Functional Neurological Disorder (FND):

A Treatment Manual for Clinicians, Patients, Families, & Schools

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About this Manual

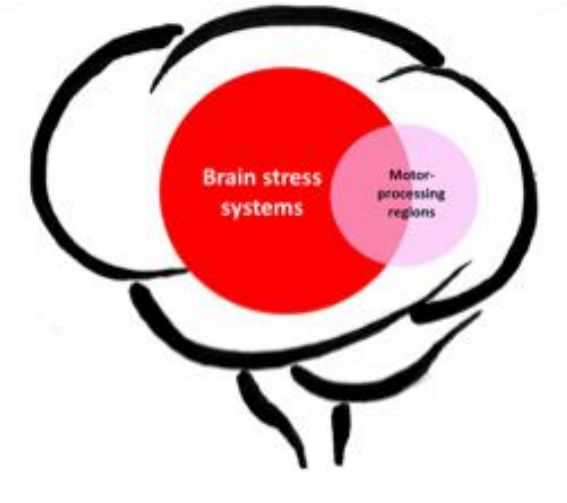
This manual is composed of two sections – Summaries of relevant literature and 'how to' guides for teams and clinicians working with patients with FND, and handouts for patients, families, and schools. It is advised that clinicians print out and provide relevant handouts at the appropriate stages in treatment.

What is FND?

Soma means body in Greek. A somatic symptom is a physical symptom resulting from stress and emotions, such as when people blush when embarrassed, or suffer a headache in response to stress. Somatisation is the psychological mechanism whereby psychological distress is expressed in the form of physical symptoms (Hurwitz, 2004). It can either occur on its own or alongside a physical illness or following an injury, exacerbating existing physical symptoms (Newlove et al., 2019).

Functional neurological disorder (FND), also known as conversion disorder, is a specific form of somatisation characterised by the occurrence of neurological symptoms due to malfunction, rather than neuropathology or neurological disease (Pepper et al., 2022). The essential feature of FND is the presence of symptoms that affect voluntary motor or sensory function. Typical symptoms include motor weakness, abnormal movements, non-epileptic/functional seizures, loss of sight, hearing, and touch, loss of speech and language, and psychogenic dementia (Hurwitz, 2004). The symptoms are not deliberately produced and can be associated with significant distress and disability (Ani et al., 2013).

Children and adolescents presenting with FND describe symptoms that are suggestive of a medical illness, but upon further history-taking and investigation, cannot be explained in terms of known pathology and pathophysiology (Krasnic et al., 2013). Emerging evidence from neuroscience research suggests that FND is a neuropsychiatric (mind-body) condition involving complex interactions between the brain, mind, body, and the lived experience of the child and family. Physical (e.g., illness or injury) and/or emotional stress (e.g., educational pressure or family or social conflict) triggers excessive activation of the brain's stress systems (salience, arousal, and emotion-processing regions), resulting in the over-connection with motor- and sensory-processing regions of the brain. Motor and sensory function is subsequently disrupted while pain processing is amplified (Kim et al., 2021; Kozlowska et al., 2020; Kozlowska et al., 2021).



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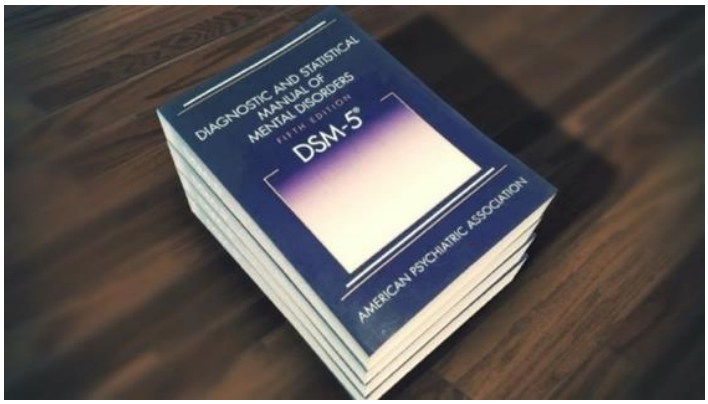
One Australian neurology publication reported FND in 15% of their sample of neurology patients (Pepper et al., 2022). An Australian surveillance study of FND in children and adolescents estimated an annual incidence rate of 2.3-4.2 per 100,000 children. There was a significantly higher incidence among girls, with 71% of the participants being female (Ani et al., 2013). It has been suggested that girls may be placed at increased risk of developing FND due to increased internalising coping styles compared with boys, who often have a tendency to manifest externalising behaviours (Malas et al., 2017). Gender ratios are roughly equal before puberty, however. Another Australian study revealed a mean age of paediatric patients diagnosed with FND to be 11.8 years. While a history of childhood trauma is common among adults with FND, a history of trauma has been found to be no more common among children with FND compared to rates of trauma in the general paediatric population (Wilkinson-Smith & Waugh, 2022).

In the DSM-IV, emphasis was given to making an exclusionary diagnosis and linking onset to a psychological trigger (Aybek & Perez, 2022). Having a co-existing psychiatric disorder or an identified precipitant is no longer a requirement for diagnosing FND (O'Neal et al., 2021). Rather, the presence of a psychosocial stressor is now recorded as being present or absent as an adjunctive specifier only. The new set of diagnostic criteria in the DSM-5 highlights the importance of making a rule-in positive diagnosis based on physical examination and symptomatology (Aybek & Perez, 2022). Australian Neurologists are encouraged to take this rule-in approach when diagnosing FND in an attempt to minimise iatrogenic harm (Pepper et al., 2022).

DSM-5 Diagnostic Criteria for Conversion Disorder (FND):

- **A.** *One or more symptoms of altered voluntary motor or sensory function.*
- **B.** *Clinical findings provide evidence of incompatibility between the symptom and recognised neurological or medical conditions.*
- **C.** *The symptom or deficit is not better explained by another medical or mental disorder.*
- **D.** *The symptom or deficit causes clinically significant distress or impairment in social, occupational, or other important areas of functioning or warrants medical evaluation.*



Specify symptom type:

- *With weakness or paralysis*
- *With abnormal movement (e.g., tremor, dystonic movement, gait disorder)*
- *With swallowing symptoms*
- *With speech symptom (e.g., dysphonia, slurred speech)*
- *With attacks or seizures*
- *With anaesthesia or sensory loss*
- *With special sensory symptom (e.g., visual, olfactory, or hearing disturbance)*
- *With mixed symptoms*

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Discussion & Understanding of Diagnosis

Treatment of FND is a process that begins with the diagnosing physician providing an explanation of the diagnosis conveying that: 1) There is an established diagnosis, 2) in most cases, FND can be diagnosed definitively with a neurological examination (rather than requiring unnecessary tests), and 3) the disorder is potentially reversible with treatment (Espay et al., 2018). FND causes a problem with the *function* of the nervous system, not as a result of damage to the nervous system itself (Nielsen et al., 2015). Rather, there is a problem with the 'software' of the brain communicating to the limbs (Stone, 2016), with symptoms occurring when the 'computer crashes' (Aybek & Perez, 2022). Physical therapies assist in 'retraining' the nervous system to help regain control over movement (Nielsen et al., 2015).

It is important for patients to understand that while their symptoms are very much 'real', they are rooted in complex interactions between the mind and the body, therefore having psychological origins. It is helpful to provide common examples of emotions affecting our physical state, such as sweaty palms and flushed cheeks. The key difference between an individual who blushes in response to public speaking and a young person with FND, is that FND patients typically are not consciously aware of the triggering stressor. The emotional response is thereby converted into a physical symptom (Krasnik et al., 2013).

Contemporary research findings suggest that the complex interactions between biological (e.g., genetics and malfunctioning neural network function), psychological (e.g., maladaptive coping strategies), and social (e.g., adverse experiences and the neuroplastic consequences of such) factors impact the neurobiology of FND. It is therefore important that patients and families understand that effective treatment requires an application of a holistic, biopsychological model of the patient's presentation (Kozlowska et al., 2021).

It is crucial for the treating team to use language that strengthens the therapeutic relationship, enables the patient to understand and accept the FND diagnosis, formulation,

and treatment plan, and directs the patient toward health-promoting thoughts, behaviours, and actions. Collaborative construction of the formulation assists with diagnosis acceptance and active involvement in developing an effective treatment plan (Kozlowska et al., 2021).

A dismissive approach to diagnosis communication can jeopardise the patient's confidence in the validity of their illness experience, potentially translating to rejection of the diagnosis and treatment plan (Pepper et al., 2022). Similarly, an incomplete diagnosis discussion fuels diagnostic uncertainty and mistrust while driving a search for additional diagnostic testing and alternative opinions that can delay or derail treatment (O'Neal et al., 2021).

A significant delay before confirming an FND diagnosis can negatively impact the patient's prognosis, with early diagnosis discussions correlating with improved patient acceptance. Education about the diagnosis and opportunities for patient questions should be considered an ongoing process rather than a one-time occurrence (O'Neal et al., 2021).

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Inpatient Rehabilitation

FND can be associated with disruptions to education, peer and family relationships, and engagement in extra-curricular activities. An inpatient admission may be warranted when the level of impairment is severe (Ibeziako et al., 2019). Effective treatment involves an interdisciplinary multi-modal, mind-body rehabilitation approach that assists children and adolescents regain independent functioning, improve physical and emotional well-being, and address triggers contributing to their stress at school, home, or within other important relationships (Cruz et al., 2014).

Completion of a thorough mental health assessment helps provide an understanding of how the patient's vulnerability characteristics, past experiences, and current circumstances translate to a manifestation of FND symptoms, thus assisting in planning the patient-centred admission (O'Neal et al., 2021). While it is usually advised that any required medical investigations are completed prior to the commencement of rehabilitation, it may be appropriate to proceed with treatment when investigations are delayed (Nielsen, 2016).

Rehabilitation programs begin with the basics of getting back to a regular routine, involving sleep, meal routines, and exercise/activity. A functional recovery is often observed before somatic symptoms decrease. Parents are recruited to support their child in working toward school reintegration while resuming engagement in extracurricular activities (Krasnik et al., 2013).

Psychologically-informed physical therapies as implemented primarily by Physiotherapists and Occupational Therapists, and where appropriate, Speech Therapists, implement motor rehabilitation strategies that assist the patient in retraining abnormal movement patterns and

malfunctioning neurological pathways, demonstrate that normal movement can occur, and change maladaptive behaviours related to symptoms. Graded exercise assists in addressing physical deconditioning and symptoms of chronic pain and fatigue, symptoms commonly associated with FND (Nielsen et al., 2015). The focus of attention is moved away from symptoms while playful activities indirectly engage the affected body part given that attention paid to symptoms and comorbid pain serves to worsen/amplify them (Gray et al., 2020; Kozlowska et al., 2020). Psychologically-informed physical therapies are embedded in a biopsychosocial framework with integrated psychological interventions including focusing on the therapeutic relationship while building the child's sense of mastery and self-confidence through use of positive reinforcement (Kim et al., 2021; Kozlowska et al., 2020).

The rehabilitation Psychologists complement physical therapy with interventions targeting emotional, cognitive, interpersonal, and physiological regulation processes, all of which serve to activate the brain's stress systems and trigger and maintain FND symptoms (Kozlowska et al., 2021). Top-down approaches including cognitive behavioural therapy (CBT), behavioural therapy, and motivational interviewing assist the young person in identifying how thinking affects their emotional states or specific behaviours. This enables the patient to challenge unhelpful cognitions (Espay et al., 2018), learn to accept panic without panicking, increase their low sense of control over symptoms (Lin & Espay, 2021), and address unresolved grief or other interpersonal issues. Mind-body techniques that use bottom-up regulation strategies including mindfulness, grounding techniques, diaphragmatic breathing, guided relaxation, and progressive muscle relaxation (Vassilopoulos et al., 2022) enable children and adolescents to develop a greater self-awareness that decreases somatic symptoms and alters pain perception by inducing a relaxation response (Drews & Bursch, 2010) while assisting them in implementing strategies to cope with identifiable stressors (Cruz et al., 2014).

Rehabilitation programs also incorporate daily attendance at the hospital school. School and educational difficulties are a common source of stress for children and adolescents with FND (Kozlowska et al., 2021). Cognitive difficulties and low academic performance are associated with a higher predisposition for developing FND for adolescents, particularly for those who perceive high parental expectations (Malas et al., 2017). A tendency to work too hard (in the context of high self-expectations and perfectionism), social difficulties with peers, bullying, and school absenteeism (and subsequently falling behind academically) are additional psychosocial difficulties that need to be identified and addressed (Kozlowska et al., 2021).

Prolonged school absence can provide children with a source of unconscious secondary-gain that can reinforce FND symptoms, including spending additional time with parents. High achieving students also often find that the 'sick role' provides escape from school-related demands (Wilkinson-Smith & Waugh, 2022). The treating team work with patients and their families to minimise secondary gains from illness behaviours while reinforcing health-focused behaviours in place of the 'sick role' (Malas et al., 2017).

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Treatment Goals, Contracts, & Discharge Planning

Effective partnership with young people and families is imperative throughout treatment. At the beginning of the admission, rehabilitation goals are developed in collaboration with the patient and family, ensuring goals and expectations align. If appropriate, a contract outlining admission expectations may be developed for the patient to sign (e.g., number and duration of sessions and agreement that therapy and school attendance takes priority over time spent in recreational areas such as the Starlight Room, for example). This assists in facilitating a smooth discharge while pre-empting problems that can arise during treatment (Nielsen, 2016).

The discharge plan is discussed with the patient and family at the beginning of the admission. Patients are prepared for the possibility of symptom exacerbation or relapses post-discharge, with the emphasis on enabling them to self-manage setbacks utilising strategies implemented during the admission (Baker et al., 2021). A self-management/relapse prevention plan which includes strategies to prevent a return to unhelpful behaviours (e.g., pacing, graded activity, CBT strategies, breathing and relaxation exercises) and future goals with realistic timeframes is developed during the admission (Nielsen et al., 2015). Thoughtful planning assists in preventing a readmission, with readmissions frequently proving counterproductive with respect to self-management and resuming school attendance and participation in regular activities.

A rehabilitation progress meeting is organised during the final week of the inpatient admission to further discuss discharge planning. This may involve discussion about how parents can support their child in implementing self-management strategies while avoiding behaviours that can exacerbate their child's distress and disability. For example, frequently monitoring and asking about their child's symptoms can serve to heighten their child's focus on their impairment. It is more helpful for parents to briefly acknowledge their child's symptoms before encouraging them to engage in activity and distraction (Drews & Bursch, 2010).

The frequency of therapy sessions is tapered, enabling greater opportunity for self-management while taking overnight leave and attending a school visit (the patient's formal school). This enables the patient, family, and treating team to iron out any problems encountered prior to discharge. A comprehensive rehabilitation discharge report is provided, summarising the intervention and reinforcing discussed strategies (Nielsen, 2016).

Treating teams can support the transition back to school by liaising directly with the school regarding the diagnosis, subsequently developing a plan with staff regarding school reintegration (which may involve a graded return) and concrete guidelines for symptom management in the educational setting (Malas et al., 2017). Understandably, school staff

commonly express concern caring for children with FND who present with symptoms such as functional seizures (that can include episodic unresponsiveness, shaking of limbs, 'fainting' episodes, and altered awareness, Vassilopoulos et al., 2022) and/or weakness who are therefore at increased risk of falls. Providing education to school staff regarding the generally good prognosis of FND can assist in alleviating systemic anxiety regarding the student's safety, thereby preventing the loss of the social contact and routine regularity that school provides (Wilkinson-Smith & Waugh, 2022).

