

Join the team

Norton Neuroscience Institute is recruiting board-certified or board-eligible physicians to Louisville, Kentucky, and the surrounding area.

Our program offers multidisciplinary research pathways and state-of-the-art facilities, including a comprehensive neuroscience space that opened in June 2021.

The ideal candidates will have an opportunity to join a collaborative team of more than 120 subspecialty neuroscience providers. To learn more and see all of our career opportunities, scan the **QR code**.



A Norton Neuroscience Institute
Comprehensive REPORT

A committed team that puts patients first. *Always*

Since 2009, Norton Neuroscience Institute has grown into a nationally recognized program that provides specialized and comprehensive care to our patients. When patients choose Norton Neuroscience Institute, they are not just choosing a neurologist or neurosurgeon. They are choosing a nationally recognized care team that collaborates day in and day out to ensure our patients are getting innovative and advanced care for their neurological condition.

Advanced treatments, breakthrough research and compassionate support resources are crucial to the work we do. Each year, as we look back at our progress and consider what highlights to share in our comprehensive report, we are struck by a singular fact: What we are able to achieve is the result of exceptional teamwork.

Without our distinguished neurology and neurosurgery specialists, skilled clinical and technical staff, and dedicated support personnel, treating neurological conditions would be nearly impossible. As a team, we are committed to diagnosing and treating neurological conditions in subspecialized and multidisciplinary settings so our patients can live their best lives. Our providers have trained at leading educational institutions from around the world, and the combined efforts of our diverse experiences provide great care for our patients.

Our team of providers are dedicated to their work, but most important, they are dedicated to our patients and our community. The work we do impacts lives every day and we are proud to provide a high caliber of care to our patients when and where they need it most.

As a regional neurological care leader, our mission provides a simple yet powerful framework that unifies our efforts and keeps us focused on working together to improve the lives of our patients.



Douglas A. Winkelhake
System Vice President
Neurosciences, Spine and Emergency Services
Norton Healthcare



Norton
Neuroscience
Institute

More patients in Louisville and Southern Indiana seek their neurology and neurosurgery care from the Norton Neuroscience Institute team of nationally recognized specialists than any other providers in the Greater Louisville.

Established in early 2009, Norton Neuroscience Institute is the region's leading provider of neurological care. Our multidisciplinary, comprehensive program has more than 120 subspecialty, fellowship-trained neurosurgeons, neurologists, neuropsychologists and advanced practice providers dedicated to providing innovative care to those with brain, spine and nervous system conditions.

We offer subspecialized care to ensure patients receive personalized medical advice, advanced treatment options and access to support resources that improve quality of life. Our multidisciplinary clinics provide patients and their families with convenient neurological and neurosurgical care in one appointment and location.

Additionally, our specialists are dedicated to offering advanced, minimally invasive neurosurgery options to potentially quicken recovery and minimize pain. These include robotic-assisted surgery, radiation therapy, responsive neurostimulation, laser interstitial thermotherapy and cutting-edge treatments for brain tumors.

NORTON NEUROSCIENCE INSTITUTE IS A COLLABORATIVE TEAM OF

More than **120** SUBSPECIALIZED NEUROSCIENCE PROVIDERS, including:

4 LICENSED CLINICAL SOCIAL WORKERS

3 NEUROPSYCHOLOGISTS

More than **50** ADVANCED PRACTICE PROVIDERS

10 NEUROSURGEONS

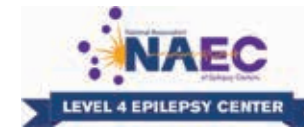
More than **40** NEUROLOGISTS subspecialty-trained in:

- Stroke
- Epilepsy
- Multiple sclerosis
- Movement disorders
- Pediatric neurology
- Headache medicine
- Neuromuscular disorders
- Sports concussion
- Memory care
- Neuro-oncology
- Neurocritical care

NAMED ONE OF **100 GREAT** neurosurgery and spine programs by **BECKER'S HOSPITAL REVIEW**

Participating in more than **130** RESEARCH STUDIES over the past decade

LEADER in using innovative and **CUTTING-EDGE TECHNOLOGY AND ROBOTICS**



Accolades

- The American Heart Association Get With the Guidelines – Stroke program has recognized all four of Norton Healthcare's adult-service hospitals in Louisville for exceeding national averages in getting patients in the door and administering lifesaving treatment to restore blood flow to the brain. Norton Brownsboro Hospital received the highest possible award – Gold Plus.
- Norton Healthcare's four adult-service hospitals in Louisville are certified by DNV, representing the highest level of stroke care. Norton Brownsboro Hospital is recognized as a Comprehensive Stroke Center.
 - » Norton Audubon Hospital is a Primary Stroke Center.
 - » Norton Hospital is a Primary Stroke Center.
 - » Norton Women's & Children's Hospital is an Acute Stroke Ready Hospital.
- Norton Neuroscience Institute Hussung Family Multiple Sclerosis Center is a designated Center for Comprehensive MS Care by the National Multiple Sclerosis Society.
- The National Association of Epilepsy Centers has recognized Norton Neuroscience Institute as a Level 4 Epilepsy Center, providing the highest level of medical and surgical evaluation and treatment for patients with complex epilepsy.
- Becker's Hospital Review ranked Norton Healthcare in its list of 100 hospitals and health systems with great neurosurgery and spine programs.
- U.S. News & World Report ranked Norton Healthcare's hospitals as high-performing hospitals for stroke in 2023-2024



SCAN THE QR CODE to watch a video about careers at Norton Neuroscience Institute.



Comprehensive facility on Norton Brownsboro Hospital campus

New technology and patient focus in expansive neuroscience facility

In 2021, Norton Neuroscience Institute opened a comprehensive facility unlike any other in the region. This new space benefits patients and the community by providing a multidisciplinary neurosciences program with leading-edge technologies and enhanced research and outreach efforts. The facility encompasses more than 48,000 square feet of clinical, diagnostic, procedural and rehabilitation space. The unique location contains advanced equipment to allow patients to undergo complex neurological testing and procedures, access rehabilitation services and connect with support resources at the same site as their routine office visits. Norton Healthcare invested \$15 million in the construction project.

Norton Neuroscience Institute's newest location is designed to support patients and their families in the most convenient way possible. Scan the QR code to learn more about this one-of-a-kind facility.



Norton Neuroscience Institute Resource Centers

Norton Neuroscience Institute Resource Centers are committed to helping people with neurological disorders and their families understand and navigate their diagnoses. The centers offer the latest information on treatments, education and exercise programs, support services, community resources, and more.

Offered at no cost to patients and caregivers thanks to the support of donations to the Norton Healthcare Foundation, the resource centers play an invaluable role in the patient journey. With locations on the Norton Healthcare – St. Matthews and Norton Brownsboro Hospital campuses, the team is available to support patients and families where it's most convenient for them.

NORTON NEUROSCIENCE INSTITUTE RESOURCE CENTERS

SUPPORT CLINICAL CARE

to help people with neurological disorders and their families understand and navigate their diagnosis. The centers offer educational programs, support services, community resources and the latest information on treatments.



TWO
convenient locations

SUBSPECIALTY SUPPORT

for patients with

- Epilepsy
- Multiple sclerosis
- Parkinson's disease
- Movement disorders
- Memory disorders
- Stroke
- and more



- Robust educational programming, social service resources and patient support through two Norton Neuroscience Institute Resource Center locations.
- Free annual Neuroscience Expo, providing the latest in neurological disease education, open to patients, their caregivers and community members interested in or diagnosed with neurological conditions
- Creation of the Norton Neuroscience Institute Cressman Parkinson's & Movement Disorders Center and the Norton Neuroscience Institute Hussung Family Multiple Sclerosis Center
- Development of neuroscience capabilities at Norton Healthcare adult-service hospitals through investment in state-of-the-art surgical technology



Community support through the Norton Healthcare Foundation

The Norton Healthcare Foundation, the philanthropic arm of the not-for-profit Norton Healthcare system, provides valuable resources for Norton Neuroscience Institute to continue our mission of building hope for patients and families.

Thanks to the generosity of our community, the Norton Healthcare Foundation has provided more than \$10.12 million to Norton Neuroscience Institute since 2013, to advance the mission of providing specialized neuroscience care. This includes access to the highest level of technology and treatments, recruitment of talented neuroscience providers, and patient support programs for each patient with a neurological condition, as well as their family.

Notable projects that have benefited from significant philanthropic support through the Norton Healthcare Foundation include:

- Cressman Parkinson's Research established to further clinical research in the areas of Parkinson's disease, Alzheimer's disease and dementia-related conditions, including the build-out of a research and biorepository laboratory
- Support for the comprehensive Norton Neuroscience Institute location on the Norton Brownsboro Hospital campus, with state-of-the-art rehabilitation equipment and technology, multidisciplinary clinical patient rooms, and community education spaces



14
DEDICATED STAFF
Including



THREE
SOCIAL WORKERS



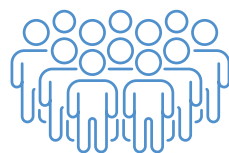
FOUR
PATIENT NAVIGATORS



10
ONGOING SUPPORT GROUPS



Hosted
OVER 40
PROGRAMS



Reached
8,205
COMMUNITY MEMBERS

IN 2022

For ways to help or to learn more, visit NortonHealthcareFoundation.com or call (502) 420-4299.

