

2022 NEUROSCIENCES ANNUAL REPORT

NEURO



By the Numbers

#1

in Los Angeles County
for Number of Inpatient
Neurosciences Discharges

#11

in Neurology and
Neurosurgery, 2021-22

U.S. News & World Report



82%

of all
neurosurgery
residency

applicants in the United States
applied to Cedars-Sinai—a total of
328 applicants for two slots.

8.4%

Cedars-Sinai's
Comprehensive Stroke

Center has the lowest mortality rate in the
U.S. for ischemic strokes among Medicare
patients, according to new data from the
Centers for Medicare & Medicaid Services.



From the Chairs

For the second year in a row, we are writing to you amid a pandemic. In 2021, we delivered world-class care while confronting historic challenges, and we continued to make major strides in neurosurgery and neurology while serving as an essential ally in our community's fight against COVID-19.

We are proud to offer world-class care for over 150 complex neurological disorders, and are known for our state-of-the-art research, our clinical outcomes and the personalized attention we give each patient. In this report, you can read about recent breakthroughs we made in the treatment of cerebrospinal fluid leak, for example. Our specialists have unmatched expertise in this hard-to-detect disorder, making Cedars-Sinai a destination of choice for CFS leak patients across the U.S. and beyond. You will also learn about major developments in treating skull-base tumors and the trailblazing work we continue to do for conditions such as Parkinson's disease and memory disorders.

While we are proud of our accolades and achievements, we are most gratified when we help fulfill Cedars-Sinai's core mission of improving the health status of the community. The pandemic and the civic unrest of 2020 served as stark reminders of inequities in our society. Cedars-Sinai was founded by individuals who cared deeply about justice and equity, and who believed that access to healthcare is an essential right. We continue to strengthen our long-standing commitment to inclusiveness and equity—from our recruitment for fellowships and residencies to our community services and outreach. More hard work remains, yet the unwavering energy and commitment of our faculty, staff and supporters carries us forward and strengthens our mission.



Keith L. Black, MD
Chair, Department of
Neurosurgery
Ruth and Lawrence Harvey
Chair in Neuroscience

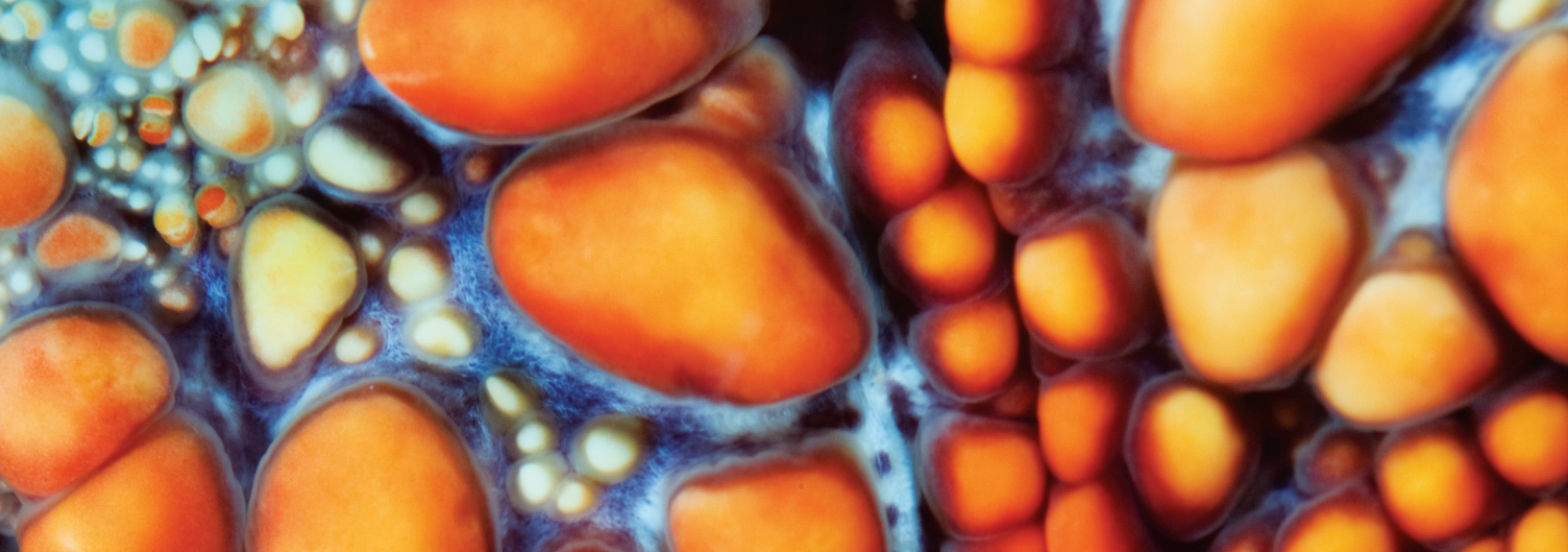


Nancy L. Sicotte, MD, FAAN
Chair, Department of
Neurology
Women's Guild Distinguished
Chair in Neurology

