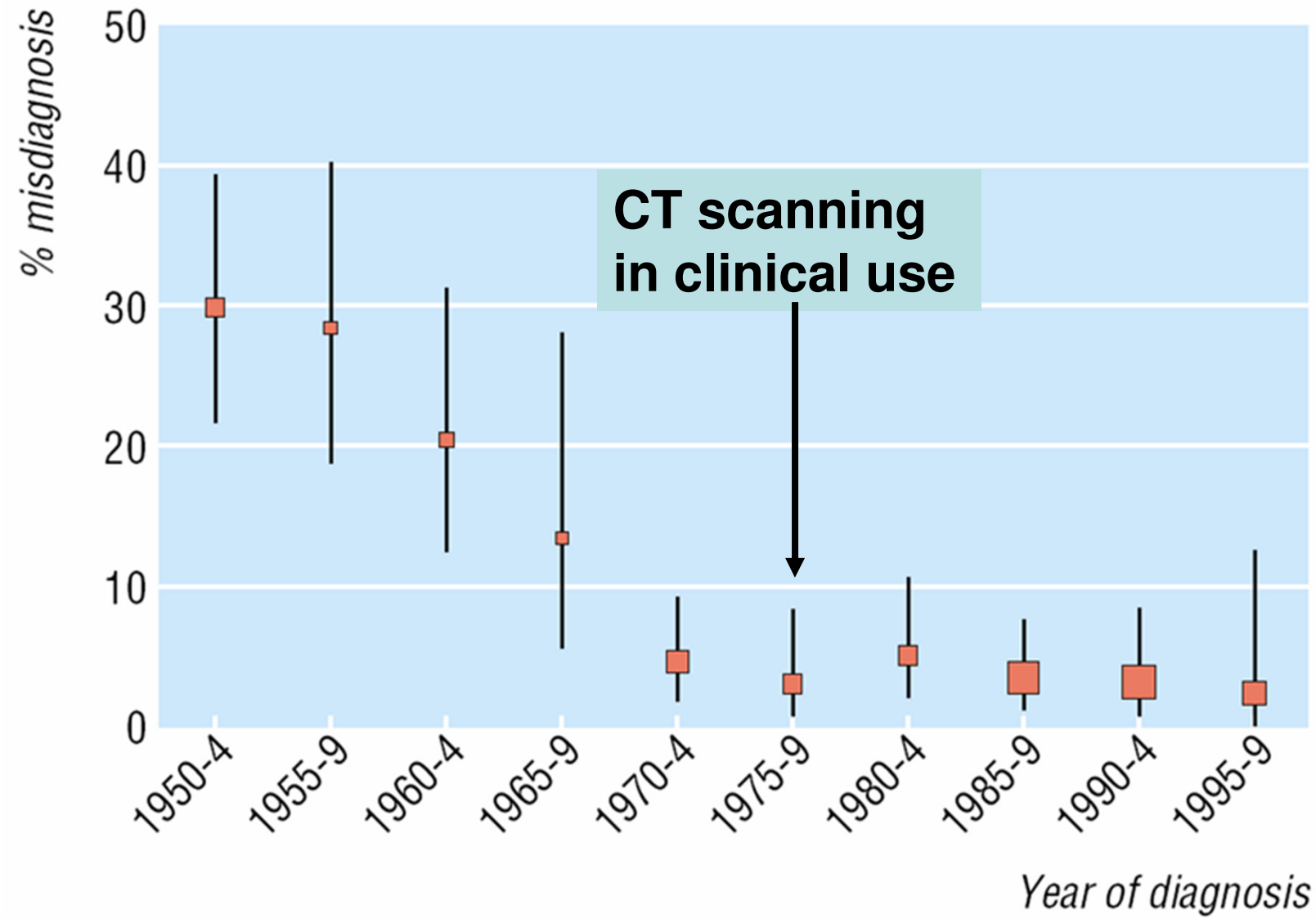
Scottish Neurological Symptoms Study
Aberdeen Dundee Edinburgh Glasgow

….and they often remain so in the long term

- 60 patients with functional weakness seen 12 years previously in Edinburgh
- 83% still symptomatic
- Levels of disability similar to Multiple Sclerosis
- 29% had taken medical retirement

