# Considerations in Prescribing and De-Prescribing in Pediatric Functional Neurological Disorders

JAMIE GAINOR DIPIETRO, MD; ALISON MANNING, MD; HEATHER A. CHAPMAN, MD

**ABSTRACT**

Functional neurological disorder (FND) is common among children and adolescents, results in significant impairments in quality of life, and places a substantial burden on healthcare systems. Despite this, there is minimal literature to guide prescribing for this population. The purpose of this article is to provide common sense prescribing recommendations for providers who treat pediatric FND. A narrative review was conducted by searching PubMed using keywords related to FND and pharmacology. The narrative synthesis was guided by the objective of providing evidence for generally accepted practices and highlighting contributions and gaps in the literature. There is a dearth of evidence, and unique challenges exist in prescribing for pediatric patients with FND. Efforts should be made to limit prescribing and to discontinue, or de-prescribe, medications that may contribute to polypharmacy or overmedicalization of functional symptoms. Pediatric patients with FND require a thoughtful, multidisciplinary approach.

**KEYWORDS:** Functional Neurological Disorders, psychopharmacology, prescribing, pediatrics

## CASE

Early in her treatment course, BH was evaluated by psychiatry and diagnosed with major depressive disorder. She had no history of prior SSRI trials at that time. BH's symptoms of depression made it hard for her to consistently engage productively in treatment. Her family also expressed concern that BH was taking ibuprofen multiple times daily. At the time of her initial orthopedic injury, she was prescribed this medication to take as needed, but it had been intended to be a short-term support.

- What medication might be considered and why?
- What's the rationale for de-prescribing in patients with FND?

## INTRODUCTION

Psychiatrists, primary care pediatricians, and pediatric subspecialists face unique challenges in prescribing medications in pediatric patients with functional neurological disorder (FND). These challenges include a lack of evidence-based recommendations to guide prescribing practice, varied symptom presentations, diagnostic confusion, presence of co-morbid somatic symptoms, and barriers to assessing medication efficacy. This article will 1) elaborate on challenges faced by prescribers in pediatric FND, 2) summarize existing data for prescribing in FND and, 3) review generally accepted prescribing practices and guiding principles.

## CHALLENGES TO PRESCRIBING IN FND

### Varied presentations and diagnostic uncertainty/delay

Patients with FND frequently have complex presentations including varied neurological symptoms, somatic symptoms, and fluctuations in presentation, including shifts in the primary presenting symptom or the development of new symptoms,[1,2] making it challenging to identify treatment targets. The myriad presentations of FND (e.g., functional seizures, functional paralysis, functional tics) make it difficult to generalize existing evidence from one subset of patients to those with different symptoms. Additionally challenging is that the correct diagnosis may not be immediately apparent. While there has been a shift away from considering FND a diagnosis of exclusion and movement toward a "rule-in" approach, the literature reveals ongoing delays in diagnosis with one study of children with functional seizures demonstrating times to diagnosis ranging from months to four years.[3] As such, patients may be started on medications that are not indicated such as when antiepileptic drugs (AEDs) are prescribed for functional seizures.

Patients may also be prescribed multiple or unnecessary medications to address individual symptoms before these are recognized as constituting a single, unifying diagnosis. For example, alpha-agonists for tics, muscle relaxers for spasms, and beta blockers for tremor may be prescribed for a given patient when these symptoms assessed collectively may actually represent abnormal movement subtype of FND. Patients with FND commonly report somatic symptoms such as pain, fatigue, and gastrointestinal complaints,[4,5] potentially resulting in prescriptions for a wide range of symptom-focused medications such as opiates, NSAIDS,[6] antiemetics, and others. A chart review of 322 adults in the UK with motor FND treated in a large mental health system found that patients with FND were at higher

risk of polypharmacy as they had a greater number of prescriptions for multiple medication classes than non-FND diagnosed patients,[7] highlighting the necessity of thoughtful prescribing practices to minimize the risk of side effects and medication interactions.

Additionally, wide-ranging symptoms may lead to multiple diagnoses and multi-specialty involvement. Pediatric primary care, psychiatry, and subspecialty providers who prescribe for patients with FND are often involved in considering if and when to refer to subspecialists and initiate work-up for new or existing symptoms. There is a necessary balance between appropriately investigating new symptoms and trialing reasonable, evidence-based treatment approaches for reported symptoms with recognizing that symptoms may be part of an FND presentation and limiting over-medicalization. Diagnostic accuracy can help avoid unnecessary prescriptions, polypharmacy, and the risk of reinforcing illness identity.

