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MEDICAL SCHOOL

Functional Neurological Disorder (FND) and Somatic Symptom Disorder (SSD): Assessment and Management

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Medical Psychiatry: Comprehensive Update

September 2026

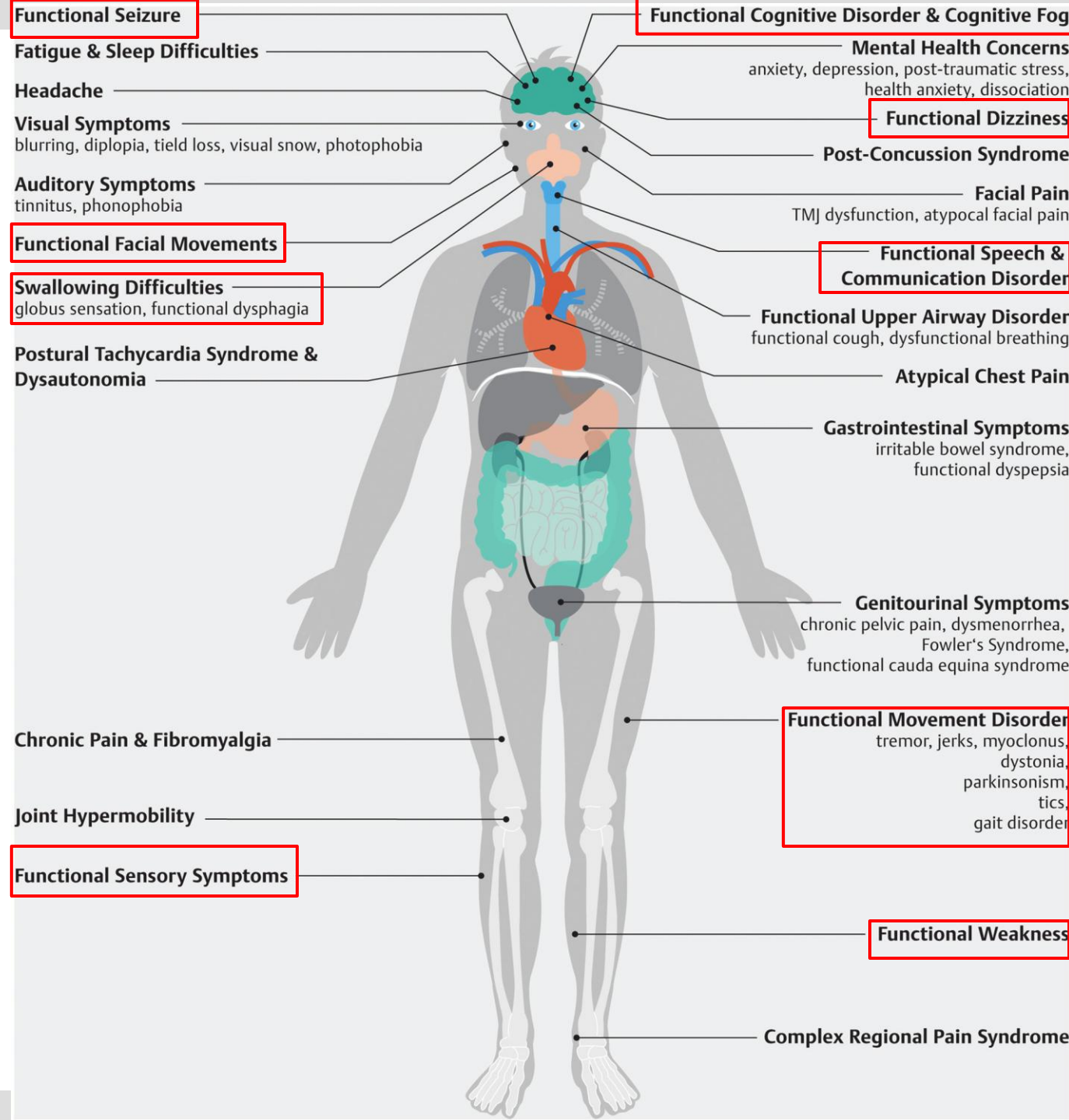
Disclosures

- The opinions expressed in this presentation do not represent the opinion of the US government
- Royalties from Oxford University Press

Objectives

- Formulate an updated biopsychosocial understanding of SSD and FND.
- Learn a model of care for patients with SSD and FND.
- Acknowledge current state of evidence-based treatment for SSD and FND.

**Somatic
symptoms
are highly
prevalent**



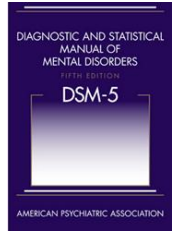
1. Somatic Symptom and Related Disorders

- Somatic symptom disorder
- Illness anxiety disorder
- Functional neurological disorder (FND)

