

UC San Diego Health Neurological Institute is routinely recognized for excellence in care. Some of the venerated institute's accolades include:

#1	\$10M+	3,800+	671	100+	4,100
IN NIH FUNDING FOR NEUROSCIENCES	IN COMBINED NIH AND INDUSTRY GRANTS	MAJOR CASES ANNUALLY	MAJOR PEDIATRIC CASES ANNUALLY	PEER-REVIEWED PUBLICATIONS	JOURNAL CITATIONS AND PUBLICATIONS

GUIDING PATIENTS THROUGH THE UNFAMILIAR LANDSCAPE OF NEUROLOGICAL DISEASE

UC San Diego Health Neurological Institute delivers innovation and state-of-the-art, world-class surgical treatment for brain and spinal diseases.

“It is a truly extraordinary time in developing treatments for neurological disease,” says Dr. Alexander Khalessi, chair of the department of neurological surgery at UC San Diego Health and professor of surgery, radiology, and neuroscience. “We’re not just getting better at treating the surgical problems of today; we’re defining the problems and interventions of tomorrow.”

Recognized by *U.S. News & World Report* as a top 25 destination treatment center for neurology and neurological surgery, UC San Diego Health Neurological Institute is one of the nation’s most well-funded neuroscience research programs. A diverse group of faculty, residents, and staff deliver the latest advanced treatments for injuries and disorders of the brain, spine, and peripheral nerves—all while conducting pioneering research and educating the neurosurgical leaders of tomorrow. Together, they are saving lives and changing patient outcomes.

Hope Through Innovation

“It is astonishing how imaging and visualization have transformed neurological surgery



in the last 10 years,” explains Dr. Khalessi. “Diagnoses that used to be death sentences are now managed as chronic conditions, and disabling chronic conditions are now treated or even cured.”

Beyond rehabilitation for a primary injury to the brain or spinal cord, the UC San Diego Health Neurological Institute team is leveraging biology and technology to restore quality of life. Through deep brain stimulation with advanced MRI imaging,

Parkinson’s patients may be given the chance to eat, drink, and write again. Seizure patients may experience partial or complete reduction of seizures through targeted surgical techniques. Formerly inoperable brain tumors may be safely removed without any reduction in function, giving cancer patients extra years to enjoy life. Patients with chronic pain may experience life-altering relief though minimally invasive spinal surgery.

With the use of new catheter-based systems to open blocked brain arteries, stroke patients who would have died—or been left unable to move or speak—are living and regaining functionality.

“Stroke is the third-leading causing of death,” Dr. Khalessi says. “Catheter-based interventions are as big of an advancement for stroke treatment as penicillin was for infection treatment. In every area of neurological surgery, our exceptional faculty is

advancing our understanding of neurological disease and discovering new ways to offer hope to patients worldwide.”

Providing Specialty Team Care

Treating neurological disease requires complex, interdisciplinary, and highly skilled care. With specialty teams for every aspect of neurosurgical care and state-of-the-art facilities, UC San Diego Health Neurological Institute is internationally known in every major neurosurgical discipline, from neuro-oncology and neurovascular to epilepsy, neuro-spine, and pediatrics.

“Specialty teams provide the full range of contemporary neurosurgical practice while delivering compassionate, high-quality care,” Dr. Khalessi says. “Our faculty is constantly pushing the frontiers of what is medically possible.”

To point, the Skull Base Surgery program, led by Dr. Marc Schwartz in neurological surgery and Dr. Rick Friedman in otolaryngology, offers one of the country’s largest and most renowned integrated care centers for complex intracranial brain tumors, diseases of the skull base, and acoustic neuromas. Drs. Thomas Beaumont and Adam DeConde partner in advanced anterior skull base techniques for pituitary disease.

In spine surgery, neurological surgery has partnered with orthopedics, anesthesia, radiology, and interventional services to enhance the care of complex spine patients. Along with pioneering advanced, minimally invasive spinal surgical techniques, Drs. William Taylor, Joseph Osorio, and Martin Pham have reimagined the Neuro-Spine program to encompass complex deformity, advanced robotics, and stealth navigation.

Additionally, Dr. Sharon Ben-Haim is bringing together neuroscience and engineering teams to understand the electrical signature of the brain for breakthrough epilepsy treatment; Drs. David Barba and Joseph Ciacci are working on stem cell implantation therapies for Parkinson’s and chronic spinal cord injuries; and Dr. Michael Levy is using image-guided, 3D-assisted surgery to treat a high volume of complex pediatric cases with minimal pain and scarring.



Leading Research, Treatment, and Education

As the nation’s top recipient of NIH funding for neuroscience, the UC San Diego Health Neurological Institute is advancing the fundamental understanding of neurological disease through cutting-edge imaging, surgical visualization, medical device development, and world-class surgical procedures.

“By emphasizing laboratory and translational research, we offer the unique infrastructure, collaborative partnerships, and forward-thinking culture needed for our investigators to take on neuroscience’s toughest cases and questions,” says Dr. Khalessi.

UC San Diego Health is one of the few health systems in the country to have Comprehensive Stroke Center certification at two hospitals: Hillcrest and Jacobs Medical Center. This certification, awarded by The Joint Commission, recognizes the significant resources in infrastructure, staff, and training needed to provide state-of-the art, complex stroke care.

“Our research teams provide international thought leadership and surgical innovation,” Dr. Khalessi says. “For example, every major neurovascular device adopted in the past decade was partially developed



by or had initial trainings performed at UC San Diego Health.”

Among the first Level 1 trauma centers nationally, UC San Diego Health remains the region’s first and only Level 4 epilepsy center and NCI-designated Comprehensive Cancer Center. UC San Diego Health Neurological Institute is also the region’s only academic program offering an extensive range of graduate medical education, fellowships, and research training.

UC San Diego Health

Patient Care:

health.ucsd.edu/specialties/neuro
619-543-5540

Academics:

medschool.ucsd.edu/som/surgery/divisions/neurosurgery