

# The Neurotransmitter

UT Health Austin Pediatric Neurosciences at Dell Children's

Promoting Discovery and Innovation in the Pediatric Neurosciences



Dear Colleagues:

Welcome to **UT Health Austin Pediatric Neurosciences at Dell Children's**. In this issue, we highlight several publications by our team members, our acquisition of a state-of-the-art portable MRI, Manikum Moodley's retirement, and several recent accomplishments and events.

As our nationally ranked program continues expanding its impact in Central Texas and beyond, we remain dedicated to offering outstanding educational opportunities, promoting research and scholarly activity, and delivering exceptional multidisciplinary clinical care for all children with neurological disorders.

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## FEATURED ARTICLES

Our program contributes scholarly articles on a variety of topics, and we encourage publications from all members of the team. The featured articles below, for example, include contributions from child neurologists, child neurology residents, a nurse practitioner, and a pediatric neurosurgeon.



**Kevin Kumar, MD, PhD**, assistant professor of neurosurgery at Dell Medical School, was the lead author of a recent *Frontiers in Surgery* article that analyzed the effectiveness of deep brain stimulation (DBS) and responsive neurostimulation (RNS) in children with drug-resistant epilepsy. DBS was used primarily for palliation of generalized or mixed drug-resistant epilepsy after other therapies failed, and 71% of these patients experienced a 50% or greater seizure reduction. RNS was used for patients with a better-defined seizure focus and no prior epilepsy surgery. Eighty percent of the RNS patients achieved clinical seizure freedom, and 20% had a 90% reduction in seizure burden. RNS also provided valuable data for future interventions. Both DBS and RNS are useful options for children with drug-resistant epilepsy.



Child neurology residents **Catherine Kronfol, MD, PGY-4**, and **Aaron Hocher, MD, PGY-3**, described a newborn who was transferred from another hospital because of metabolic acidosis, respiratory distress, and suspected seizures. Abnormal facial movements and posturing were initially suspected to represent seizures, but continuous electroencephalography showed no epileptiform discharges during the movements. His initial serum ammonia level was dramatically elevated (1284 µg/dL). Urine organic acids, plasma amino acids, serum pyruvate, and carnitine were normal, but next-generation DNA sequencing of serum confirmed evidence of *Ureaplasma urealyticum*, an organism that produces copious amounts of ammonia. After treatment with azithromycin, his ammonia level normalized, and when seen at 13 months of age he was developmentally normal. Severe hyperammonemia does not always result from genetic metabolic disorders.



**Samantha Irwin, MSc, MB BCh BAO**, an associate professor of neurology, and **Sara Pavitt, MD**, an assistant professor of neurology, reviewed the assessment and management of headache in children in the American Academy of Pediatrics' education journal *Pediatrics in Review*. The far-reaching review includes typical clinical manifestations, common headache triggers, red flags that could indicate more serious conditions, the epidemiology of headaches in children, symptomatic and preventive medications, and neuromodulation devices for headache.



**Janet Wilson, MSN, CPNP-PC**, has years of experience treating children with drug-resistant epilepsy with the ketogenic diet. She frequently volunteers in Kenya and the Caribbean islands, where the use of the ketogenic diet is often hindered by the cost of nutritional supplements and extensive laboratory monitoring and by the limited availability of the ingredients commonly used to make diet recipes. She has identified locally available ingredients that are suitable for maintaining ketosis and taught people how to implement the diet. In a recent issue of *Epilepsy Currents*, Wilson teamed with colleagues from the United States, Jamaica, India, and Kenya to discuss optimization of refractory epilepsy care in resource-limited settings, including implementation of dietary therapies.

Uchitel J, Lui A, Knowles J, Parker JJ, Phillips HW, Halpern CH, Grant GA, Buch VP, Hyslop A, Kumar KK. Intracranial neuromodulation for pediatric drug-resistant epilepsy: early institutional experience. *Front Surg*. 2025 Apr 8; 12:1569360.

<https://doi.org/10.3389/fsurg.2025.1569360>

Pavitt S, Irwin SL. Headache care. *Pediatr Rev*. 46(3):129-138.

<https://doi.org/10.1542/pir.2024-006402>

Kronfol C, Hoche A, Roach ES. Neonatal hyperammonemia due to Ureaplasma sepsis. *Ann Child Neurol Soc*. 2025;3:57-58. <https://doi.org/10.1002/cns3.20107>

Yardi R, Radhakrishnan K, Samia P, Wilson J, Ali A. Managing refractory epilepsy in a resource-limited setting—doing more with less. *Epilepsy Curr*. Published 2025 May 27.