Development of social scripts to assist children and adolescents in responding to peers who may enquire about their diagnosis, symptoms, and/or school absence can also be extremely useful (Vassilopoulos et al., 2022).

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Relapse Prevention Planning

Peaks and troughs are often observed during the recovery course for FND given it can be a relapsing remitting condition (Stone et al., 2020). Relapses can occur following the implementation of even the most effective treatment. It is important to normalise this at the beginning of the patient's journey. This provides a rationale for developing a self-management/relapse prevention plan from the outset, detailing helpful coping strategies.

Helpful relapse prevention plans should consider the following whilst promoting self-management of FND symptoms:

1) What have you learnt about your condition?
2) What factors trigger or worsen your symptoms?
3) What are the most helpful coping/management strategies you have been implementing?
4) What plans can you put in place if you notice your symptoms and/or function worsening (Nicholson et al., 2020)?

A reassessment of current functioning and symptom triggers can be beneficial at the point of relapse, enabling a revision of goals. Even in the absence of a significant reduction in symptoms, a continued focus on function and reengaging in routines and activities is extremely important.

Readmissions to an inpatient setting are generally discouraged unless the patient and family are unable to safely manage at home in the instance of significant functional impairment. Instead, outpatient reviews and appointments can be used to increase the patient and family's resilience and confidence in their capacity to manage symptoms through use of strategies in their FND 'toolkit'.

For some patients with significant comorbid mental health difficulties, relapses can be best managed by focusing on mental health intervention and/or family work. Additional physical rehabilitation may be more appropriate at a later time for a subgroup of this population should functional impairment remain after mental health difficulties have been managed. Psychological difficulties can become more apparent for some patients with a diagnosis of FND once their functional impairment has significantly improved. Referral to community-based Psychologists and/or tertiary level mental health services (as appropriate) should be considered for all FND patients to provide ongoing support.

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When Treatment Does Not Achieve Desired Outcomes

While research has indicated that approximately three quarters of children who received specialist interdisciplinary treatment for FND returned to full health and resumed full-time school attendance, outcomes have been less favourable for those who presented with chronic motor symptoms from the outset. Cognitive vulnerabilities and the presence of comorbid mental health and/or functional somatic symptoms that do not resolve were identified as additional risk factors for a poor prognosis (Perez et al., 2021).

Treatment has also found to be less effective in the instance whereby patients and families experience difficulty understanding and accepting the FND diagnosis or have very fixed views about an alternative diagnosis, given this negatively impacts upon engagement in the rehabilitation approach. Misunderstanding of the diagnosis has also been found to be a barrier to patients initiating treatment (O'Neal et al., 2021). There are also a group of patients with FND who do understand their diagnosis and comply with treatment, yet remain symptomatic.

While it is important for both health professionals and patients to acknowledge when treatment has not been particularly helpful (Stone, 2016), given the fluctuating nature of FND, it is important to consider that gains may be possible in the future. Re-engaging in rehabilitation may be advantageous for some patients at a later date, and can be assessed during a follow-up appointment (Nicholson et al., 2020).

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Functional Seizures

Functional seizures, previously more commonly known as pseudoseizures or psychogenic nonepileptic seizures (PNES), resemble epileptic seizures in symptomatology yet are not caused by abnormal epileptiform electrical activity in the brain (Tilahun & Bautista, 2022). Functional seizures are sudden, time-limited episodes of neural network dysregulation that typically results in a loss of voluntary control of motor function and can also result in a change in consciousness (Savage et al., 2022).

A duration of more than two minutes is specific for functional seizures when differentiating these episodes from epileptic seizures (Aybek & Perez, 2022). Fluctuating patterns of movement and distractibility during the episode is suggestive of a functional seizure (Tilahun & Bautista, 2022). Other features can include preserved consciousness, closed eyes, rapid side-to-side head movements, pelvis thrusting, arching back, vocalisation, abnormal speech, crying, and stuttering. Rapid recovery and the absence of post-ictal confusion is typical following a functional seizure (Aybek & Perez, 2022).

Provided that the patient does not have comorbid epileptic seizures, discussion with the patient and family about functional seizures should clearly clarify that the patient does not have epilepsy and does not require antiseizure medications. Rapid weaning of antiseizure medications following the diagnosis discussion is associated with improved outcomes in comparison to delayed titration (Tilahun & Bautista, 2022).

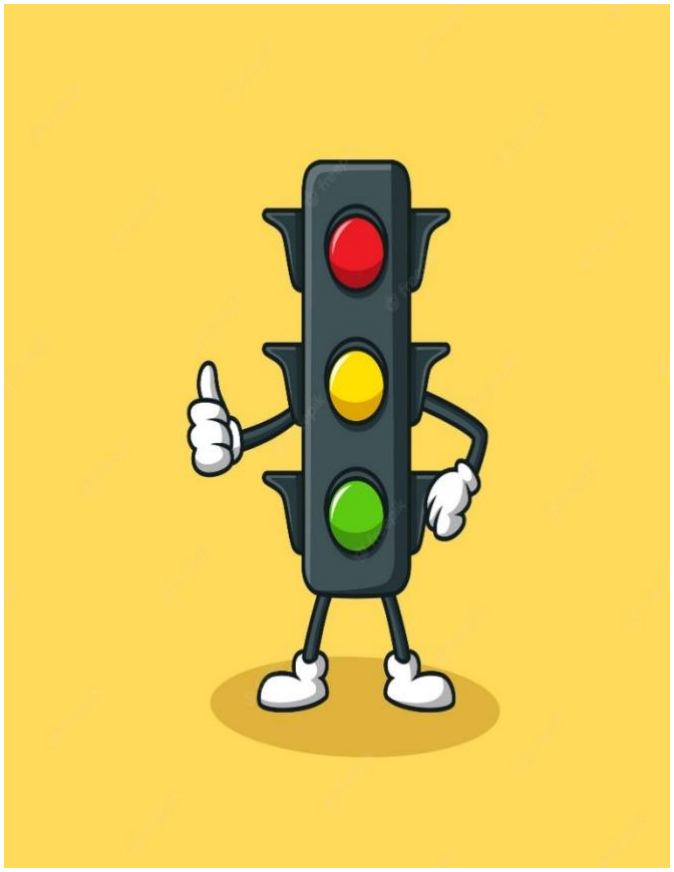
'Treatment of Functional Seizures in Children and Adolescents: A Mind-Body Manual for Health Professionals' is a comprehensive guide written by Savage et al. (2022) that details the best practice for managing functional seizures. These authors report that their research revealed that approximately 50% of children and adolescents with functional seizures trigger these events by hyperventilating, with brain arousal and neural network destabilisation subsequently increasing (Savage et al., 2022).

Savage et al. (2022) recommend a five-step plan for managing functional seizures, namely:

1) **Assist the patient in identifying the warning signs of a functional seizure.** This involves providing psychoeducation emphasising that functional seizures are not causing harm and that the young person can learn strategies to reset their temporarily overactivated and dysregulated neural networks to return to normal function. Patients are supported in identifying their warning signs, subsequently practicing mind-body strategies to either prevent or manage the functional seizure. Body maps whereby the patient draws what happens in their body immediately before, during, and after functional seizures (with different colours representing the three different stages) can assist in increasing awareness of body sensations, translating in an increased capacity to identify warning signs.

2) **Ensure the safety of the patient.** Patients are instructed to move to a safe space to sit or lie down upon identifying the presence of warning signs that they may experience a functional seizure.
3) **Implement mind-body regulation strategies to avert the functional seizure.** A main focus of an FND treatment intervention is to collaboratively develop a toolkit of strategies that the patient can implement to interrupt over-activation to calm the mind and body. Upon identifying the presence of warming signs, patients may initially engage in distraction techniques. Breathing and relaxation exercises can subsequently be used to attempt to avert functional seizures.
4) **'Ride out' functional seizures.** Should implemented strategies fail to avert a functional seizure, patients are encouraged to 'ride out' the episode, allowing it to run its course. Savage et al. (2022) liken the above to 'surfing the wave', allowing the functional seizure to 'dump' and 'thrash around' the surfer before they swim back to the water's surface.
5) **Implement regulation strategies to calm the mind and body following a functional seizure.** Patients are encouraged to spend 5-10 minutes of quiet time following a functional seizure to implement strategies to calm and regulate their mind and body. Patients are then encouraged to gently resume their previous activity.

Savage et al. (2022) detail the helpfulness of translating the above five-step plan into a visual 'Traffic Light Safety Plan for Managing Functional Seizures', as developed by Laskowski and Kozlowska (2019). The green light phase details the signs (including body sensations, thoughts, feelings, and behaviours) and strategies associated with when the patient is feeling safe and settled. The amber light represents the phase associated with the patient experiencing warning signs that they may experience a functional seizure, with strategies including moving to a safe space before implementing regulation techniques. The red light is associated with the presence of a functional seizure, with patients being reminded to 'ride out' the episode before implementing regulation strategies prior to resuming their previous activity.



Functional seizure management involves parent work to equip parents and caregivers with the confidence to remain calm during episodes, quietly monitoring from a distance (Savage et al., 2022). Should parents find it too anxiety provoking to observe a functional seizure, they may nominate a preference for another caregiver to assume this role in the interim.

Given the importance of both building patients' confidence in their capacity to self-regulate and minimising secondary gain associated with FND, providing excessive comfort and reassurance during and following a functional seizure (e.g., supporting or stroking the patient's head or holding their hand) is strongly discouraged.

Instead, it is more helpful for parents and caregivers to support their child in implementing learned strategies. Inviting parents and caregivers to sessions where they can practice breathing and relaxation exercises alongside their child can be an effective method of demonstrating the techniques' effectiveness in calming the mind and body.

Extreme measures including calling for an ambulance are to be avoided, if possible, and decrease the patient's confidence in their ability to 'ride out' their functional seizure.

Effective communication with schools is of paramount importance with respect to ensuring consistency in functional seizure management. A medical letter confirming that the student's seizures are functional and non-epileptic in nature is an extremely containing resource for schools alongside a copy of the five-step functional seizure management plan. Most schools are extremely supportive of ensuring the student has a safe, quiet space to implement regulation strategies before, during, and after functional seizures (e.g., use of the sick bay or quiet space in the library). Supporting schools in implementing both a graded return to school and appropriate modifications to student support and workload often plays a crucial role in minimising stressors associated with the presence of functional seizures.

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The Role of Physiotherapy with FND Patients

Indication for Physiotherapy Input:

- Aim to improve function
- Guide steps away from the illness role
- Prevent or treat secondary complications
- Can be an effective avenue if the patient displays resistance to Psychology intervention
- It is important to ensure there are no outstanding medical Investigations

Aims of Physiotherapy Input:

- To restore function
- To develop goals
- To work in collaboration with other treating team members

Initial Physiotherapy Contact/Assessment Session:

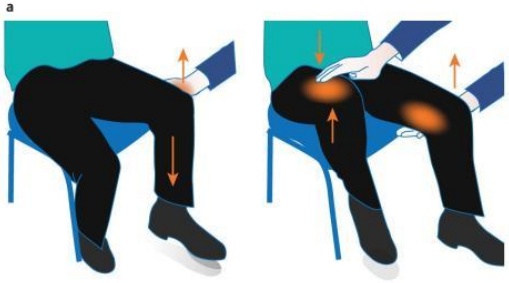
Subjective:

- Be aware of non-verbal communication
- Listen to the patient's story - Demonstrate active listening, acknowledge that the patient's symptoms are real and disabling. Hear it in their own words, listen at length to all symptoms and dig deep - This builds trust!
- What have they been told/understand/accepted?
- Enquire about the patient's expectations of therapy - What do they think is wrong/needs to be done?
- Identify key goals

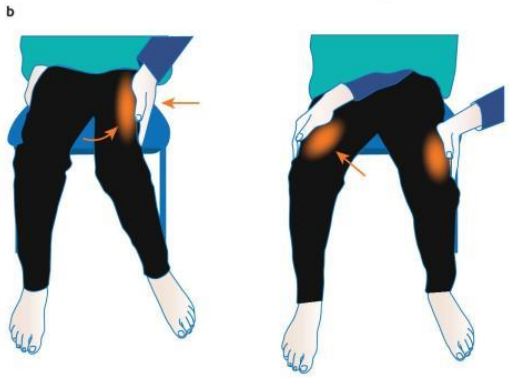
Objective:

- FUNCTION and DISTRACTION - Play a game with younger kids
- Observe while the patient is distracted/comfortable/at rest
- Because formal assessments can exacerbate symptoms, focus more on functional movements
- Use positive rule-in signs (e.g., Hoover's Sign) to educate about the FND diagnosis
- Consideration of outcome measures
- What might be seen in assessment/observation?
    - Gait disturbance is decreased when the patient is distracted

- Hoover's Sign (figure a): Weakness of hip extension which returns transiently to normal during contralateral hip flexion against resistance

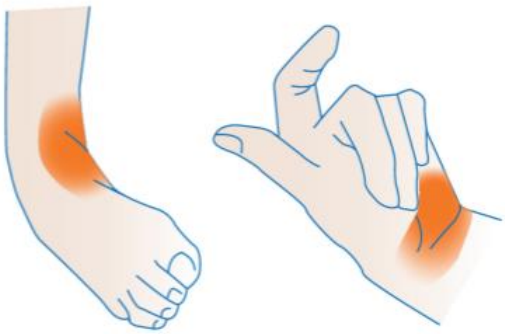


- Hip Abductor Sign (figure b): Weakness of hip abduction that returns to normal with contralateral movement



- Tremor Entrainment (refer to figure below): If, when the patient copies the examiner's rhythmical movement of thumb and forefinger with their better side and the affected side functional tremor ceases during the entrainment test, distractibility is demonstrated

- Functional Dystonia: Typically presents with a fixed position, usually a clenched fist or inverted ankle. This is different to other types of dystonia which are usually mobile



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Communicating Assessment Findings:

- Go through what you have observed and explain what this shows us
- Reassure that what you have seen fits with the FND diagnosis
- Re-cap functional capacity and challenges to identify goals
- Explain how we will use the assessment information to plan the treatment approach
- Discuss the treatment theory of FND

Function-Focused Goals:

- Goals are formulated with the interdisciplinary team (e.g., return to school)
- Physical goals – Develop short-term (e.g., sit up in the chair for meals) and long-term physical goals (e.g., walk to school for three kilometers), adding to the shorter-term goals on a daily basis as they are achieved
- Physiotherapy session goals/tasks (e.g., beat the Physiotherapist at balloon tennis)

Use a Traffic Light Intersection Metaphor to help explain Motor Disturbance:

- Under normal circumstances, the traffic lights are synchronised and the traffic flows smoothly ***(walking is automatic – you normally do not need to think about it)***
- Malfunctions can occur and the lights flash orange, resulting in the cars ceasing to flow smoothly ***(the difficulty walking that some FND patients experience)***
- The traffic may need assistance (by traffic police or others) to navigate through the intersection while the lights are flashing orange ***(health professionals working with the patient and family)***
- The lighting malfunction is fixed ***(health professionals working with the patient and family)***
- Traffic flow resumes ***(patient begins to resume walking smoothly)***
- Drivers whose cars were affected may brake as they approach the intersection in the coming days as they remember the malfunction. This braking may cause collisions and stop the traffic flowing again ***(patient may focus internally on the how to move rather than on the external goal of completing a task e.g., focusing on how to stand up to shoot a ball through a net rather than focusing just on the outcome/task of getting the ball through the net)***
- As the drivers become confident that the malfunction is fixed, the traffic will flow smoothly ***(patient walks smoothly all the time)***

