

# Neurosurgery

The Neurosurgery Practice at Children's Hospital Central California specializes in the diagnosis and treatment of a variety of diseases and conditions of the central nervous system for infants, children, and adolescents. We provide inpatient, outpatient and emergency care to over 1,000 patients annually. Each year our neurosurgeons perform about 500 surgeries such as craniotomies, insertion or revision of ventricular shunts, insertion of vagus nerve stimulators and repair of myelomeningoceles.

Neurosurgery is also part of several multidisciplinary teams at Children's. Children with brain and spinal tumors receive treatment in Children's neuro-oncology program, and neurosurgeons work with the craniofacial program, the spina bifida clinic, the trauma service, spasticity clinic, and the epilepsy team.

The team performs more than 300 surgical procedures annually in the largest pediatric surgical facility in Central California. The most common operations are for the treatment of hydrocephalus and include insertion or revisions of shunts and endoscopic third ventriculostomies. Other procedures include craniotomies for brain tumors and trauma, repair of congenital malformations, insertion of vagus nerve stimulators, insertions of intrathecal Baclofen infusion pumps, cranial reconstruction, and release of tethered cords.

Advanced equipment is always available. Children's recently installed an advanced 64-slice CT scanner and a new operating microscope that can be guided by a frameless neuronavigation. The "Brain-Lab" system is being used for craniotomies, and lasers and endoscopes are available for minimally invasive neurosurgery. In addition, programmable valves and siphon regulatory devices are utilized to treat hydrocephalus. The team has access to pediatric anesthesiologists for diagnostic and imaging tests if needed.

Congenital malformations treated by pediatric neurosurgery include neural tube defects like tethered cord syndrome, spina bifida, myelomeningoceles, lipomyelomeningoceles, dermal sinus tracts, split cord malformations, diastematomyelia, and encephaloceles.

The team treats disorders of the cerebrospinal fluid Circulation including hydrocephalus, CSF shunt malfunctions, syringomyelia, Chiari malformations, pseudotumor cerebri, aqueductal stenosis, and arachnoid cysts.

Head and spine deformities treated include positional molding of infancy, plagiocephaly, craniosynostosis, craniofacial anomalies, and macrocephaly. The team also treats central nervous system tumors, head and spine trauma, central nervous system vascular malformations, spasticity, and epilepsy.

Infants with myelomeningocele are preferably cared for by a pediatric neurosurgeon (as part of a medical-surgical team).

Infants with hydrocephalus are preferably cared for by a pediatric neurosurgeon.

Infants and children with medical conditions that increase operative risk (e.g., congenital heart disease) who must undergo a common neurosurgical procedure (e.g., shunt for hydrocephalus) should be cared for by a pediatric neurosurgeon.

Contact numbers are on the following page.

# Neurosurgery

## Children's Access Center

24/7 access for referring physicians  
**(866) 353-KIDS (5437)**

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## Outpatient Referral

Referral forms online at: [www.childrenscentralcal.org/services/medicaloffice/refer](http://www.childrenscentralcal.org/services/medicaloffice/refer)  
FAX: (559) 353-8888

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## Neurosurgery Office Numbers

Main Number: (559) 353-6277  
FAX: (559) 353-5424  
Physician Line: (559) 353-5598

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Physician Liaison: (559) 353-7229

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## Medical Staff:

Gary Magram, MD

Patricia Quebada-Clerkin, MD

Meredith Woodward, MD

# Pediatric Neurosurgery Consultant Reference Guide

Condition	Pre-referral Workup	When to Refer
Brain and Spinal Cord Abscesses	Document neurological symptoms and signs, rate of progression, previous treatments including surgery and medical therapy	If patient is symptomatic or with a positive scan -- send for evaluation by Infectious Disease first
Tumors	MRI of affected area with or without contrast	Positive scan
Cysts of the Brain	MRI of brain with positive results	If pseudotumor cerebri, need documentation of ICP
Cerebral Palsy/Spasticity	Document neurological symptoms and signs, treatment history, and response to prior therapies	Secondary referral after Neurology or Rehabilitation consult
Chiari Malformation	Document neurological symptoms and signs including headache, swallowing difficulties, hand weakness, or numbness  MRI of head and cervical spine Consider MRI CINE flow study	Positive scan
Craniosynostosis	Skull X-ray	Positive X-ray or abnormal head shape
Chiari Malformation	Document neurological symptoms and signs including headache, swallowing difficulties, hand weakness, or numbness  MRI of head and cervical spine Consider MRI CINE flow study	Positive scan