Stone et al JNNP 2003: 74:591-6

Misdiagnosis of conversion symptoms / hysteria

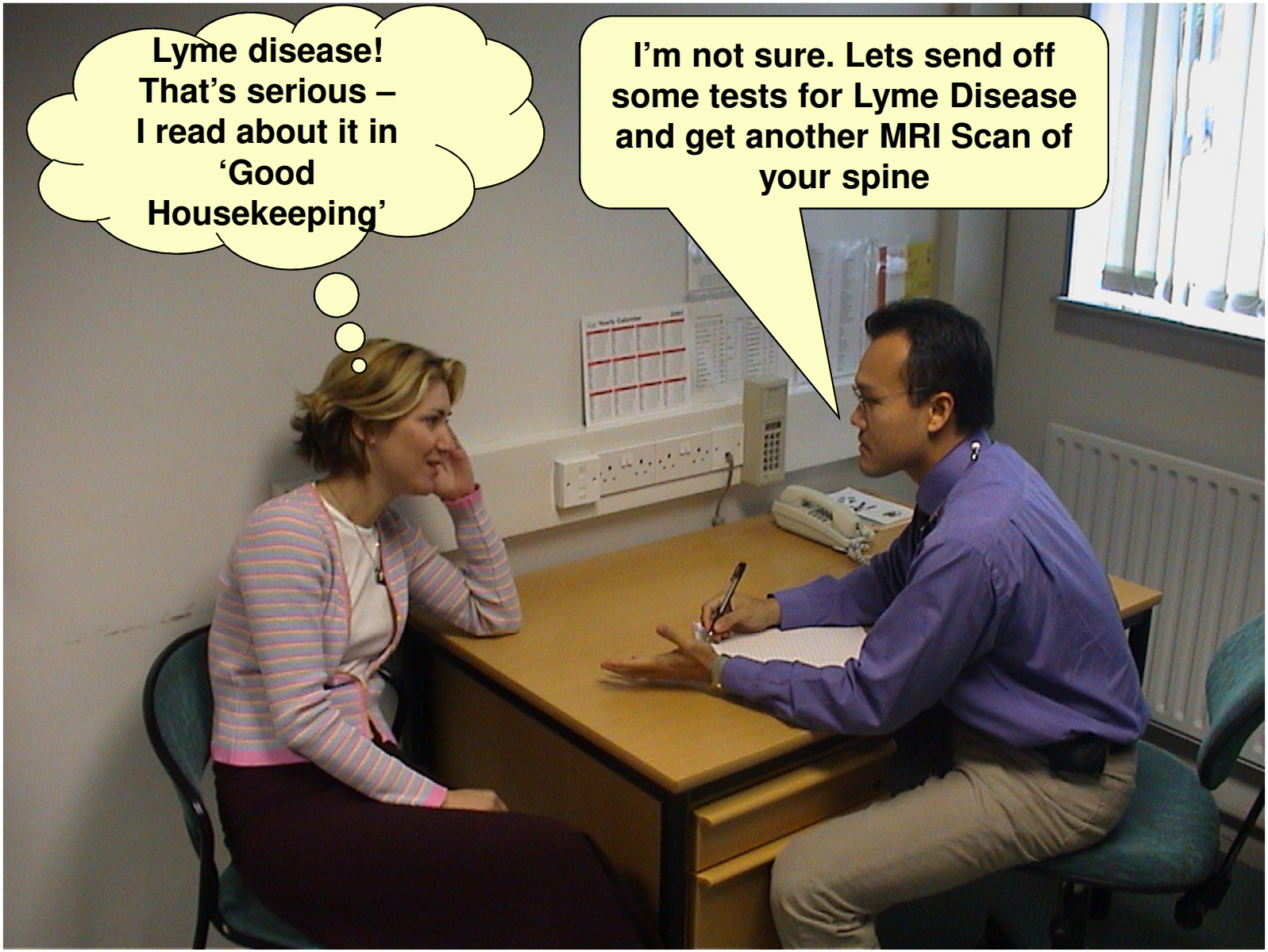


Stone et al . BMJ Oct 2005. 27 studies; 1466 patients followed for median of 5 years

Now its time to tell the patient whats wrong with them….

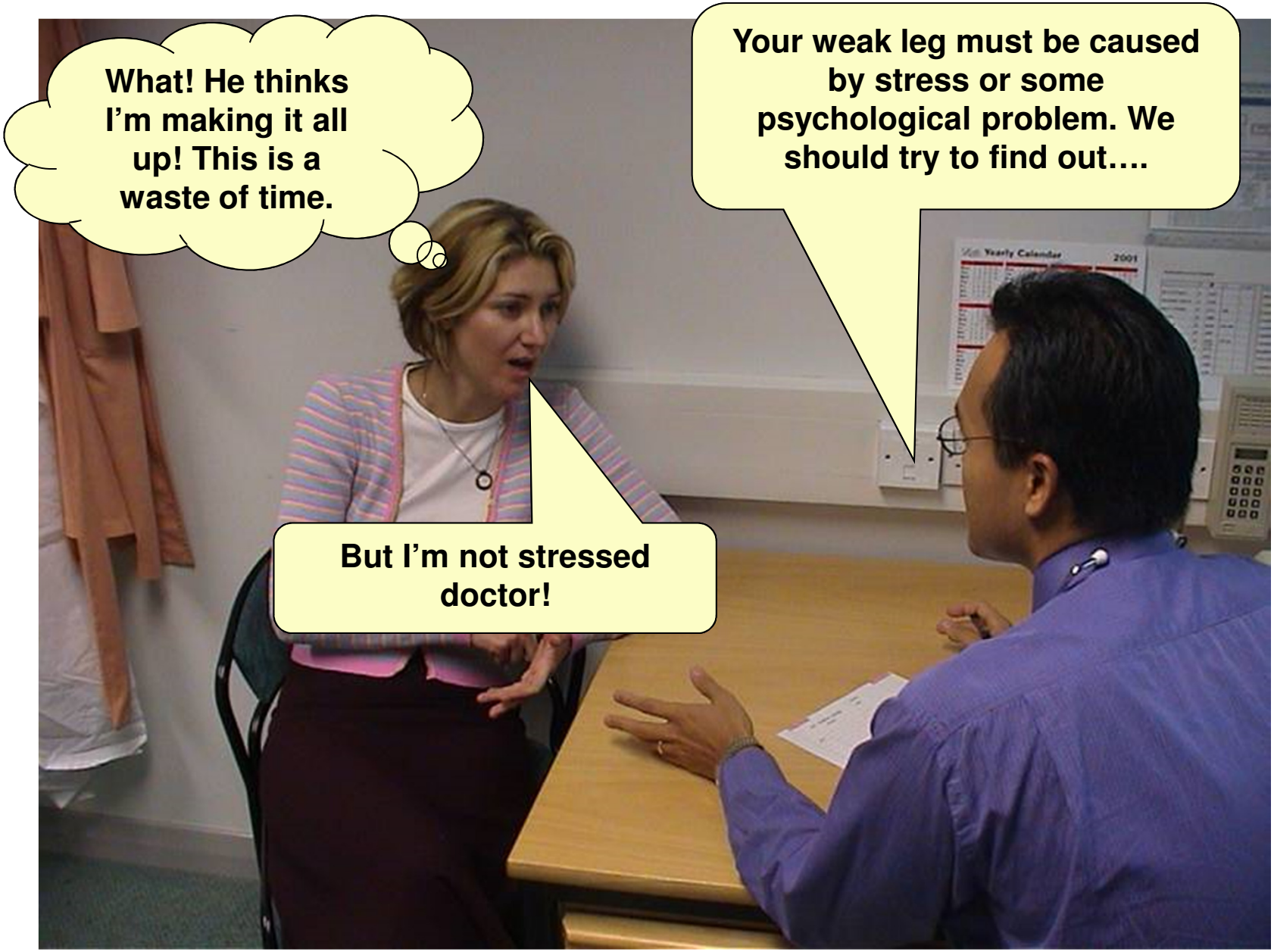

Well….I'm glad to tell you that there is nothing on the tests to explain your weakness
That's good, but what's causing it then doctor?