### Evaluating response to treatment

Evaluating the impact of pharmacologic interventions for FND is inherently challenging as no standardized assessment measures exist,[8,9] and avoidance of focusing on symptoms is a core tenet of treatment. Some etiological theories of FND propose that over-focus on the affected body area contributes to symptom onset and maintenance.[10] Additionally, using patient or parent report on the frequency or intensity of symptoms to determine pharmacologic efficacy can be problematic; instead assessing overall functioning is most appropriate.[11] For example, tracking the frequency of functional seizures may be a straightforward way to monitor progress and is often used as an outcome measure in evaluating pharmacologic interventions for FND,[9,12] but it does not capture fluctuations in other symptoms or in functioning. Additionally, while the primary presenting FND symptom may be most distressing to the family and lead to seeking care, associated symptoms such as fatigue or pain may be equally or more impairing.[5] Understanding general symptom trends may be necessary, but repeated inquiry about neurological or somatic symptoms may interfere with treatment progress. Instead, input from parents, schools, and other observers can be helpful in tracking global functioning over time.[13,14]

Assessing overall functioning in children will often involve monitoring school attendance, especially as absenteeism is a perpetuating factor for FND,[15] as well as monitoring the completion of other daily routines including hygiene, chores, and participation in extra-curricular activities. A child supported by therapeutic and pharmacologic interventions who is attending school regularly and re-engaging with friends despite having a consistent or even increased number of functional seizures is likely demonstrating global improvement in functioning. Conversely, there may be increased concern for a child who has decreased event frequency but presents with other symptoms that are functionally impairing (e.g., a child with fewer functional seizures but new functional leg weakness that results in difficulty getting out of bed). Setting the expectation for families that their child may have some ongoing symptoms and that this does not indicate treatment failure, either therapeutically or pharmacologically, can be helpful anticipatory guidance.

## OVERVIEW OF THE EXISTING LITERATURE

### Psychotropic medications for FND

There is a paucity of studies examining the role of psychotropic medications in the treatment of FND, with most data coming from small studies or case reports in adults. A review of the existing literature indicates that most major classes of psychotropic medications have been utilized for individual patients or evaluated in studies of pharmacotherapy interventions for FND including mood stabilizers, antipsychotics, antidepressants, and others.[12,16-18]

Studies evaluating the role of selective serotonin reuptake inhibitors (SSRIs) and selective norepinephrine reuptake inhibitors (SNRIs) in treating FND are among the more robust, albeit with small sample sizes. In a pilot randomized controlled trial of 38 patients with functional seizures taking sertraline up to a maximum dose of 200 mg or placebo, the sertraline group demonstrated a trend toward lower seizure frequency.[12] A follow-up study of 38 patients with functional seizures randomized to treatment with sertraline only, cognitive behavioral therapy-informed psychotherapy (CBT-ip) only, CBT-ip with sertraline, or treatment as usual, the group receiving therapy and medication demonstrated the largest reduction in seizure frequency with no significant reduction in seizure frequency in the medication-only group.[19] In another study of 19 adults with functional seizures with comorbid anxiety and/or depression treated with venlafaxine, 15 patients had a reduction in seizure frequency by half or more.[18] In a study of 28 adults (78% with at least one comorbid Axis I diagnosis) with functional movement disorder initially prescribed citalopram or paroxetine with switch to venlafaxine for lack of response after four weeks, 8 of 10 patients with primary FND demonstrated improvement in motor symptoms and seven patients had complete remission.[20] These limited studies in adults suggest possible efficacy of SSRIs and SNRIs in the treatment of FND.

Antipsychotic medications are sometimes used for the treatment of FND,[17,21] though literature regarding efficacy is sparse. A small randomized controlled trial demonstrated that both haloperidol and quetiapine decreased acute symptoms of FND in adults in the emergency room setting without commenting on the presence or absence of psychosis or agitation in these patients.[17] The use of aripiprazole was followed by a decrease in symptoms, improved function, and eventual remission in a case report of an adult patient with a general diagnosis of somatization disorder with a subset of neurologic symptoms.[22] Another case report described the

use of aripiprazole in a child with bizarre behaviors proximal to functional seizure episodes, with a subsequent transition to quetiapine due to akathisia.[21] Some experts suggest consideration of this class of medications for patients with severe, treatment-resistant FND in whom robust, therapeutic interventions have already been implemented or in whom symptoms have a psychotic quality.[23] Nonetheless, these medications are not first line, and if used off label, should be prescribed following best practices including implementing appropriate monitoring of labs and weight, using the lowest effective dose, and minimizing duration of treatment.[24]