The Importance of Rapport in Physiotherapy Sessions:

- Maintain a mutual trust and respect
- Phrases such as "This is familiar" help patients feel they are being heard
- Highlight the potential for reversibility of FND with treatment
- Share positive rule-in signs to build confidence in the diagnosis
- Work as a team and provide the patient with the opportunity to be involved the interdisciplinary team process
- Establish expectations
- Make note of the patient's interests
- Be mindful that symptoms will be exacerbated by both stress and attention
- Provide education about focusing on function, with gains gradually translating to a reduction in symptoms and pain over time

Key Elements of Physiotherapy Sessions:

- Importance of choice for patient - Involve them in planning the sessions
- Presence of family in sessions – Parents/family members usually do not attend sessions, but may join the latter part of a session to observe the modelling of supportive language and approach to therapy. This helps to upskill parents as they prepare for their child's discharge
- Avoid taking a passive approach and discourage both dependence and the sick role – Instead, encourage normal, independent, functional movement and activity
- Avoid the patient feeling a sense of pressure in sessions - Keep things light and chat
- Avoid reflecting on symptoms
- Initially validate but then quickly move on to distraction
- Reinforce terminology and strategies used by the interdisciplinary team (e.g., fidget toys, diaphragmatic breathing, traffic light plan for functional seizures)
- Establish expectations (e.g., attendance at sessions, hard work, fun, progress), including the role of homework, and develop a plan with the patient
- Normalise that patients sometimes experience pain, fatigue, and/or discomfort as they participate in physical therapy
- Explain the mind/body connection and the disruption that occurs for FND patients
- Provide validation that while symptoms are not under voluntary control, Physiotherapy is safe and promotes the rewiring of connections
- Perform tasks on unaffected side if the patient is not engaging with their affected side

Attention Diversion in Physiotherapy:

- Managing the patient's focus of attention is the key aim of sessions
- Avoid 'tricking' the patient - Be explicit and transparent, explaining your approach (e.g., you will not be focusing on symptoms/affected side) to the patient and family
- Plan tasks with bigger end-point goals
- External versus internal focus (e.g., for sit to stand, perform the whole movement as part of the goal of putting a ball through the hoop rather than breaking it down)
- An element of competition often works well (e.g., beat the Physiotherapist at UNO while standing)
- Initially avoid reflecting on symptoms or progress/functional gains
- A perception of having to perform under pressure often translates to increased difficulty for patients
- Implement distraction – Play music (the patient may like to compose a Physio playlist for sessions) and engage the patient in cognitive tasks (e.g., counting backwards, catching/throwing a ball, chatting)

Planning Physiotherapy Sessions:

- Selected activities should achieve therapy goals - Be realistic and plan measurable goals
- Select activities that enable the focus to be taken away from the symptom or presenting problem
- A progressive, graded exercise approach is recommended, adding more time, repetitions, or difficulty to tasks in order to challenge the patient
- Tasks are progressed based on mastery - Once a patient has mastered a task, progress to the next task
- Tasks should not be practiced if they are performed incorrectly
- Apply a graded approach, foster achievement, pleasure, and a sense of control by including the patient when planning sessions
- Pleasurable exercise activates brain-body states
- Set homework tasks

Example Physiotherapy Session Plan:

Short-term goals:

1. Sit upright on couch in room
2. Remove footplates from wheelchair
3. Kneel at basin to brush teeth
4. Add a new short-term goal daily

Long-term goals:

1. Sit in a standard school chair
2. Attend a school excursion
3. Walk the dog
4. Return to playing basketball

Example movement program:

Movement	Description
1. Beat the Physio at balloon tennis	Sit on a fit ball with two taps being allowed per shot
2. Learn boxing technique in high kneeling	Protect face and use jabs, hooks, and upper cuts
3. Score three goals in basketball shooting	Use a small ball with any distance from the ring being permitted

Physiotherapy Input During Functional Seizures:

- Refer to the five-step plan for managing functional seizures detailed by Savage et al. (2022) and summarised in the below diagram
- Encourage use of learned mind-body self-regulation strategies
- Step back to give the young person space to implement learned strategies

Gait Aids:

- While use of gait aids is usually discouraged, this is not always possible
- It is better for the patient to move with an aid than not at all
- Be transparent in advice/reasoning – The patient may use the aid as a task prompt strategy (e.g., if the patient is dragging their left foot, use a ball on the end of a walking stick and step to the ball to discourage dragging)
- Wean use of gait aids as soon as possible
- Avoid excess assistance

Managing Falls:

- The less support provided, the better
- Set up safety mats (or similar) and allow patients to fall – Patients tend to protect themselves
- Establish boundaries on assistance – Ensure the safety of the nursing staff, family, and yourself
- Explain safety boundaries to the patient (e.g., "I can't catch you")
- Follow the falls protocol at your place of employment

Interventions – Bedbound Patients:

- Implement bed-based exercises with use of distraction (e.g., push down on playdough with feet, stretch leg to reach balloon/ball, lift bottom to reach toy/object underneath
- Play a game with the patient sitting on the edge of the bed (e.g., throw/catch a balloon/ball, play UNO, or do a puzzle)
- While engaged in distraction (e.g., counting backwards or counting in another language, or seeing if the patient will stand up to either catch a ball or high five), see if the patient can sit to stand from the edge of the bed

Interventions – Beyond Bed Bound:

- Lower Limb activities:
  - Hydrotherapy
  - High kneeling/walking with an activity such as bowling or boxing
  - Sitting on a fit ball with feet on floor playing balloon tennis
  - Reformer Pilates for older patients
  - Plank hold and progress to taking sideways steps
  - Sit to stand with a standing goal
  - Wii, hula hoop, dancing
  - Stepping over objects in rails
  - Heel toe walking
  - Progress to functional activities

- Upper Limb – Engage in the following with the patient either standing, sitting, or kneeling:
  - Balloon tennis
  - Arts and crafts activities
  - Cooking
  - Board games
  - Wii games

Potential Barriers:

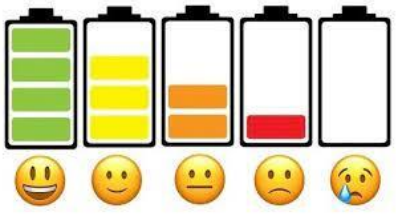
- Pain/headaches – It is important to agree upon boundaries of tolerance and treatment
- Nausea/dizziness – Teach the patient to manage these symptoms through education and taking regular breaks
- Fatigue – Implement pacing strategies and use a timetable (please refer to the following section), in addition to ensuring that all team members have an aligned approach to fatigue management to avoid the patient over-exerting themselves

Amanda Apple, Senior Clinical Physiotherapist, VPRS

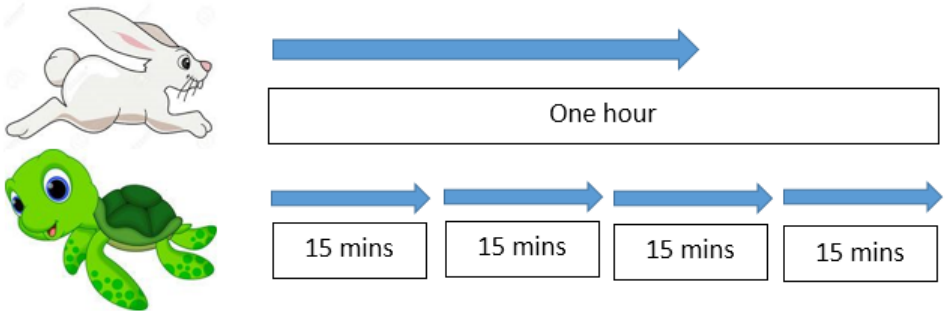
Pacing & Use of Timetables

Given the frequency at which FND patients present with symptoms of fatigue and deconditioning, it is helpful to promote use of pacing strategies to assist children and adolescents to learn to balance activity and rest as they return to school (often in a graded fashion) and resume extracurricular activities.

It is helpful to provide the analogy of one's energy supply being comparable to a mobile phone battery that requires a lengthy recharge after being completely drained before the phone can be used again. In contrast, regular phone-charges allows one to use their phone throughout the day without interruption. Similarly, when patients with FND carefully plan and balance activity with rest, they can minimise the chance of completely draining their supply of energy and exacerbating their FND symptoms.



Use of timetables is an effective technique for children and adolescents to plan their day or week and visually map out a balance of activities requiring low, moderate, and high amounts of energy with planned, regular rest breaks. This should include essential activities including meals and self-care tasks, in addition to therapy and educational requirements (including completion of homework tasks for both), social/leisure activities, and mind-body techniques to assist in recharging their 'battery'. Using a timetable can assist individuals in identifying large, effortful tasks which would benefit from being broken down into smaller chunks with rest breaks in between.



Once a consistent routine is established, activity levels can be gradually increased by continuing to ensure tasks are balanced throughout the week, adding in small steps towards the young person's goals.

In combination, these techniques support individuals to prioritise what is important to them and take proactive steps to gradually resume their previous activities in a sustainable manner.

Dr Kelly Thompson, Senior Clinical Psychologist & Ella Barry, Senior Occupational Therapist, VPRS

Psychologically Informed Speech Therapy

Functional communication problems (e.g., dysphonia, dysfluency and language and articulation disorders), swallowing disorders (dysphagia and globus), cough, and upper airway symptoms are commonly encountered by Speech Therapists working with children and adolescents with FND (Baker et al., 2021).

Speech Therapists play a pivotal role both in the diagnosis and treatment of functional voice disorders, particularly when children present with functional aphonia, functional dysphonia, significant anxiety about swallowing, choking phobias, or chronic symptoms of "tic" or "barking" cough (Kozlowska et al., 2021).

The Speech Therapist prioritises rapport building and the creation of a therapeutic space where the patient feels safe to convey (via whatever communication method they can) any changes they have observed in their speech, voice, swallowing, or cough, in addition to detailing the circumstances they recall being associated with the onset of their functional voice disorder (Kozlowska et al., 2021).

Assessment involves taking a detailed psychosocial history and a formal oromotor/speech assessment including elicitation of positive signs (Kozlowska et al., 2021). Positive clinical features may be observed during history taking, during the standard motor speech examination, or may be observable in the child or adolescent's social utterances and activities, specific speech or swallowing tasks, or conversational speech (Baker et al., 2021).

Positive clinical features of functional communication and swallowing disorders:

Positive clinical signs of FND	General examples in functional communication & swallowing disorders
Symptoms are inconsistent with clinical examination and laboratory/imaging findings	• Severity of speech deficit is disproportionate to severity of injury or locus of lesion • Total or partial loss of voice despite normal structure and function of vocal folds during laryngoscopy
Symptoms are internally inconsistent	• Resolution or reduced severity during small talk or other spontaneous discussion, when attention is diverted, or during natural automatic functions, preverbal and/or automatic utterances, playful, emotionally expressive activities, and during laryngeal manipulation (voice disorders) • Suggestibility (e.g., the symptom becomes significantly more prominent whilst being discussed)
Symptoms are associated with inefficient and non-ergonomic patterns of movement	• When weakness is major complaint, speech, voice, swallowing fatigues in the direction of muscle hyperfunction • Struggle behaviours – Overmouthing, eye blinking, facial contortions, excessive effort in breathing, neck, shoulders, strap muscles, shifts in body posture – including during non-speech oromotor tasks

Adapted from Baker et al. (2021)

Comorbid structural pathology should be excluded early in the diagnostic process, even when a functional diagnosis is likely – the presence of 'structural' pathology does not exclude an FND diagnosis, which can be comorbid with structural or neurological disease, possibly representing 'functional overlay' (Baker et al., 2021).

Early speech therapy intervention can facilitate a rapid resolution of symptoms (Kozlowska et al., 2021). Many patients referred with functional disorders of communication, swallowing, and cough achieve some improvement or even elimination of one or more, and occasionally all of their symptoms during the initial consultation. Others require several therapy sessions of symptomatic/behavioural work, integrated with counselling. Intensive therapy with several sessions per week may be most successful in assisting patients to regain normal function and inhibit abnormal movements or struggle behaviours (Baker et al., 2021).

Speech therapy may include symptomatic, behavioural and/or psychological interventions along with ongoing education about the patient's FND diagnosis to reinforce and consolidate their understanding about the condition. Consistent with the principles of Occupational Therapy and Physiotherapy FND intervention, symptomatic management of functional communication, swallowing, and cough disorders involves learning or retraining motor patterns while highlighting the ways in which attention, expectations, and illness beliefs may inhibit normal movements and promote abnormal movements (Baker et al., 2021).

It is important to explain how the patient's symptoms differ from those associated with normal speech, voice, swallowing, or cough, subsequently drawing attention to the inadvertent and unnecessary efforts being used in particular muscle groups, such as in the head and neck, face, upper torso, and shoulders – As an example, patients are often surprised to learn that producing a hoarse whisper requires excessive effort (Baker et al., 2021).

The Speech Therapist engages children and adolescents with FND in fun and collaborative activities including parallel play, art/drawing, and singing to counteract the activation of the brain stress systems that triggered the functional speech impairment (Kozlowska et al., 2021). This technique is imperative to working with FND patients given that conscious self-focused attention on the minutiae of the mechanics of motor tasks negatively impacts both performance and learning. In contrast, focused attention on the target of the enjoyable activity and desired outcomes of the task is generally more beneficial (Baker et al., 2021).

Playful and distracting activities are used to facilitate automatic patterns of sounds, words, and movement – vocalisations the therapist can help shape into automatic utterances which can be gradually transitioned into easy, relaxed verbal exchanges. Over time, this enables the patient to regain voluntary control over the initiation and maintenance of voice and movements (Kozlowska et al., 2021).

Please refer to the following section for specific functional symptoms seen by Speech Therapists.