The ‘Lets do another test approach’….



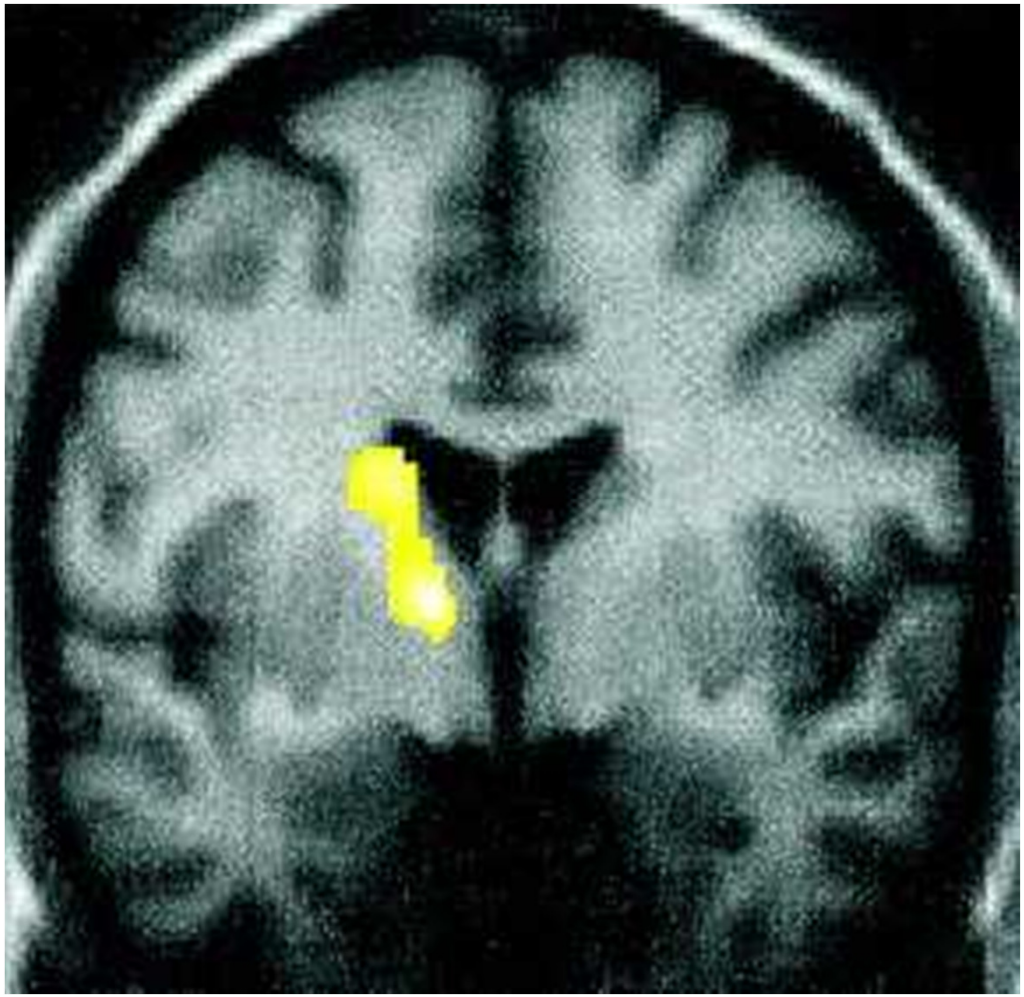
The ‘Its medically unexplained approach’

The ‘Psychological Approach’….



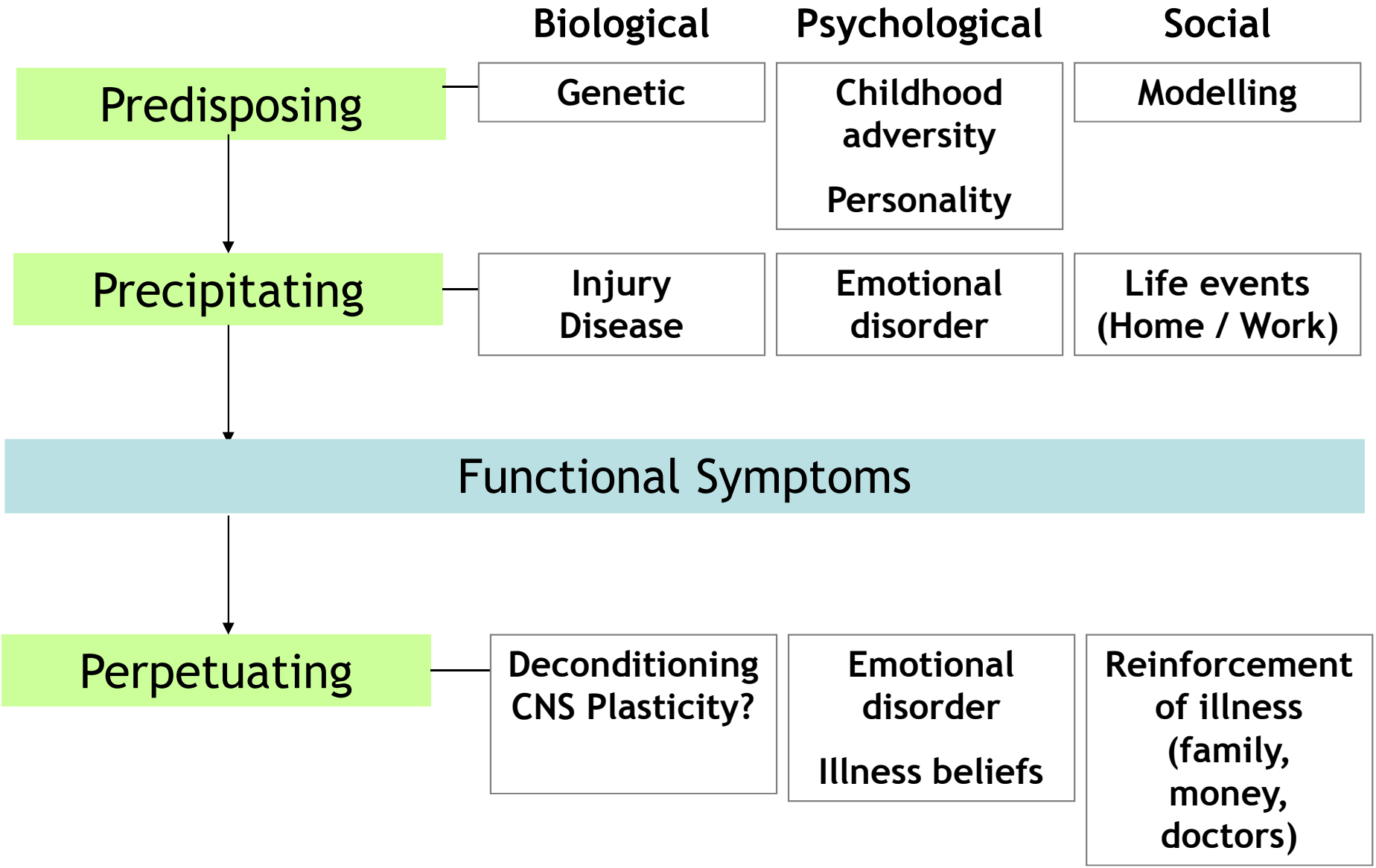
The functional model – a new (old) approach