### Treating psychiatric co-morbidities in FND

Many pediatric patients with FND have a co-occurring psychiatric diagnosis.[25-27] In a study comparing children with functional seizures to their siblings, anxiety (83.6%) and depression (43.6%) were the most common comorbidities. Additionally, children with functional seizures were significantly more likely to have diagnoses of anxiety, depression, and PTSD than their siblings.[26] Other somatic symptom and related disorders (SSRDs) and neurodevelopmental disorders including ADHD have also been identified as being more common in children with functional seizures.[27] Children with FND have been found to be at risk for receiving a new psychiatric diagnosis in the two years following their FND diagnosis compared to healthy controls and children with epilepsy, emphasizing the need for ongoing assessment for psychiatric co-morbidities.[27] Notably, a barrier to identifying co-occurring psychiatric diagnoses in patients with FND may be a tendency toward somatization resulting in under-reporting symptoms of anxiety or depression and instead endorsing physical symptoms.[28] There are no dedicated studies demonstrating that treating psychiatric co-morbidities directly improves pediatric FND; however, available literature indicates that it is reasonable to address these.[29,30] This approach is further supported by limited data that psychiatric co-morbidities may impact quality of life to a greater degree than symptoms of FND in patients with functional seizures.[31]

## GENERAL PRINCIPLES

### Consider the therapeutic implications of pharmacologic intervention

Beyond evaluating whether medications are indicated and effective in directly addressing symptoms, it is important to recognize that there can be therapeutic implications of starting, continuing, and discontinuing medications. Treatment protocols for FND consistently recommend delivering a clear diagnosis of FND as an important initial step in management,[32,33] which can decrease subsequent healthcare utilization.[34] The failure to discontinue medications that treat an inaccurate diagnosis can communicate uncertainty about the diagnosis or make it difficult for families and patients to have confidence that a diagnosis of FND is correct.[35] The psychological impact of prescribing medications has long been considered, and medications used to treat various diagnoses may hold psychological meaning for patients and families.[36] For example, children treated pharmacologically for depression report they draw conclusions about their illness severity and ability to cope based on being prescribed a medication.[37] Additionally, pediatric patients with chronic medical illnesses, for example rheumatoid arthritis,[38] report an impact of medication on self-perception. Identification with the "sick role" has been proposed as one of many factors that contribute to the maintenance of symptoms in patients with FND,[10] and thus avoiding over-medicalization is another important consideration in weighing risks and benefits of initiating or continuing medication in this patient population.

The manner in which medications are discontinued requires consideration. While there is evidence that weaning anti-epileptic medications more expeditiously in patients with functional seizures results in improved outcomes,[39] partnering with a hesitant patient or family to gradually discontinue an unneeded medication may strengthen the therapeutic alliance and build trust around this recommendation.

### Avoid unnecessary prescriptions and de-prescribe when indicated

A guiding principle for treating FND is avoiding interventions that reinforce inaccurate diagnoses which can interfere with treatment progress. Thus, equally important as considering initiating medications is evaluating opportunities to avoid prescribing or to de-prescribe medications, simplifying regimens to those medications that are indicated and helpful. For example, a child with FND presenting as functional seizures, initially treated with benzodiazepine rescue medication and prescribed one or more anti-epileptic drugs (AEDs), would be an appropriate candidate for de-prescribing. Estimates of the percentage of children already prescribed an anti-epileptic drug at the time of diagnosis of functional seizures varies widely and may be as high as 50–95%.[40] After a diagnosis of functional seizures is made, if the child does not have concurrent epilepsy, discontinuing medications that target electrical seizures is recommended.[29,41] The fact that FND can co-exist with other diagnoses, for example in individuals with both functional seizures and epilepsy,[42] can make these treatment decisions more difficult and potentially result in reluctance to discontinue medications. Diagnostic clarity and prescribing appropriate medication is critical as AEDs can have significant side effects,[43] and continued use, if not clinically indicated, can convey a lack of diagnostic certainty to the patient and family.[35] De-prescribing in these scenarios often requires clear, united communication with the child's family by their neurologist, pediatrician, therapist, and/or psychiatrist.