*Cedars-Sinai
is a leader in
the treatment
of more than
150 complex
neurological
disorders
and conducts
innovative
research
that brings
new hope to
patients and
caregivers.*

ABOUT THE ART

Jellyfish, starfish, coral and sea anemones photographed in this report are just a few of the many sea creatures devoid of a single centralized brain.



SPOTLIGHT

Cerebrospinal Fluid (CSF) Leak

Wouter Schievink, MD
Director, Cerebrospinal Fluid
Leak Program; Director,
Microvascular Neurosurgery
Program; Professor of
Neurosurgery

Leading-Edge Research and Treatments

In 2021, we hosted the **Fourth Annual Cedars-Sinai Intracranial Hypotension (SIH) Symposium** for healthcare providers, patients and caregivers. We reported that MRI-myelography is an excellent noninvasive **alternative to CT-myelography**, that SIH can rarely be caused by skull-base CSF leaks, and that multiple CSF leaks are uncommon. We also published the only community-based **epidemiologic study of SIH**.

The CSF Leak Program also began offering **paraspinal vein embolization** to patients with SIH caused by CSF-venous fistulas. Our investigators have discovered that **superficial siderosis is potentially reversible** with early treatment of the underlying spinal CSF leak. A review article on SIH was published in the *New England Journal of Medicine*.

- Most highly cited article on CSF leaks in *JAMA*
- 80 peer-reviewed publications on CSF Leak
- Published the only study regarding the long-term risks of persistent CSF leak

Advanced treatment options and an unmatched expertise to care for all forms of this difficult-to-detect disorder



Publications*

86

Neurology

80

Neurosurgery



Active Clinical Trials

48

Neurology

14

Neurosurgery



Philanthropy

448

Donors to
neurosciences in FY21

5

Neurosciences
endowed chairs

* High-impact, peer-reviewed only



Newly Awarded Grants

	Neurology	Neurosurgery
Federal	2	7
NonFederal	5	4
SubAwards*	3	5
Total	10	16

* Federal and nonfederal

SPOTLIGHT

Brain Tumors

Keith L. Black, MD

Chair, Department of
Neurosurgery; Director, Maxine
Dunitz Neurosurgical Institute;
Ruth and Lawrence Harvey
Chair in Neuroscience;
Professor of Neurosurgery

Skull-Base Tumors Expertise

Cedars-Sinai was among the first to offer a comprehensive and truly multidisciplinary approach to diagnosing and treating all skull-base conditions—from pituitary tumors to meningiomas, craniopharyngioma, chordomas and acoustic neuroma—with a clear expertise in **endonasal approaches** and minimally invasive endoscopic methods.

On the research side, investigators are currently engaged in developing an **immunotherapy protocol** to treat patients with neurofibromatosis 2 who develop multiple brain tumors. Additionally, the Pituitary Apoplexy Surgical Timing and Outcome Registry (PASTOR), a project initiated at Cedars-Sinai, provides definitive guidelines for the **treatment of pituitary apoplexy** and gathers data about treatment approaches and outcomes from nine medical centers in the U.S., Canada, Europe and Asia, with results to be published and presented in 2022.

- 400 new patients with pituitary disorders treated each year
- Recently instituted fluid restriction protocols for postoperative patients have reduced readmissions for hyponatremia from approximately 17% to 0% over the past two years

A powerful incubator for pioneering techniques



SPOTLIGHT

Memory Disorders

Zaldy Tan, MD, MPH
Medical Director,
Jona Goldrich Center for
Alzheimer's and Memory
Disorders; Carmen and
Louis Warschaw Chair
in Neurology; Professor
of Neurology

Sarah Kremen, MD
Director, Alzheimer's Clinical
Trial Program, Jona Goldrich
Center for Alzheimer's and
Memory Disorders; Director,
Neurobehavior Program;
Associate Professor of
Neurology

Expertise and Team Approach

The recently founded Jona Goldrich Center for Alzheimer's and Memory Disorders continued to blaze a trail of excellence with a strong focus on diversity, equity and inclusion. The center launched **multidisciplinary memory evaluation clinics**, enabling patients to see the full memory disorders team (physicians, nurse practitioners, neuropsychology, pharmacy, social work and genetic counseling) in one clinic day. Community outreach to underserved populations, access to cutting-edge research, and initiatives to screen patients for cognitive impairment in primary care and ED settings are just a few of the center's many clinical offerings.