Contralateral hypoperfusion of thalamus and caudate in patients with functional weakness and sensory disturbance



Vuilleumier et al. Brain 2001 Jun; 124:1077-1090

What causes Functional Symptoms



Separating ‘Why?’ and ‘How?’ in Neurology

	Why?	How?
Motor Neurone Disease	**????**	**Not enough Motor Neurones**
Multiple Sclerosis	**Genes. Don’t know really**	**Autoimmune inflammation**
Primary Generalised Epilepsy	**Genes etc. Don’t know really**	**Electrical Storm**
Functional Symptoms	**Multifactorial.**	**Panic Dissociation** **“Altered brain function”**

The ‘Functional Approach’….

But many less controversial and useful steps in explanation

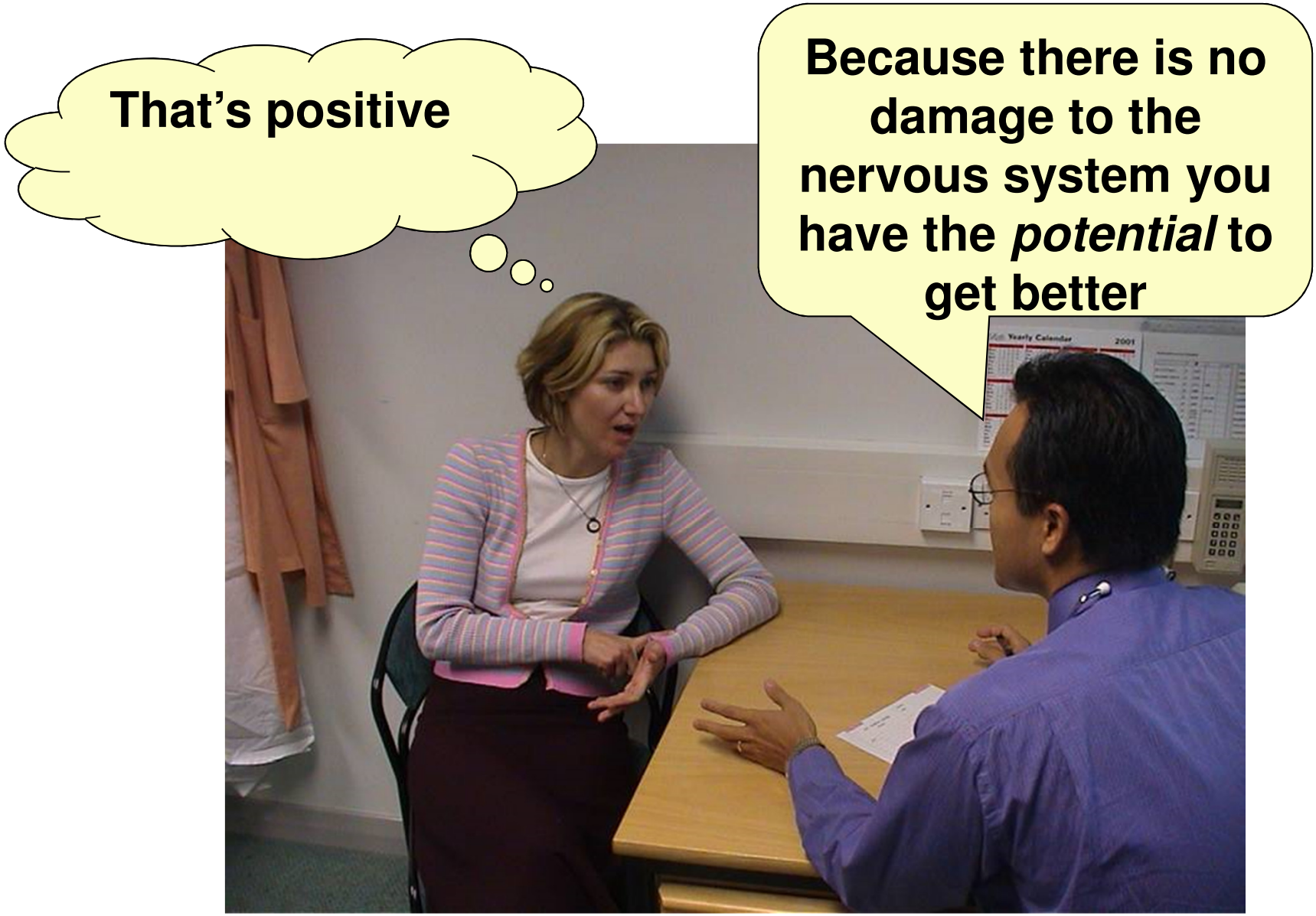
‘I believe you….’

‘This is how I’m making the diagnosis….’