<https://doi.org/10.1177/15357597251318562>

## A SECOND OPINION

This 17-year-old boy presented for a second opinion regarding unilateral vision loss and eye pain. He initially had complained of blurred vision and right eye pain. During the following week, his blurred vision progressed to near blindness in the right eye and worsening eye pain, especially when looking around the room. He also noted that colors were not as vibrant. He had a history of mild headaches but no conjunctival injection or tearing.

The family first sought medical care two weeks after symptom onset. An optometrist identified a right afferent pupillary defect and referred him to an emergency department, where he had a normal head CT. He was discharged with a diagnosis of refractive error versus migraine with aura.

### Presenting Diagnoses

1. Refractive error
2. Migraine with aura

What additional diagnostic studies are indicated?

*See below for additional discussion.*

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## DELL CHILDREN'S MEDICAL CENTER ADDS PORTABLE MRI





In the last few years, MRI technology has advanced sufficiently to allow small, safe, portable machines that can be brought to a patient's bedside. Dell Children's Medical Center's new portable MRI circumvents the need to transport patients away from their care unit, making MRI more feasible for critically ill patients requiring ventilation, ECMO, or other vital support measures. For these patients, being moved from the intensive care setting for the 60–90 minutes that is typically needed for an MRI represents a substantial risk; the portable MRI, however, provides diagnostic-quality images in less than 30 minutes without requiring the patient to leave the room. Our portable MRI's open design also allows a caregiver to remain with the child during the study, in some instances eliminating the need for sedation.

"The portable MRI helps us rapidly identify and treat an array of neurological conditions in children who are too ill to safely transport for neuroimaging," said **Chelsey Ortman, MD**, an assistant professor of neurology who was instrumental in acquiring the technology. "For many of these children, earlier diagnosis will translate into a better outcome."

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## ELECTED & SELECTED

### Pavitt Named Clinician of the Year in Pediatric Leadership



Congratulations to **Sara Pavitt, MD**, associate chief of pediatric neurology and chief of the Dell Children's Pediatric Headache Center, who was selected as Clinician of the Year in the category of pediatric leadership by Ascension Medical Group. The award recognizes innovative, servant, and transformational leaders who inspire others, foster success, and cultivate an open, trusting culture.

### Keith Selected to *Pediatric Neurology* Editorial Board



**Louisa Keith, MD**, assistant professor of neurology and chief of the Neurodevelopmental Center, was recently appointed to the editorial board of *Pediatric Neurology*. This appointment reflects Keith's growing reputation as an expert for formal follow-up of children at high risk for neurological impairment. Keith serves alongside several of our pediatric neurosciences colleagues, including senior associate editor **Stephen Deputy, MD**, statistician **Yingchao Yuan, MA**, and editorial board members **Audrey Brumback, MD, PhD**, **Duriel Hardy, MD**, **Samantha Irwin, MSc, MB BCh BAO**, and **Kristina Julich, MD**.

### **Resident Receives Best Research Poster Award**



Congratulations to neurosurgery resident **Vik Kohli, MD, MBA**, recipient of the Best Research Poster by a Resident from the Department of Pediatrics at Dell Medical School for his poster entitled “Treatment of Advanced Medulloblastoma With Multidisciplinary Subspecialty Care and State-of-the-Art Technology.”

### **Moodley Receives 2025 Resident Teaching Award**



Congratulations to neurology professor **Manikum Moodley, MD**, winner of this year’s Excellence in Neurology Resident Teaching Award. Moodley was selected by the child and adult neurology residents who spent time in our program. He was also the recipient of the award in 2021.

### **Clarke Elected Chair of ILAE-North America**



**Dave Clarke, MD**, professor of neurology at Dell Medical School and Kozmetsky Family Foundation Endowed Chair in Pediatric Epilepsy, has been elected as chair of the International League Against Epilepsy’s **North American branch**, representing the United States, Canadian, and Caribbean chapters. Clarke, who has served as a board member of ILAE-North America since 2013, will begin his four-year term as chair in August.