## CONCLUSION

There is a dearth of evidence to guide clinicians in prescribing medications to pediatric patients with FND. Expert consensus and limited available data support the general principles that co-morbid psychiatric conditions should be treated according to evidence-based guidelines and that prescribing should be judicious to avoid polypharmacy, overmedicalization, and reinforcement of the sick role. Medication regimens should be routinely evaluated for opportunities to de-prescribe agents no longer helpful or not consistent with the diagnostic formulation. Assessing the impact of pharmacologic treatment interventions should be done thoughtfully without excessive focus on individual symptoms and instead focus on broader functioning. A multidisciplinary approach to convey a unified message, in addition to partnering with the family, are essential components to treating these complex pediatric patients.

## CASE UPDATE

As there is empirical support for the efficacy of SSRIs in treating depression in youth, BH was started on sertraline, which was gradually titrated to 150 mg. She had improvement in depressive symptoms and gradually improved engagement in therapy. She was also eventually able to participate in a school transition despite having intermittent, ongoing symptoms of paralysis. After forming a therapeutic relationship with BH and her family, it became clear that she took ibuprofen at times of emotional distress instead taking it for pain. Her psychiatry team coordinated with her orthopedics team to deliver a clear message around why taking daily ibuprofen was not indicated. BH was supported in using other coping skills during this process, which was ultimately important as she applied these to various stressful situations.

### References


1. McKenzie PS, Oto M, Graham CD, Duncan R. Do patients whose psychogenic non-epileptic seizures resolve, "replace" them with other medically unexplained symptoms? Medically unexplained symptoms arising after a diagnosis of psychogenic non-epileptic seizures. J Neurol Neurosurg Psychiatry. 2011;82(9):967-969. doi:10.1136/jnnp.2010.231886
2. Yong K, Chin RFM, Shetty J, et al. Functional neurological disorder in children and young people: Incidence, clinical features, and prognosis. Dev Med Child Neurol. 2023;65(9):1238-1246. doi:10.1111/dmcn.15538
3. Valente KD, Alessi R, Vincentiis S, Santos BD, Rzezak P. Risk Factors for Diagnostic Delay in Psychogenic Nonepileptic Seizures Among Children and Adolescents. Pediatr Neurol. 2017;67:71-77. doi:10.1016/j.pediatrneurol.2016.10.021
4. Forejtová Z, Serranová T, Sieger T, et al. The complex syndrome of functional neurological disorder. Psychol Med. 2023;53(7):3157-3167. doi:10.1017/S0033291721005225
5. Gelauff JM, Kingma EM, Kalkman JS, et al. Fatigue, not self-rated motor symptom severity, affects quality of life in functional motor disorders. J Neurol. 2018;265(8):1803-1809. doi:10.1007/s00415-018-8915-7
6. Friedrichsdorf S, Giordano J, Desai Dakoji K, Warmuth A, Daughtry C, Schulz C. Chronic Pain in Children and Adolescents: Diagnosis and Treatment of Primary Pain Disorders in Head, Abdomen, Muscles and Joints. Children. 2016;3(4):42. doi:10.3390/children3040042