See how weak your leg is when I do that? That is typical of functional weakness

See how your left leg comes back to normal when I do that? That shows me there is a problem with your brain sending a message to the leg but not damage to the nerves

‘You have something potentially reversible….’



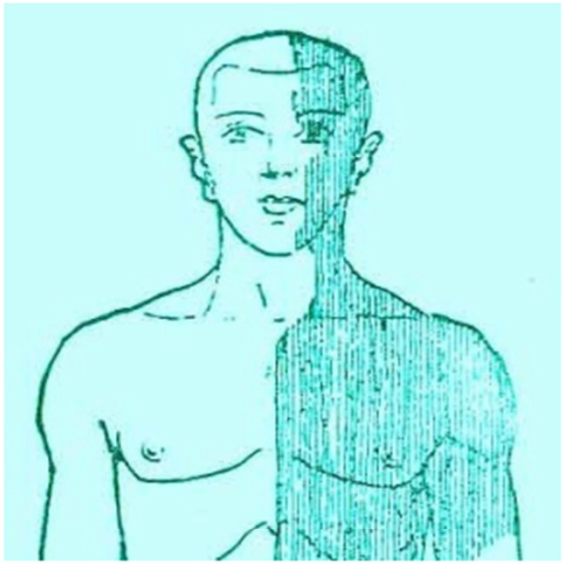
‘This is how I’m making the diagnosis….’

“Here’s a website which explains more……”

www.neurosymptoms.org

Functional and Dissociative Neurological Symptoms : a patient's guide

Welcome | Symptoms | Causes | All in the mind? | Misdiagnosis? | Treatment | Cases | Guestbook



This website is about symptoms which are:

- neurological (such as weakness, numbness or blackouts)
- real (and not imagined)
- but not due to neurological disease.

These symptoms have many names (including dissociative symptoms and conversion symptoms) but are often described as "functional symptoms".

Symptoms like these are surprisingly common but can be difficult for patients and health professionals to understand.

This website, written by a neurologist with a special interest in these problems, aims to give you a better understanding of these symptoms. It has no advertising and does not make any money for the author.

How to use this website ...

Most people with functional or dissociative neurological symptoms have a combination of symptoms like "weakness, numbness and fatigue" or "blackouts and sleep problems"

Click on a symptom on the right or use the menu above to explore the symptoms that are relevant to you.

Click on ‘Causes’ to discover what is known about....

Symptoms ...

Weakness / Paralysis | Tremor / Movements

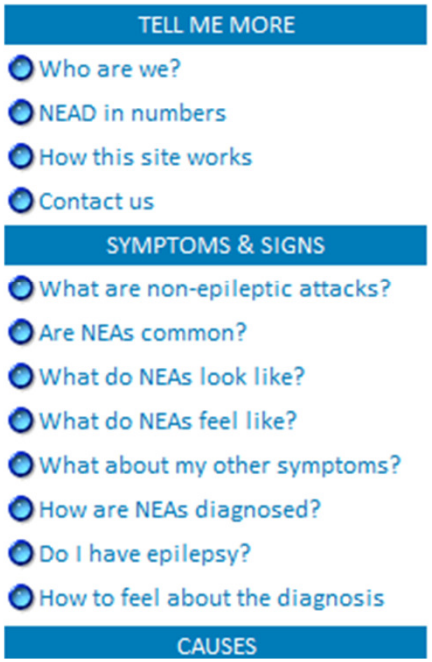
Blackouts / Attacks | Spasms

Sensory Symptoms | Walking Problems

Pain | Word Finding Difficulty

“Here’s a website which explains more……”

www.nonepilepticattacks.info



Welcome

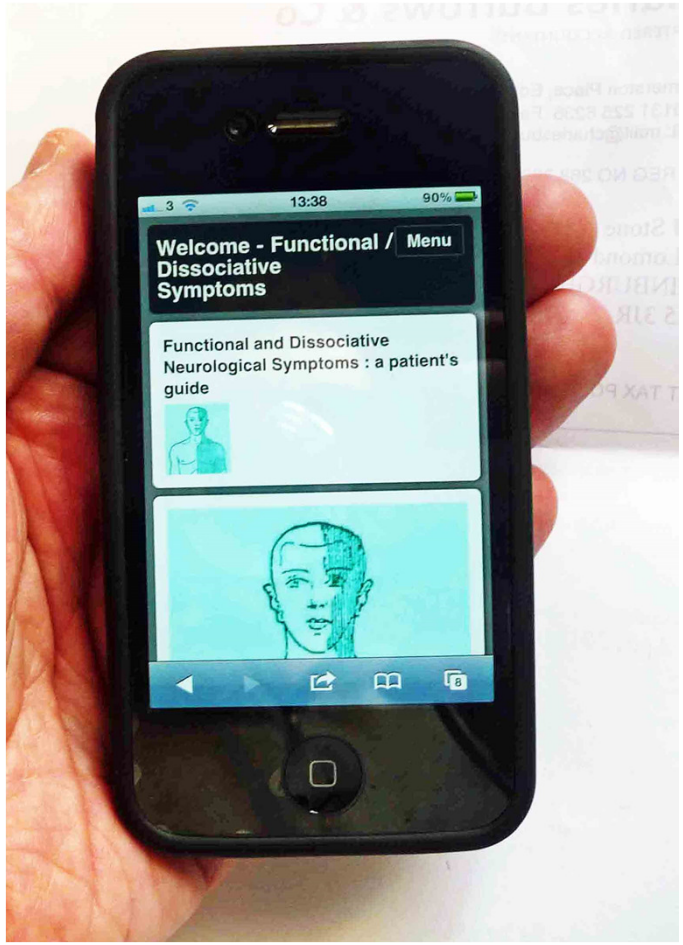
Who are we?

