

Functional Neurological Disorder

Functional Neurological Disorder (FND) is a condition where the function (programming) of nerve pathways connecting the fear, movement and sensory control centres in the brain, becomes overactive in response to stress, threat or danger, leading to wide variety of (sometimes difficult to explain) symptoms; such as pain, anxiety, numbness, tingling, weakness, dizziness or blackouts. In FND, the terms 'stress', 'threat', 'danger' or 'trauma' mean the same thing and can all trigger FND. *Pain* is one of the most powerful stressors a person can face and is nearly always present in FND.

When animals and humans are threatened by danger, their brains produce a number of protective responses. The best-known is the '*fight-or-flight*' response. In this mode, the brain is 'switched-on' to be on the lookout for danger (like a Meerkat protecting its nest). As a result, the brain becomes supersensitive to all kinds of sensations in-and-around the body (called hyper-vigilance), including light, sounds, smells, changes in temperature, touch and pain. These sensitivities are very common in FND.

A lesser-known way the brain reacts to danger is by producing the '*faint-or-freeze*' response. You see this in nature films when an animal that is threatened by a predator, freezes or 'plays-dead' to escape detection. Humans also have a '*faint-or-freeze*' response to stress which produces symptoms like dizziness, fainting, blackouts and muscle weakness.

In FND, the danger processing centre in the brain called the *amygdala* becomes overactive and sends abnormal signals via nerve pathways to the fear, sensory and movement centres. These centres in turn generate abnormal symptoms such as fear, pain, dizziness, weakness, numbness and tingling.

At times of extreme stress, the brain goes into shutdown-mode (like CTRL-ALT-DEL on your computer) which can lead to difficult-to-explain changes in consciousness, paralysis, numbness, difficulties with speech, loss of vision, or out-of-body sensations and in rare cases, *functional non-epileptic seizures*.

Key points

- FND is a ‘real’ condition due to changes in the *function* (programming) of nerve circuits linking the *amygdala* (danger centre) to sensory and movement centres in the brain, in response to stress or threat.
- FND is not a ‘put-on’ condition, malingering or Munchausen’s disease; the person has no conscious control over their symptoms.
- FND may be misunderstood in the community and in healthcare as unexplained, unreal, malingering or abnormal illness behaviour.
- FND will not lead to permanent disability and always improves over time.
- Psychological stress (such as anxiety, pain and trauma) is the key trigger for FND; managing these stressors is vital for recovery;
- We can’t ignore the power our mind has over our bodily functions in FND.
- Mental healthcare (e.g. clinical psychologist, psychiatrist) to reduce anxiety and stress, and physiotherapy (to restore normal physical function) are the most important treatments for FND.

Managing FND involves:

- Making a diagnosis.
- Explaining FND to affected persons and their families and reassuring them it will improve over time.
- Helping affected persons to identify and manage the *psychological, social and illness-related stressors* that are driving their FND.
- Medications (for short periods) such as antidepressants to calm down the overactive brain circuits.

- Using psychological and physiotherapy techniques to calm-down and re-programme the hyperactive brain circuits, so they return to normal function.
- Encouraging persons with FND to return to a *normal way of life* as soon as possible (which is the best way to re-programme the brain to normal function).
- Health team members who manage FND include; psychologists, mental health professionals, physiotherapists, occupational therapists, neurologists, rehabilitation specialists and pain specialists.

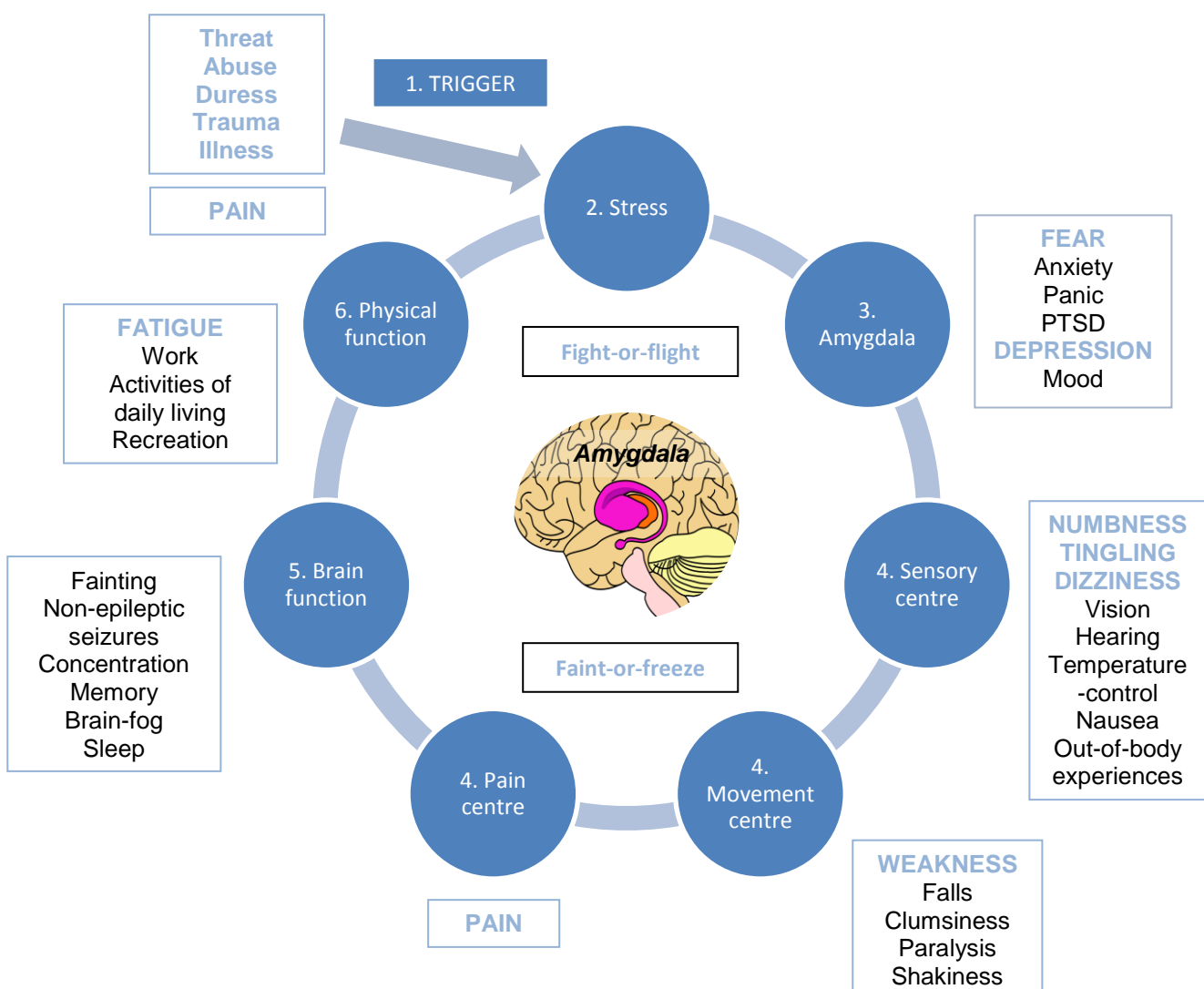


Figure 1. Functional Neurological Disorder and interconnected brain centres which generate abnormal symptoms at times of extreme stress or pain.