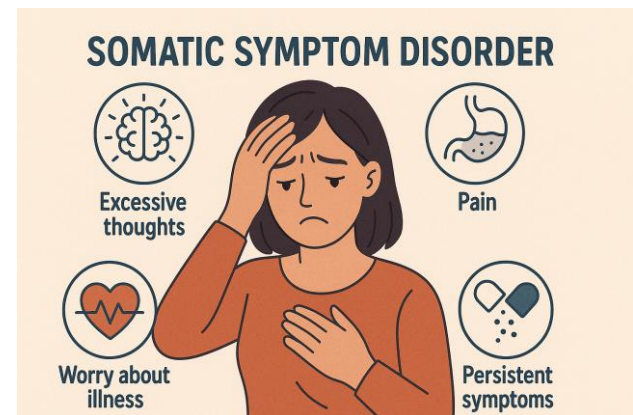


2. Functional Somatic Disorder: NOT PART OF DSM- 5

1. Somatic Symptom Disorder (DSM-5)

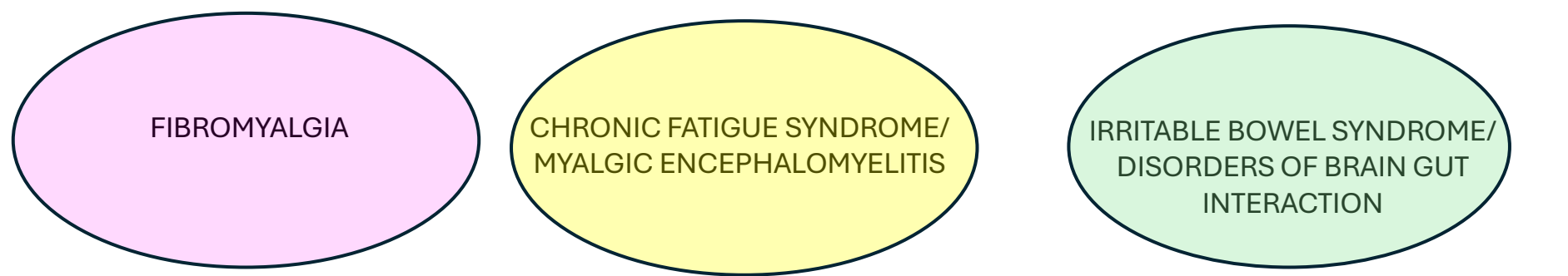


- A: Somatic symptom (one or more) – distressing or causes disruption in daily life
- B: **Psychobehavioral criteria**: thoughts, anxiety and/or behaviors related to the symptom
- C: State of being symptomatic is persistent (more than 6 months)



2. Functional Somatic Syndromes

- Individual, well-recognized medical syndromes, that share the following features:
 - clear diagnostic features
 - diagnosis frequently made in clinical practice
 - etiology not yet explained

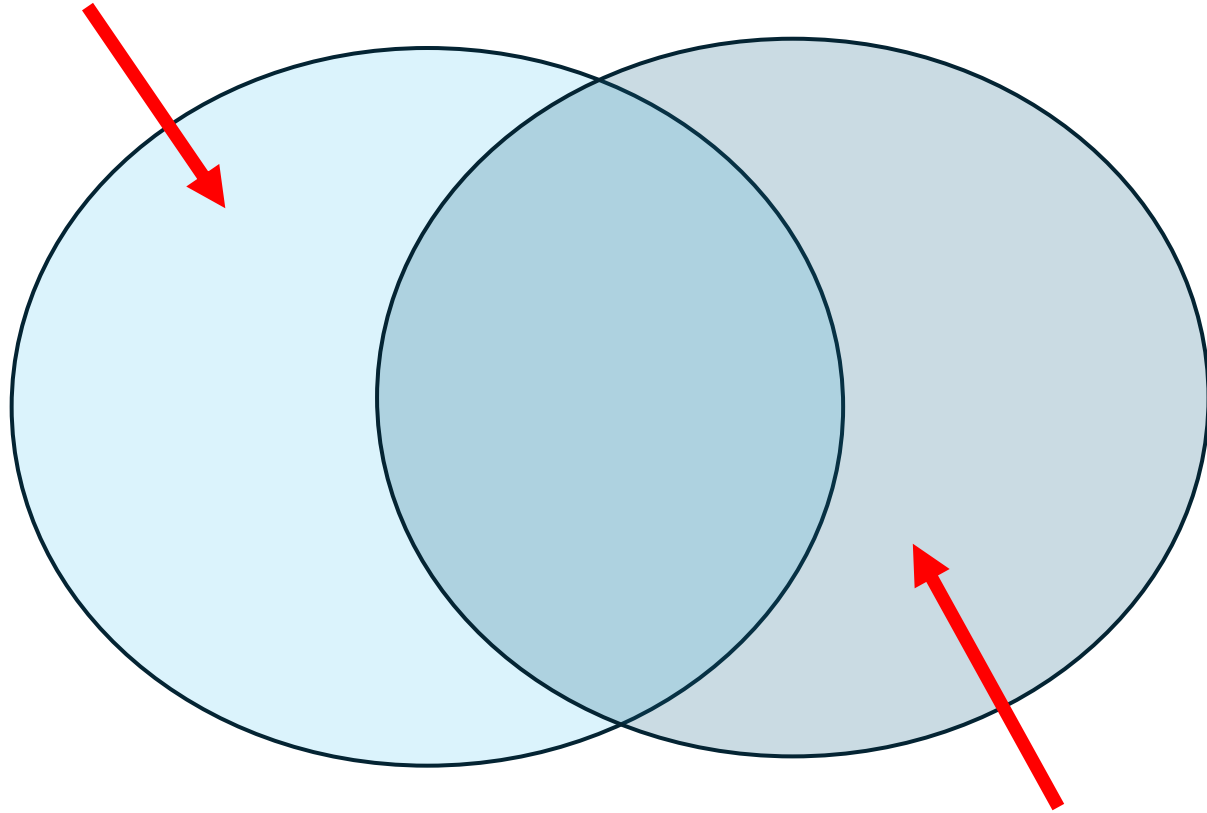


FIBROMYALGIA

CHRONIC FATIGUE SYNDROME/
MYALGIC ENCEPHALOMYELITIS

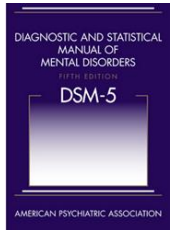
IRRITABLE BOWEL SYNDROME/
DISORDERS OF BRAIN GUT
INTERACTION

Somatic symptom disorder (DSM-5)