In tandem with the center, the Department of Neurology established a Neurobehavior Program to broaden educational, clinical and research expertise in cognitive neurology. A central research focus is the new Alzheimer's clinical trials program which is slated to launch its **first drug study** to investigate the most promising therapeutic approaches to Alzheimer's disease and related dementias in Spring 2022. Starting July 2022, the Cedars-Sinai Behavioral Neurology Fellowship Program will commence training the next generation of physician leaders in behavioral neurology.

- 4,000 patients with Alzheimer's disease and related dementias receive medical care at Cedars-Sinai annually
- 150 residents, medical students and other health professionals train annually in the expert diagnosis and management of patients with memory and cognitive disorders

Transforming the landscape of research and clinical care



Volume

Visits*	Stroke	Surgical**	Total
59,938	1,033	3,108	64,079

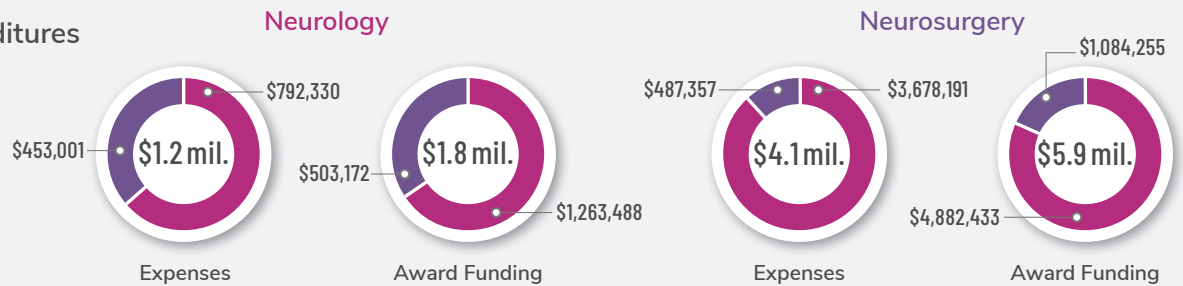
* Inpatient and outpatient, Neurology/Neurosurgery/Spine

**Includes brain tumor, neurovascular, interventional radiology and spine



Research Expenditures and Funding:

- Federal
- Nonfederal



SPOTLIGHT

Movement Disorders

Michele Tagliati, MD
 Director, Movement Disorders Program; Professor and Vice Chair, Neurology; Caron and Steven D. Broidy Chair in Movement Disorders

Clinical and Research Innovation

Patients with Parkinson's admitted to the hospital are at a higher risk of complications. Our **Parkinson's Inpatient Outcomes Project** task force—in collaboration with the IT department, inpatient pharmacy, nursing education and the Emergency Department—created an alert system for inpatients with Parkinson's to monitor proper treatment process. The center was the first in Los Angeles to offer a **multidisciplinary Parkinson's clinic** where patients can take advantage of multiple specialties in a single location to comprehensively address the complexity of their symptoms.

On the bench side, our investigators completed a clinical trial to test a Type 2 diabetes drug, the GLP-1 agonist liraglutide, as a **potential treatment for Parkinson's**. The trial was part of the Linked Clinical Trials initiative, accelerating the development of new Parkinson's treatments by repurposing drugs already approved for other conditions. Results will be presented at the American Academy of Neurology in April 2022.

4,250

Movement disorders outpatient visits and procedures in FY2021

The highest standard of care, innovative research, teaching and outreach for Parkinson's patients





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Named one of the best hospitals for Neurology and Neurosurgery in the U.S.

At Cedars-Sinai, the dedication of our doctors and staff has made us one of the most recognized hospitals in the nation. We're proud to have earned a place on *U.S. News & World Report's* Best Hospitals Honor Roll. This recognition belongs to our entire team who shows up day after day, night after night, to care for patients from around the world.

Learn more about our specialty care: cedars-sinai.org/neuro