Rehabilitation integrated *with* neuroscience clinical care

According to the journal *Lancet Neurology*, neurological disorders are the leading cause of disability and the second leading cause of death worldwide. For many, specialized rehabilitation plays a significant role in healing and quality of life. We offer patients three dedicated rehabilitation facilities. Highly trained therapists and physician collaboration, combined with state-of-the-art technology, can provide patients with comprehensive, personalized care to improve quality of life.

Cressman Neurological Rehabilitation

Norton Neuroscience Institute Cressman Neurological Rehabilitation has some of the most advanced therapy technology and specialized services in one location to help patients improve their gait, balance, strength, flexibility, speech, fine motor skills, swallowing, driving skills, cognition, vision and more.

Cressman Neurological Rehabilitation is housed in our comprehensive neuroscience facility on the Norton Brownsboro Hospital campus, allowing patients to receive coordinated clinical outpatient care and rehabilitation services all in the same location. The uniquely designed space features copious natural light, a fully equipped kitchen, bathroom with shower and the latest in rehabilitation technology to facilitate a comprehensive array of speech, occupational and physical therapy modalities.

Specialized offerings include:

- Biodex music-assisted gait training system to help patients find their stride using the science of music
- G-EO robotic-assisted gait therapy system to develop patients' nerve and muscle function using a suspended harness and robotics that simulate leg motions without weight-bearing
- Computerized dynamic posturography/immersive virtual reality (CDP/IVR) to help combat neurological symptoms such as dizziness, balance issues and motion sensitivity
- ZeroG Gait and Balance System to protect patients from falling while providing dynamic body weight support for gait and balance training
- Virage driving simulation system that includes a visual optical system, genuine dashboard and control panel, and simulated car-driving sound system
- Bioness Integrated Therapy System, a trio of technologies that together offer a comprehensive program that challenges visual, cognitive, motor and balance abilities of patients
- Testing before and after deep brain stimulation
- Flexible endoscopy for assessment of voice and swallowing
- Lee Silverman Voice Treatment (LSVT)-trained clinicians
- Modified barium swallow studies
- Parkinson Wellness Recovery (PWR!)-certified therapists
- Videostroboscopy test to diagnose conditions affecting the vocal cords and esophagus

Norton Neurosciences & Spine Rehabilitation Center

Norton Neurosciences & Spine Rehabilitation Center, located in downtown Louisville on the Norton Hospital campus, is focused solely on rehabilitating patients with neurological and spine injuries and disorders, including stroke, brain tumors, brain injuries, spine disorders and injuries, multiple sclerosis and movement disorders. The center's dedicated team provides more specialized therapies and treatment services than a general rehabilitation facility.

Our programs include:

- Bioness system for treating paralysis
- Driving evaluations and training
- Dry needling
- Flexible endoscopy for voice and swallowing evaluation
- Functional electrical stimulation cycles for arms and legs
- Lokomat gait training system
- Modified barium swallow studies
- Schroth Method scoliosis training
- Videostroboscopy
- Wheelchair seating and positioning



Norton Specialty Rehabilitation – St. Matthews

Located on the Norton Healthcare – St. Matthews campus, Norton Specialty Rehabilitation provides therapy as a part of Norton Neuroscience Institute Hussung Family Multiple Sclerosis Center. Rehabilitation providers are specially trained to support patients with MS and offer therapeutic services to help patients improve gait, balance, strength, flexibility, speech, fine motor skills, swallowing, cognition, vision and more.

Multisensory therapeutic approaches include:

- Certified lymphedema therapy
- Dry needling
- Flexible endoscopy for voice and swallowing evaluation
- Functional electrical stimulation cycles for arms and legs
- Gait Real-time Analysis Interactive Lab (GRAIL) system
- Modified barium swallow studies
- Therapy for MS symptoms
- Oncology specialty services
- Pelvic floor health services
- Videostroboscopy
- VitalStim swallowing therapy



Research and the future of neuroscience care

We strive toward actively finding new treatments for neurological conditions. In 2023, Norton Neuroscience Institute Cressman Neurological Research was established to further develop the field of care through clinical trials and translational studies in Louisville. The Norton Healthcare Foundation provided \$4 million for the research program.



How stomach health connects to risk for movement disorders

For the increasing number of people with Parkinson’s disease, advances in managing symptoms through medication, lifestyle and even surgery are bringing hope. The disease currently has no cure and is the 14th leading cause of death in the U.S., according to the Centers for Disease Control and Prevention.

The Norton Healthcare Foundation is supporting groundbreaking new studies at Cressman Parkinson’s Research. Scientists there are studying a possible connection between gut health and movement disorders. The hope is their findings will lead to additional treatments and potential prevention strategies.

Shirish S. Barve, Ph.D., chief research scientist, Norton Neuroscience Institute and Norton Research Institute, leads these efforts in collaboration with Norton Neuroscience Institute colleagues Christopher B. Shields, M.D.; Gregory E. Cooper, M.D., Ph.D.; Justin T. Phillips, M.D.; and Jason L. Crowell, M.D. Dr. Barve is known internationally for his research work on the connection between the gut microbiome and brain.

“We want to determine how the changes in the microbiome-gut-brain axis are involved in the development of neurodegenerative diseases, including Parkinson’s disease,” Dr. Barve said. “We know that the gut is constantly influencing lifestyle issues, including lack of sleep, stress and diet.”

Work done by Dr. Barve and his research group on the gut microbiome has already received additional sustained federal funding from the National Institutes of Health.

“This is a monumental time for research across Norton Healthcare.”

–Stephen W. Wyatt, DMD, MPH

“We’ve already seen expansion of research in oncology, neurosciences, infectious diseases, diabetes, health equity and population health, and I expect that momentum to continue in the future,” said Stephen W. Wyatt, DMD, MPH, chief research executive, Norton Research Institute.



To learn more about Norton Research Institute and Cressman Neurological Research, go to [NortonResearchInstitute.com](https://www.nortonresearchinstitute.com).



Norton *Neuroscience* Institute

SPECIALTY CENTERS OF CARE

Providing the individualized care every patient deserves.
Creating a unique place to practice neuroscience medicine.

Norton Neuroscience Institute is dedicated to creating a type of care that patients, their families and health providers can easily recognize is changing the future of treatment. In an already subspecialized field, our team is working to create centers of care that specialize even further. Each of these centers is focused on a unique neurological condition. Team members have developed an advanced level of expertise beyond a general neurological focus, which helps expedite diagnostic evaluation, offer the latest in treatments, provide support resources tailored to the condition, and display an intimate understanding of each neurological disorder.

Our multidisciplinary teams of subspecialty-trained providers collaborate to provide advanced, personalized, compassionate care.

Hussung Family Multiple Sclerosis Center

Multiple sclerosis is an autoimmune disease that impacts the central nervous system and affects nearly 1 million people in the U.S.

Norton Neuroscience Institute Hussung Family Multiple Sclerosis Center is the region's comprehensive treatment facility for individuals with MS. Staffed by board-certified and fellowship-trained MS specialists, we are dedicated to enhancing quality of life for our patients using advanced diagnostic tools and treatments, along with a variety of support services.

The National Multiple Sclerosis Society has designated our MS program as a Center for Comprehensive MS Care. That distinction means we are recognized for demonstrating broad knowledge and expertise, and offering multidisciplinary, coordinated care.

Our neuroimmunology services reach beyond MS. We also treat other demyelinating and inflammatory diseases of the central nervous system, including neuromyelitis optica spectrum disorder, myelin oligodendrocyte glycoprotein antibody disease, neurosarcoidosis, autoimmune encephalitis and cerebral vasculitis.



Diagnosing multiple sclerosis

The typical age of onset for MS is age 20 to 50. Signs and symptoms can be mistaken for other conditions. Better recognition of MS symptoms has led to some patients being diagnosed much earlier in life. Early diagnosis and treatment can result in less accumulated nerve damage and disability over time.

Neuroimmunological disorders can mimic one another or other neurological conditions. Our specialists leverage the experience of our broadly trained team of neurologists, neurosurgeons and neuropsychologists to collaboratively determine the right diagnosis for each patient.

Our team uses advanced diagnostic and imaging capabilities to achieve a differential diagnosis, including:

- 3T MRI
- Optical coherence tomography
- Evoked potential tests: brainstem auditory evoked potential, visual evoked potential and sensory evoked potential
- Blood collection and analysis
- Lumbar puncture

Patient and caregiver support

Our dedicated MS team includes a patient navigator, licensed clinical social worker, pharmacist and mental health specialists who provide vital support as patients navigate complex treatment protocols and disease-modifying therapies.