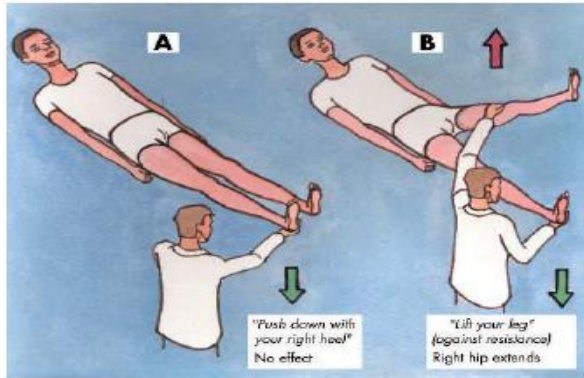


Functional somatic syndromes (separate criteria)

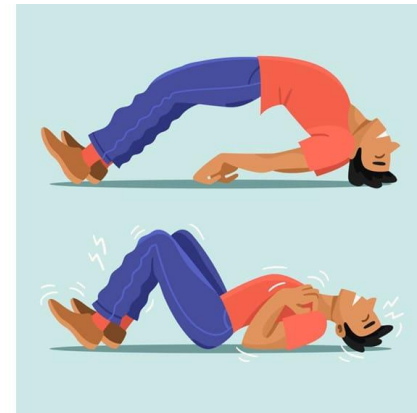
❖ Functional Neurological Disorder (DSM-5)



- Neurological symptom/s: seizures, motor (weakness, gait, abnormal movement), sensory, speech, dizziness, cognitive, etc.
- Positive signs on exam



Hoover's sign (functional weakness)



Eye closure and opisthotonic posturing
(functional dissociative seizures)

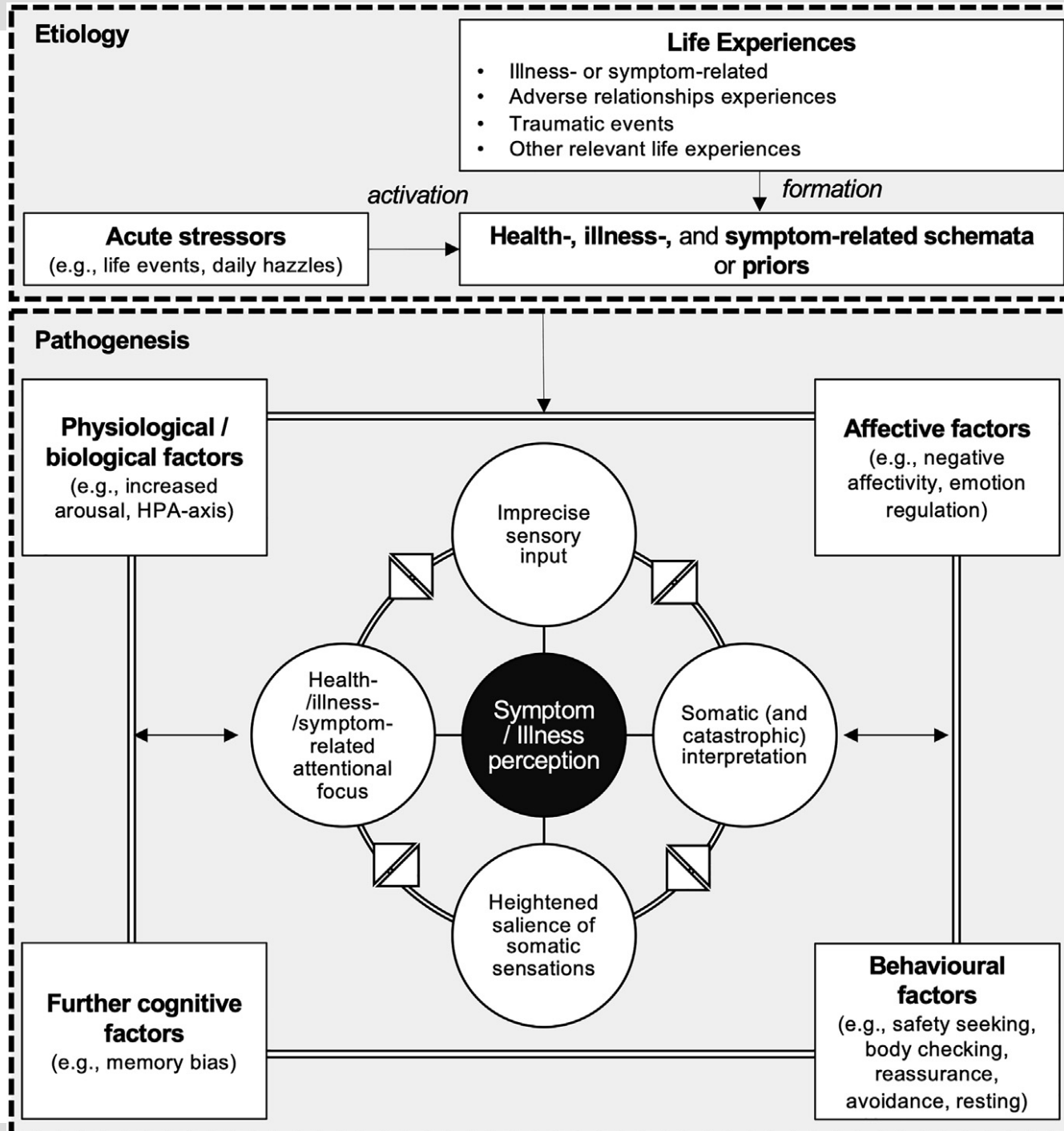
Somatic, factitious disorder and malingering

	Volitional Production of Symptoms	Conscious Awareness of Motivation Behind Complaint
Somatic Symptom and Related Disorders	-	-
Factitious Disorder	+	-
Malingering	+	+