Functional Voice Disorders:

- Functional voice symptoms include dysphonia, aphonia, odynophonia, vocal fatigue, and mutational falsetto or puberphonia
- Globus is common, and excessive physical effort is a hallmark feature of these disorders
- There is usually a sudden or intermittent loss of volitional control over the initiation and maintenance of phonation despite normal structure and function as observed during laryngoscopy and clinical examination
- Treatment involved strategies to bypass problematic movement patterns by facilitating short, instinctual responses and overlearned or reflexive utterances
- It is advisable to inform patients that you are going to ask them to do some things differently which may involve making unusual sounds or carrying out unique gestures or bodily movements not associated with their typical way of speaking (Baker et al., 2021)

Functional Stuttering:

- Functional stuttering is distinguished from developmental or neurogenic stuttering by extremes of variability or consistency on sound, syllable, word or phrase repetitions, unusual patterns of rate and pausing, increased dysfluency with more simple speech tasks, and lack of improvement with activities that usually promote fluency
- Effective techniques include instructing the patient to speak while lying on their back, squeezing a ball, tapping their thumb and finger together, or listening to music through headphones
- Psychological impacts can be severe when functional dysfluency does not resolve quickly given the likelihood that the patient will develop generalised anxiety and social anxiety in anticipation of speaking activity (Baker et al., 2021)

Functional Articulation Symptoms:

- Functional articulation disorders are characterised by substitutions or distortions of specific sounds
- Some sounds are produced with marked variability and unusual and exaggerated tongue, lip, or jaw movements – These distortions may be accompanied by other unusual features including inappropriate patterns of loudness with exaggerated facial movements
- Errors may be consistent and limited to particular sounds, or unusual and associated with unusual tongue posturing
- Effective techniques include singing and engaging in either distracting tasks or mindfulness techniques while speaking (Baker et al., 2021)

Globus Pharyngeus:

- Globus pharyngeus is a functional disorder which presents as a recurrent and uncomfortable sensation of a lump in the throat in the absence of dysphagia, odynophagia, or a histopathology-based oesophageal motility disorder
- Globus commonly co-occurs with functional voice disorders
- Symptoms may be persistent or intermittent and are experienced as a sensation of a foreign body in the throat, a tightening or choking sensation, a lump in the throat, or sensations of throat strain or itch
- Globus is more obvious between meals and improves whilst the patient is eating
- Globus is often associated with throat clearing, a sense of mucus accumulation or dry throat, repeated swallowing, chronic cough, or hoarseness
- There is good evidence for the effectiveness of speech and language therapy in treating globus (Baker et al., 2021)

Functional Dysphagia:

- Functional dysphagia is more often oropharyngeal rather than oesophageal since oropharyngeal musculature is under voluntary rather than autonomic control
- For oropharyngeal dysphagia, identifying positive features is a crucial element of intervention – Positive signs include an inability to swallow in the absence of drooling or excessive oral secretions, or inability to control anything in the mouth whilst maintaining the ability to spit saliva into a cup
- Symptoms of globus are commonly described by patients with functional dysphagia, frequently culminating in avoidance behaviours in an attempt to reduce the perceived risk of choking (fear of choking is common and functional dysphagia may ultimately lead to unintended weight loss, social withdrawal, anxiety, panic, and depression)
- Functional dysphagia is most effectively managed through a combination of educational, behavioural, and psychological strategies (Baker et al., 2021)

Cough and Vocal Cord Dysfunction:

- Chronic cough and vocal cord dysfunction can be considered manifestations of laryngeal hypersensitivity syndrome
- Symptoms can occur in the absence of a known cause or persist (despite thorough medical management) as a result of reversible changes in function or aberrant involuntary learnt behaviours
- Intervention involves assisting the patient in recognising the key triggers that stimulate their urge to cough and their behavioural response to these triggers (Baker et al., 2021)

Other Functional Communication Disorder Symptoms including Foreign Accent Syndrome:

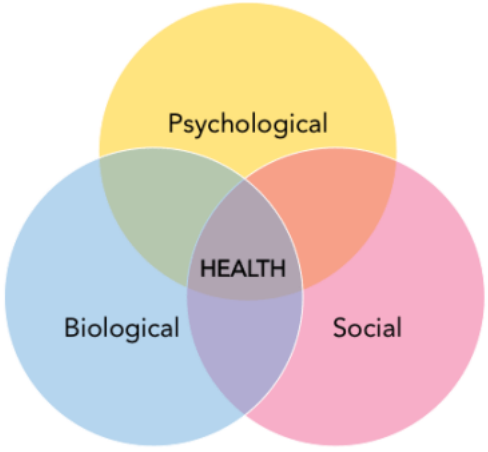
- Other functional communication disorder symptoms can include language, prosody, and accent
- Foreign accent syndrome (FAS) is a disorder of speech in which the patient speaks with a foreign or regional accent, with functional FAS being identified by the presence of internally inconsistent changes in the person's articulation and prosody, alterations to vowel and consonant production, stress, rhythm, and intonation
- Functional FAS may resolve spontaneously or during treatment (Baker et al., 2021)

Dr Kelly Thompson, Senior Clinical Psychologist, VPRS

Psychological & Mind-Body Interventions for FND

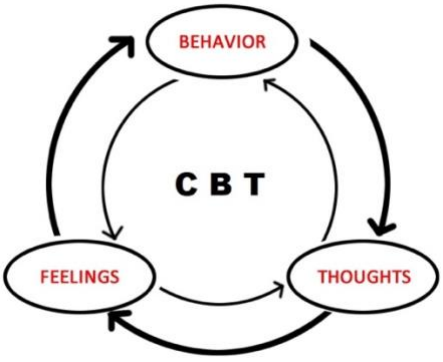
A crucial role of Psychologists and other mental health clinicians working with FND patients is to complete a thorough **assessment** that includes taking detailed medical and developmental histories and constructing a family **genogram**. It can be extremely helpful to draw and display a **timeline** of developmental milestones and significant (individual and family) events during the assessment with the patient and family, subsequently enquiring about how the patient managed significant happenings in the family narrative and their somatic response to challenging events (Kozlowska et al., 2023).

The above information can be used to co-construct a **biopsychosocial formulation** with the patient and family. This should incorporate potential predisposing, precipitating, maintaining, and protective factors. This helps the patient and family understand how the expression and maintenance of somatic symptoms can result from the complex interactions between biological, psychological, and social factors (Drews & Bursch, 2010). The biopsychosocial formulation can subsequently be used to help inform the patient's individualised treatment path, which should emphasise the potential reversibility of symptoms (LaFaver et al., 2021).



Addressing sources of significant stress (e.g., academic stress or conflict with peers or siblings) is imperative to effective FND intervention, and may involve liaising with the young person's school or making a referral to a family therapy service. Irrespective of particular stressors, it is crucial to ensure that patients (and/or families as appropriate) are linked-in with necessary community-based supports to prevent a gap in service provision after the young person has been discharged home.

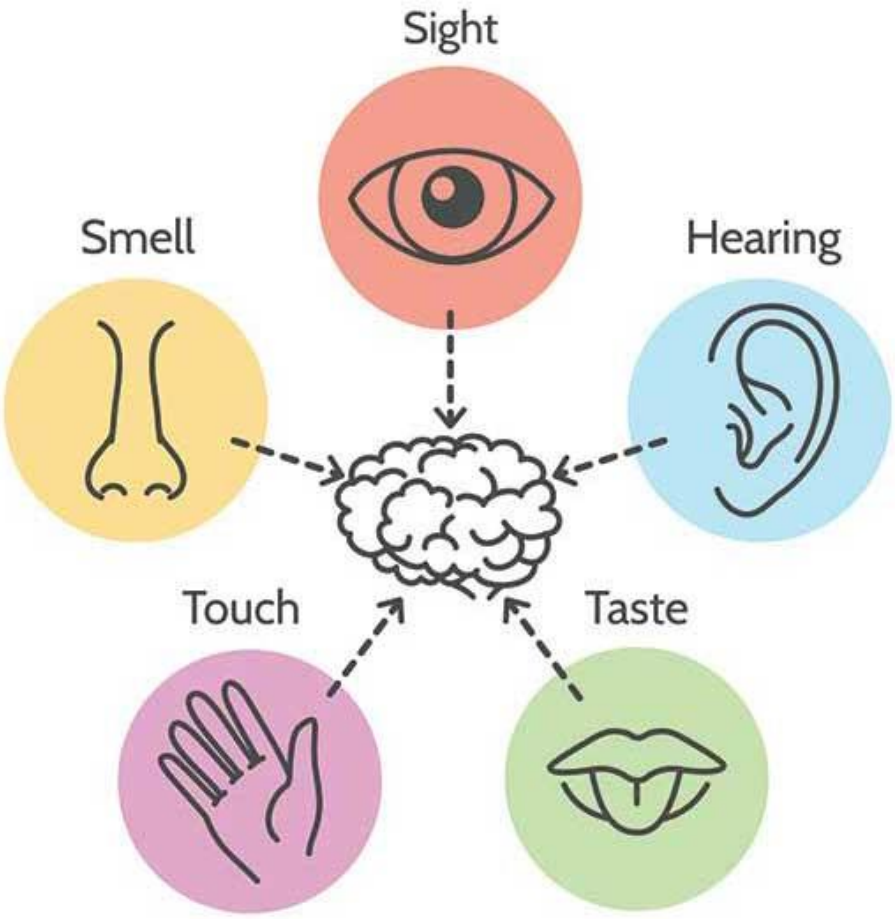
CBT coupled with mind-body techniques enables children and adolescents to increase awareness of their internal body states and emotions. Increased self-awareness subsequently equips children and adolescents with the capacity to implement CBT strategies to cope with identified stressors (Cruz et al., 2014).



Body mapping is an effective technique to establish a mind-body connection and visually represent how the child or adolescent feels emotions and experiences in their body. It assists individuals in noticing and sequencing the felt sense of the body (Kozlowska et al., 2023).

Visually displaying sensations, feelings, and experiences can be a particularly useful communication strategy for young people who display difficulty verbalising their internal state early in their FND journey.

Another useful technique is to encourage children and adolescents to trial a range of **sensory strategies** to explore how sensory input can assist in calming their body and/or distracting their mind to provide relief at times when their minds and/or bodies are in a state of overdrive. **Mindfulness** techniques apply similar principles whereby the individual refocuses their attention to the present moment by tuning into both internal (e.g., thoughts, feelings, and bodily sensations) and external experiences (i.e., the individual's current environment).



As with all effective therapy, providing a **safe environment where the patient feels heard** is of utmost importance. A main aim of psychological therapy is to increase the child or adolescent's confidence in their ability to express themselves. Ongoing **psychoeducation** encourages this by emphasising that increased self-awareness and capacity to communicate one's needs through use of **assertive communication** can translate to a decrease in the expression of somatic symptoms.

Please refer to following patient handout section of this manual for examples of CBT, assertive communication, and mind-body exercises, including diaphragmatic breathing, progressive muscle relaxation, guided imagery, mindfulness and grounding techniques, sensory strategies, and body mapping.

Individual therapy with the patient is complemented by the provision of **psychoeducation for parents and caregivers**. Emphasis is placed on the importance of parents and caregivers supporting their child to **move away from the sickness role by redirecting their focus away from their symptoms and impairment** toward re-engaging in school and other social activities. This is a crucial aspect of successful intervention given **FND symptoms amplify with attention and diminish when attention is refocused on another activity** (Kozlowska et al., 2023). This approach also serves to **limit the secondary gains typically associated with illness behaviours** (e.g., avoiding schoolwork and spending additional time with parents when a student stays home from school on a high symptom day).

Many parents welcome and benefit from a **referral to a community-based Psychologist** to receive their own support while caring for a child or adolescent with FND. This is exceedingly important in instances whereby a parent's own trauma and/or mental health history is impacting upon their capacity to support their child to engage in FND intervention.

Psychological comorbidities, most commonly anxiety, panic, and depression, have been found to affect over 50% of patients diagnosed with FND (Stone et al., 2020). While psychological difficulties can be exacerbated by functional disability, for some patients, mental health difficulties can become apparent or psychological comorbidities can worsen as the patient's function improves. A referral or re-referral to a mental health clinician or service may be required at this time. Furthermore, while there is a very limited role for psychotropic medications in the management of FND (Malas et al., 2017), prescription of a selective serotonin reuptake inhibiter (SSRI) may prove a helpful adjunct treatment for patients with comorbid depression or anxiety (Wilkinson-Smith & Waugh, 2022).

Final Tips for Psychologists Working with FND Patients:

- Maintain a balance of providing validation and normalising the patient's symptoms
- Encourage use of fidget toys, with some patients finding it easier to engage in conversation while either playing with a fidget toy or engaging in a game of UNO
- Provide a space for continuous psychoeducation and question-asking
- Maintain regular communication with other disciplines (e.g., via care team meetings) if working in a separate service to other clinicians to ensure coordinated care

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Handouts

Given not all handouts will be relevant for every patient, it is most helpful for clinicians to print out and provide relevant handouts to patients, families, and schools at the appropriate stages in treatment

FND – A Guide for Kids & Teens

What is FND? You have been diagnosed with functional neurological disorder (FND), which is a condition where people experience symptoms in their body due to a problem with their brain's 'software'. This means that your brain is experiencing some difficulty communicating to different parts of your body, with symptoms occurring when the 'computer crashes'. The great news is that the 'hardware' of your body is not sick or injured.

Your brain and body are usually good partners, always working together. When this partnership is working well, you have a helpful inbuilt warning system. For example, when you walk on hot concrete in bare feet in summer, the pain signal travels up to your brain which then tells you to either move away or put shoes on to avoid injury. This mind-body connection is also why we may blush when feeling embarrassed, or feel butterflies in our stomach when we feel nervous. Somatisation is when we experience somatic (physical) symptoms in response to strong emotions, such as when we experience a headache in response to feeling stressed. Everyone experiences symptoms of somatisation to some extent, but the brain-body message system sends 'false-alarms' for people with FND.

FND is diagnosed when people experience physical and neurological symptoms (that can include difficulty walking, decreased strength, numbness, and functional seizures) that significantly interfere with daily life. FND can severely impact upon young people's ability to attend school and engage in extracurricular activities such as sports.

Why has this happened to me? There is rarely a single cause for the development of FND. For some individuals, it can be triggered by strong emotions and stress. Other people may have been unwell with an illness or suffered an injury prior to their FND diagnosis. For some, a combination of stress and illness may have contributed to their disorder. And on occasion, a cause is unclear.

Are my symptoms real? Some people worry that others may think they are 'faking', or that their symptoms are 'all in their head'. Your symptoms are just as real as those experienced by someone who has suffered a physical injury or illness.

How can I get better? Physical therapy will assist you in retraining and strengthening the connections between your mind and body while you regain control over your movement. Psychological therapy and mind-body strategies will help you identify and manage things that may have caused your symptoms or that may be making them worse.

What should I do if symptoms flare-up? Recovery from FND is a gradual process, and it is common to see an increase or change in symptoms at various stages. Speak with your treating team and refer to your Self-Management Plan for strategies to manage your symptoms. It is important to continue with your timetabled activities, both in hospital and at home, even during a flare-up. Activities can be modified to help you achieve your goals.

Dr Kelly Thompson, Senior Clinical Psychologist, VPRS

What will my Rehab Admission look like?

FND can affect all areas of life, including mobility, school attendance, friendships, and being able to engage in extra-curricular activities. Effective inpatient treatment therefore involves an interdisciplinary team including Doctors, Nurses, Physiotherapists, Occupational Therapists, Clinical Psychologists, Teachers, and other relevant professionals, which can include Speech Therapists, Social Workers, Dietitians, and Music Therapists.

You will be allocated a Key Contact who will meet you at the beginning of your admission, and work with you to develop functional goals. This may include goals you aim to achieve during your admission (e.g., improve walking and standing to be able to shower without assistance), and longer-term goals you continue to work toward as an outpatient (e.g., return to playing basketball).