We provide additional support services for patients and their families through our Norton Neuroscience Institute Resource Centers. These include unique, no-cost activities for people with MS and other neurological conditions. From yoga, music therapy, support groups and aqua aerobics, to an annual educational luncheon and more, these activities help improve quality of life for those living with MS.

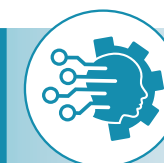
Treatment options

Treatment for MS can be defined by disease course: clinically isolated syndrome, relapsing-remitting, secondary progressive and primary progressive. The goal of treatment is to prevent a potentially devastating relapse and slow progression.

Our multidisciplinary team approach to treatment seeks to treat the whole person, thereby improving or maintaining the patient's quality of life.

Our advanced treatment and supportive therapies include:

- Infusion services in an integrated space offering
- Botox injections and baclofen pump evaluations for spasticity
- Norton Specialty Rehabilitation – St. Matthews, offering MS-certified physical and occupational therapy, a state-of-the-art gait lab to assess walking and balance, noninvasive spasticity management options, vestibular therapy, motorized wheelchair evaluations and certified driving assessments
- Speech therapy for swallow assessments and cognitive rehabilitation
- Neuropsychological testing
- Counseling, including cognitive behavioral therapy for anxiety and depression



Research The future of MS care

Research around risk factors for developing MS, factors that impact progression and treatments that slow or inhibit lesion accumulation are the focus of all leading MS centers. We are an active participant in research to advance the treatment of MS. With a dedicated research nurse and a unique patient population of more than 6,000, our center participates in clinical trials and studies that include our diverse patients.

We serve as a site for the TREAT-MS study, a Patient-Centered Outcomes Research Institute-funded investigation aimed at identifying specific treatment strategies for relapsing-remitting MS.

Learn more about our MS clinical trials.



Cressman Parkinson's & Movement Disorders Center

Cressman Parkinson's & Movement Disorders Center allows for a seamless approach to the many facets of patient care in a single setting, where a visit becomes truly comprehensive in nature and allows for convenience and ease with ongoing needs.

According to the Parkinson's Foundation, more than 1 million people in the U.S. are living with Parkinson's disease, and that number is projected to rise to 1.2 million by 2030. This makes Parkinson's the second most common neurodegenerative disease. Norton Neuroscience Institute Cressman Parkinson's & Movement Disorders Center works to diagnose, treat and provide comprehensive support for patients and their families. Our multidisciplinary team of board-certified and subspecialized movement disorders neurologists offers advanced treatment options and much-needed resources to support patients with all types of movement disorders.

Cressman Parkinson's & Movement Disorders Center was established in 2010 after a gift to the Norton Healthcare Foundation from Elizabeth Pahk Cressman, M.D. Dr. Cressman, a retired anesthesiologist who practiced at what is now Norton Women's & Children's Hospital, donated millions of dollars over the years for Parkinson's and critical care initiatives at Norton Healthcare. Her gifts were made in memory of her husband, Frederick Cressman, M.D., who died in January 2010 after a seven-year battle with Parkinson's disease.

Diagnosing movement disorders

Parkinson's disease and movement disorders can be difficult to diagnose in their early stages due to mild symptoms and a gradual onset. However, early diagnosis can be key in managing symptoms and maintaining quality of life.

An initial diagnosis is made through evaluation of symptoms, which may include slowness of movement, stiff muscles or tremors (shaking) of the hands, arms, legs and face. These common symptoms are the result of deterioration of particular neurons in the substantia nigra, which leaves the patient incapable of initiating and controlling their physical movements in a normal way. As the disease progresses, additional symptoms may develop, including difficulty with memory and thought processes, impaired balance and coordination, and issues with speech, eating and swallowing.

Treatment options

While a cure has yet to be found for Parkinson's, we offer some of the most advanced treatments available to help control patients' symptoms through medications, therapy and surgery.

Treatments can include medications that alleviate symptoms of the disease. Physical, occupational and speech therapy through our dedicated rehabilitation facilities are useful tools to optimize quality of life in conjunction with pharmacological treatment. If a patient is eligible, minimally invasive surgery such as deep brain stimulation, or DBS, also can be an effective way to manage the disease. Our physicians are fellowship trained in movement disorders. With the help of a dedicated patient navigator, the team determines the best treatment plan and support resources for patients and their lifestyle.



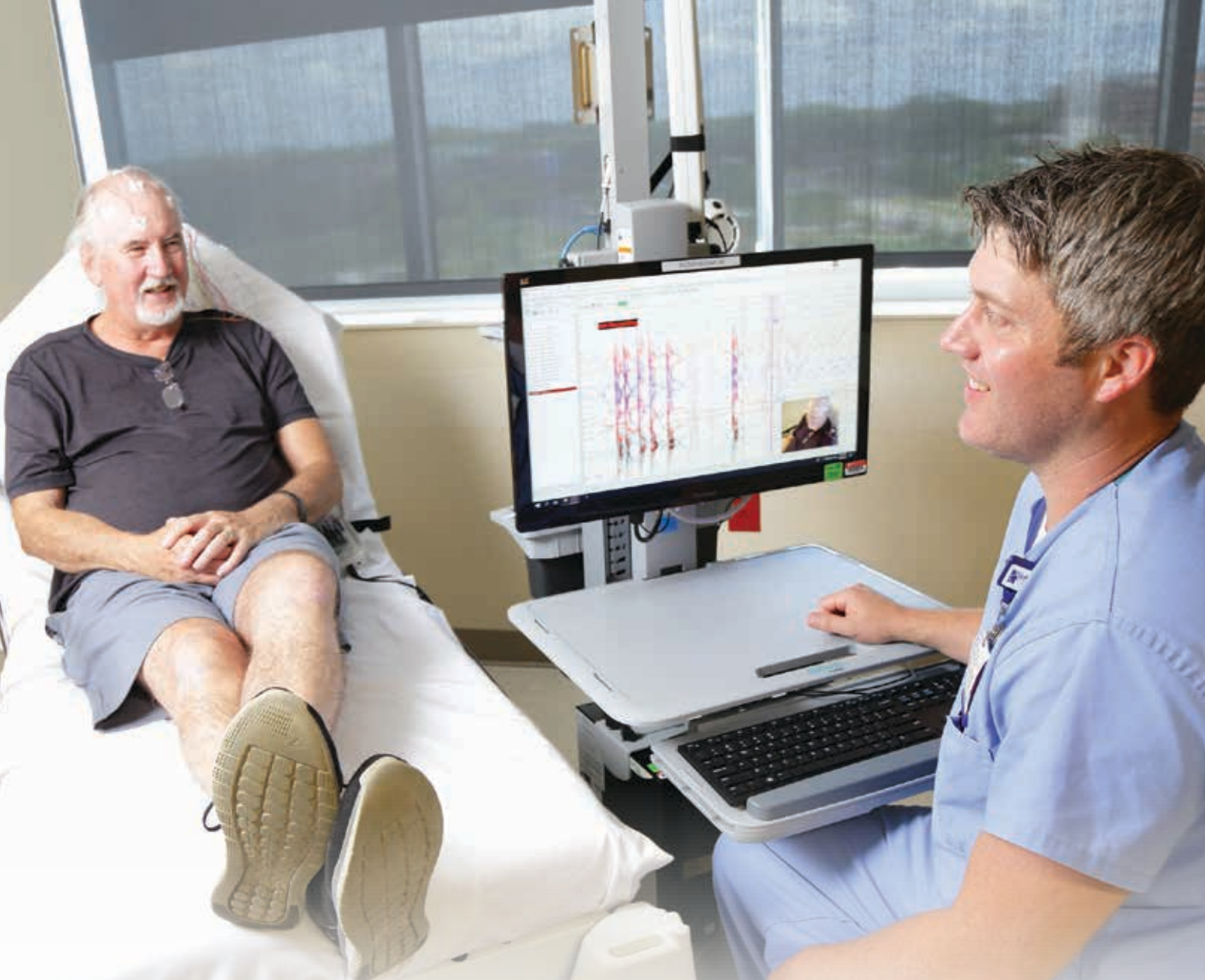
New testing to help diagnose Parkinson's disease

A new skin test is helping doctors confirm whether a patient has Parkinson's disease, dementia with Lewy bodies and other related neurological conditions. The Syn-One Test aims to help confirm or rule out a diagnosis. The test, which takes about 15 minutes, involves taking three small skin samples from the patient. These skin biopsies then go to a lab and are evaluated for a specific protein (phosphorylated alpha-synuclein) found in people with certain neurological conditions. Norton Neuroscience Institute was one of the first health care organizations in the country to employ the test.

Case study review

Read how an alpha-synuclein skin biopsy reveals early/prodromal Parkinson's in a 61-year-old patient.