Epidemiology

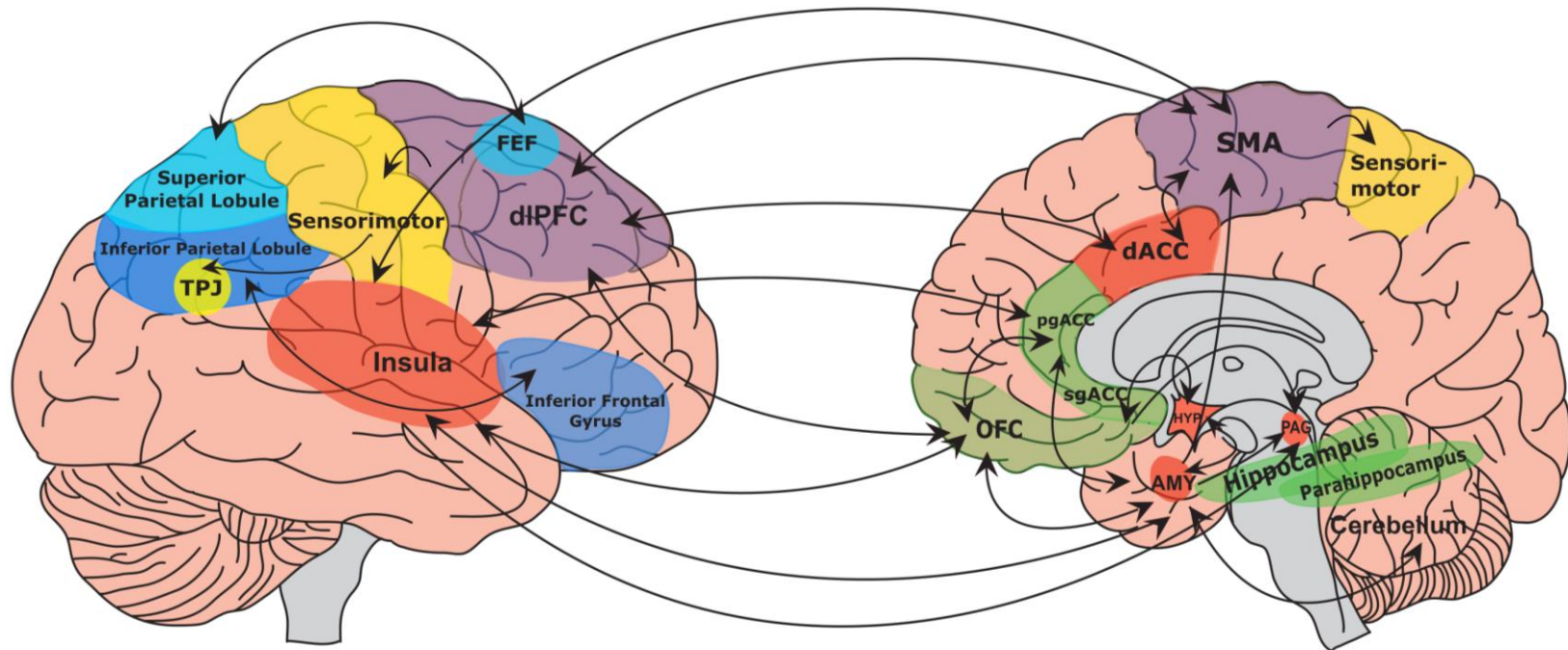
- Mean frequency of SSD was¹
- 12.9% (95% CI, 12.5 to 13.3) in the general population
- 35% (95% CI, 33.8 to 36.3) in general medicine
- 23.6% (95% CI, 22.3 to 25.0) in specialized care.
- FND is the second most common dx made in ambulatory neurology²
- 30% of initials assessments have a functional component²
- FND: Female preponderance (3:1 F:M)³; *children/elderly F=M*^{4,5}
- Adolescence → midlife onset
- High medical utilization, decrease in QOL, stigma, caregiver burden

1. Lowe et al, *Psychological Medicine*, 2018; 2. Stone et al, *Brain* 2009 ; 3. Lesser, *Neurology*, 1996; 4..Duncan et al, *Neurology*, 2006; 5.. Huang et al, *J Chin Med Assoc*, 2009