A main focus of your rehab admission will be assisting you in getting back to a regular routine, involving sleep, meal routines, exercise/activity, and attendance at the hospital school. You will be provided with a weekly timetable, such as the example below:

<table>
<tr><th>Time</th><th>Monday</th><th>Tuesday</th><th>Wednesday</th><th>Thursday</th><th>Friday</th></tr>
<tr><td>8:00am</td><td colspan="5" rowspan="2">Get dressed, brush teeth and have breakfast out of bed/in chair</td></tr>
<tr><td>8:30am</td></tr>
<tr><td>9:00am</td><td rowspan="2">Clinical Psychology</td><td>PT exercises</td><td>Schoolwork</td><td rowspan="2">Physio</td><td>PT exercises</td></tr>
<tr><td>9:30am</td><td rowspan="2">OT</td><td rowspan="2">Physio</td><td rowspan="2">Clinical Psychology</td></tr>
<tr><td>10:00am</td><td>Rest</td><td>Rest</td></tr>
<tr><td>10:30am</td><td colspan="5" rowspan="3">School</td></tr>
<tr><td>11:00am</td></tr>
<tr><td>11:30am</td></tr>
<tr><td>12:00pm</td><td>Online Yoga</td><td>Rest</td><td>Rest</td><td>PT exercises</td><td>Rest</td></tr>
<tr><td>12:30pm</td><td colspan="5">Lunch in chair</td></tr>
<tr><td>1:00pm</td><td>Deep breathing</td><td>Guided imagery</td><td rowspan="2">Clinical Psychology</td><td rowspan="2">Rehab Progress Mtg</td><td rowspan="2">OT</td></tr>
<tr><td>1:30pm</td><td rowspan="2">Physio</td><td rowspan="2">Physio</td></tr>
<tr><td>2:00pm</td><td>Online Yoga</td><td>Mindfulness</td><td>Choice of Relaxation</td></tr>
<tr><td>2:30pm</td><td rowspan="2">Schoolwork</td><td rowspan="2">Dietitian Review</td><td rowspan="2">Music Therapy</td><td rowspan="2">OT</td><td rowspan="2">Physio</td></tr>
<tr><td>3:00pm</td></tr>
<tr><td>3:30pm</td><td rowspan="2">OT</td><td>Rest</td><td>Schoolwork</td><td rowspan="2">Schoolwork</td><td rowspan="2">Schoolwork</td></tr>
<tr><td>4:00pm</td><td rowspan="2">Schoolwork</td><td>Rest</td></tr>
<tr><td>4:30pm</td><td>Rest</td><td>Muscle relaxation</td><td>Rest</td><td>Rest</td></tr>
<tr><td>5:00pm</td><td colspan="5">Dinner in chair</td></tr>
</table>

Therapy sessions: Your Physiotherapy and Occupational Therapy sessions will assist you in working toward your functional goals, while your Clinical Psychology sessions will assist you in identifying and managing triggers for your symptoms. Your therapists will assist you in formulating a Self-Management Plan, which will identify triggers and develop practical strategies to both manage symptoms and increase coping.

School: You will attend the hospital school as part of your program. Your hospital teacher will liaise with your school to ensure you are up-to-date with the curriculum, in addition to supporting you in transitioning back to school after your admission. A visit to your home school may be included in your timetable for your last week of admission.

Rehabilitation progress meetings: Meetings are scheduled on a weekly basis to give you and your parents a chance to meet with the team and discuss how your week is progressing. This gives you all an opportunity to ask any questions. The progress meeting during your final week of admission will focus on planning for your discharge home.

Overnight/weekend leave: Toward the end of your admission, you may take overnight and/or weekend leave to practice using your learned strategies at home. Hospital and home are very different environments, so leave is important in giving you an opportunity to work with your team to revise strategies and plans after you have had a chance to see how they work in the real world!

Discharge documentation: You will be provided with copies of your Rehabilitation Discharge Report, which will include summaries of your progress from your treating team. This report will detail the plans for your outpatient follow-up. It is helpful to provide copies of this report to your school, GP, and any other relevant professionals who you see closer to home.

Dr Kelly Thompson, Senior Clinical Psychologist, VPRS

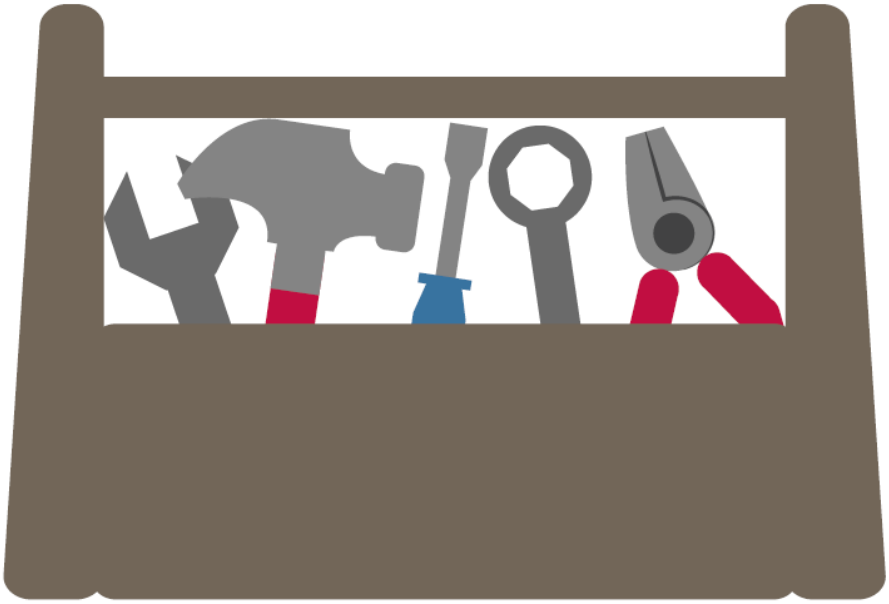
Analogy to Help Understand FND

Hardware vs. Software:

- Consider your brain as the computer that contains both hardware (the physical components) and software (the operating system e.g., Windows)
- The hardware and software communicate together to help you function
- FND develops when there is 'glitch' in the software. While the hardware is still intact, the communication between the hardware and software is not functioning normally
- Treatment involves recognising the symptoms you are experiencing and developing effective tools to fix them

Katherine Dare, Physiotherapist, VPRS

Developing a Toolkit



What's in Your Toolkit?

Your team will help you to develop your toolkit to assist you in managing your FND symptoms. This will involve:

- ✓ Education to help you to recognise and understand your symptoms
- ✓ Development of a graded exercise program to regain movement and functional tasks
- ✓ Using goal setting to break tasks down into small achievable steps to help you accomplish the outcomes that are important to you
- ✓ Learning skills to develop your self-management plan

Katherine Dare, Physiotherapist, VPRS

My FND Self-Management Plan

Name: _____ **Date of Birth:** _____

My Hospital Therapy Team (e.g., Doctor, Physio, OT, Psych):

_____

_____

_____

_____

Rehab Team Ph: _____

My Community-Based Supports (e.g., school contact, Counsellor, Exercise Physiologist):

Name: _____ Ph: _____

Name: _____ Ph: _____

Name: _____ Ph: _____

Name: _____ Ph: _____

My FND symptoms are:

_____

_____

_____

_____

_____

_____

_____

My symptom triggers are:

_____

_____

_____

_____

_____

_____

_____

Practical strategies that help manage my FND symptoms (e.g., use of heat/ice packs, stretching, exercise):

_____

_____

_____

_____

_____

My coping strategies (e.g., deep breathing, relaxation exercises, mindfulness, CBT, distraction):

_____

_____

_____

_____

_____

_____

Dr Kelly Thompson, Senior Clinical Psychologist, VPRS

FND & Physical Function

The Brain & Body Connection:

The brain is the control centre for the body. In people diagnosed with FND, the structures connecting their brain and body are not damaged. Rather, the messages being sent from their brain are not being delivered to the body correctly.

Some common symptoms you may be experiencing and that affect your movement can include:

- Weakness in your arms, legs, and/or body
- Abnormal or increased movement (e.g., shaking, tremor)
- Abnormal sensation in your body

FND affects everyone differently!

Returning to Movement:

- A component of your recovery will include a targeted, graded return to movement. By loading and moving your muscles and joints, your brain can 'rewire' and start to use the pathways correctly.

- Your Physiotherapist will help guide your return to physical activity in appropriate stages. A graded exercise program will assist you to retrain movement, re-learn skills, and help build up your stamina in a manageable and safe way. Physical activity tasks will gradually increase in complexity and effort.

Your program will be guided by your individual goals with tasks targeted towards the activities and skills that are important to you. Setting smaller short-term goals will help provide the stepping stones required to achieve your bigger long-term goals.

Katherine Dare, Physiotherapist, VPRS

Goal Setting

Why is it important to set goals?

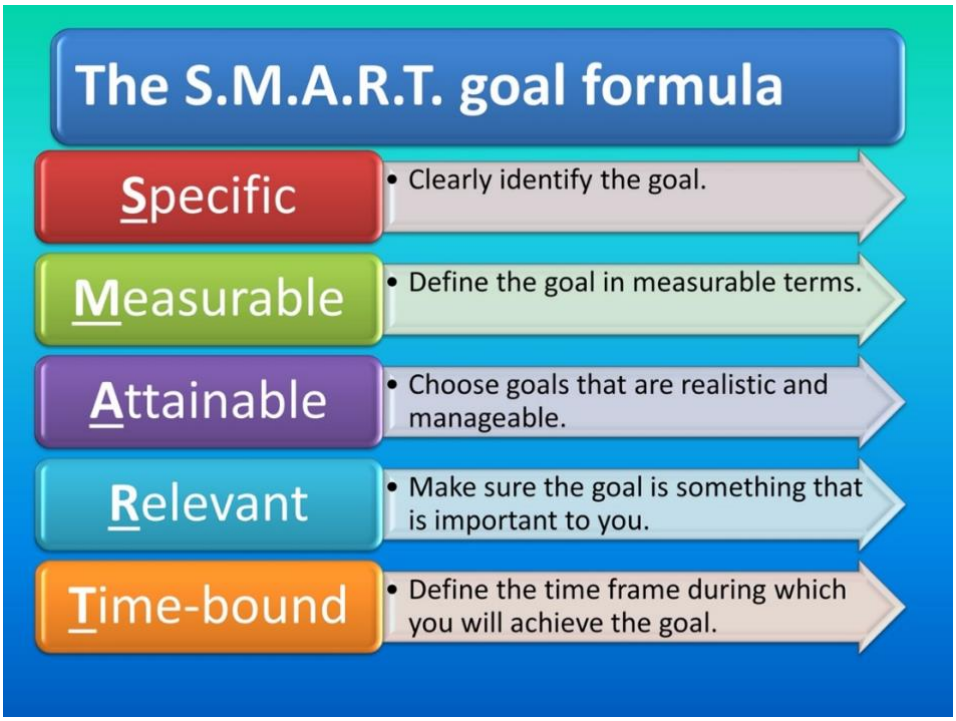
Goal setting and regularly reviewing your goals is an important part of learning to manage your FND.

- ✓ Goals help to motivate you by giving you a reason to do what you need to do
- ✓ Goals help to break bigger tasks (that seem like a big leap) into smaller, more achievable steps
- ✓ It is important that YOU develop your goals to ensure they are meaningful to you

Don't worry – we will give you lots of help with this!

Working towards your goals:

The goals you initially identify may be a large leap from your current level of functioning and may therefore become your 'long-term goals'. You can work toward your long-term goals by breaking them down into 'short-term goals' that get you closer to achieving this outcome. You can increase the effectiveness of your goals by applying the S.M.A.R.T. goal formula:



Katherine Dare, Physiotherapist, VPRS

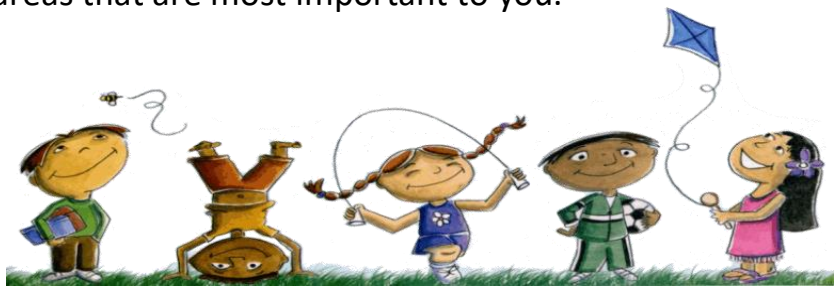
Routine & Goal Setting

Talking through your routine can be a really helpful way to identify what parts of your home, school, social, and family life are most important for you to set goals for.

This is different for everyone. Some areas to think through in your day that you might want to work on could be:

Self-Care *Everyday routine:* - Getting out of bed in the morning - Getting dressed - Doing your hair - Doing your makeup - Having a bath/shower - Toileting - Making breakfast/lunch/dinner - Eating - Walking in/outside - Managing steps	**Leisure** *What do you enjoy? This could be by yourself or with others:* - Art - Sports - Gaming - Music - Board games - Bike riding - Going to the beach/river etc - Cooking/baking - Walking the dog
Social - Talking with friends - Accessing areas your friends go to - Activities your friends do together - Attending church or community groups	**School** - Traveling to and from school - Getting around at school - Carrying school books - Concentrating in class - Typing/handwriting

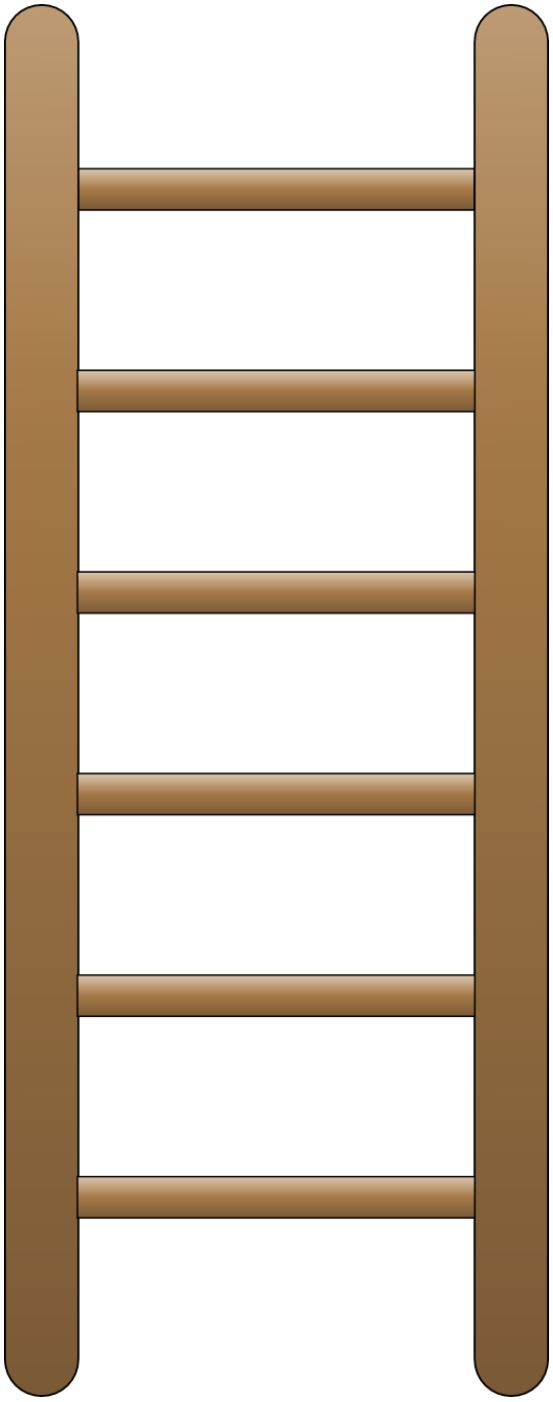
This will help us understand what you want to be able to do when you go home. We can then work on the areas that are most important to you.



Laura Finn, Senior Occupational Therapist, VPRS

Breaking your Goals down into Small Steps

A ladder representation can help display daily progress.
The example below breaks down the goal of walking.



STEP 1

Stand with help

STEP 2

Stand for 10 seconds

STEP 3

March on the spot

STEP 4

Walk with help

STEP 5

Take a few steps

STEP 6

Walk inside

Step 7

Walk by myself!