Deep brain stimulation

Deep brain stimulation (DBS) is one of the state-of-the-art treatments we offer. During a DBS procedure, the neurosurgeon places a small device inside the chest with wires to the deep gray structures of the brain. The device sends electrical pulses to the brain that alter the nerve signals that cause symptoms such as tremors, rigidity and bradykinesia (slow movements). DBS surgery allows patients to improve motor function, positively impacting their ability to carry out activities of daily living and improving their quality of life.



Case study review

Higher precision is achieved in deep brain stimulation for Parkinson's disease.

Rehabilitation and additional services

Working in partnership with Cressman Neurological Rehabilitation allows us to help patients live their most functional and independent life. Specialized rehab services include:

- Biodex gait training system and assessment tools for improving walking and balance
- ZeroG Gait and Balance System to provide body weight support for gait and balance training
- Testing before and after deep brain stimulation
- Flexible endoscopy for voice and swallowing
- Lee Silverman Voice Treatment-trained clinicians
- One-on-one personalized training with a community fitness program
- Parkinson Wellness Recovery-certified therapists
- Videostroboscopy
- Wellness and prevention education
- SPEAK OUT! and LOUD Crowd speech therapy

Learn more about Cressman Neurological Rehabilitation on page 8.

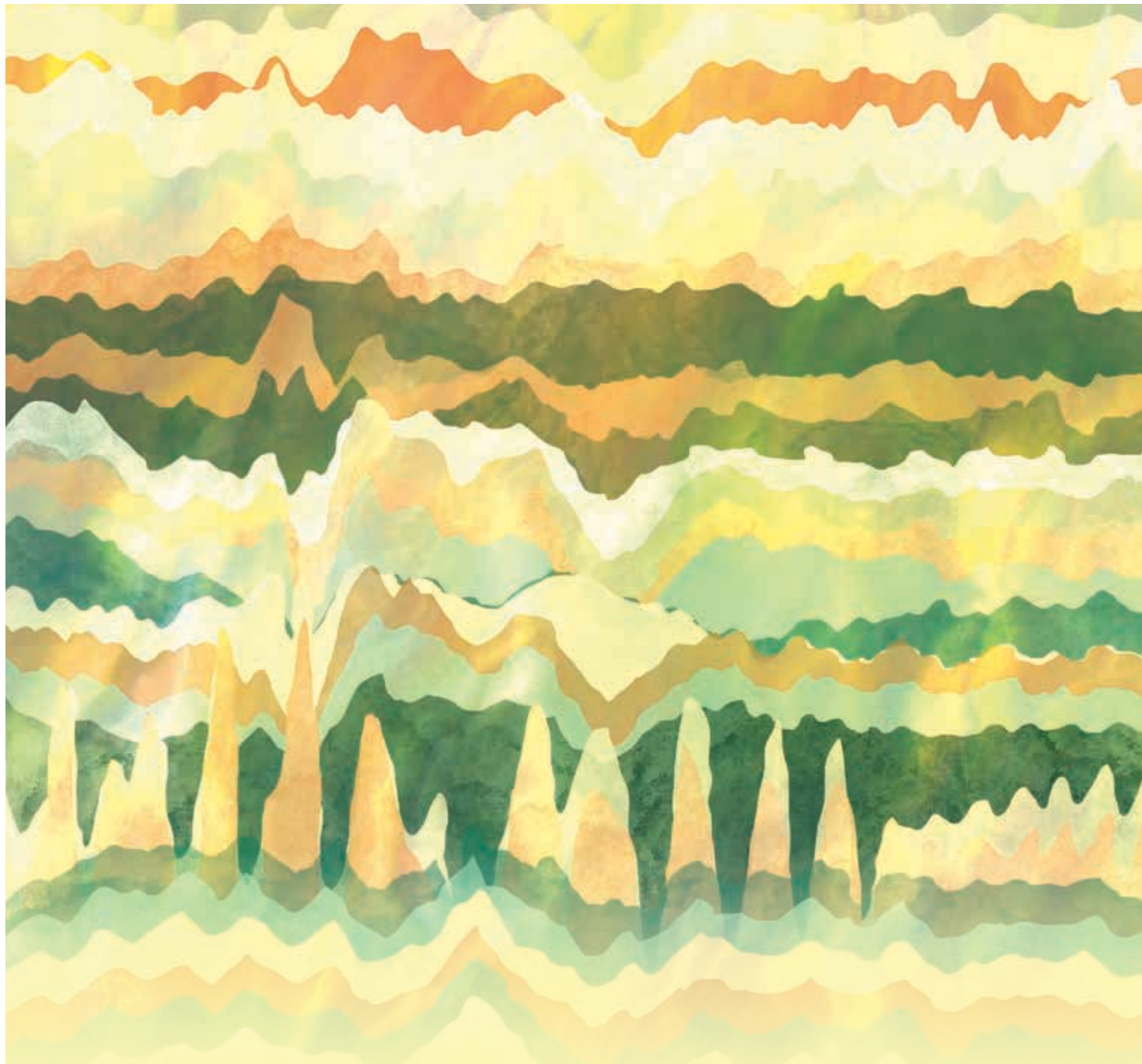
Patient and caregiver support

Norton Neuroscience Institute Resource Centers offer a robust menu of classes, support groups and special events specifically for patients with Parkinson's disease and movement disorders, as well as their caregivers. These targeted support resources can help people live life more fully while managing their disease.

Our comprehensive support resources include:

- A suite of free educational seminars and support groups for patients and their families
- Patient navigator to help patients manage their appointments and community resources
- Parkinson's-focused exercise and therapeutic classes
- A dedicated social worker experienced in assisting patients with lifestyle and socioeconomic changes
- Behavioral and cognitive therapy
- Physical, speech and occupational therapies through Cressman Neurological Rehabilitation





Comprehensive Epilepsy Center

The Comprehensive Epilepsy Center is designated as a National Association of Epilepsy Centers Level 4 Epilepsy Center, indicating the highest level of comprehensive care and treatment options for epilepsy. Additionally, Norton Brownsboro Hospital features a newly renovated, ABRET-certified, six-bed epilepsy monitoring unit.



Epilepsy is the fourth most common neurological disorder. In people with epilepsy, abnormal brain activity causes repeated seizures that can significantly impact quality of life. Norton Neuroscience Institute Comprehensive Epilepsy Center has developed a multidisciplinary team committed to providing specialized clinical care and support resources that improve the lives of people with epilepsy. In addition, we offer diagnosis and treatment of nonepileptic seizures and neurological conditions that mimic seizures.

Our epilepsy care team is made up of board-certified epileptologists, fellowship-trained epilepsy neurosurgeons, fellowship-trained epilepsy neuropsychologists, neuro-radiologists, a designated patient navigator and a social worker. They provide high-level medical and surgical evaluation and treatment of patients with complex and refractory epilepsy.

Diagnosing epilepsy

Each person's experience with a seizure or epilepsy is different. An initial diagnosis to establish a cause and frequency of seizures in a timely manner traditionally has been a hurdle for neurologists.

Norton Neuroscience Institute First Seizure Clinic offers an expedited entry to care after a first seizure. It's important to be treated by a neurologist who specializes in epilepsy. Through a thorough diagnostic work-up that often includes an electroencephalogram, MRI and bloodwork, our team is able to create a care plan and medication management protocol that is as unique as each patient.

Advanced epilepsy treatment

When initial treatment and medication management are unsuccessful, we are able to offer many additional treatment options for epilepsy. If two or more medications fail to control seizure activity, surgical options can be considered, such as resection, responsive neurostimulation, deep brain stimulation and vagal nerve stimulation.

Epilepsy monitoring unit

We know that for some patients, the epilepsy surgical evaluation process can be overwhelming. Norton Healthcare is committed to offering patients a comprehensive presurgical evaluation in an efficient and coordinated way that offers treatment options faster than many neuroscience programs. A patient's time is precious, and we want to improve lives quickly through personalized, advanced treatment.

As a front-line tool, studies conducted in our state-of-the-art epilepsy monitoring unit use technology that watches, listens and records physical activity while measuring brain wave activity.

Surgical evaluations including ictal SPECT with injected radiotracer, PET scan, MRI, functional MRI (performed while doing activities to understand areas of corresponding brain control), Wada brain testing to measure memory on a single side of the brain, and neuropsychological evaluation help give our team a comprehensive understanding of each patient.

Locating the area of the brain causing seizures and understanding how it affects a patient's functionality is key to developing a custom treatment plan.



Surgical treatment

A full spectrum of surgical options to fit each patient's needs

The ability to offer a wide array of surgical treatment options for epilepsy allows our team to treat some of the most complex refractory epilepsy cases.

Norton Neuroscience Institute was the first in Louisville, Kentucky, to offer deep brain stimulation for epilepsy and, since then, has not stopped pushing the boundaries of care.