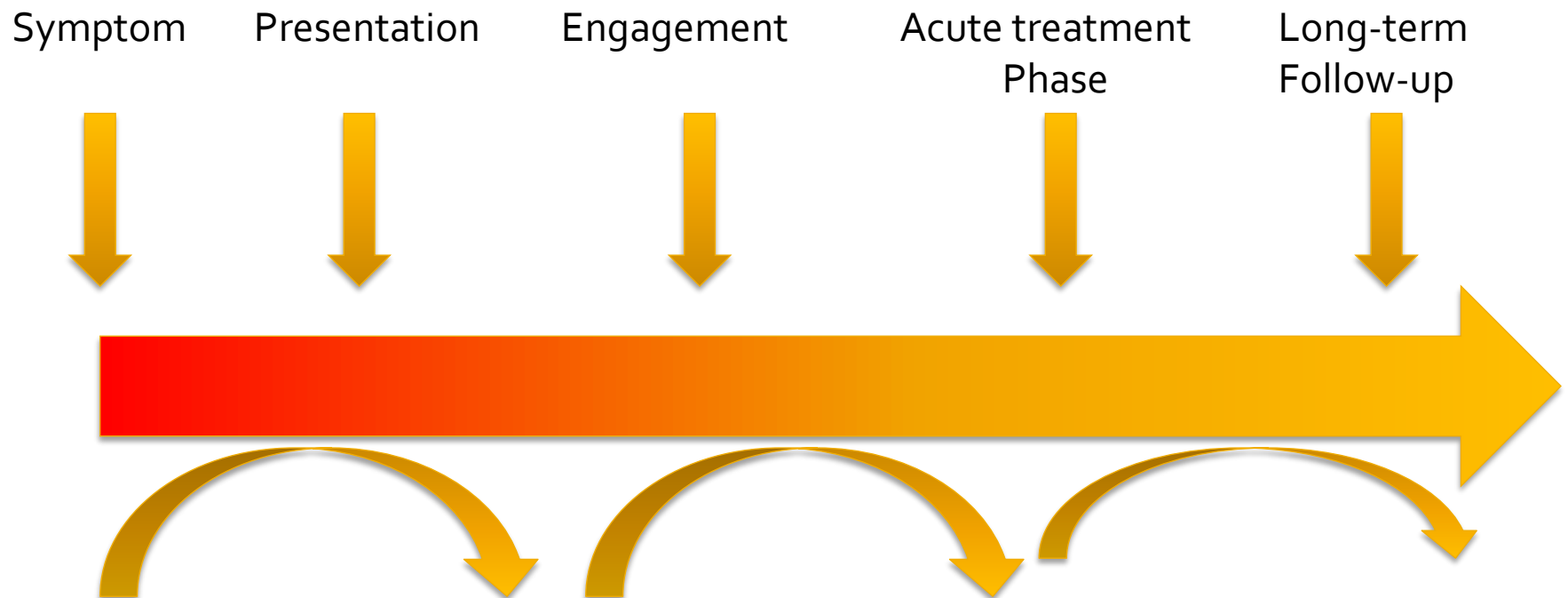
A brain circuitry disorder

SSD/FND is a disorder where brain circuitry implicated in **motor control**, **perceptual awareness**, **attention**, **emotional salience attribution** and **cognitive control** is dysfunctional

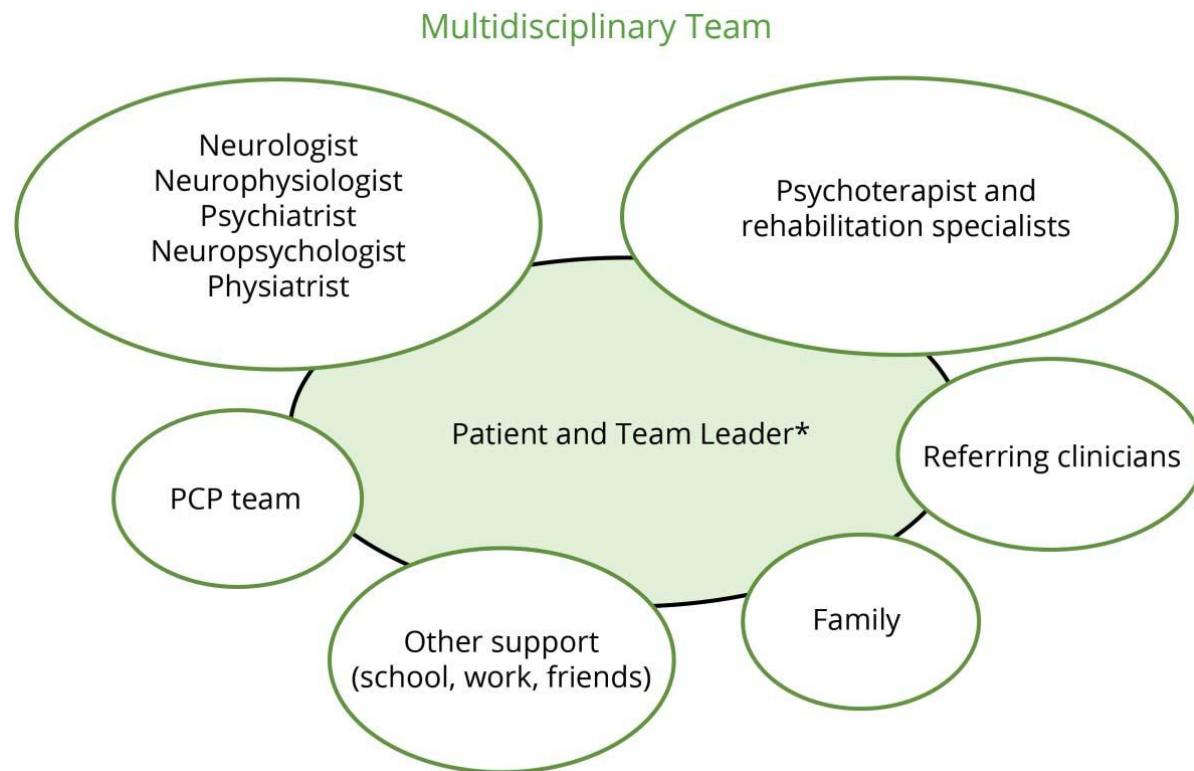


- Sensorimotor & TPJ networks: deficits in motor execution and feedforward signaling leading to impaired self-agency
- Saliency network: altered homeostatic balance, interoception, multimodal integration and emotional/self-awareness
- Limbic network: impaired emotion regulation, fear extinction, value-based viscerosomatic processing
- Dorsal attention network: altered goal-directed attentional mechanisms
- Ventral attention network: altered stimulus-driven attentional mechanisms
- Cognitive control and motor planning networks: motor planning deficits

Course of treatment in SSD/FND



Relevance of multidisciplinary care



Members of the team interact in a fluid nature as determined by the patient's needs.
A neurologist may be the referring clinician or part of the multidisciplinary team.

*The Team Leader is the individual most engaged with the patient. This could be the PCP, neurologist, or one of the mental health providers.