Laura Finn, Senior Occupational Therapist, VPRS

Goal Setting Worksheet

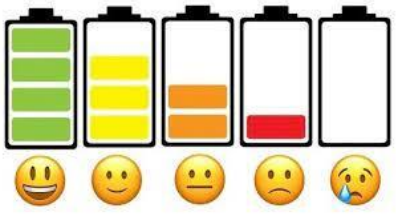
What do I want to achieve?	Steps to break this goal into smaller parts	Timeframe
Goal:	**1.** **2.** **3.**	
Goal:	**1.** **2.** **3.**	
Goal:	**1.** **2.** **3.**	
Goal:	**1.** **2.** **3.**	

Katherine Dare, Physiotherapist, VPRS

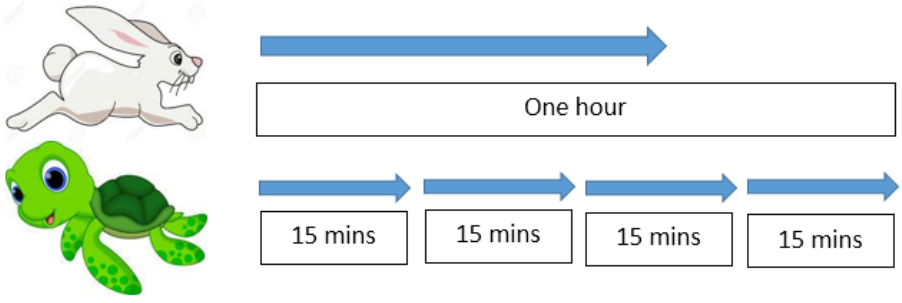
Pacing & Use of Timetables

Given the frequency at which FND patients present with symptoms of fatigue and deconditioning, it is helpful to promote use of pacing strategies to assist children and adolescents to learn to balance activity and rest as they return to school (often in a graded fashion) and resume extracurricular activities.

It is helpful to provide the analogy of one's energy supply being comparable to a mobile phone battery that requires a lengthy recharge after being completely drained before the phone can be used again. In contrast, regular phone-charges allows one to use their phone throughout the day without interruption. Similarly, when patients with FND carefully plan and balance activity with rest, they can minimise the chance of completely draining their supply of energy and exacerbating their FND symptoms.



Use of timetables is an effective technique for children and adolescents to plan their day or week and visually map out a balance of activities requiring low, moderate, and high amounts of energy with planned, regular rest breaks. This should include essential activities including meals and self-care tasks, in addition to therapy and educational requirements (including completion of homework tasks for both), social/leisure activities, and mind-body techniques to assist in recharging their 'battery'. Using a timetable can assist individuals in identifying large, effortful tasks which would benefit from being broken down into smaller chunks with rest breaks in between.



Once a consistent routine is established, activity levels can be gradually increased by continuing to ensure tasks are balanced throughout the week, adding in small steps towards the young person's goals.

In combination, these techniques support individuals to prioritise what is important to them and take proactive steps to gradually resume their previous activities in a sustainable manner.

Dr Kelly Thompson, Senior Clinical Psychologist & Ella Barry, Senior Occupational Therapist, VPRS

Tips for Good Sleep Hygiene

Keep regular hours: Stick to a regular bedtime and wake-up routine, even on weekends and during holidays. The body has a natural clock that makes you feel sleepy when you're ready for bed. Getting up at the same time helps to keep your body clock synchronised.

Avoid napping: Napping can disturb the normal patterns of sleep and wakefulness. If you are in the habit of taking a daytime nap & it doesn't seem to affect your night-time sleep, try to keep it short (i.e., less than an hour), and avoid napping in the evening, as this will reduce your body's drive to fall asleep.

Ensure adequate exposure to natural light: Light is important in the production of melatonin, which is a sleep-promoting substance naturally produced by the body. Adequate exposure to natural light (ideally before 11:00am) helps normalise melatonin levels and maintain a healthy sleep-wake cycle.

Exercise regularly: Regular exercise improves restful sleep. Vigorous exercise should take place earlier in the day (i.e., at least six hours before your bedtime). Relaxing forms of exercise (e.g., yoga) in the evening can help initiate a restful night's sleep.

Set aside problem-solving for during the day: If you are worrying about things during the night, set aside some time to get all of your worries out of your system during the day. Your bed is a place to rest, not a place to worry!

Avoid stimulants such as caffeinated coffee, tea, and energy drinks too close to bedtime: This can increase arousal, delaying sleepiness. Remember that chocolate contains caffeine!

Avoid going to bed too full or hungry: Stay away from large meals close to bedtime, but never go to bed feeling hungry (eat a light snack if necessary).

Make sure that your bedroom is comfortable: Make sure that your room is quiet, dark, and at a comfortable temperature when you are trying to sleep.

Associate your bed with sleep: This enables your brain to make the connection with your bed and sleep. Avoid using your bed for activities other than sleep – Do not use your bed while watching TV, speaking on the phone, using electronic devices, or doing homework etc.

Establish a relaxing bedtime routine: Try to do the same things each night before bed. Drinking a warm glass of milk before bed can help you to feel sleepy, as milk contains the sleep-enhancing amino acid tryptophan. A warm bath before bedtime causes the body's temperature to rise and then fall, promoting sleep. Allow yourself time to wind down before going to bed. If you are studying or playing a video game, stop at least 30 minutes before bedtime and do something relaxing that doesn't involve screens.

Relaxation techniques: Go through your breathing and relaxation exercises as soon as you hop into bed. If you do not feel relaxed, go through the exercises one more time.

Listen to a white noise app: This can be helpful for people who like background noise.

Avoid checking the time repeatedly: Clocks with bright displays are a distraction, and ruminating on the time will perpetuate difficulty falling asleep. Consider turning clocks to face the wall overnight.

If you can't fall asleep within a reasonable amount of time, get out of bed and do something else for half an hour: Get up and engage in a non-screen activity, such as reading a book or browsing a magazine. Go back to bed once you feel sleepy again.

Dr Kelly Thompson, Senior Clinical Psychologist, VPRS

Emotional Awareness & Talking about your Feelings

We often feel emotions in our bodies before we are able to recognise them in our thoughts. At times, it can be difficult to know what emotions are related to certain physical sensations, making FND symptoms more difficult to manage. It is therefore important to understand the mind-body connection while paying attention to our emotions.

Many people with FND have a tendency to ignore or 'bottle up' challenging emotions while pushing themselves to 'get on with things'. Some people are concerned that if they start crying, they may never stop. Others only feel safe to experience strong emotions when they are alone, either feeling embarrassed to let people in, or not wanting to burden others. While some ignore their distress until it manifests as an uncontrollable outburst.

Talking about challenging feelings and experiences with others assists people in learning to acknowledge and process difficult emotions. This is important for people with FND, given that locking away emotions leads to distress being expressed through physical symptoms. Denying difficult feelings can also lead to other psychological difficulties, such as anxiety and depression.

It can be helpful to:

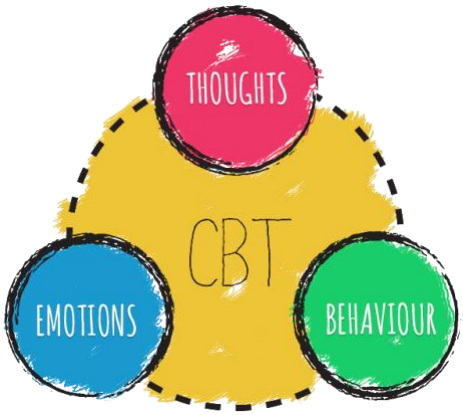
- Start talking about your feelings and worries with people that you trust.
- If there is nobody around, write your feelings down in a diary or notepad.
- Download a free feelings or diary app, such as 'Feelings Diary – Mood Journal', 'Mood App: Journal', 'Secret Diary', 'My Secret Journal: Diary Book', or 'Grateful: A Gratitude Journal'.
- Call a free telephone help line or try their web counselling:
    - Kids Helpline - Ph: 1800 55 1800, https://kidshelpline.com.au/get-help/webchat-counselling
    - Lifeline - Ph: 13 11 14, https://www.lifeline.org.au/get-help/online-services/crisis-chat
    - eheadspace – https://headspace.org.au/eheadspace/
- Talk to your Rehabilitation Psychologist, and consider seeing a Psychologist or Counsellor closer to home once you are discharged from hospital. Your GP can organise a Mental Health Treatment Plan (MHTP) which will entitle you to up to 10 sessions per year that are covered by Medicare (there may be a small gap fee). Your Rehabilitation Psychologist can recommend good local options.

Dr Kelly Thompson, Senior Clinical Psychologist, VPRS

The CBT Model

Many people with FND have developed negative thoughts and beliefs about themselves and their illness. Some children and adolescents may believe that their body is fragile and cannot cope with normal activities. Others may believe that their physical symptoms are completely unpredictable and uncontrollable. If left unaddressed, these negative thoughts can escalate and exacerbate FND symptoms, negatively impacting upon one's ability to cope with their disorder.

It is therefore helpful to learn how your **thoughts** (the words that run through your mind that tell you about what's going on around you), **emotions** (feelings that come and go as different things happen to you), and **behaviour** (the things you do) is connected. This is the Cognitive Behavioural Therapy (CBT) model.



What happened? My left leg feels wobbly and weaker than my right leg

My thoughts: There is something wrong with my leg. If I put weight on it, I might injure it further.

My emotions: I feel anxious about my leg not working, and worried that I might injure it further.

My behaviour: Because I feel anxious about injuring my leg, I refuse to put weight on it and walk.

Dr Kelly Thompson, Senior Clinical Psychologist, VPRS

Thinking Errors

Just because you have a thought doesn't mean that it's true. Your thoughts are guesses about why something has happened, or about something that might happen. Thoughts can be irrational and negative, and therefore have the potential to cause depression, anxiety, and poor self-esteem. Negative self-talk can lead to a person feeling overwhelmed by their FND, falsely believing that they cannot effectively engage in therapy and improve their functioning.

Negative self-talk can be associated with the following thinking errors:

- ***Ignoring the good:*** Paying more attention to the bad things, and ignoring when something good happens (e.g., you get only one answer wrong on a test, but all you can think about is the mistake).
- ***Catastrophising:*** You blow small things up, and anticipate the worst possible outcome (e.g., You wake up feeling very wobbly in your legs and believe you will never be able to walk without crutches again. This will mean you will never be able to get the job you wanted, and your life will be ruined).
- ***Fortune telling:*** Thinking you can predict what will happen in the future, and expecting that the outcome will be bad (e.g., "My team have organised a family meeting and they're going to tell me that something else is wrong with me and I won't get better").
- ***Mind reading:*** Believing you know what someone else is thinking or why they are doing something, without having enough information (e.g., "My friends have rescheduled visiting me in hospital. They must not care about my anymore").
- ***Setting the bar too high:*** Thinking you must be perfect with everything that you do and believing you're useless if you don't maintain a perfect performance (e.g., "If I don't manage to get rid of my wheelchair altogether this week, I haven't worked hard enough in Physio and I'm useless").
- ***Self-blaming:*** Blaming yourself for everything that goes wrong, even if you had nothing to do with it (e.g., "The doctors seem busy today. They must be sick of me being here").
- ***Feelings as facts:*** Believing that if you feel something, it must be true (e.g., "I feel so weak and stressed today… I'll probably never improve").
- ***'Should' statements:*** Believing that things have to be a certain way (e.g., believing you should make significant daily gains with no setbacks).

Dr Kelly Thompson, Senior Clinical Psychologist, VPRS

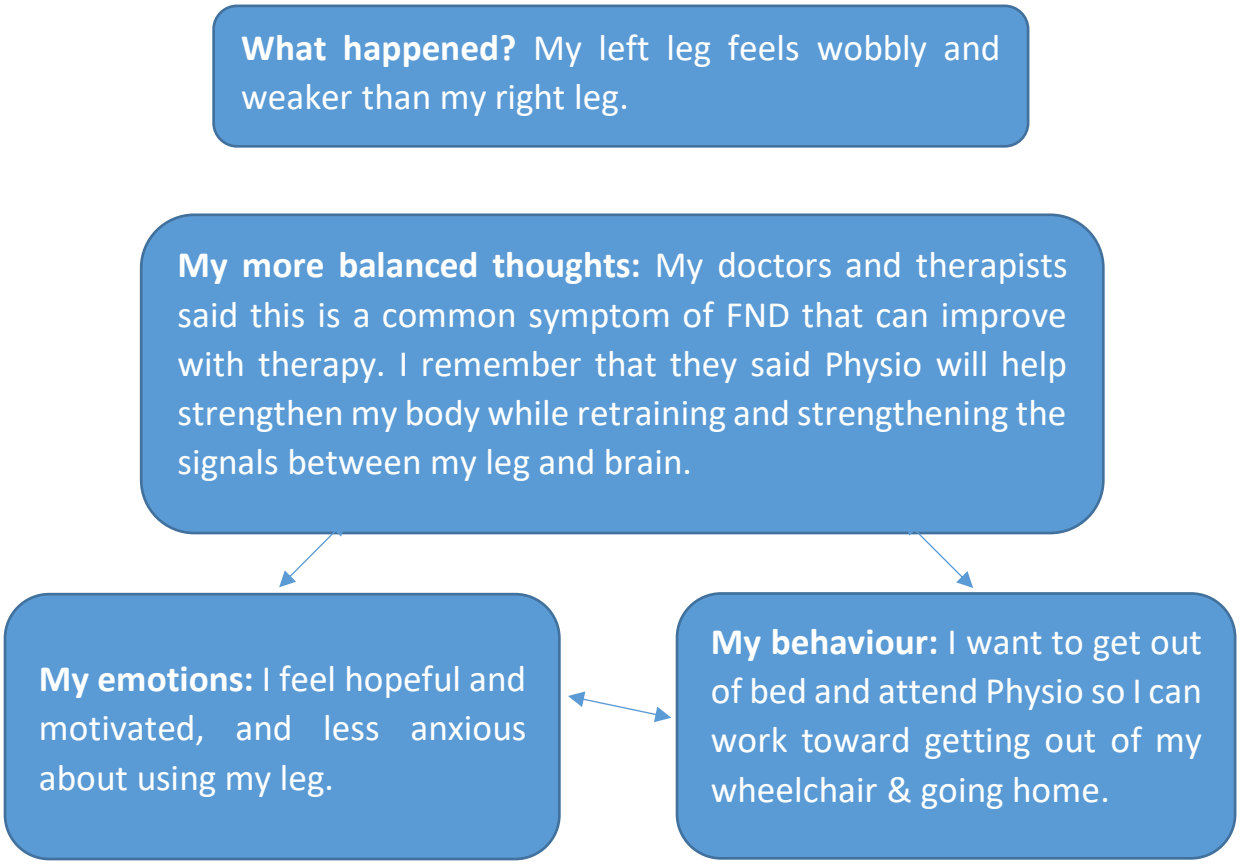
Challenging Negative Thoughts

People are more likely to experience unhelpful and unrealistic cognitions when FND symptoms are high.

Challenging negative self-talk and irrational beliefs can enable us to develop a more balanced view of what's going on, positively shifting how we feel and behave in response to a situation.

We can gain a more balanced view by asking the following questions:

- Are my thoughts realistic?
- Is there any evidence to support my thoughts?
- Is there any evidence contrary to my thoughts?
- What is the worst thing that could happen?
- What is the most realistic outcome?
- What would a friend say about this situation?



Dr Kelly Thompson, Senior Clinical Psychologist, VPRS

Problem Solving

Everyone has real-life problems. Problems can range from what to watch on Netflix to experiencing difficulty engaging in activities with friends due to FND symptoms. People can easily feel overwhelmed by their problems, resulting in lowered mood, anxiety, and decreased motivation to tackle their difficulties. For some people, it can be useful to develop their problem-solving skills, providing them with a method to identify problems, subsequently brainstorming solutions and implementing the most effective strategy. This can assist people in managing their FND and the impact this can have upon their daily life at times.