Epilepsy surgical services include:

- Deep brain stimulation
- Responsive neurostimulation via the NeuroPace system
- Vagus nerve stimulation
- Brain resection surgery
- Surgical robotics using ROSA robotic surgical assistant
- Interoperative CT
- Minimally invasive laser ablation using NeuroBlate
- Intracranial epilepsy monitoring with stereo electroencephalography depth electrodes or subdural grids

Scan the QR code to learn more about minimally invasive surgery options.



Patient and caregiver support

In addition to comprehensive medical interventions, Norton Neuroscience Institute Resource Centers offer patients and their caregivers access to support services for many aspects of living with epilepsy. Our goal is not only to provide treatment, but also to help each patient live their life to the fullest.

Our comprehensive support resources include:

- A suite of free educational seminars as well as exercise and therapeutic classes for patients
- A social worker experienced in assisting patients with the lifestyle and socioeconomic impacts of living with epilepsy
- Behavioral and cognitive therapy
- Physical, speech and occupational rehabilitation therapies through Cressman Neurological Rehabilitation
- Patient navigator to help patients manage their appointments and community resources



Comprehensive Stroke Program

Norton Neuroscience Institute Comprehensive Stroke Program is one of the largest stroke treatment destinations in the region. We have four adult-service hospitals in Louisville certified by DNV.



- Norton Brownsboro Hospital is a Comprehensive Stroke Center.
- Norton Audubon Hospital is a Primary Stroke Center.
- Norton Hospital is a Primary Stroke Center.
- Norton Women's & Children's Hospital is an Acute Stroke Ready hospital.

Norton Healthcare is the region's largest comprehensive stroke care system and is recognized by U.S. News & World Report as a high-performing adult-service facility for its care and procedures.



The Norton Healthcare stroke team is the first line of defense against a brain attack. The highly specialized, multidisciplinary team is available around the clock to combat stroke emergencies. The team includes neurologists, neurosurgeons, vascular surgeons, neuroradiologists, cardiologists, emergency medicine physicians and nurse specialists. Norton Brownsboro Hospital has 24-hour fellowship-trained neurocritical care services dedicated to critical stroke patients.

Optimizing outcomes

A precise diagnosis of the type of stroke and what part of the brain it has affected are critical to restoring blood flow quickly and giving the patient the best chance of recovery. With the implementation of RapidAI artificial intelligence diagnostic tools and advanced surgical capabilities, our team can quickly prepare for incoming stroke patients and their immediate intervention. Two newly renovated hybrid biplane suites at Norton Brownsboro Hospital greatly reduce wait time and expedite care.

Treatment options

Saving time means saving brain. Our Comprehensive Stroke Program offers advanced pharmacologic treatment and surgical capabilities to treat stroke patients quickly and effectively.

Award-winning stroke care

Norton Healthcare's four adult-service hospitals in Louisville each received a 2023 American Heart Association Get With the Guidelines – Stroke award. Norton Brownsboro Hospital received the highest possible award — **Gold Plus**.

85% or more of applicable patients experience door-to-needle times of 60 minutes or less.



U.S. News & World Report ranked Norton Healthcare's hospitals as high performing in stroke care in 2023-2024.

Surgical capabilities

Norton Neuroscience Institute is part of a large regional comprehensive stroke network connected with regional hospitals to optimize quick and efficient patient transfers when needed. Our network offers advanced surgical capabilities, including:

- Mechanical thrombectomy for brain catheterization to remove blood clots
- RapidAI CT angiography and CT perfusion technology to read scans and quickly assess patients' need for transfer
- Intraoperative CT scan technology
- NICO Myriad System for removal of intercerebral hemorrhages
- Biplane X-ray technology and hybrid biplane suites at Norton Brownsboro Hospital provide high-resolution imaging that identify the cause of a stroke and capture layered images to produce a detailed 3D picture of the blood vessels.

Norton Brownsboro Hospital's two hybrid biplane suites were the second and third available in the country.

Our Comprehensive Stroke Program offers an EMS observational experience. In partnership with local and state entities, flight nurses, paramedics, EMTs and first responders can participate in a professional structured observation experience to enhance their knowledge of stroke and learn about the state-of-the-art treatments and interventions available at Norton Healthcare.

Scan the QR code to learn more.



Neurocritical care specialists ready to help the most acute stroke cases

In addition to stroke neurologists and neurosurgeons, a team of neurocritical care physicians is available to treat the most acute stroke cases 24/7. At Norton Healthcare, our collaborative stroke care team uses advanced diagnostic procedures and innovative therapies to aggressively treat a stroke patient within minutes of arrival.

STROKE PROGRAM STATISTICS

BY TYPES OF STROKE

More than **1,795** PATIENTS TREATED FOR STROKE in a hospital setting in 2022

TRANSIENT ISCHEMIC 83



HEMORRHAGIC 227

ISCHEMIC 1,213

Patient and caregiver support

We understand that life after stroke can present unique challenges for patients and their loved ones. Norton Neuroscience Institute Resource Centers help educate patients and their families about managing the effects of a stroke. Support is available virtually and in person.

Our dedicated stroke patient navigator assists patients with connecting to care after stroke and preventing future stroke.

- A post-acute care program is a collaboration with Trilogy Health Services, Norton Home Health and Norton Healthcare geriatricians to maintain a continuity of care.
- A Stroke Bridge Clinic offers services to patients discharged after stroke to coordinate appointments and medication management needs.
- Cressman Neurological Rehabilitation offers physical and occupational therapy to patients adjusting to the physical effects of stroke.

Case study review

See a collection of cases from our Comprehensive Stroke Program.





Memory Center

Norton Neuroscience Institute Memory Center is a multidisciplinary program focused on clinical care, clinical and translational research, and robust support for patients with memory impairment and their caregivers.



Committed to offering comprehensive care to families and caregivers of those with dementia, our team includes neurologists, geriatricians, social workers, pharmacists, a psychiatric nurse practitioner and various therapists. Our multidisciplinary team collaborates to develop a treatment and care plan that best supports patients.

What we treat

Dementia, an umbrella term for several memory disorders, currently affects more than 55 million people worldwide. Though dementia itself is not a specific disease, it includes several collective cognitive symptoms: impaired intellectual function, memory loss, inability to problem-solve, emotional dysregulation, personality changes, behavioral issues and others.

We treat the specific cognitive disorders that fall under a dementia diagnosis, including Alzheimer's disease, vascular dementia, Lewy body dementia, frontotemporal dementia, Huntington's disease and Creutzfeldt-Jakob disease.

Diagnosing dementia

There is no single, simple test for diagnosing dementia, and dementia symptoms (types) can overlap. Our multidisciplinary team offers a thorough evaluation to determine an accurate diagnosis. Alzheimer's and other types of dementia are diagnosed based on an assessment of medical history, physical exam, various lab tests and understanding the characteristic changes in behavioral and cognitive daily functions.

Treatment options

While there is no cure for dementia or Alzheimer's disease, treatment and management options are available to minimize symptoms, slow progression and improve quality of life. Our team works collaboratively across many areas to ensure each patient's treatment plan is individualized to their diagnosis, symptoms and lifestyle. A robust approach of medication, therapeutic support and social support can help patients and caregivers manage their condition.

Disease-modifying medications for memory loss

Norton Healthcare is leading the region in access to disease-modifying medications to delay or slow progression of memory loss by targeting its underlying cause. Recent developments have led to the availability of drugs like lecanemab and aducanumab, with more anticipated in the coming years.

In July 2023, the Food and Drug Administration approved lecanemab, marketed as Leqembi, for the treatment of the earliest symptomatic stages of Alzheimer's disease. Lecanemab is available at Norton Healthcare and covered by most insurance plans. To learn more, go to NortonHealthcare.com/Lecanemab.

Symptom management

In addition to disease-modifying drugs, other medications can help relieve symptoms of the disease. Some examples of symptoms that may be treated with medication:

- Anxiety
- Incontinence
- Insomnia
- Depression
- Pain
- Hallucinations, delusions, severe agitation or aggression

Therapeutic support

Norton Healthcare provides rehabilitation, occupational therapy and speech-language pathology services for patients managing memory loss. Our facilities offer some of the most advanced technology and specialized services in one location to help with gait, balance, strength, flexibility, speech, fine motor skills, swallowing, driving, cognition, vision and more.



Patient and caregiver support

Families and patients are not on their own when it comes to coping with dementia. Research has shown that support groups and classes designed to help patients' well-being can be an important addition to treatment that aims to slow disease progression.

The Memory Center and Norton Neuroscience Institute Resource Centers offer holistic care for patients with Alzheimer's disease and other dementia conditions while supporting caregivers and families. Our patient support programming includes:

- Dedicated social worker
- Dedicated pharmacist and prescription assistance
- Caregiver workshops and support groups
- Therapeutic programming, including neuro choir, scrapbooking and brain games
- Exercise classes, including aqua aerobics, tai chi and yoga



Research The future of dementia care

In addition to offering clinical care, we are dedicated to studying ways to eradicate memory disorders. The Alzheimer's Association estimates that by 2050, 152 million people are expected to be living with dementia worldwide, up from 57 million in 2019.