Treatment in FND is multidisciplinary



Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

Seizure

journal homepage: www.elsevier.com/locate/yseiz

Psychological interventions for psychogenic non-epileptic seizures: A meta-analysis

Perri Carlson*, Kathryn Nicholson Perry

Australian College of Applied Psychology, Level 11, 255 Elizabeth Street, Sydney, NSW 2000, Australia

Occasional essay

Occupational therapy consensus recommendations for functional neurological disorder

Clare Nicholson ¹, Mark J Edwards,² Alan J Carson,³ Paula Gardiner,⁴
Dawn Golder,⁵ Kate Hayward,¹ Susan Humblestone,⁶ Helen Jinadu,⁷ Carrie Lumsden,⁸
Julie MacLean,⁹ Lynne Main,¹⁰ Lindsey Macgregor,¹¹ Glenn Nielsen,² Louise Oakley,¹²
Jason Price,¹³ Jessica Ranford,⁹ Jasbir Ranu,¹ Ed Sum,¹⁴ Jon Stone ³

Neuropsychiatry

VIEWPOINT

Physiotherapy for functional motor disorders: a consensus recommendation

Glenn Nielsen,^{1,2} Jon Stone,³ Audrey Matthews,⁴ Melanie Brown,⁴ Chris Sparkes,⁵
Ross Farmer,⁶ Lindsay Masterton,⁷ Linsey Duncan,⁷ Alisa Winters,³ Laura Daniell,³
Carrie Lumsden,⁷ Alan Carson,⁸ Anthony S David,^{9,10} Mark Edwards¹

General neurology

Review

Management of functional communication, swallowing, cough and related disorders: consensus recommendations for speech and language therapy

Janet Baker,^{1,2} Caroline Barnett,³ Lesley Cavalli,^{4,5} Maria Dietrich,⁶ Lorna Dixon,⁷
Joseph R Duffy,⁸ Annie Elias,⁹ Diane E Fraser,¹⁰ Jennifer L Freeburn,¹¹
Catherine Gregory,² Kirsty McKenzie,¹² Nick Miller,¹³ Jo Patterson,¹⁴ Carole Roth,¹⁵
Nelson Roy,^{16,17} Jennifer Short,¹⁸ Rene Utianski ,^{19,20} Miriam van Mersbergen,²¹
Anne Vertigan,^{22,23} Alan Carson,²⁴ Jon Stone ,²⁴ Laura McWhirter ²⁴

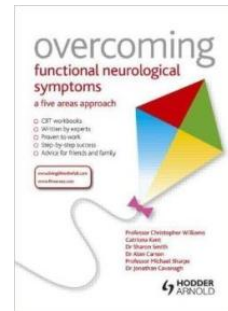
Benefits of multidisciplinary care also demonstrated in SSD

(Henningsen, Dialogues and Clin Neuroscience, 2018)

Strategies for Management of SSD in Primary Care

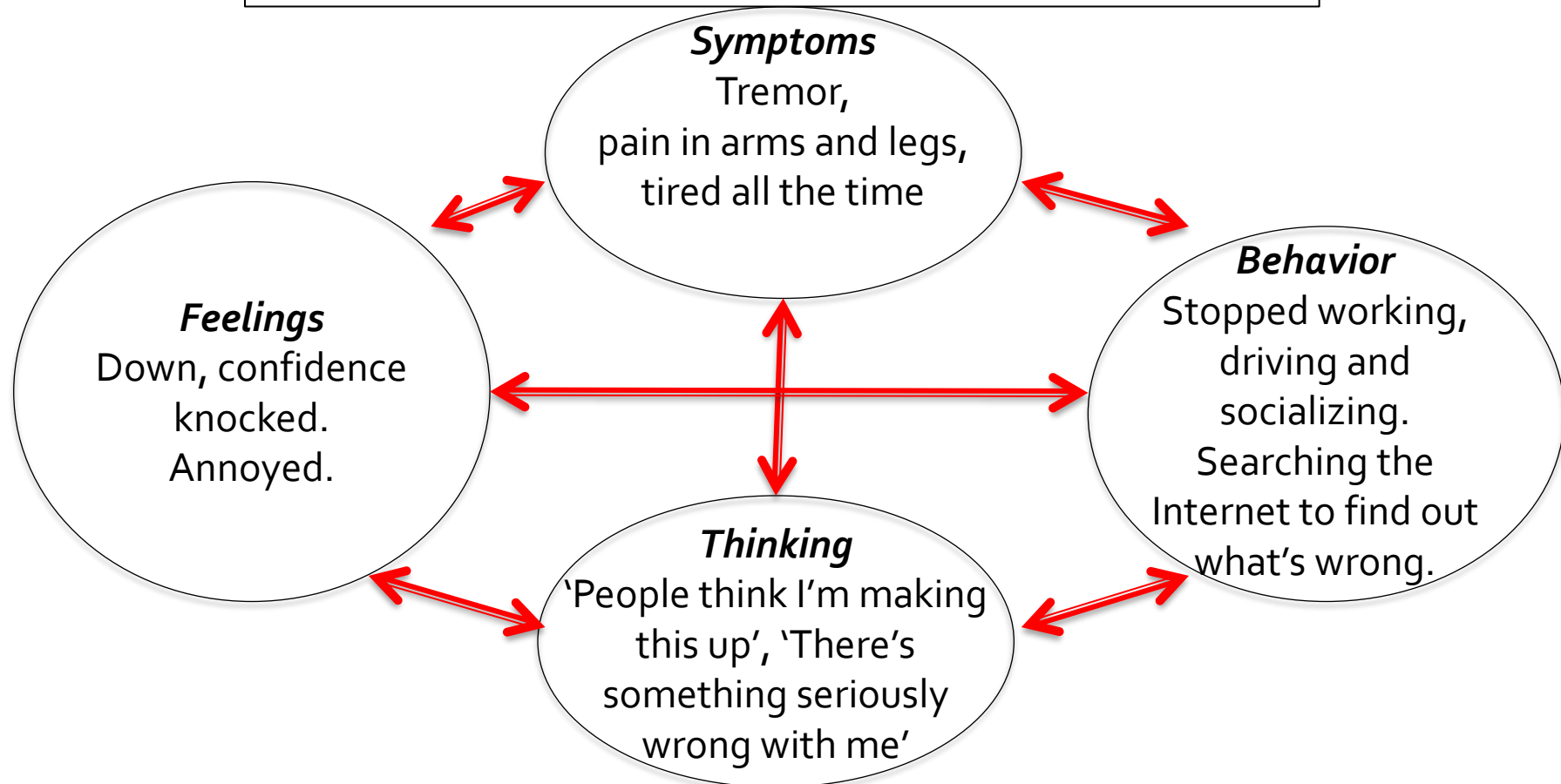
- Identify single gatekeeper
- Diagnose early
- Validate experience as genuine, not fake
- Screen for other physical symptoms and psychiatric comorbidities
- Monitor symptoms with appropriate measures
- Therapeutic conservatism: avoid repetitive, risky evaluations
- Provide reassurance
- Offering an explanatory model
- Change the conversation: less symptom monitoring and more engagement in life
- Break contingency between symptom complaint and receiving care
- Symptomatic relief: only temporary and if supported by evidence
- Emphasize healthy lifestyle
- Psychiatric consultation when the patient is open to it – linkage to treatment