7. O'Connell N, Nicholson T, Blackman G, Tavener J, David AS. Medication prescriptions in 322 motor functional neurological disorder patients in a large UK mental health service: A case control study. Gen Hosp Psychiatry. 2019;58:94-102. doi:10.1016/j.genhosppsych.2019.04.004
8. Fobian AD, Szaflarski JP. Identifying and evaluating novel treatment targets for the development of evidence-based interventions for functional neurological disorder. Epilepsy Behav Rep. 2021;16:100479. doi:10.1016/j.ebr.2021.100479
9. Nicholson TR, Carson A, Edwards MJ, et al. Outcome Measures for Functional Neurological Disorder: A Review of the Theoretical Complexities. J Neuropsychiatry Clin Neurosci. 2020;32(1):33-42. doi:10.1176/appi.neuropsych.19060128
10. Fobian AD, Elliott L. A review of functional neurological symptom disorder etiology and the integrated etiological summary model. J Psychiatry Neurosci. 2019;44(1):8-18. doi:10.1503/jpn.170190
11. Doss JL, Plioplys S. Pediatric Psychogenic Nonepileptic Seizures. Child Adolesc Psychiatr Clin N Am. 2018;27(1):53-61. doi:10.1016/j.chc.2017.08.007
12. LaFrance WC, Keitner GI, Papandonatos GD, et al. Pilot pharmacologic randomized controlled trial for psychogenic nonepileptic seizures. Neurology. 2010;75(13):1166-1173. doi:10.1212/WNL.0b013e3181f4d5a9
13. Janssens KAM, Klis S, Kingma EM, Oldehinkel AJ, Rosmalen JGM. Predictors for Persistence of Functional Somatic Symptoms in Adolescents. J Pediatr. 2014;164(4):900-905.e2. doi:10.1016/j.jpeds.2013.12.003
14. Rief W, Burton C, Frostholm L, et al. Core Outcome Domains for Clinical Trials on Somatic Symptom Disorder, Bodily Distress Disorder, and Functional Somatic Syndromes: European Network on Somatic Symptom Disorders Recommendations. Psychosom Med. 2017;79(9):1008-1015. doi:10.1097/PSY.0000000000000502
15. Janssens KAM, Oldehinkel AJ, Dijkstra JK, Veenstra R, Rosmalen JGM. School Absenteeism as a Perpetuating Factor of Functional Somatic Symptoms in Adolescents: The TRAILS Study. J Pediatr. 2011;159(6):988-993.e1. doi:10.1016/j.jpeds.2011.06.008
16. Messina A, Fogliani AM. Valproate in Conversion Disorder: A Case Report. Case Rep Med. 2010;1-3. doi:10.1155/2010/205702
17. Ghanbarizadeh SR, Dinpanah H, Ghasemi R, et al. Quetiapine versus Haloperidol in Controlling Conversion Disorder Symptoms; a Randomized Clinical Trial.
18. Pintor L, Baillés E, Matrai S, et al. Efficiency of venlafaxine in patients with psychogenic nonepileptic seizures and anxiety and/or depressive disorders. J Neuropsychiatry Clin Neurosci. 2010;22(4):401-408. doi:10.1176/jnp.2010.22.4.401
19. LaFrance WC, Baird GL, Barry JJ, et al. Multicenter Pilot Treatment Trial for Psychogenic Nonepileptic Seizures: A Randomized Clinical Trial. JAMA Psychiatry. 2014;71(9):997. doi:10.1001/jamapsychiatry.2014.817
20. Voon V, Lang AE. Antidepressant treatment outcomes of psychogenic movement disorder. J Clin Psychiatry. 2005;66(12):1529-1534. doi:10.4088/jcp.v66n1206
21. Oldak SE, Bernal JA, Bez Y, Coffey BJ. Rational Psychopharmacological and Psychotherapeutic Treatment of a 14-Year-Old Female with Functional Neurological Symptoms Disorder and Depression. J Child Adolesc Psychopharmacol. 2023;33(4):158-161. doi:10.1089/cap.2023.29239.bjc
22. Nagoshi Y, Tominaga T, Fukui K. Effect of Aripiprazole Augmentation for Treatment-Resistant Somatoform Disorder: A Case Series. J Clin Psychopharmacol. 2014;34(3):397-398. doi:10.1097/JCP.0000000000000063