We are a group of healthcare professionals interested in developing effective treatments for non-epileptic

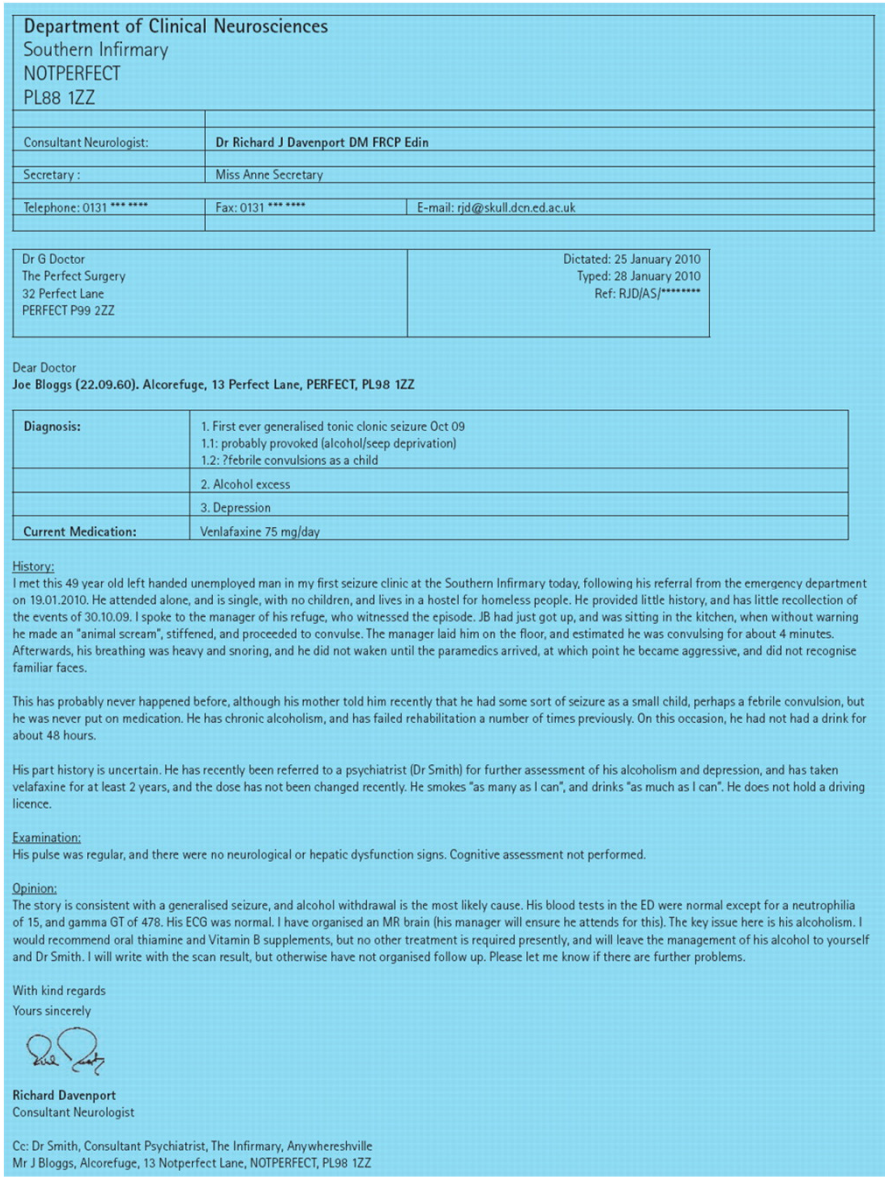
“’You can look at it on the way home on the bus……”

www.neurosymptoms.org

mobile version (iphone and android)



Copy your letter to the patient (and other health professionals involved)



Department of Clinical Neurosciences
Southern Infirmary
NOTPERFECT
PL88 1ZZ

Consultant Neurologist:	**Dr Richard J Davenport DM FRCP Edin**	
Secretary :	Miss Anne Secretary	
Telephone: 0131 *** ****	Fax: 0131 *** ****	E-mail: rjd@skull.dcn.ed.ac.uk

Dr G Doctor
The Perfect Surgery
32 Perfect Lane
PERFECT P99 2ZZ

Dictated: 25 January 2010
Typed: 28 January 2010
Ref: RJD/AS/********

Dear Doctor
Joe Bloggs (22.09.60). Alcorefuge, 13 Perfect Lane, PERFECT, PL98 1ZZ

Diagnosis:	1. First ever generalised tonic clonic seizure Oct 09 1.1: probably provoked (alcohol/seep deprivation) 1.2: ?febrile convulsions as a child
	2. Alcohol excess
	3. Depression
Current Medication:	Venlafaxine 75 mg/day

History:
I met this 49 year old left handed unemployed man in my first seizure clinic at the Southern Infirmary today, following his referral from the emergency department on 19.01.2010. He attended alone, and is single, with no children, and lives in a hostel for homeless people. He provided little history, and has little recollection of the events of 30.10.09. I spoke to the manager of his refuge, who witnessed the episode. JB had just got up, and was sitting in the kitchen, when without warning he made an "animal scream", stiffened, and proceeded to convulse. The manager laid him on the floor, and estimated he was convulsing for about 4 minutes. Afterwards, his breathing was heavy and snoring, and he did not waken until the paramedics arrived, at which point he became aggressive, and did not recognise familiar faces.

This has probably never happened before, although his mother told him recently that he had some sort of seizure as a small child, perhaps a febrile convulsion, but he was never put on medication. He has chronic alcoholism, and has failed rehabilitation a number of times previously. On this occasion, he had not had a drink for about 48 hours.

His part history is uncertain. He has recently been referred to a psychiatrist (Dr Smith) for further assessment of his alcoholism and depression, and has taken velafaxine for at least 2 years, and the dose has not been changed recently. He smokes "as many as I can", and drinks "as much as I can". He does not hold a driving licence.

Examination:
His pulse was regular, and there were no neurological or hepatic dysfunction signs. Cognitive assessment not performed.

Opinion:
The story is consistent with a generalised seizure, and alcohol withdrawal is the most likely cause. His blood tests in the ED were normal except for a neutrophilia of 15, and gamma GT of 478. His ECG was normal. I have organised an MR brain (his manager will ensure he attends for this). The key issue here is his alcoholism. I would recommend oral thiamine and Vitamin B supplements, but no other treatment is required presently, and will leave the management of his alcohol to yourself and Dr Smith. I will write with the scan result, but otherwise have not organised follow up. Please let me know if there are further problems.