Up to 40% of dementia cases are preventable. Our researchers are collaborating with centers across the world to better understand, develop treatments and prevent dementia. As a robust program rooted in clinical care, research, community outreach and prevention through enhanced brain health initiatives, we are on the leading edge of treatment and care development.

Demand for medications to treat dementia and Alzheimer's disease is growing, and Norton Healthcare is committed to research and clinical trials to develop successful treatments.

Learn more about our memory disorders clinical trials.



See the impact we are having on families in Kentucky.



Headache Center

One in every six people in the United States experiences severe headache or migraine, according to recent government health studies. Chronic headache and migraine can be unbearable, affecting the personal and professional lives of many patients.

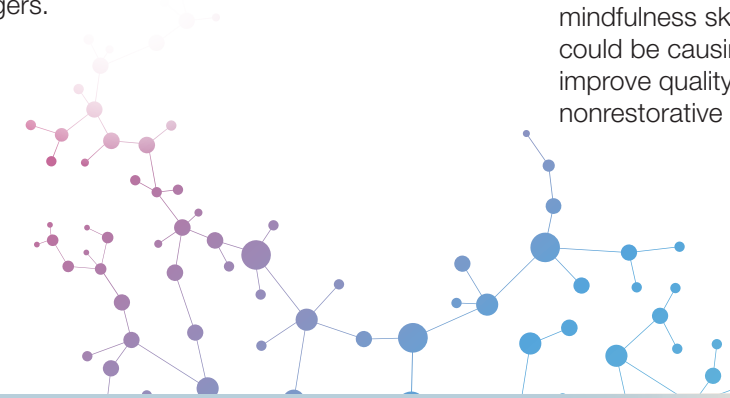
Norton Neuroscience Institute Headache Center offers patients emerging treatments and research-based clinical care to help manage what can be a chronic condition.

As a regional destination for care, we treat more patients for headache and migraine than any other provider in the area. Our team of specialists includes four headache medicine physicians certified by the United Council for Neurologic Subspecialties and nurse practitioners certified by the National Headache Foundation.

Through diagnostics, education, support and ongoing innovation, our team assists patients in improving quality of life and experiencing more migraine-free days.

What we treat

When people experience chronic headache or migraine, it can impact their daily functioning, work life, emotional health and overall physical well-being. Diagnosing headache or migraine is critical to prescribing effective treatment. Our headache specialists are board certified and trained to extensively understand headache and migraine. Using their expertise, our team diligently works with patients to understand their condition, including their symptom patterns and potential triggers.



At Norton Neuroscience Institute, we know that living with headache can feel overwhelming. Bright lights, noises, screens, and other environmental factors can trigger the onset of a migraine or headache. This is why we have designed our headache center to have dimmer lights, white noise, and comfortable seating so patients can rest assured their doctors visit will help them manage their migraine, not cause one.

We offer treatment for patients experiencing:

- Migraine
- Chronic daily headache
- Cluster headache
- Medication overuse headache
- Cervicogenic headache
- Menstrual-related migraine
- Tension-type headache
- Postconcussive/post-traumatic headache

We also offer medical and surgical treatment for:

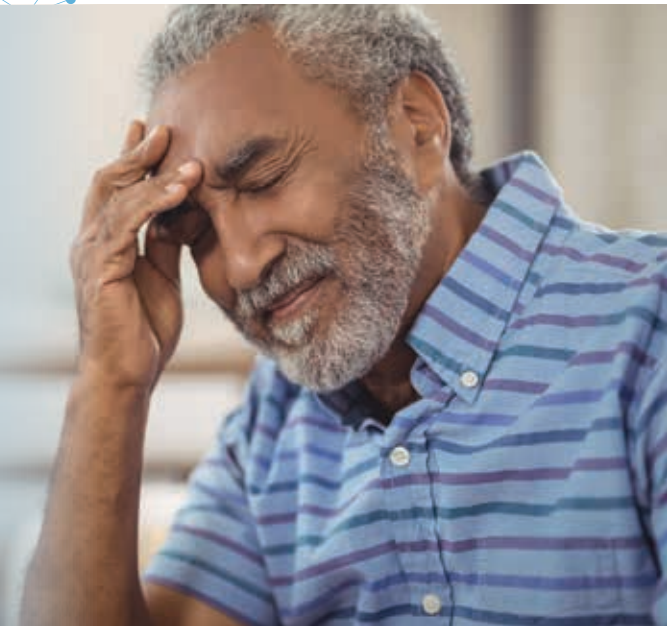
- Occipital neuralgia
- Trigeminal neuralgia
- Pseudotumor cerebri

Treatment options

Our specialists develop personalized, comprehensive treatment plans based on individual patient needs.

Medication options include oral, injectable and intravenous forms. Nerve block injections (including Botox) and neuromodulation devices also are available. Referral to hospital inpatient or surgical treatment is an option if warranted.

We also offer behavioral treatments that show strong evidence of effectiveness. Trained specialists teach patients mindfulness skills to lessen bodily responses to stress that could be causing headache. Sleep training is available to improve quality of sleep habits for people who are living with nonrestorative sleep issues that result in chronic headache.



A growing program

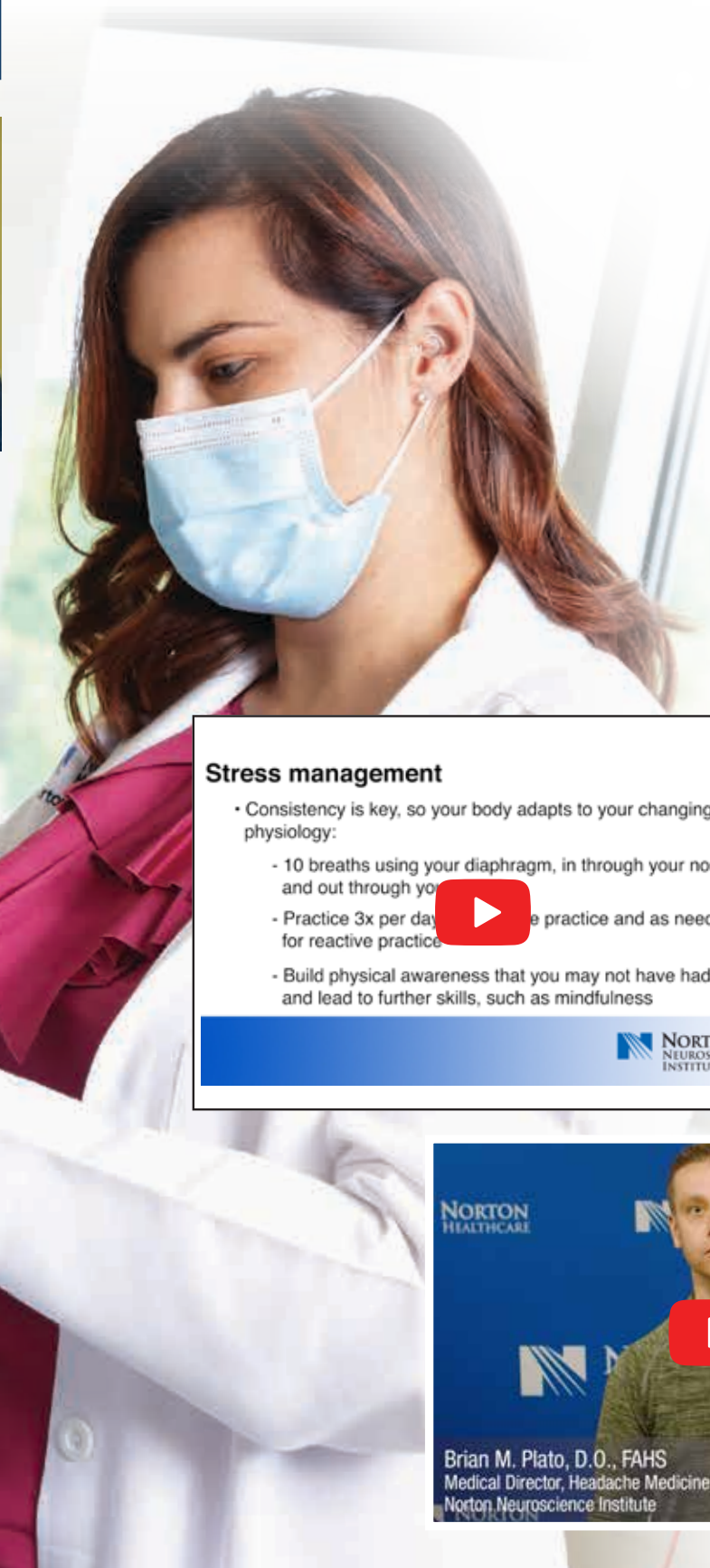
At least 39 million Americans live with migraine, but according to the American Migraine Foundation, that number is much higher because many people do not seek treatment or have access to migraine specialists. We treat nearly 8,000 patients each year.