23. Scamvougeras A. Understanding and Managing Somatoform Disorders. AJKS Publishing; 2018. Accessed August 26, 2024. https://somatoformdisorders.wordpress.com/wp-content/uploads/2019/12/understanding-managing-somatoform-disorders-scamvougeras-howard-2018.pdf
24. Correll CU. Assessing and Maximizing the Safety and Tolerability of Antipsychotics Used in the Treatment of Children and Adolescents. J Clin Psychiatry. 2008:69 Suppl 4:26-36.
25. Yi YY, Kim HD, Lee JS, Cheon KA, Kang HC. Psychological Problems and Clinical Outcomes of Children with Psychogenic Non-Epileptic Seizures. Yonsei Med J. 2014;55(6):1556. doi:10.3349/ymj.2014.55.6.1556
26. Plioplys S, Doss J, Siddarth P, et al. A multisite controlled study of risk factors in pediatric psychogenic nonepileptic seizures. Epilepsia. 2014;55(11):1739-1747. doi:10.1111/epi.12773
27. Hansen AS, Rask CU, Christensen AE, Rodrigo-Domingo M, Christensen J, Nielsen RE. Psychiatric Disorders in Children and Adolescents With Psychogenic Nonepileptic Seizures. Neurology. 2021;97(5). doi:10.1212/WNL.0000000000012270
28. Kozlowska K, Schollar-Root O, Savage B, et al. Illness-Promoting Psychological Processes in Children and Adolescents with Functional Neurological Disorder. Child Basel Switz. 2023;10(11):1724. doi:10.3390/children10111724
29. Gilmour GS, Nielsen G, Teodoro T, et al. Management of functional neurological disorder. J Neurol. 2020;267(7):2164-2172. doi:10.1007/s00415-020-09772-w
30. Hallett M, Aybek S, Dworetzky BA, McWhirter L, Staab JP, Stone J. Functional neurological disorder: new subtypes and shared mechanisms. Lancet Neurol. 2022;21(6):537-550. doi:10.1016/S1474-4422(21)00422-1
31. Flewelling KD, Koehler A, Shaffer J, Dill EJ. Correlates of health-related quality of life in youth with psychogenic non-epileptic seizures. Seizure. 2020;83:203-207. doi:10.1016/j.seizure.2020.09.030
32. Stone J, Carson A, Sharpe M. Functional symptoms in neurology: management. J Neurol Neurosurg Psychiatry. 2005;76. (Suppl 1):i13-21. doi:10.1136/jnnp.2004.061663
33. Garcia A. Pediatric Functional Neurologic Disorders. Pediatr Clin North Am. 2023;70(3):589-601. doi:10.1016/j.pcl.2023.01.006
34. Lagrand TJ, Jones M, Bernard A, Lehn AC. Health Care Utilization in Functional Neurologic Disorders: Impact of Explaining the Diagnosis of Functional Seizures on Health Care Costs. Neurol Clin Pract. 2023;13(1):e200111. doi:10.1212/CPJ.0000000000200111
35. LaFrance WC, Reuber M, Goldstein LH. Management of psychogenic nonepileptic seizures. Epilepsia. 2013;54(s1):53-67. doi:10.1111/epi.12106
36. Rappaport N, Chubinsky P. The Meaning of Psychotropic Medications for Children, Adolescents, and Their Families. J Am Acad Child Adolesc Psychiatry. 2000;39(9):1198-1200. doi:10.1097/00004583-200009000-00021
37. Maroun RA, Thackeray LA, Midgley N. Meaning and medication: a thematic analysis of depressed adolescents' views and experiences of SSRI antidepressants alongside psychological therapies. BMC Psychiatry. 2018;18(1):374. doi:10.1186/s12888-018-1961-y
38. McDonagh JE, Shaw KL, Prescott J, Smith FJ, Roberts R, Gray NJ. "Sometimes I feel like a pharmacist": identity and medication use among adolescents with juvenile arthritis. Pediatr Rheumatol. 2016;14(1):57. doi:10.1186/s12969-016-0117-1
39. Oto M, Espie CA, Duncan R. An exploratory randomized controlled trial of immediate versus delayed withdrawal of antiepileptic drugs in patients with psychogenic nonepileptic attacks (PNEAs). Epilepsia. 2010;51(10):1994-1999. doi:10.1111/j.1528-1167.2010.02696.x
40. Babaturk L, Sullivan K. Pediatric Psychogenic Non-Epileptic Seizures (PNES): Considerations for Treatment. Child Adolesc Psychopharmacol News. 2017;22(2):1-4. doi:10.1521/capn.2017.22.2.1
41. Gasparini S, Beghi E, Ferlazzo E, et al. Management of psychogenic non-epileptic seizures: a multidisciplinary approach. Eur J Neurol. 2019;26(2):205. doi:10.1111/ene.13818
42. Kutlubaev MA, Xu Y, Hackett ML, Stone J. Dual diagnosis of epilepsy and psychogenic nonepileptic seizures: Systematic review and meta-analysis of frequency, correlates, and outcomes. Epilepsy Behav. 2018;89:70-78. doi:10.1016/j.yebeh.2018.10.010
43. Jovanovic M, Jocic-Jakubi B, Stevanovic D. Adverse effects of antiepileptic drugs and quality of life in pediatric epilepsy. Neurol India. 2015;63(3):353. doi:10.4103/0028-3886.158203


## Authors


Jamie Gainor DiPietro, MD, Warren Alpert Medical School of Brown University; Hasbro Children's Partial Hospital Program; Hasbro Children's Hospital/Rhode Island Hospital; Providence, RI.

Alison Manning, MD, Warren Alpert Medical School of Brown University; Hasbro Children's Hospital/Rhode Island Hospital; Providence, RI.

Heather A. Chapman, MD, Warren Alpert Medical School of Brown University; Hasbro Children's Partial Hospital Program; Hasbro Children's Hospital/Rhode Island Hospital; Providence, RI.


## Disclosure

Authors have no conflicts of interest relevant to this article to disclose.

## Correspondence


Jamie Gainor DiPietro, MD
RIH/Hasbro Children's Partial Hospital Program – Potter Basement
593 Eddy Street
Providence, RI 02903
401-444-8638
Fax 401-444-2085
jgainordipietro@lifespan.org