With kind regards
Yours sincerely

Richard Davenport
Consultant Neurologist

Cc: Dr Smith, Consultant Psychiatrist, The Infirmary, Anywhereshville
Mr J Bloggs, Alcorefuge, 13 Notperfect Lane, NOTPERFECT, PL98 1ZZ

Further management

‘See the patient again.,……’

Evidence – Physio

Two studies of a physical rehabilitation for disabled patients show benefit

60% improved at 2 years vs 21% controls (n=60 both arms) ***Czarnecki – 2011 Parkinsonism & related Disorders***

Significant benefit from inpatient rehab (n=60) sustained at 2 years
Jordbru – Rehab Medicine 2012 in press

Evidence – Talking treatments

Systematic Review
(Kroenke and Swindle, 2000)

29 trials (27 RCTs) in various functional symptoms (e.g Chronic Fatigue Syndrome, Irritable Bowel Syndrome, Fibromyalgia)

Cognitive Behavioural Therapy better than comparison therapy in 70%

One positive trial in somatisation disorder and non-epileptic attacks

Allen et al. RCT of CBT for somatisation disorder. Arch Intern Med 2006

Goldstein. RCT for psychogenic non-epileptic attacks.Neurology 2010

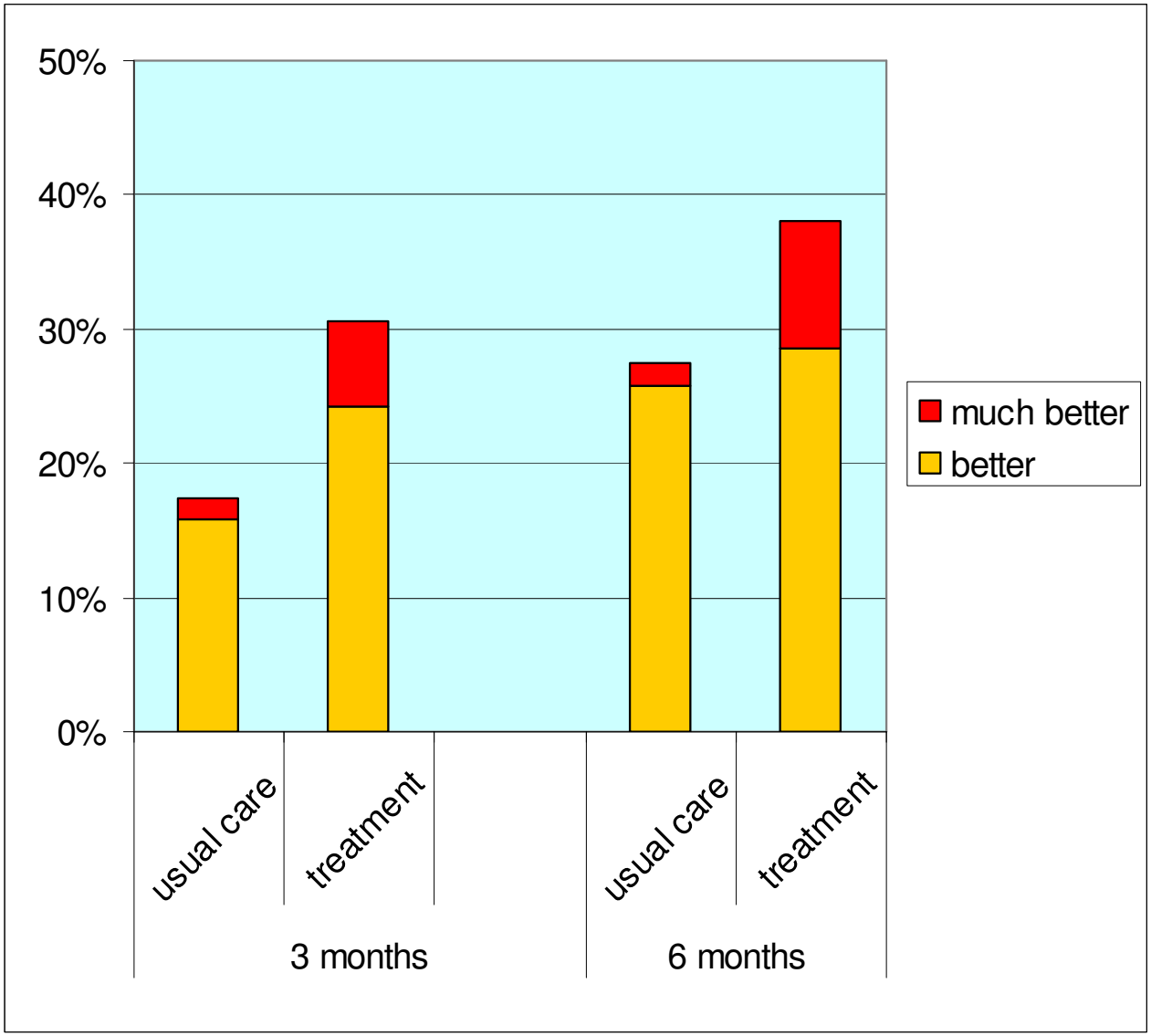
Changing thoughts and behaviours (CBT)

	Functional weakness
Old thought	**“I’ve got MS; I’m going to end up in a wheelchair. No one believes me”**
New thought	**Perhaps I can get better. I do seem to walk better when I don’t think about it**

Changing thoughts and behaviours (CBT)

	Functional weakness
Old Behaviour	**See lots of doctors** **Don't do much – it might make it worse**
New Behaviour	**Gradual exercise** **Expect relapses**

SNSS – RCT of guided self help



127 patients randomised to:

