



## Pediatric Hydrocephalus

The division of Pediatric Neurosurgery at Children's Memorial Hermann Hospital specializes in the diagnosis and treatment of pediatric hydrocephalus as part of a broad diagnostic and treatment program for pediatric neurological disorders. In collaboration with UTHHealth Medical School, the affiliated pediatric neurosurgeons provide a comprehensive, coordinated program for patients with hydrocephalus and are continuously conducting research and exploration to provide evidence-based care for even the youngest of patients.

### Diagnosis

Hydrocephalus is increased pressure on the brain caused by the excessive accumulation of cerebrospinal fluid (CSF). If left untreated, loss of mental and physical abilities, brain damage and even death may occur. Early diagnosis and timely intervention are important to the successful treatment and recovery of children with hydrocephalus.

The condition can be present at birth (congenital) or it can occur at any time during the child's life as a result of injury or illness, including hemorrhage, meningitis, tumor, cyst or head trauma. Prenatal hydrocephalus is most often diagnosed between 20 and 24 weeks of gestation when an ultrasound displays abnormal dilation of the ventricles, the largest fluid spaces within the brain. After birth, infants and babies may exhibit growth of the head at a faster rate than normal, due to buildup of excess CSF. Older children may experience the sudden onset of severe headaches accompanied by vomiting, as well as loss of bladder control, irritability, sleepiness, seizures and loss of balance, motor skills and memory.

In an effort to minimize radiation exposure in children, the pediatric neurosurgery team at Children's Memorial Hermann Hospital has instituted an innovative "Quick Brain" MRI protocol. Quick Brain MRI studies can be completed in under five minutes, do not require sedation and have no radiation exposure for children.

### Traditional and Minimally Invasive Surgery

The most common treatment for pediatric hydrocephalus is surgical implantation of a shunt, which contains a flexible tube and valve system to drain the excess CSF from the brain into another part of the body, such as the abdomen, where it can be absorbed into the bloodstream. Some patients may be candidates for a minimally invasive surgical procedure called endoscopic third ventriculostomy (EVT). This treatment option is typically available for patients with an obstruction between the third and fourth ventricles of the brain, which prevents the flow of CSF. EVT provides an alternate channel for the fluid to bypass the obstruction.

The expert team of physicians is nationally recognized for innovative endoscopic treatments for pediatric hydrocephalus that go beyond EVT. Pediatric neurosurgeons affiliated with Children's Memorial Hermann Hospital are among only a handful of physicians in the country who are extensively experienced in using minimally invasive techniques, including:

- Septostomy
- Aqueductoplasty
- Choroid plexus coagulation
- Cyst fenestration

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**The Pediatric Neurosurgery Team**



**David I. Sandberg, M.D., FACS, FAAP**  
 Director of Pediatric Neurosurgery  
 Mischer Neuroscience Institute  
 Associate Professor  
 The Vivian L. Smith Department of Neurosurgery  
 Associate Professor and Chief  
 Department of Pediatric Surgery  
 Division of Pediatric Neurosurgery  
 UTHealth Medical School



**Stephen Fletcher, D.O.**  
 Associate Professor  
 Department of Pediatric Surgery  
 Division of Pediatric Neurosurgery  
 UTHealth Medical School



**Manish Shah, M.D.**  
 Assistant Professor  
 Department of Pediatric Surgery  
 Division of Pediatric Neurosurgery  
 UTHealth Medical School



**Lee Ann Conrad, PA-C**  
 Physician Assistant  
 Department of Pediatric Surgery  
 Division of Pediatric Neurosurgery  
 UTHealth Medical School



**Jacklyn Eyre, PA-C**  
 Physician Assistant  
 Department of Pediatric Surgery  
 Division of Pediatric Neurosurgery  
 UTHealth Medical School



**Lillian Sprague, PA-C**  
 Physician Assistant  
 Department of Pediatric Surgery  
 Division of Pediatric Neurosurgery  
 UTHealth Medical School

**Collaboration**

Referring physicians are kept fully informed about patient progress throughout the evaluation, diagnosis and treatment process. Following the patient's office visit, referring physicians will receive a summary that includes the initial diagnosis, pending tests and treatment options.

**To refer a patient or speak to a physician, please call 832.325.7234. For urgent consultations, please contact the page operator at 713.704.4000 and ask to page the pediatric neurosurgeon on call.**



6411 Fannin  
 Houston, TX 77030  
 713.704.KIDS (5437)  
[childrens.memorialhermann.org](http://childrens.memorialhermann.org)