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## MOODLEY RETIRES AFTER FOUR DECADES OF SERVICE IN PEDIATRIC NEUROLOGY



On April 30, we hosted a department luncheon in honor of **Manikum Moodley, MD's** retirement. Moodley, an affiliate faculty member in the Department of Neurology and former co-director of our Neurofibromatosis Center of Excellence, began a remarkable half-century medical career in 1974 after completing his medical degree at the University of KwaZulu-Natal Nelson R. Mandela School of Medicine in Durban, South Africa. He finished a rotating internship and residencies in pediatrics and neurology in South Africa, then completed fellowship training in child neurology, neurodevelopmental disorders, and neuromuscular diseases at the Hospital for Sick Children in London and the Royal Hospital for Sick Children in Edinburgh, followed by a fellowship in neonatal neurology at the British Columbia Children's Hospital in Vancouver. This extensive training no doubt underpinned what often appeared to be an uncanny ability to arrive at a correct diagnosis that had escaped others.

In 2004, Moodley began a 15-year stint with the Cleveland Clinic, where he honed his expertise in pediatric autonomic disorders and neuroimmunological conditions. Working closely with David Rothner, MD, Moodley also became an expert in the management of neurofibromatosis. In parallel, his academic career flourished. Moodley authored some 80 articles and chapters, often in collaboration with his trainees. He has won more than seven resident and student teaching awards from three different institutions. Special honors include the Distinguished Alumnus Award from the Nelson R. Mandela School of Medicine and his selection as the keynote speaker for the medical school's annual convocation.

In 2019, when many people would be planning for a comfortable retirement, Moodley joined the faculty of the newly established Dell Medical School. Here he played a major role in the creation of the now-flourishing pediatric neurosciences program. To no one's surprise, he won a resident teaching award the year after he arrived. He established the

clinical pediatric autonomic laboratory and helped to establish the Neurofibromatosis Center of Excellence.

Moodley has been a worthy role model for both trainees and colleagues. We are not quite ready to turn loose of this remarkable physician: he will continue to be involved in our neurology outreach program in Kenya and in assisting trainees with publications and presentations.

Thank you, Dr. Moodley, for decades of service to child neurology! Enjoy your retirement — you have earned it.

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## **PROGRAM CO-SPONSORS SECOND IMPRES PEDIATRIC EPILEPSY SURGERY CONFERENCE**



*Session panelists (L to R) Ahmed T. Abdelmoity, MD, MBA, MS, Jorge Vidaurre, MD, Alison Kukla, MPH, Sandi Lam, MD, MBA, and Dave Clarke, MD*

The [Dell Children's Comprehensive Pediatric Epilepsy Center](#) in collaboration with the Lurie Children's Epilepsy Center presented the second annual Innovative Minds: Pediatric Research in Epilepsy Surgery (IMPRES) Conference on the Northwestern University campus in downtown Chicago, Illinois, from June 20–22. The conference kicked off on Friday evening with a reception cruise on Lake Michigan and featured two days of CME sessions, including a neurodiagnostic breakout session.





*Attendees during one of the conference's 25 presentations*

The national IMPRES program focuses on evidence-based research in pediatric epilepsy surgery and highlights collaboration among pediatric epilepsy centers and programs. This year's conference theme, improving access and health equity in epilepsy, featured prominently in each of the seven conference sessions and 25 presentations. Session topics included the anthropology and history of epilepsy, management of epilepsy, presurgical investigative studies, nontraditional surgical patients, surgical techniques, quality of life and psychosocial outcomes, and neurodiagnostics. Each session concluded with a moderated panel discussion and Q&A.



*(L to R) Jorge Vidaurre, MD, Gemma Carvill, PhD, Kristen Arredondo, MD, and Mary Wojnaroski, PhD, during the epilepsy management session Q&A*

IMPRES is an ongoing collaboration between Dell Children's Medical Center and Lurie Children's Hospital. This year's conference organizers were Dell Children's pediatric epilepsy chief **Dave Clarke, MD**, and Sandi Lam, MD, MBA, of Lurie Children's and Northwestern University Feinberg School of Medicine.

"IMPRES 2025 was an inspiring gathering of innovative minds dedicated to advancing care for children with epilepsy and their families," said Lam. "This unique interdisciplinary conference fostered remarkable collaboration among neurosurgeons, neurologists, neuropsychologists, social workers, researchers, advocates, and families. Together, we explored new frontiers in epilepsy care, neurosurgery, global health, and health equity to improve outcomes for children with epilepsy."

"Praise for this thought-provoking conference has been far-reaching," said Clarke. "Planning is already underway for IMPRES 2026 here in Austin."