Growing demand for headache and migraine care has led to expansion of our team, virtual headache evaluations and follow-up services, and “Headache School” classes to help patients manage and change behaviors to reduce symptoms.

Patient support

In addition to comprehensive medical interventions, we offer patients dedicated spaces specially designed to make their care experience more comfortable, including:

- Dimmable lights
- White noise to quiet the environment
- Reduced fragrance areas
- Reduced bright-colored surroundings to minimize headache/migraine triggers

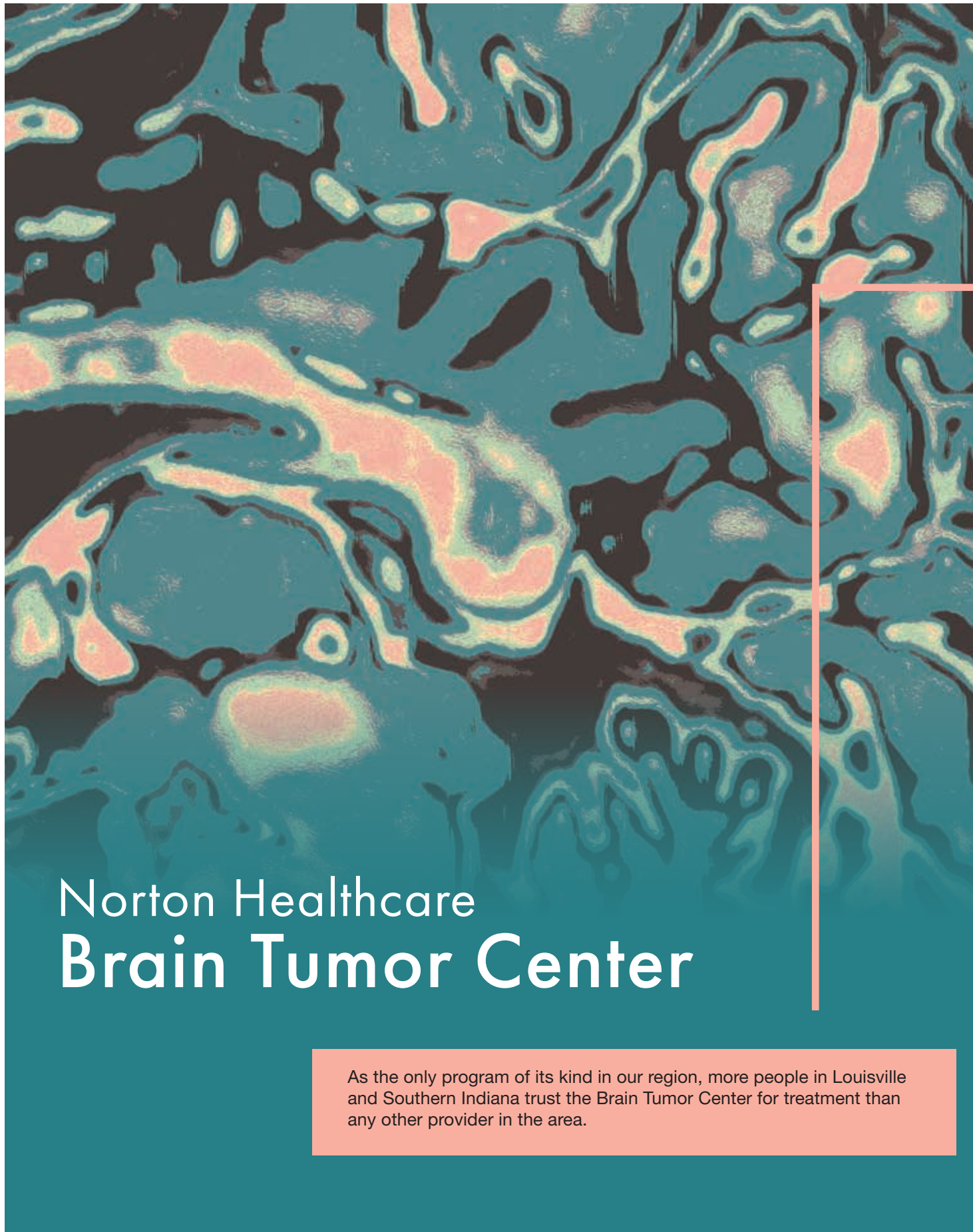


Stress management

- Consistency is key, so your body adapts to your changing physiology:
 - 10 breaths using your diaphragm, in through your nose and out through your mouth
 - Practice 3x per day for reactive practice and as needed for reactive practice
 - Build physical awareness that you may not have had before and lead to further skills, such as mindfulness



Headache School, presented by Norton Neuroscience Institute Headache Center, is a free, on-demand virtual series of five video presentations designed to inform new and existing patients about their headache syndromes, why they should see a specialist and what treatments are available. Register for the series at NortonHealthcare.com/HeadacheSchool.



Norton Healthcare Brain Tumor Center

As the only program of its kind in our region, more people in Louisville and Southern Indiana trust the Brain Tumor Center for treatment than any other provider in the area.

Norton Healthcare Brain Tumor Center, a collaboration between Norton Neuroscience Institute and Norton Cancer Institute, is on the forefront multidisciplinary medicine. The Brain Tumor Center was born from a vision to provide coordinated, collaborative care in one convenient location for patients facing brain or spinal cord tumor diagnoses. The Brain Tumor Center allows scheduling a single same-day appointment where the patient can meet with all specialists to minimize time and travel.

We are at the leading edge of rapidly developing improvements in brain tumor treatment. We have the skills and experience to diagnose brain tumors and devise customized treatment plans to eliminate the tumor while preserving healthy brain tissue for the best patient outcomes.

What we treat

We have the expertise and technology to diagnose and treat nearly all types of brain tumors, including:

- Metastatic brain cancers
- Meningioma
- Glioblastoma
- Astrocytoma
- Germ cell tumors
- Glioma
- Ependymoma
- Central nervous system lymphoma
- Acoustic neuroma
- Pituitary tumors
- Spine and spinal cord tumors
- Skull base tumors

Using state-of-the-art tools, our specialists can determine a precise diagnosis and develop a customized treatment plan using some of the most advanced treatments in the field. Our diagnostic process involves extensive testing, including CT scan, MRI, functional MRI and biopsy, to ensure the most accurate diagnosis.

Scan the QR code to watch a video about the Brain Tumor Center.



The Brain Tumor Center offers minimally invasive surgical treatment techniques that often result in reduced hospital stays, shorter recovery times and a lower expected mortality rate after brain tumor surgery. Minimally invasive options include NeuroBlate laser interstitial thermal therapy and the ROSA robotic system.

Treatment options

Brain tumor treatment is advancing rapidly. Our board-certified neuro-oncologists and fellowship-trained specialists know which emerging or established treatments to employ against a comprehensive range of brain tumor types.

As part of the diagnosis and treatment planning process, each patient's case is reviewed weekly by a brain tumor board — a gathering of the center's specialists to review patient progress and next steps. Sharing their expertise and experience, physicians specializing in neuro-oncology, neurosurgery, radiation oncology, behavioral oncology, neuropathology, neuroradiology and neuropsychology collaborate to create a customized treatment approach.



In addition to innovative surgical options, the Brain Tumor Center offers specialized treatments and radiation therapies, including:

- Intensity-modulated radiation therapy
- Tumor-treating fields
- GammaTile Therapy surgically targeted radiation
- TrueBeam stereotactic radiosurgery



Read our neuro-oncology case studies.