Cognitive Behavioral Principles in SSD/FND



Situation, relationship, resources and practical problems

Good marriage; husband, mother and father supportive; income currently reduced



CBT for SSD

- Reduces health anxiety
- Moderately effective in decreasing somatic symptom intensity (less effect than on health anxiety) compared to usual care
- Therapeutic components:
 - * Psychoeducation
 - * Expand to a biopsychosocial framework rather than arguing for psychological factors
 - * Attention re-training (somatic hypervigilance)
 - * Cognitive re-structuring (for somatic catastrophizing)
 - * Stress management techniques
 - * Alternatives to maladaptive behaviors
 - * Reduce excessive resting or avoidance with gradual exercise exposure
 - * Interoceptive exercise exposure (to examine physical activity fears)

Review

Systematic review of psychotherapy for adults with functional neurological disorder

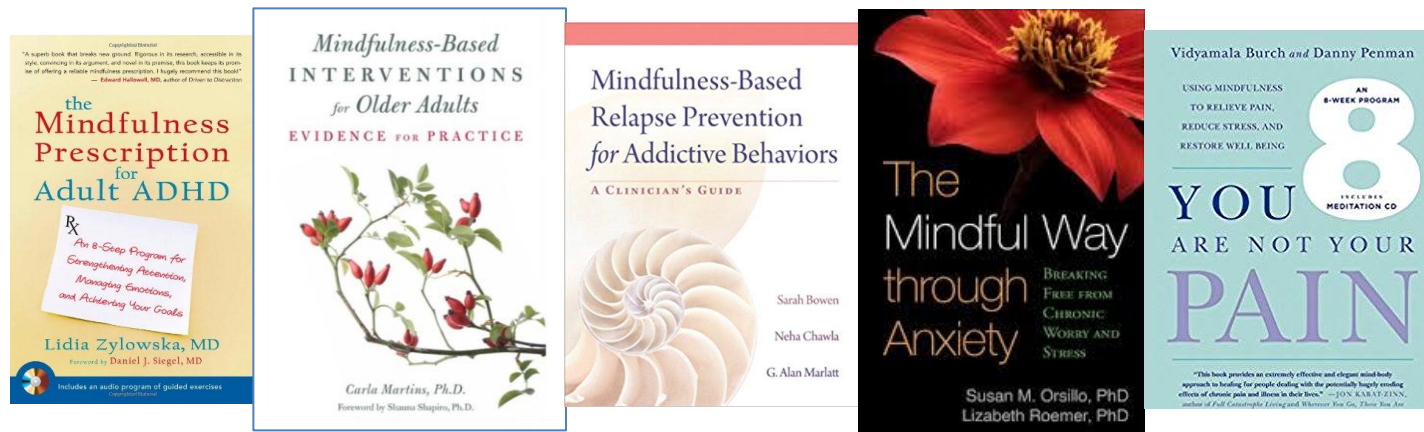
Myles Gutkin ,^{1,2} Loyola McLean ,^{3,4} Richard Brown ,^{5,6}
Richard A Kanaan ¹

19 studies were included

- 12 skills-based, CBT-like approaches vs 7 psychodynamic approaches
- 11 pre-post studies vs. 8 RCTs
- Most studies (except 4) included only one FND phenotype
- Effect sizes showed medium-sized benefits for physical (FND) symptoms, mental health, well-being, function and resource use for both kinds of therapies.
- Outcomes comparable across both types of therapy.
- Lack of controlled trials for psychodynamic psychotherapy.
- Lack of follow-up data in majority of CBT trials

Mindfulness-based interventions in clinical practice

- Mindfulness Based Stress Reduction (MBSR)
- Mindfulness Based Cognitive Therapy (MBCT)
- Dialectical Behavior Therapy (DBT)
- Acceptance and Commitment Therapy (ACT)



Targets of mindfulness in SSD/FND

Interoception abnormalities
Limited emotion awareness



Avoidance

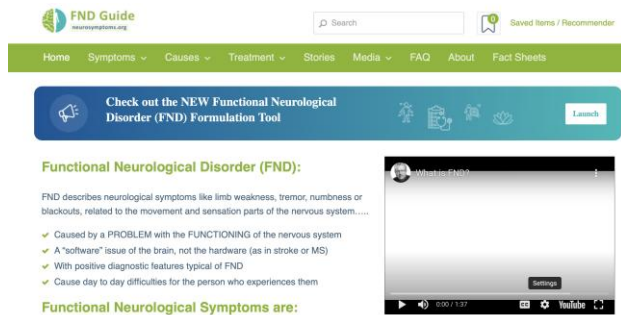
Somatic attention
Dissociative tendencies

Evidence of efficacy of mindfulness-based interventions across multiple clinical populations (including some with functional/ somatic etiology)