Steps for problem solving:

1) ***Identify and describe the problem:*** Clearly identify the problem, including what actually happened.
2) ***Generate several alternative solutions to the problem:*** Brainstorm and write down as many possible solutions you can think of, no matter how far-fetched.
3) ***Decision making:*** The next step is to examine the alternatives carefully, eliminating those that are less likely to prove effective. Select the option that seems most likely to provide the best solution.
4) ***Put the best solution into action:*** Once you have chosen your solution to the problem, develop a plan for carrying this out. Break this down into steps before implementing this plan.

Dr Kelly Thompson, Senior Clinical Psychologist, VPRS

Assertive Communication

Many people who have FND report that they spend much of their time looking after and pleasing others, while ignoring their own needs. As a result, they can become stressed, tired, and resentful, leading to an increase in their FND symptoms. It is important to practice assertive communication, as this will help you to communicate in a clear and direct manner while still respecting others. This can lead to more positive relationships with others, improved self-esteem, and decreased stress levels.

The Three Communication Styles

Passive Communication:

During passive communication, a person prioritises the needs, wants, and feelings of other people, often at their own expense. The person does not express their own needs, which can lead to being taken advantage of because others are unaware of their wants. People who communicate passively are often softly spoken, display poor eye contact, lack confidence, and are avoidant of confrontation. Passive communication can be damaging to one's self-esteem and relationships.

Aggressive Communication:

A person who communicates using an aggressive communication style expresses only their own needs, wants and feelings. The other person often feels bullied, with their own needs being ignored. People who engage in aggressive communication often speak in a loud or overbearing way, are unwilling to compromise, frequently use criticism and domination, often interrupt others and fail to listen, and can appear disrespectful toward others.

Assertive Communication:

Assertive communication emphasises the importance of *both* people's needs. While practicing assertive communication, a person stands up for their own needs, wants, and feelings, while also listening to and respecting the needs of others. An assertive person is willing to compromise when it is appropriate. People who engage in assertive communication listen without interruption, display a confident tone (use a firm, calm voice) and body language (stand tall and face the person directly without shifting or fidgeting), and maintain good eye contact.

Dr Kelly Thompson, Senior Clinical Psychologist, VPRS

Tips for Assertiveness & Healthy Boundaries

Respect yourself:
Your needs, wants, and rights are just as important as anyone else's. You have every right to express what you want, provided you are respectful toward others.

Plan what you're going to say:
Know what you want to communicate before entering into a conversation. Write down dot-points and rehearse.

Express your thoughts and feelings calmly:
Take responsibility for your thoughts and emotions, and express them in a calm and factual manner. Try starting sentences with "I think…." and "I feel….".

Acknowledge that you hear the other person: Agree that you hear what he/she is saying, then repeat your position (e.g., "I understand that you want me to do that, but that's unable to happen tomorrow").

Learn to say "no":
No matter how hard you try, you can't make everyone happy all the time. It is okay to say "no", and you don't have to offer an explanation. You could offer an alternative suggestion or compromise instead. Avoid tentative statements such as "I'm not sure" or "Maybe". It is also okay to change your mind. Saying "no" becomes easier with practice.

Consider the long view:
Be willing to take a longer view of relationships, when appropriate, but be aware of when one person is always the one who is giving or who is taking.

Dr Kelly Thompson, Senior Clinical Psychologist, VPRS

Diaphragmatic Breathing

When a person feels anxious or stressed, their body undergoes physiological changes and enters a state called the 'fight-or-flight response'. This prepares them to either fight or flee from the perceived danger. It is common to experience physical symptoms when this occurs, including an increased heart rate, rapid and shallow breathing/hyperventilation, sweating, and increased muscle tension. Furthermore, many people with FND find that their functional symptoms are worse when they are stressed.

The physiological response to stress can be reversed by engaging in diaphragmatic breathing, which is a form of deep breathing. Diaphragmatic breathing sends messages to the brain to begin calming the body.

Practice this exercise regularly when you are feeling calm so that it works effectively the next time you feel anxious or stressed.

1) Sit back or lie down comfortably with one hand on your abdomen below your belly button and the other hand on your chest

2) Imagine you have a balloon in your stomach

3) Slowly breathe in through your nose and imagine the balloon expanding in your stomach, pushing out your hand

4) Pause and count slowly to 3

5) Breathe out slowly through your mouth for a count of 3, noticing your hand return closer to your body as your imaginary balloon deflates

6) Repeat for at least 2 minutes

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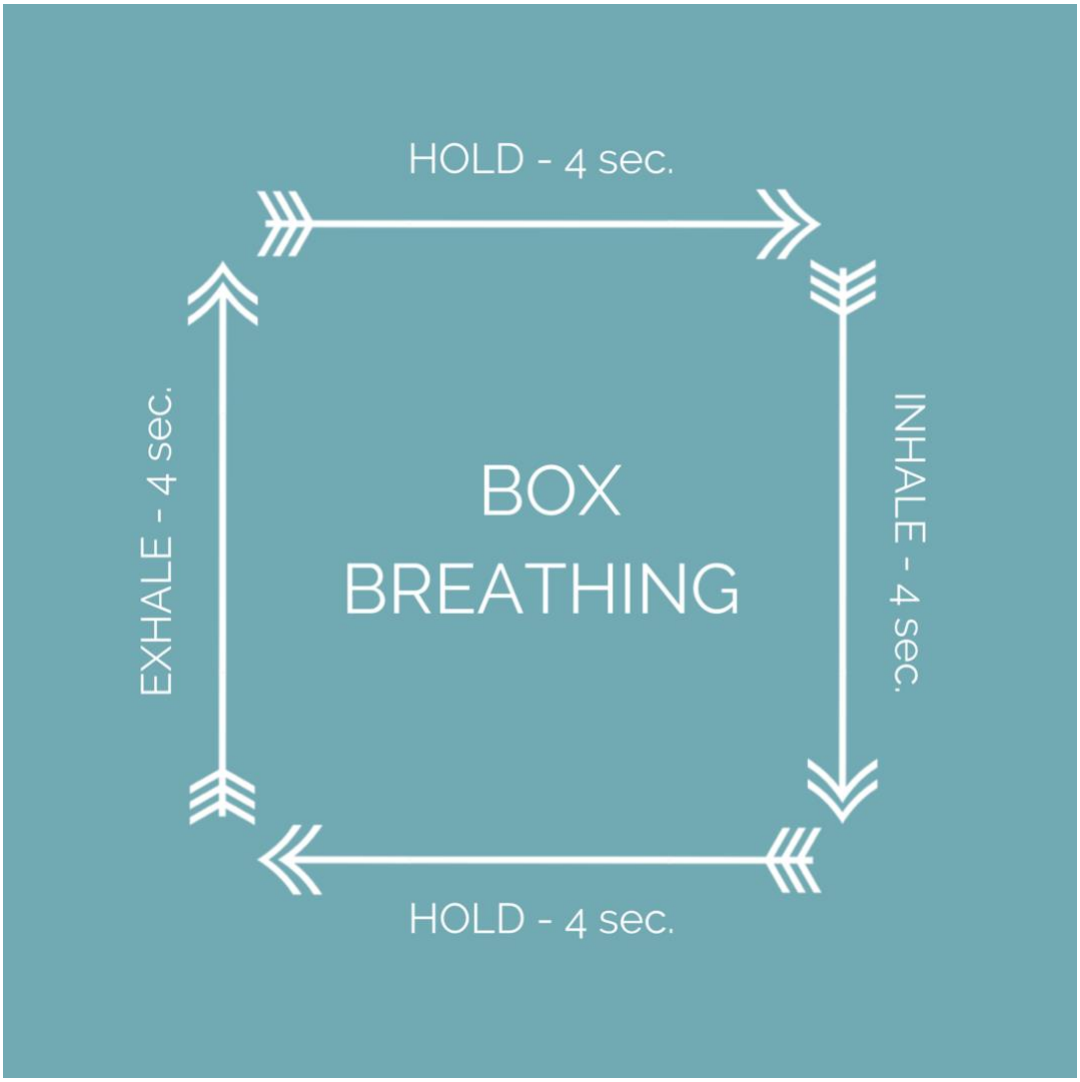
Box Breathing

Box breathing, also known as square breathing and four-square breathing, is an effective yet simple relaxation technique that helps re-set breathing back to its normal rhythm, clear the mind, relax the body, and minimise stress.

1. Inhale deeply for 4 seconds, feeling the air fill up your lungs while imagining you're drawing energy into your body
2. Hold that breath in for another 4 seconds
3. Slowly and steadily exhale through your mouth for 4 seconds while imagining all of your stresses and worries leaving your body
4. Repeat steps 1 to 3 until you feel calm and relaxed



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Progressive Muscle Relaxation

During the fight-or-flight response when you are stressed or anxious, the tension in your muscles increases. This can increase FND symptoms, including pain. Progressive muscle relaxation reduces stress and anxiety in your body by having you slowly tense then relax each muscle. This can provide an immediate feeling of relaxation, yet will be most effective if you practice regularly. With experience, you will become more aware of when you are experiencing tension and you will have the skills to relax.

During this exercise, each muscle should be tensed, but not to the point of strain. Pay special attention to the feeling of releasing tension in each muscle and the resulting feeling of relaxation.

Sit back or lie in a comfortable position. Shut your eyes if you feel comfortable doing so.

Begin by taking a deep breath in through your nose and noticing the feeling of air filling your lungs. Hold your breath for a few seconds.

Release the breath slowly through your mouth, as if you're giving a long sigh. Let the tension leave your body.

Take another deep breath in and hold….

Again, slowly release your breath and notice the feeling of tension leaving your body.

Now move your attention to your feet. Begin to tense your feet by curling your toes. Hold onto the tension and notice what it feels like.

Release the tension in your feet. Notice how relaxed your feet feel.

Next, move your focus onto your lower legs. Tense your calf muscles. Hold them tightly and pay attention to the feeling of tension.

Release the tension from your lower legs. Notice the feeling of relaxation. Remember to continue to take deep breaths.

Now, tense the muscles in your thighs by squeezing them together.

Release, feeling the tension leaving your muscles.

Begin to tense your stomach by sucking it in. Squeeze harder and hold the tension.

Release, and allow your body to go limp.

Continue to take deep breaths. Breathe in slowly, and notice the air filling your lungs. Hold….

Release the air slowly, noticing your breath leave your lungs.

Next, tense the muscles in your back by bringing your shoulders together behind you. Tense them and hold them tightly.

Release the tension from your back. Feel the tension slowly leaving your body. Notice how different your body feels when you allow it to relax.

Tense your arms all the way from your hands up to your shoulders. Make a fist and squeeze.

Release the tension from your arms and shoulders. Notice the feeling of relaxation in your fingers, hands, arms, and shoulders. Notice how your arms feel limp.

Move up to your neck and head. Move your head backwards, as if you are looking up to the ceiling. Squeeze your eyes shut and tense your jaw.

Bring your head back up and release the tension in your face, noticing the new feeling of relaxation.

Finally, tense your entire body. Tense your feet, legs, stomach, chest, arms, head, and neck. Tense harder without straining and hold….

Now release. Allow your whole body to go limp like a ragdoll. Pay attention to the feeling of relaxation and how different it is from when you feel tense.

Begin to wake up your body slowly by wriggling your fingers and toes. Take a deep breath and open your eyes when you're ready.

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Guided Imagery

Guided imagery combines a focus on a visual image with deep relaxation to reduce distress and improve self-control. The purpose of this exercise is to relax your mind and body, and guide you to imagine you are at your own safe, peaceful place. You can visualise this place when you are feeling stressed or anxious.

Sit back or lie in a comfortable position. Shut your eyes if you feel comfortable doing so.

Focus on your breathing. Take a deep breath in through your nose, and slowly breathe out through your mouth. Breathe in…. then out…. and in…. then out. Continue to breathe slowly and peacefully as you allow the tension to leave your body. Feel your muscles relax and become more comfortable with each breath.

Begin to create a picture in your mind of a place where you feel completely relaxed. It may be somewhere you have been before, or a place you imagine would make you feel safe and calm.

What does this place look like? Is it indoors or outdoors? What can you see? What objects make your place beautiful and enjoyable?

Focus on the relaxing sounds you can hear in your peaceful place.

What can you feel? What is the temperature like? Can you feel the sun on your skin if you are outside? Is there a breeze? What does the surface you are sitting or lying on feel like?

What can you smell? Can you taste anything?

What are you doing in this calming place? Are you sitting and relaxing, or are you walking around?

Are you alone, or are you having a conversation with one of your favourite people? Are there animals? Do you have a pet with you?

Take a moment to notice how you feel in your special place. Imagine a sense of peace and calmness. You have no worries while you are here. Memorise the sights, sounds, and sensations around you and take a mental snapshot. Know that you can return to this place in your mind whenever you need to take a mental vacation.

Turn your attention back to the present. Take a deep breath and begin to notice your surroundings. Open your eyes if you had them closed.

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Mindfulness & Grounding Techniques

Many people with FND find that their symptoms can be improved using mindfulness and grounding techniques, as it assists them in tuning into the present moment and evoking a sense of calm.

Cognitive awareness:

Re-orient yourself in place and time by asking yourself the following questions:

- Where am I?
- What is today's date?
- What season is it?
- What is your date of birth?

5-4-3-2-1 technique:

- What are 5 things you can see?
- What are 4 things you can feel?
- What are 3 things you can hear?
- What are 2 things you can smell?
- What is 1 thing you can taste?

Notice your breath:

Take a deep breath in, and as you exhale, imagine breathing out your tension through the soles of your feet. Feel the connection of your feet with the floor. Do this three times.

Three items:

Look around and choose three items you can see. Describe them in detail, including the colour, texture, and shape.

Special item:

Carry a small item in your pocket, like a pebble. Hold and rub the item, bringing focus to its sensation, including its weight and texture.

Cold water:

Have a few slow sips of cold water, noticing the cold sensation in your mouth and as you swallow.

Counting:

Count backwards from 50.

Sensory Strategies

Sensory processing refers to how we use our various senses (including sight, hearing, taste, smell, and touch) to understand information received from our surroundings. We all have different sensory needs and preferences, and these can change when our minds and/or bodies are in a state of overdrive. Sometimes increasing sensory input can help to calm the body or distract the mind, while at other times, reducing sensory stimuli can induce a soothing response. While you may not be able to engage in all of the suggestions below at the current time, it is helpful to discover which strategies to include in your FND toolkit. You may even find that a combination of these suggestions provides the most effective relief.

Oral Activities:

- Drink through a straw
- Have a fizzy drink
- Chew gum or liquorice
- Suck on a hard lolly
- Eat a crunchy apple or muesli bar
- Suck on an icy pole or ice blocks
- Taste a sour lolly or lemon
- Blow on a whistle
- Chew on a chew toy or chewy bracelet
- Blow bubbles


Auditory Activities:

- Listen to music
- Sing, hum, or whistle
- Listen to rain, wind, birds, etc.
- Use noise cancelling headphones
- Play a musical instrument
- Listen to an audiobook
- Move to a quiet space
- Listen to a white noise app
- Wear ear muffs or ear plugs
- Listen to a podcast


Movement Activities:

- Engage in stretching exercises
- Do yoga
- Crumple or tear up paper
- Play with fidget toys
- Use a swing or trampoline
- Gently rock yourself back and forth
- Engage in progressive muscle relaxation
- Push hands together for 10-seconds
- Do push-ups
- Stomp on the spot

Tactile Activities:

- Use a weighted blanket or toy
- Have a warm bath or shower
- Give someone a hug
- Have a massage
- Moisturise yourself with lotion
- Play with slime, dough, or putty
- Pat a furry pet or stroke a fluffy blanket
- Dig in sand or soil
- Pop bubble wrap
- Place your hands in a bag of rice

Body Scanning & Mapping

The human body is a well-designed warning system that helps us keep in touch with our emotional state. Body maps are visual representations of how we feel emotions and experiences in our bodies. They are an effective way to demonstrate the mind-body connection and can help us to tune into experiences that can be hard to put into words.

