

Pediatric Neurosciences

Our pediatric neurologists and neurosurgeons provide comprehensive care for children with congenital and acquired brain conditions as well as neuromuscular disorders. Our team includes physicians with special training in a wide range of pediatric neurological conditions, including epilepsy, chronic headache, concussion, pediatric spasticity, hydrocephalus and muscular dystrophy as well as less common conditions like tuberous sclerosis. Our neurologists and neurosurgeons also care for children with brain and spinal tumors, trauma and craniosynostosis, as well as preterm and sick newborns in our Level IV Neonatal Intensive Care Unit.

A personalized approach lies at the heart of our pediatric neurologic care. Each patient has a plan of care that is uniquely attuned to his or her needs and draws upon the expertise of pediatric specialists across UVA Health System, ensuring each patient receives exceptional support. We work closely with experts at UVA Child Development and Rehabilitation Center, which features neurological developmental specialists and those from non-neurological fields such as urology, cardiology, endocrinology, orthopaedics, physical and occupational therapy and social work. Moreover, our emphasis on collaborative care includes the patient's referring provider, and each step of the way, we utilize EpicCare Link to keep everyone up-to-date with the latest developments.

If a pediatric patient's plan of care includes surgical intervention, our pediatric neurosciences team includes three pediatric neurosurgeons, backed by an OR that offers the most up-to-date surgical navigation systems, equipment and imaging support, including intraoperative magnetic resonance imaging (iMRI).

Taken together, this collaborative approach emphasizes the well-being of the child and their family, and seeks to provide all measures of support the child requires. The result is the best possible neurological care for Virginia's pediatric patients.

Conditions Treated

Our team includes physicians with expertise in the full spectrum of neurological conditions, allowing us to provide highly specialized care to the children and adolescents we serve.

Epilepsy

We offer a comprehensive epilepsy program for pediatric patients, from infancy through adolescence, caring for all aspects of the disorder. Our team includes a core group of pediatric neurologists who are board-certified in epilepsy. These neurologists collaborate with a multidisciplinary team that includes a genetic counselor and neuropsychologist, among others. In addition, the National Association of Epilepsy Centers has certified our program as a Level 4 center, indicating that we have the professional expertise and facilities necessary to provide the highest level of medical and surgical evaluation and treatment for patients with complex epilepsy.

Our epilepsy treatments range from standard medications and approaches — including an active ketogenic diet program — to new and novel therapies available through our longstanding epilepsy clinical trials program. For patients with intractable epilepsy who have failed two medical therapies, we offer a pediatric epilepsy surgery program led by a pediatric neurosurgeon who is specially trained in the latest surgical techniques for pediatric epilepsy intervention.

Our pediatric epilepsy surgery program includes extensive preoperative evaluations featuring the latest imaging technologies to define the seizure focus in relation to eloquent areas of the brain. We utilize industry-leading imaging technology including:

- Video electroencephalography (video-EEG) monitoring
- Positron emission tomography (PET) scanning
- Functional magnetic resonance imaging (fMRI)
- Fast-scan MRI for pediatric patients
- Wada testing, an interventional neuroradiology and neurology test for memory and language dominance
- Subdural grid placement

Our approach to pediatric epilepsy care is patient- and family-focused. Whenever possible, we schedule all component appointments of our intake evaluation — including EEG — for the same day, lessening the scheduling burden on families. In addition, each patient and their family work with an on-site epilepsy coordinator to navigate their plan of care. In addition, we offer telemedicine support for patients and families who live a distance from UVA Medical Center and Charlottesville, requiring less travel for care.

Headache and Concussion

Pediatric headache can be challenging to treat, and we work with pediatricians and family doctors from across Virginia to provide new treatment and therapy options for children who suffer from persistent headaches. Our team includes physicians and nurse practitioners who are dedicated to caring for pediatric patients with chronic headaches and

are well-versed in all available treatments and therapies, including botulinum toxin and D.H.E. 45. We also understand the affect chronic headaches can have on a child's family, and partner with our patients and their referring providers to create a plan of care that accounts for those complex needs.

A concussion can have a long-lasting impact on a child, with many factors to consider. Our team includes pediatric neurologists that are dedicated to the research and clinical management of concussions in pediatric patients — the only such team in Virginia.

Neuromuscular Conditions

We treat children with a wide range of suspected and diagnosed neuromuscular conditions, including muscular dystrophy, diabetic neuropathy, inherited neuropathy, inflammatory conditions such as dermatomyositis, autoimmune diseases such as myasthenia gravis and spinal muscular atrophy. Our team includes neuromuscular specialists that are fellowship-trained in electromyography, allowing for accurate diagnosis and monitoring of these conditions.

