How Functional Neurological Disorder (FND) can evolve

An example pathway for Person B – a physical trigger (no trauma needed)

FND can develop after a physical event such as illness, injury, pain, migraine or another medical problem.
This diagram shows one possible pathway. Each step can influence the next, and the process can become a self-maintaining cycle, even when the original physical problem improves.

1 A physical trigger



e.g. illness, infection, injury, pain, migraine, surgery or another medical condition.

The person experiences a genuine physical change or unusual symptom.

2 The brain detects a change



The nervous system notices unusual signals from the body. This is important information, so the brain increases attention to the affected area.

3 Increased salience and protective response



The brain's salience/survival systems (e.g. amygdala, insula) mark this as important. This can lead to increased arousal, vigilance and a need to protect the body.

4 The brain starts predicting differently



"My leg might not be strong."
"It could give way."
"It might be unsafe to walk."

The brain forms new expectations about what is likely to happen.

5 More attention to the body



The person naturally monitors the leg more, checking how it feels and trying to control the movement. This increased attention can interfere with automatic movement.

6 Automatic movement becomes disrupted



Normal, automatic movement is less efficient. The brain relies more on conscious control, which can feel effortful and unnatural.

7 Altered sense of agency



The movement may feel different or involuntary. The usual sense of "I am in control" can be reduced.

8 FND symptom emerges



This can include:
- weakness
- difficulty moving
- freezing
- tremor or j
- altered gait
- or other functional symptoms.

The symptom is real and genuinely experienced, but it is due to altered brain network function rather than structural damage.

9 The symptom itself becomes a new signal



The symptom provides powerful new sensory information. It confirms the brain's prediction: "See, something really is wrong. I need to protect this body."

10 The cycle continues



The brain becomes more confident in the prediction, even if the original physical problem has improved. This can make the symptom persist.

This can become a self-maintaining cycle
The longer it continues, the more automatic the pattern can become.

What this means

FND can develop without psychological trauma. A physical event can genuinely change the brain's expectations about the body. Increased attention, protective responses and altered predictions can then disrupt automatic movement and the sense of agency. The symptom itself provides new information, which can reinforce the brain's prediction, creating a self-maintaining cycle. This explains why FND symptoms can continue even when the original physical problem has recovered.

Understanding this pathway can be reassuring. It shows that the symptoms are real, the brain is trying to protect you, and recovery is possible. Therapy, education and rehabilitation can help by reducing fear and over-monitoring, rebuilding trust in the body, and creating safe, successful movement experiences that help the brain update its predictions.

Recovery is possible



With the right support, the brain can learn new, safer predictions. This can reduce symptoms and restore confidence, movement and participation in daily life.

"Your brain is not broken.
It has learned a protective pattern.
And it can learn a new one."

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FND can develop without a history of psychological trauma. For some people, the process may begin with a genuine physical event such as illness, injury, pain or migraine. The nervous system naturally gives increased importance to unusual sensations or changes in movement. The brain may then begin forming new expectations about what the body is able to do. Increased attention to the affected part of the body may further influence these expectations and interfere with movements that would normally happen automatically. Current FND models describe altered attention, prediction and the brain's normal sense of agency as potentially important mechanisms in this process. Pathophysiology of functional neurological disorder for the general neurologist | BMJ Neurology Open, Functional neurological disorder: new subtypes and shared mechanisms - The Lancet Neurology

Over time, the FND symptom itself can provide further sensory information that reinforces the brain's expectation. For example, if a leg unexpectedly gives way, the brain has another powerful reason to expect difficulty the next time the person walks. A cycle involving **attention** → **prediction** → **altered movement** → **further attention** may therefore become established even after the original physical problem has improved. Importantly, this does not mean that the person is consciously producing the symptom. Functional weakness can demonstrate preserved movement under some circumstances, supporting the idea that movement may remain available but access to its normal automatic control has become disrupted

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