*Lake Michigan welcome reception cruise*

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## PROGRAM HOSTS SIXTH ANNUAL PRACTICAL PEDIATRIC NEUROSCIENCE SYMPOSIUM



*Neurosurgery chief Elias Rizk, MD, PhD, presenting on pediatric neurosurgery for primary care providers*



*Pediatric neuroimmunologist Duriel Hardy, MD, speaking on pediatric multiple sclerosis*

Each spring our program hosts a practical pediatric neuroscience symposium designed to enhance knowledge of commonly encountered pediatric neurological conditions among general pediatric practitioners. The sixth annual symposium on May 17 featured presentations by nine pediatric neurosciences faculty members, with topics ranging from functional neurological disorders to updates in migraine treatment. Each interactive presentation provided techniques and evidence-based recommendations for diagnosis and management, including the roles of interprofessional teams in improving quality of life and treatment outcomes. The presentations are available to [download](#) and to watch [online](#).

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### A SECOND OPINION: EPILOGUE

Although refractive error and migraine are both common in children, rapidly progressive unilateral vision loss, loss of color vision, and eye pain would be exceedingly uncommon manifestations of either condition. Additional physical findings included subtle right-hand weakness, difficulty with tandem walking, difficulty with walking on his toes and heels, and brisk patellar reflexes.

MRI of the brain and spinal cord demonstrated multiple T2-hyperintense lesions in the periventricular regions, juxtacortical regions, cerebellum, optic nerve, and spinal cord, some of which were enhancing (see Figure). Coupled with his signs and symptoms,



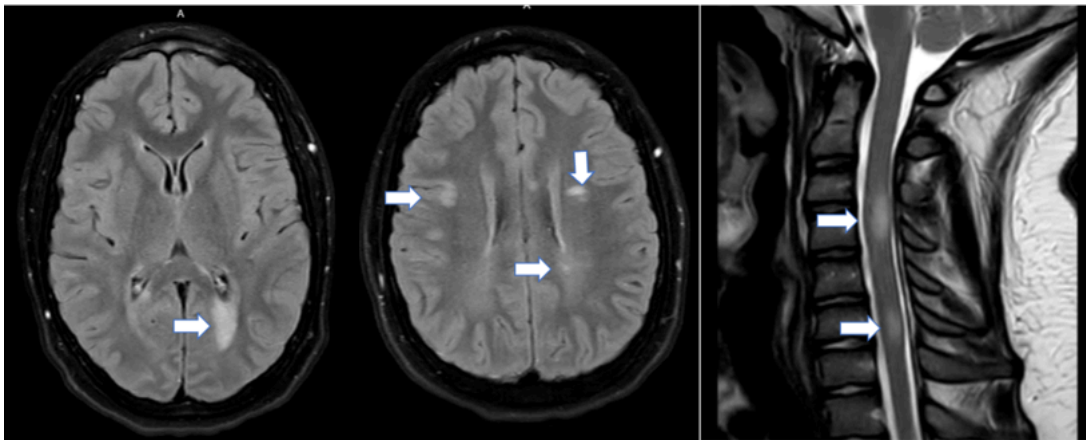
these imaging findings suggested a diagnosis of childhood multiple sclerosis (MS), and he was treated with high-dose steroids and started on rituximab.

Although MS is uncommon in children, childhood-onset MS accounts for up to 5% of all patients with MS. The most common presentation of pediatric-onset MS is optic neuritis, which as in this patient manifests with vision loss, eye pain, and loss of color vision. The most appropriate diagnostic imaging to be performed in these patients is MRI. Early disease recognition is important because earlier administration of disease-modifying therapy is associated with better outcomes.

### Final Diagnoses

1. Optic neuritis
2. Pediatric-onset multiple sclerosis

### Figure



The MRI revealed multiple lesions (arrows) in the spinal cord and cerebral white matter, findings typical of multiple sclerosis.

### Additional Reading

1. Otallah S, Banwell B. Pediatric multiple sclerosis: an update. *Curr Neurol Neurosci Rep.* 2018;18(11):76.
2. Thompson AJ, Banwell BL, Barkhof F, et al. Diagnosis of multiple sclerosis: 2017 revisions of the McDonald criteria. *Lancet Neurol.* 2018;17(2):162-173.
3. Fadda G, Brown RA, Longoni G, et al. MRI and laboratory features and the performance of international criteria in the diagnosis of multiple sclerosis in children and adolescents: a prospective cohort study. *Lancet Child Adolesc Health.* 2018;2(3):191-204.



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