(a) 4 x 30 min sessions of guided self help over 3 months *or*

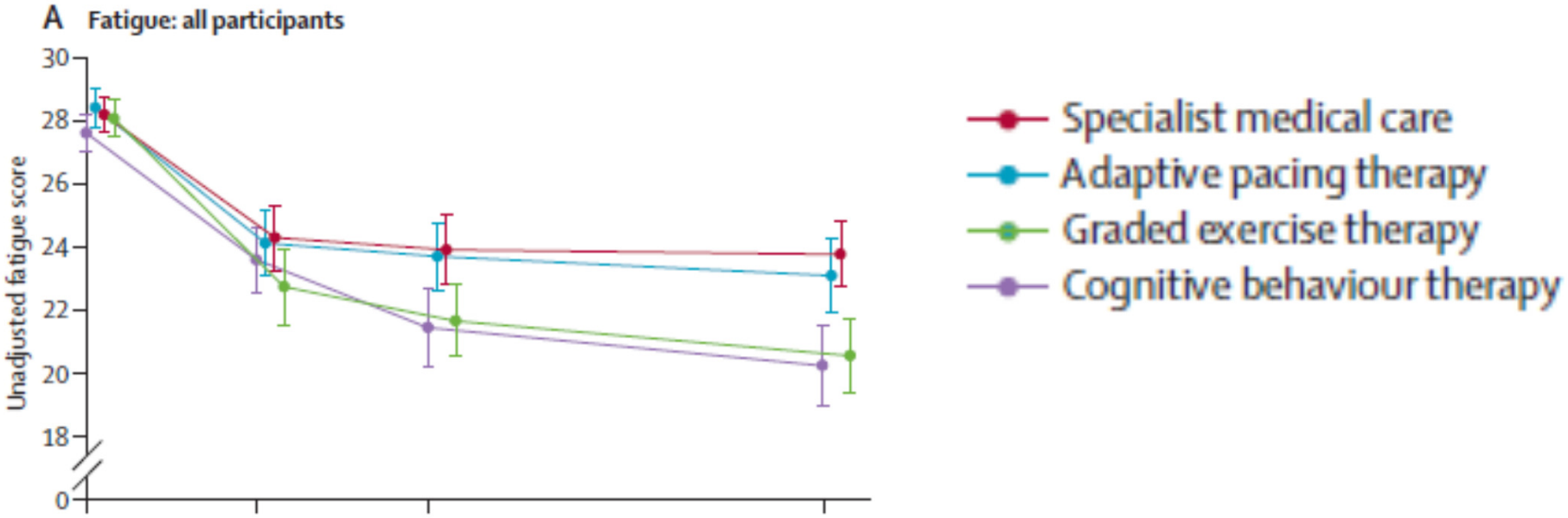
(b) usual care

2 patients lost to follow up

Treatment effect sustained at 6 months (p=0.02)

Sharpe M, Walker J, Williams C. Stone J Carson et al - *Neurology - 2011*

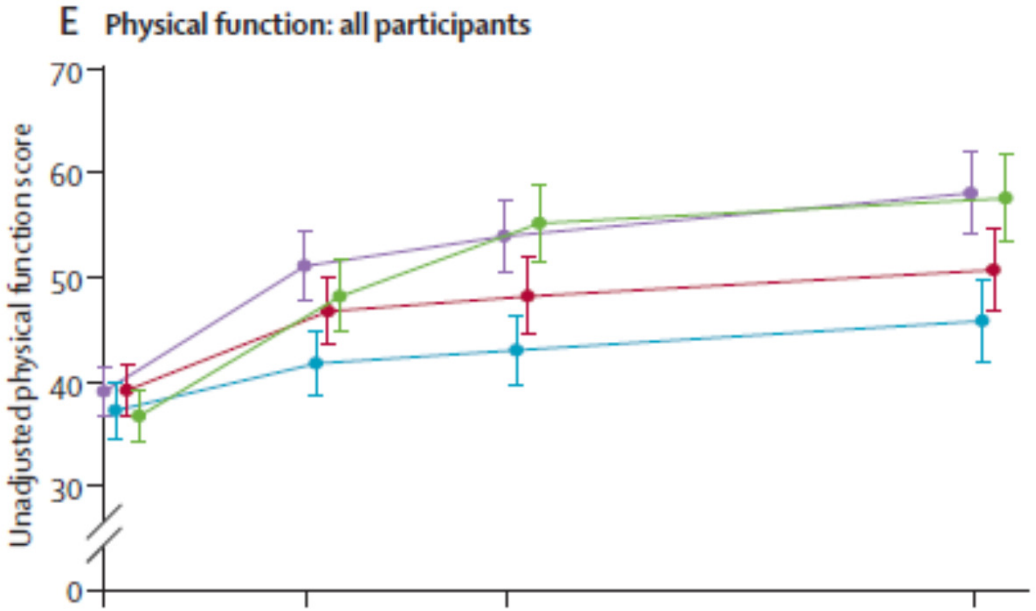
PACE trial for Chronic Fatigue



642 patients

52 weeks follow up

Lancet 2011



Other treatments

- **Hypnosis / Sedation**
- **Antidepressants**
- **? Transcranial magnetic stimulation**

……But knowing when to quit essential

Treatment - The treatment resistant patient

- **Aim to make a difference to 1 in 3 severely affected patients**
- **Can be hard to tell who that's going to be at the outset**
- **Accept they have a chronic illness (like MS) which can be modulated but not cured**
- **If unsuccessful consider a plan to contain patient and protect from harm by other doctors**

Functional Symptoms in Neurology – 3 things

- **Dissociative (non-epileptic) attacks are a bit like panic attacks – think of them if perioperative or in status**
- **Make a functional diagnosis on positive not negative grounds**
- **Explanation by a physican IS treatment**

Acknowledgements and Further Reading

Dr Jon Stone
Consultant in
Neurology

Dr Alan Carson
Consultant in
Neuropsychiatry

Professor Michael Sharpe
Psychological Medicine
and Symptoms research

Professor Charles Warlow
Medical Neurology

Further Reading

**Stone. Functional Symptoms – the bare essentials.
Practical Neurology 2009;9:179-189**

Hoover's Sign in the real world

		Sensitivity	Specificity
Acute (n=127)	Functional vs Stroke	63% (24-91)	95% (97-100)
Chronic (n=107)	Functional vs mainly MS	56% (47-65)	98% (89-100)

McWhirter et al. Hoovers Sign in Acute Stroke. Journal of Psychosomatic Research. 2012

Stone, Warlow, Sharpe. The Symptom of Functional Weakness. Brain 2010:133;1537-1551