# Pediatric Neurosurgery Consultant Reference Guide

Condition	Pre-referral Workup	When to Refer
Craniosynostosis	Skull X-ray	Positive X-ray or abnormal head shape
Encephalocele	MRI of area of concern	Usually referred at birth
Hydrocephalus	Chart growth in head circumference, history of prematurity/hemorrhage, and prior therapy or surgery  CT / MRI / ultrasound of head	Positive physical findings, scan or documentation
Macrocephaly	Increased head circumference with chart	Routine referral unless symptomatic
Lipomyelomeningocele	MRI of back Documentation noting defect	Positive physical findings, scan or documentation
Neural Tube Defects	Ultrasound if infant	Positive scan
Myelomeningocele	Document neurological symptoms and signs, prior surgical therapy  MRI of affected area	Positive physical findings, scan or documentation
Dermal Sinus Tract	Document neurological symptoms and signs, prior surgical therapy MRI of affected area	Positive physical findings, scan or documentation
Syringomyelia	MRI of affected area	Secondary referral after Orthopaedics consult

# Pediatric Neurosurgery Consultant Reference Guide

Condition	Pre-referral Workup	When to Refer
Seizures/Epilepsy	VNS referral	Secondary referral after Neurology consult
Cysts, Lumps and Bumps to Head	Document history of affected area; MRI / CT / X-ray as indicated	Routine referral upon positive physical finding or scan
Vascular Disorders of the Brain and Spinal Cord	Document neurological and cardiovascular symptoms and signs, history of bleeding, TIA, or stroke  MRA / CTA / cerebral angiogram  MRI of brain with contrast	Positive physical findings, scan or documentation  If symptomatic, call Neurosurgery for a referral
Skull Fracture/Intracranial Bleed/ Post-Traumatic Event	MRI / CT of brain	Positive physical findings or scan

# Pediatric Neurosurgery Consultant Reference Guide

## Insurance Plans\*

Aetna EPO/HMO/PPO

AllCare IPA

Bakersfield Family Medical Center/ Heritage Physician Network

Blue Cross HMO/ Prudent Buyer PPO/ Healthy Families EPO

Blue Cross Medi-Cal/ Healthy Families HMO

Blue Shield HMO/ PPO/ Healthy Families

Capp Care (Beachstreet)

Catholic Healthcare West-Bakersfield

CCS – California Children's Services

Central California Alliance for Health

Central Valley Medical Group CVMG

Choice Care

Cigna/ Greatwest

Delano Regional Medical Group

EHS IPA (Blue Cross Managed Medi-Cal Patients/Healthy Families)

Emmanuel Employee Benefit Plan

First Health/ CCN

Foundation HealthCare Administrators/ California Foundation for Medical Care

GemCare IPA/ Managed Care Systems

Health Net HMO/ PPO/ Healthy Families/ Healthy Kids

Health Net Medi-Cal / CalViva

Health Plan San Joaquin Medi-Cal/ Healthy Families

Hill Physician Medical Group

Interplan

Kaiser HMO/ Healthy Families/ Medi-Cal

Kern Health Systems Medi-Cal/ Healthy Families

Key /Mosaic Medical Group IPA

LaSalle IPA (Blue Cross Managed Medi-Cal)

Medicare

MediCal – California State

MedCore Medical Group

Multiplan/ PHCS

Sante IPA

Sutter Gould Medical Foundation

Sutter Hospital System (Modesto Memorial, Memorial Los Banos, Sutter Tracy)

TriWest (Formally TRICARE/CHAMPUS)

United HealthCare /PacifiCare

Universal Care

\* Contracted Status subject to change. If you have questions or to verify coverage please call 559.353.8800/888.824.5439