



FND has undergone a significant conceptual shift in the past decade, from a diagnosis of exclusion to one made on positive clinical signs, but clinical practice is lagging behind.



The Paradigm Shift

Once judged as purely psychological, a 'conversion disorder', FND is now understood as a **disorder of brain function**.¹

FND is defined as 'a clinical syndrome with genuinely experienced neurological symptoms which are **distressing** and **impairing**, and show **dysfunction** of the nervous system'.¹



Subtypes:¹



Seizures: functional/dissociative seizures (formerly 'psychogenic non-epileptic seizures')



Cognitive: brain fog, memory difficulties



Motor: weakness or paralysis, dystonia, tics, tremor, jerks, gait disorder



Speech and swallowing: slurred speech, stutter, difficulty swallowing



Dizziness: persistent postural-perceptual dizziness



Visual: functional blindness

The DSM criteria currently cover only sensory and motor subtypes; cognitive FND and PPPD have separate, though related, criteria.³

Burden:

Incidence:
10–22 /100,000 **adults**
1–18 /100,000 **children**^{1,2}

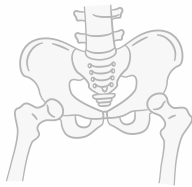
Prevalence:
80–140 /100,000^{1,2}

Morbidity and mortality:
Highest in the **seizure** subtype.¹

Diagnosis: Positive 'Rule In' Criteria

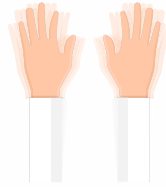
Diagnosis must be **positive**, based on the presence of **physical signs**, including but not limited to the following:⁴

1



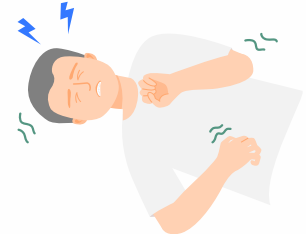
Hoover's sign: functional limb weakness⁵
Hip extension is weak on direct testing, but returns to normal when the opposite hip is flexed against resistance

2



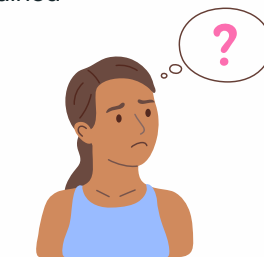
Tremor entrainment⁵
When the patient taps a **set rhythm** with the unaffected hand, the tremor matches that rhythm, stops, or can't be sustained

3



Functional/dissociative seizures^{5,6}
Sensations and states of **consciousness**; dissociative attacks with no ictal EEG correlate

4



Cognitive⁶
Memory difficulties that are worse during formal bedside testing than casual conversation

Other diagnostic considerations, including marked symptom fluctuation and the exclusion of alternative diagnoses, remain important when making the diagnosis.

In a 2024 survey of 580 patients, only one in 10 felt that their diagnosis was clearly explained.³



What We Know: The FND Brain

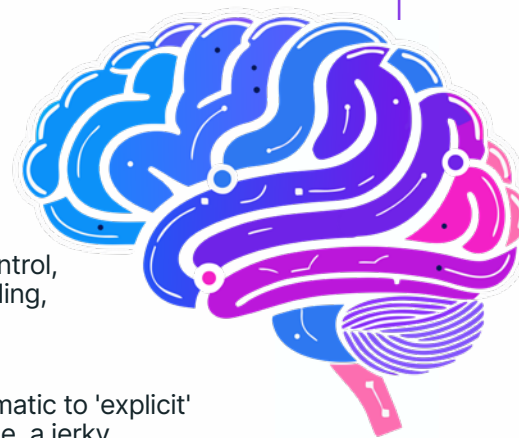
Psychological factors, including adverse life events, can increase the risk of FND alongside factors such as neurodiversity and coexisting neurological conditions.

fMRI shows **altered functional connectivity**.^{1,2}

FND is understood as a **disorder of brain networks** spanning emotion/salience processing, attention, motor control, sense of agency, predictive coding, and interoception.²

Motor control shifts from automatic to 'explicit' processing, causing, for example, a jerky, 'robotic' movement.³

There is **increased connectivity** between the amygdala and SMA, and executive-control regions show **reduced regulation** over motor systems.³

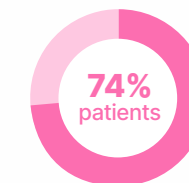


Evidence-Based Treatment: A Multidisciplinary Approach

The current evidence primarily favours the use of psychological and rehabilitative therapies for the treatment of FND, most commonly being physiotherapy for motor FND and psychotherapy for seizures.

A multidisciplinary approach for more complex cases could include:⁶

- **Physiotherapy:** facilitating/retraining normal movement
- **Occupational therapy:** supports self-management with interventions for energy conservation, graded activity resumption, sensory modulation, and vocational rehabilitation
- **Speech pathologists:** for those with speech, voice, language, cognitive-communication, and swallowing disorders
- **Psychologists:** Therapies such as CBT address functional symptoms, coexisting psychological conditions, and perpetuating factors relating to arousal, avoidance, fear of symptoms, emotional expression and awareness, and interpersonal conflicts



74% of patients who received multidisciplinary, symptom-based rehabilitation showed **clinically meaningful improvement**.⁷

The 2025 AAN functional seizures guideline, the first from AAN to focus on FND, states that psychological interventions may be effective in functional seizures.⁸

The guideline also recommends that antiseizure medications should not be prescribed for functional seizures without co-occurring epilepsy.

References:

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3. Phillips W. BMJ Neurol Open. 2025;7(2):e001309.
4. American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders: DSM-5™ (2013) 5th edition, Washington, D.C.: American Psychiatric Association Publishing.

5. Espay AJ et al. JAMA Neurol. 2018;75(9):1132–41.
6. Lehn A et al. BMJ Neurol Open. 2025;7(1):e000970.
7. Keatley ES et al. J Neuropsychiatry Clin Neurosci. 2026;DOI:10.1176/appi.neuropsych.20250222.
8. Tolchin B et al. Neurology. 2026;106(1):e214466.

Abbreviations:

AAN: American Academy of Neurology; CBT: cognitive behavioural therapy; fMRI: functional MRI; FND: functional neurological disorder; PPPD: persistent postural-perceptual dizziness; PTSD: post-traumatic stress disorder; SMA: supplementary motor area.