Find a quiet space to either sit or lay down. Close your eyes and take five deep breaths. Try to clear your mind of all other thoughts.

Scan your body from your toes to your head, making a mental note of what you notice. Pay attention to your toes, feet, ankles, shins, calves, knees, thighs, hips, buttocks, lower back, stomach, chest, upper back, upper arms, elbows, forearms, hands, fingers, shoulders, neck, jaw, mouth cheeks, nose, eyes, forehead, and scalp.

What sensations are occurring in your body? Where can you feel them?

Do you feel hot or cold?

Are any areas itchy, tingly, or numb?

Do you feel relaxed or tense? Are there any tight spots?

Do you feel any discomfort or other bodily sensations?

Can you notice any changes to your breathing or heartbeat?

Are you noticing any strong emotions? Where in your body do you feel these emotions?

Take a deep breath and open your eyes.

Draw or write down the bodily sensations and emotions you noticed on your body map. You may like to use different colours to represent different emotions. What shapes best describe how you felt? Are some sensations bigger than others? Consider creating your own symbols to represent what your body is telling you.

Draw the face of the main emotion you felt.

Now that you have focused on your internal bodily sensations, can you identify what you were thinking when you felt this way?

Can you identify any external factors that contribute to you feeling this way? This may include past experiences, family factors, school, social life and friends, or even things that are happening within the world!

Can you identify people who help support you? Or coping strategies that assist you in managing these feelings?

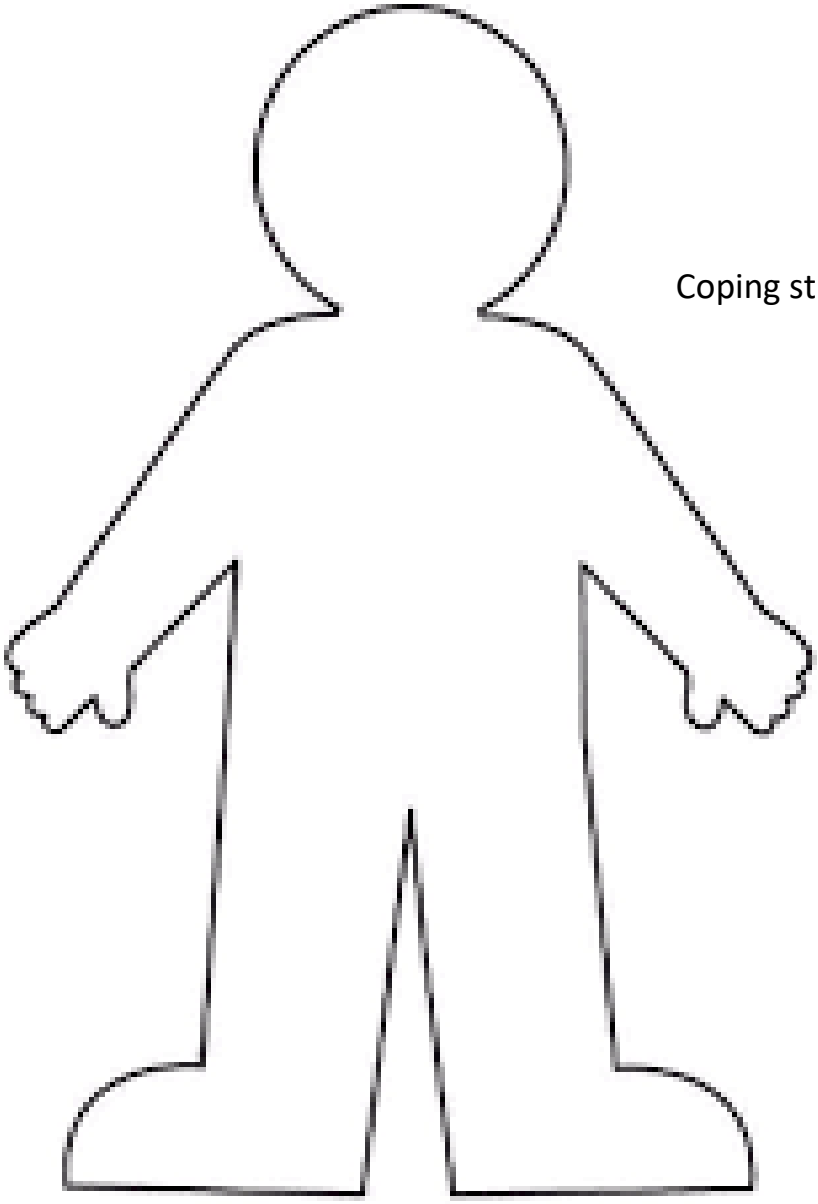
Dr Kelly Thompson, Senior Clinical Psychologist, VPRS

My Body Map

My thoughts:

Factors and events that play a role in me feeling this way:

People who support me:



Coping strategies:

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Functional Seizures

Some people can experience functional seizures as part of their FND. Functional seizures occur when people with FND experience a sense of 'overdrive' in their brain and body, often in response to stress. Functional seizures look different for everyone, and can include shaking of limbs, twitching, fainting-like episodes, altered awareness, or just feeling weird overall. While functional seizures can feel confusing and frightening to experience when they first occur, they are not causing harm to you. The other good news is that you can learn skills to:

- Identify and prevent or minimise the effect of triggers
- Identify warning signs and detect when a functional seizure may occur
- Calm your mind and body to potentially prevent the functional seizure from occurring
- Keep calm if you need to 'ride out' your functional seizure
- Calm your mind and body following a functional seizure to enable a return to your previous activity

Your team will work with you to help you identify patterns of when you are more likely to experience a functional seizure. This will involve becoming aware of potential triggers. Triggers are different for everyone, and can range from things like being in a noisy crowded room to feeling stressed about schoolwork. Your team will help you to develop a plan to minimise the effect of triggers on you. This may involve modifying your routine, problem-solving challenges, and learning skills to manage stress.

You may already have a sense of what happens in your body before a functional seizure. Some people report changes in their breathing or heart rate, changes in vision, dizziness or unsteadiness, a tingling sensation in their limbs, or a sense of feeling weird or confused.

If you feel like you might have a functional seizure, move to a safe quiet space. Your team will speak with your school about organising an appropriate space for you (e.g., a beanbag in a quiet corner of the room). Here you can practice the strategies in your toolkit to help calm your brain and body. Strategies may include diaphragmatic breathing, progressive muscle relaxation, guided imagery, mindfulness, distraction, listening to music, and use of fidget toys. Sometimes these strategies can prevent a functional seizure by disrupting the process of your body reacting to the trigger. At other times, it can be best to allow the functional seizure to run its course rather than fighting it. Professionals explain this like 'surfing the wave'. Riding out functional seizures is like a surfer on a surfboard moving with the intense waves rather than fighting the powerful ocean. The waves will eventually subside and the ocean will regain its sense of calm.

Functional seizures often use a lot of energy, so you may feel fatigued after an episode. When you have finished practicing your strategies to regulate your mind and body, it is most helpful to go back to your previous activity.

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Traffic Light Safety Plan for Managing Functional Seizures

When I'm having a functional seizure

Signs:

Strategies:

I have warning signs that I may have a functional seizure

Signs:

Strategies:

Low risk of having a functional seizure

Signs:

Strategies:

Adapted from Savage et al. (2022) with permission © Danae Laskowski and Kasia Kozlowska 2019

How Parents/Caregivers of a Child with FND can Support their Recovery

It can be stressful caring for a loved one with FND. It is important for parents and caregivers to know how to support their child, particularly when he/she is experiencing FND symptoms.

Tips for Parents/Caregivers:

Stay calm: Remember that your child is experiencing a somatic symptom as a result of their FND. They do not have an organic injury. FND causes a problem with the *function* of the nervous system, not damage to the nervous system itself. This means that there is a problem with the 'software' of the brain communicating to the limbs. Physical therapy assists your child in 'retraining' the nervous system to help regain control over their movement, while psychological therapy assists your child in managing triggers that can cause these physical symptoms.

Don't panic if symptoms flare-up: Recovery from FND is a gradual process, and we expect to see peaks and troughs. It is typical for functional symptoms to initially increase when your child begins to acknowledge difficult emotions and stressors that have served to trigger his/her symptoms. This will gradually subside as he/she develops coping strategies to manage FND.

Resist the urge to consult with 'Dr Google' and end up wondering about different diagnoses and medical tests: Flare-ups are common, with some children developing new symptoms during the recovery phase. Parents often worry that their child's doctors may have missed something and misdiagnosed. The uncertainty of questioning diagnoses and delays in treatment associated with ordering unnecessary tests delays recovery, and negatively impacts upon the child's confidence in their treating team.

Assure your child that you know he/she is not faking their symptoms: FND symptoms often present in an inconsistent manner due to the unconscious manner in which stressors are expressed. Furthermore, this disorder is not commonly known and understood by the general public. For these reasons, many patients with FND worry that others believe their difficulties are 'all in their head'.

Rather than focusing on symptoms and over-supporting, encourage participation in activity: Avoid monitoring and reminding your child about his/her symptoms. This only serves to increase their distress and level of impairment.

It is more helpful to briefly acknowledge symptoms, prior to encouraging them to distract themselves through participation in activity.

Encourage your child to implement self-management strategies: Prompt your child to refer to their FND Self-Management plan, subsequently engaging in their most effective coping strategies.

Develop a plan with your child's school: It is helpful to provide the school with copies of your child's Rehabilitation Discharge Report, FND Self-Management Plan, and other relevant documents. Most schools are very supportive of a graded return to school and send work home as required. School reintegration can trigger flare-ups for children, so it is important that the school feels comfortable managing your child's FND symptoms. 'Time out' sessions in a quiet environment are more helpful than being picked up early from school. Medical management plans can be provided by the hospital for the school in the instance whereby children present with functional seizures. While functional seizures can be confronting to observe, they do not cause physical harm, and are best managed by keeping the child calm in a safe environment.

Seek your own support: Caring for a child with FND can be a very stressful time. Try to share caregiving tasks with your partner or another family member. If you are feeling overwhelmed, consider seeking your own mental health support. Your GP can organise a Mental Health Treatment Plan (MHTP) for you to see a local Psychologist. Remember, your FND child is a thoughtful and emotionally sensitive soul – he/she will be relieved to know you are engaging in self-care.

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How Schools can Support Students with FND

What schools need to know about FND: Somatisation is the psychological mechanism whereby psychological distress is expressed in the form of physical symptoms. Functional neurological disorder (FND), also known as conversion disorder, is a specific form of somatisation, with the essential feature being the presence of symptoms that affect voluntary motor or sensory function. Typical symptoms include motor weakness, abnormal movements, functional seizures, loss of sight, hearing, and touch, and loss of speech and language. FND causes a problem with the *function* of the nervous system, not damage to the nervous system itself. Similarly, the 'hardware' of the physical body is not injured. Rather, there is a problem with the 'software' of the brain communicating to the body, with symptoms occurring when the 'computer crashes'.

The impact of academic stress and social difficulties on FND: School and educational difficulties are a common source of stress for children and adolescents with FND. Cognitive difficulties and low academic performance are associated with a higher predisposition for developing FND for adolescents, particularly for those who perceive high parental expectations. A tendency to work too hard (in the context of high self-expectations and perfectionism), social difficulties with peers, bullying, and school absenteeism (and subsequently falling behind academically) serve additional maintaining roles.

Minimising secondary gains: Prolonged school absence can provide children with a source of unconscious secondary-gain including spending additional time with parents. This can serve to reinforce FND symptoms. High achieving students also often find that the 'sick role' provides escape from school-related demands. Both hospital and school staff can minimise secondary gains from illness behaviours by limiting attention paid to symptoms and encouraging a return to previous activities while reinforcing use of coping strategies.

Functional seizures: Some patients with FND experience functional seizures as part of their condition. The treating team will advise you if your student is suffering from functional seizures and will provide you with additional information. These episodes can include episodic unresponsiveness, shaking of limbs, twitching, fainting-like episodes, and altered awareness. While functional seizures can initially be confronting to witness, they are not associated with the electrical discharges characteristic of epilepsy, and are not causing physical harm.

Given the importance of minimising secondary gain associated with FND, it is most helpful to avoid measures including calling for an ambulance, extended time spent in the sick bay, phoning parents to pick up their child early, and seeking formal medical intervention following a functional seizure.

Strategies and accommodations to consider (tick all that may apply):

- ❑ Nomination of a key contact to coordinate hospital liaison and facilitate communication with the family and teachers
- ❑ Graded return to school (your student's hospital team will liaise with you to plan for a graded school reintegration, if applicable)
- ❑ Consideration of a reduced subject load
- ❑ Encouraging the student to practice assertive communication to communicate their needs
- ❑ Referencing the student's VPRS 'Relapse Prevention Plan' for coping strategies (e.g., diaphragmatic breathing, guided imagery, progressive muscle relaxation, mindfulness, listening to music, and use of fidget toys) and plans for symptom management
- ❑ Additional time for completing classwork, tests, and exams
- ❑ Additional time to transition between classes
- ❑ Assistance carrying books and bags etc
- ❑ Allowing use of a laptop if hand function/writing is affected
- ❑ Allowing regular rest breaks during and between classes if fatigue is an issue
- ❑ Allowing use of a walking aid (e.g., wheelchair or walking frame) for longer distances if mobility is affected and use of such has been recommended by VPRS
- ❑ Access to a safe, quiet space (e.g., a beanbag in a quiet corner of the classroom or area within the library or sickbay) for implementation of strategies as required (avoiding excessive use of such if avoidance of the classroom or schoolwork is observed)
- ❑ Development of social scripts to assist the student in responding to peers who may enquire about their diagnosis, symptoms, and/or school absence

Dr Kelly Thompson, Senior Clinical Psychologist, VPRS

How Parents, Caregivers, & School Staff can Support a Child Presenting with Functional Seizures

Some individuals with FND can present with functional seizures. These episodes can include episodic unresponsiveness, shaking of limbs, twitching, fainting-like episodes, and altered awareness. While functional seizures can initially be confronting to witness, they are not associated with the electrical discharges characteristic of epilepsy, and are not causing harm to the patient.

Your child's/student's treating team will assist them in identifying both potential triggers and warning signs that they may experience a functional seizure. He/she will have developed a toolkit consisting of various regulation strategies to prevent or manage the episode. Strategies may include diaphragmatic breathing, progressive muscle relaxation, guided imagery, mindfulness, distraction, listening to music, and use of fidget toys.

Upon identifying that he/she may experience a functional seizure, your child/student will move to a safe space (e.g., a beanbag in a quiet corner of the room) where they can independently implement strategies to regain regulation.

Given the importance of both building children's confidence in their capacity to self-regulate and minimising secondary gain associated with FND, providing excessive comfort and reassurance during and following a functional seizure is strongly discouraged. It is most helpful for one adult to quietly and calmly observe from a distance. Extreme measures including calling for an ambulance are to be avoided, if possible, and decrease the child's confidence in their ability to 'ride out' their functional seizure.

Following a functional seizure, your child/student will spend some quiet time implementing strategies to calm their mind and body. He/she may report experiencing some fatigue following the episode. It is then helpful to encourage re-engagement in their previous activity.

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