- Epilepsy (Tang, 2015; Thompson, 2015; Wood, 2017)
- Multiple Sclerosis (Grossman, 2010; Simpson, 2017; Bogosian, 2015)
- Traumatic Brain Injury (Azulay, 2013; Bédard, 2014; Cole, 2015; Tornås, 2016)
- Stroke (Lawrence, 2013; Levine, 2017)
- Mild Cognitive Impairment (Wells, 2013)
- Age-related cognitive decline (Gard, 2014)
- Subjective cognitive decline (Smart, 2016)
- Cross-diagnostic fatigue (Johansson, 2012; Ulrichsen, 2016)
- Medically unexplained symptoms (van Ravesteijn, 2013; Zargar, 2021)
- Depression (Lynch, 2003; Kingston, 2007)
- Anxiety disorders (Orsillo, 2005; Evans, 2008)
- Post-traumatic stress disorder (Bradley, 2003)
- Eating disorder (Safer, 2001)
- Addiction (Hayes, 2004)
- Borderline personality disorder (Lynch, 2004)
- Chronic pain (Hilton, 2017)
- ADHD (Janssen, 2019)
- Functional seizures (Baslet, 2021)

Benefits in different domains according to each study. Improvements noted in quality of life, perceived health and cognitive self- efficacy, ***symptom severity (seizures, functional seizures, fatigue, some cognitive measures)***, depression, anxiety, cardiovascular risk behaviors.

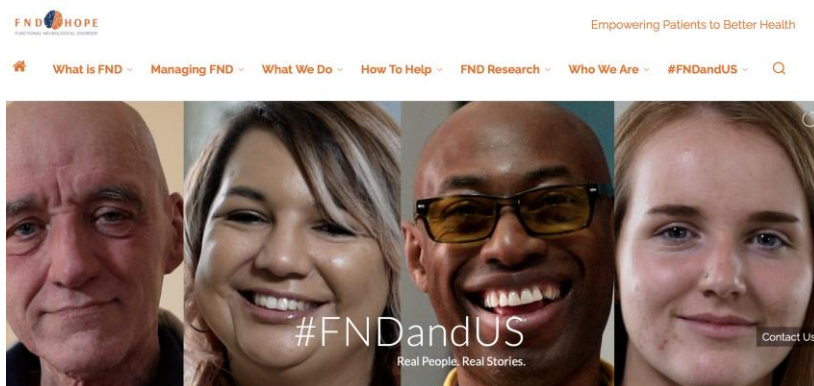
Role of education, patient support groups and self-help



neurosymptoms.org

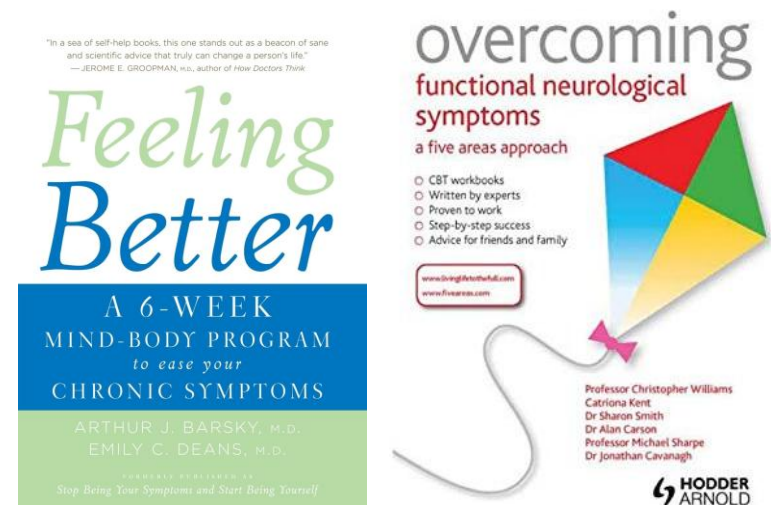


nonepilepticseizures.com



fndhope.org

Patient advocacy organization



CBT-based self-guided help books

Other therapies in SSD/FND

- Physical/ occupational/ speech therapy
- Graded exercise training for pain syndromes, chronic fatigue
- Hypnotherapy
- Prolonged exposure for comorbid PTSD and FS/ EMDR?
- Group therapy interventions
- Antidepressant treatment for IBS; gabapentin and pregabalin for FM
- Role of pharmacological treatment remains limited
- Noninvasive neuromodulation not ready for primetime for these diagnoses

FS: functional seizures; IBS: irritable bowel syndrome; FM: fibromyalgia

Henningsen, *Dialogues in Clinical Neuroscience*, 2018; Nielsen et al, *JNNP*, 2014; Baslet, *Neuropsychiatric Disease and Treatment*, 2013; Myers et al, *Epilepsy and Behavior*, 2016; Sharpe et al, *J Gen Intern Med*, 2022

Barriers to Care

Patient Related Barriers

- Lack of patient acceptance of diagnosis (stigma of psych factors)
- Avoidance tendencies
- External locus of control
- Symptom migration, heterogenous presentation
- Disability benefits
- Social isolation

Clinician Related Barriers

- Lack of knowledge and understanding by clinicians
- Lack of empathy and negative attitudes
- Concern for malingering or misdiagnosis, liability concerns (afraid of being wrong)
- Lack of collaboration with other professionals
- Lack of ownership for management of treatment

Healthcare System Related Barriers

- Lack of access to care (not just a problem in under-resourced areas)
- Lack of care co-ordination
- Lack of communication among different health care systems
- Lack of communication between providers.
- Highly specialized care may interfere with need for coordination

Tolchin and Baslet, 2017 in Dworetzky & Baslet: PNES: Toward the Integration of Care

Take-home messages

- Our understanding of SSD/FND has expanded in the last 2 decades with increased identification of neurobiological and cognitive processing mechanisms.
- Multidisciplinary collaboration allows for treatment of patients with SSD/FND with complex needs which can change over time.
- Evidence-based treatment for SSD/FND is limited but slowly growing.