Due to the complex nature of neuromuscular diseases, many of our patients require multidisciplinary care, which we coordinate with specialists at UVA Children's Hospital. We also value the relationship we form with the child's referring provider, and we utilize EpicCare Link to keep providers up to date regarding their patient's care.

We form long-lasting care relationships with our neuromuscular pediatric patients, whom we care for through the age of 21. When it is time for our patients to transition to adult clinics, we ensure the continuity of their care.

Tuberous Sclerosis

UVA Pediatric Neurosciences includes the only center in Virginia outside of the Washington, D.C., area that has a multidisciplinary clinic for pediatric patients with tuberous sclerosis (TS), a rare, multisystem tumor disorder. Pediatric patients with TS may experience tumor growth in the brain, heart, lungs, kidneys and skin. At UVA, pediatric neurologists with special training in TS oversee the care of each pediatric TS patient, ensuring coordination among the various

specialties that may be engaged to meet the patient's needs. A monthly clinic held at the Battle Building at UVA Children's Hospital includes nephrologists, cardiologists, dermatologists and developmental pediatricians, all working in concert to care for children with this challenging condition. Our multidisciplinary approach to care has earned us recognition as a Tuberous Sclerosis Complex Clinic by the Tuberous Sclerosis Alliance. UVA is one of only 25 clinics in the United States to have earned this distinction.

Pediatric Spasticity

While medical therapy using dantrolene, diazepam and baclofen can be effective for pediatric spasticity, neurosurgical intervention can be of great benefit. Our dedicated pediatric neurosurgeons offer baclofen pump insertion and selective dorsal rhizotomy, which can improve spasticity and reduce the need for orthopaedic interventions for tendon release, osteotomies and internal femoral rotation.

When caring for children with pediatric spasticity, we partner with our colleagues at UVA Child Development and Rehabilitation Center, who can offer a wide array of medical and therapeutic support tailored to the needs of each child.

Hydrocephalus

Our pediatric neurologists and neurosurgeons remain at the forefront of hydrocephalus treatment, with a focus on early detection, treatment and infection prevention. Hydrocephalus treatment typically involves surgical intervention, namely endoscopic surgery or shunt placement.

For obstructive hydrocephalus, our pediatric neurosurgeons offer endoscopic surgery, a minimally invasive option that can allow some patients to avoid shunt placement. For patients requiring a shunt, we use programmable valves that can be adjusted through the skin using a magnet, allowing the shunt to be fine-tuned to a specific pressure setting and readjusted through a simple outpatient visit.

Neuro-Neonatal Intensive Care Unit

UVA Health System is home to a Level IV NICU, the highest level of neonatal care available. Our pediatric neurologists and neurosurgeons are part of a multidisciplinary team that also includes neonatologists, developmental pediatricians and physical therapists who care for babies born preterm, at low birth weight or with medical complexity at birth. Once patients are released from the NICU, they continue to be monitored through the UVA NICU Follow-Up Clinic, a weekly multidisciplinary clinic that provides medical care and support for these patients for the next two to three years of their lives.

Additional Neurological and Neurosurgical Conditions

- Brain and spinal tumors
- Tethered cords
- Congenital spinal abnormalities
- Pediatric stroke
- Craniosynostosis
- Chiari malformations
- Brain and spinal trauma
- Spina bifida
- Pediatric movement disorders

Our colleagues at UVA Child Development and Rehabilitation Center provide care for many other conditions with neurological components, including:

- Developmental delays
- Autism spectrum disorders
- Cerebral palsy
- Muscular dystrophy

Our Team

Our team features neurologists and neurosurgeons who have special training in pediatric neurologic conditions and disorders. In addition, because we believe that the best care is achieved through collaboration and teamwork, we often partner with other specialties to provide comprehensive and personalized care.

Ashok Asthagiri, MD
Pediatric Neurosurgery

Russell Bailey, MD
Pediatric Neurology

Laurie Brenner, PhD
Pediatric Neuropsychology

J. Nick Brenton, MD
Pediatric Neurology

Chelsea Chambers, MS
Genetics Counselor

Colleen Druzgal, MD
Pediatric Hematology/Oncology

Nathan Fountain, MD
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Howard Goodkin, MD, PhD
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UVA Pediatric Neurosurgery Clinic

UVA Pediatric Neuromuscular Clinic

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Transfer a patient: **844.XFERUVA (933.7882)**

Learn more about the UVA Neurosciences and Behavioral Health Center: neurosciences.uvahealth.com