Patient and caregiver support

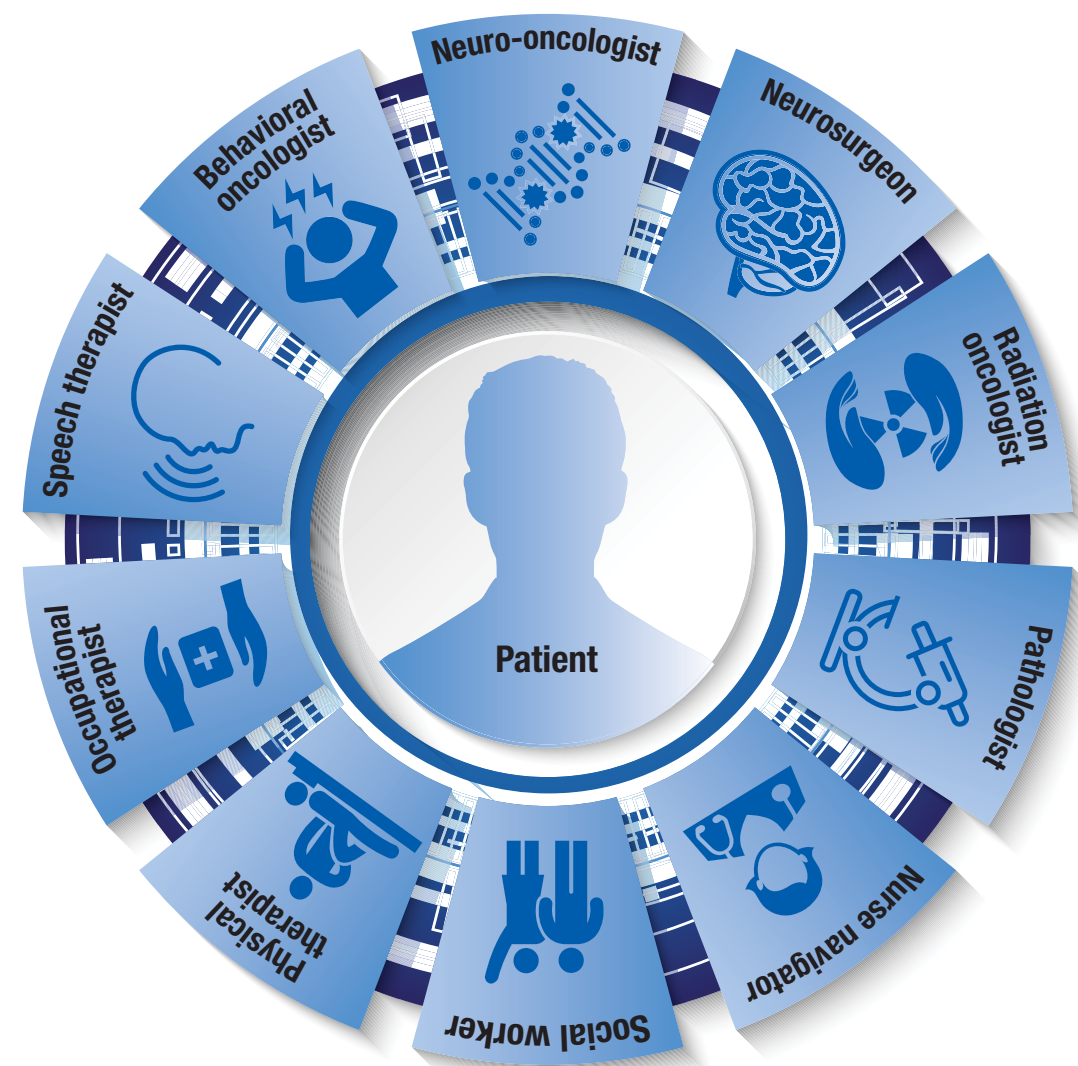
Because a brain tumor diagnosis has a tremendous impact on the whole family, we strive to provide patients and families with a level of care that goes beyond state-of-the-art treatment. We offer extensive rehabilitation services (including robust speech-language pathology and physical therapy), educational resources, and physical and emotional/behavioral support services through Norton Cancer Institute and Norton Neuroscience Institute Resource Centers.



Research The future of brain tumor care

Our brain tumor specialists from Norton Neuroscience Institute and Norton Cancer Institute work collaboratively as principal investigators in clinical trials of new and experimental treatments. We are an active participant in research to advance the treatment of all types of brain tumors. Through the growth of more clinical trials, we aim to offer patients excellent treatment options so they can stay close to home while getting the most advanced care available.

See all of our brain tumor clinical trials.





Neuromuscular Center

Neuromuscular diseases encompass disorders of the peripheral nerves, neuromuscular junction and muscle functioning. While neuromuscular disorder symptoms can vary from patient to patient, it is common for individuals to experience symptoms of weakness, numbness or both.



What we treat

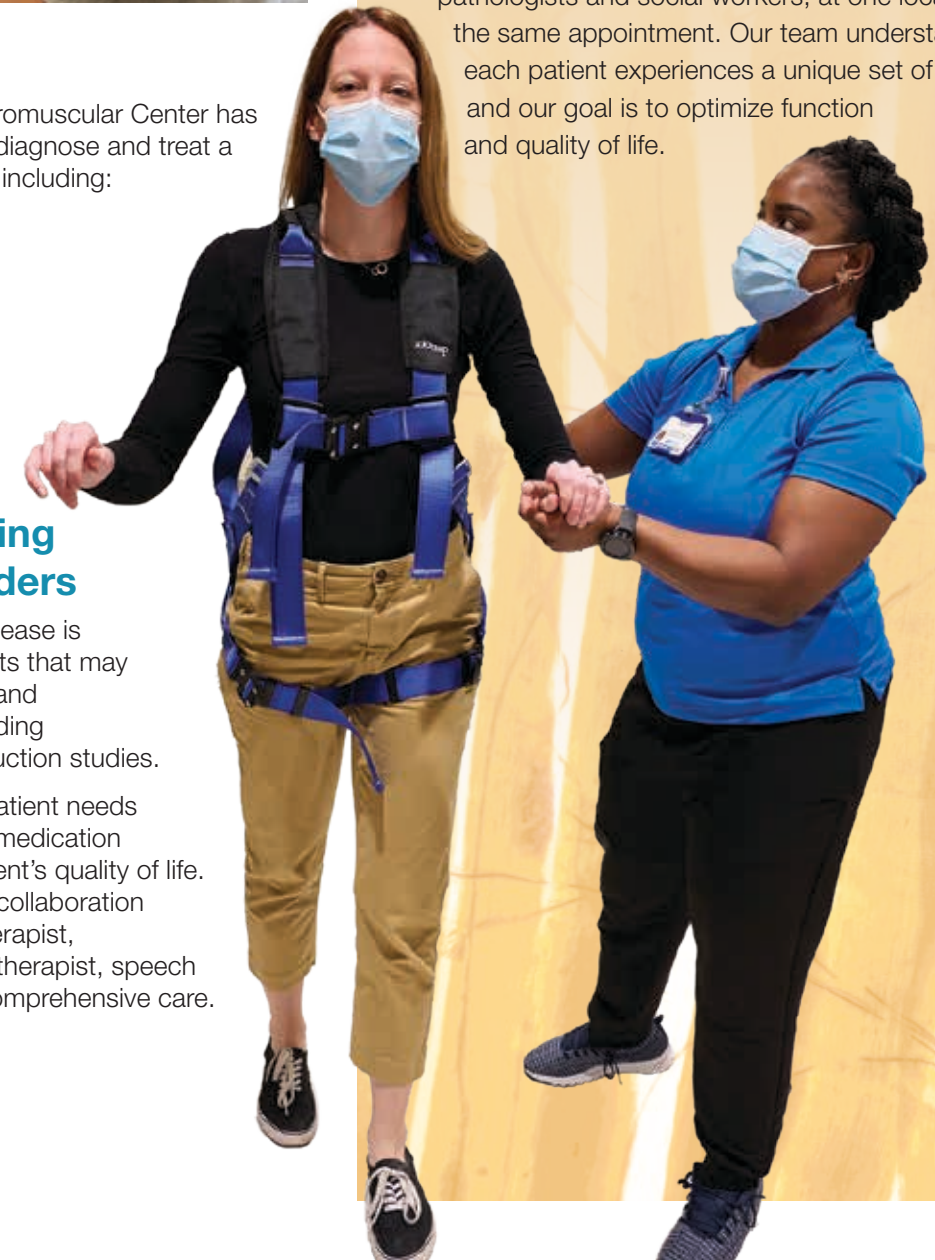
Norton Neuroscience Institute Neuromuscular Center has subspecialized providers who can diagnose and treat a variety of neuromuscular diseases, including:

- Amyotrophic lateral sclerosis
- Charcot-Marie-Tooth disease
- Muscular dystrophy
- Myasthenia gravis
- Myopathies
- Peripheral neuropathy
- Spinal muscular atrophy

Diagnosing and treating neuromuscular disorders

A diagnosis of a neuromuscular disease is determined through a variety of tests that may include lab testing, neuro-imaging and electrodiagnostic techniques, including electromyography and nerve conduction studies.

Treatment is tailored to individual patient needs and may include a combination of medication and therapies to maximize the patient's quality of life. Our multidisciplinary care includes collaboration between a neurologist, physical therapist, occupational therapist, respiratory therapist, speech therapist and dietitian to provide comprehensive care.



ALS Multidisciplinary Clinic

Amyotrophic lateral sclerosis, also called ALS or Lou Gehrig's disease, is a progressive motor neuron disease affecting the nerve cells in the brain and spinal cord, resulting in progressive muscular weakness. Over time, ALS affects limb strength, speech, swallowing and breathing. While there is no cure for ALS, treatment is available, and specialized care at our ALS Multidisciplinary Clinic can help extend functionality and survival.

At each visit, patients can see multiple specialists, including therapists, dietitians, neurologists, speech pathologists and social workers, at one location during the same appointment. Our team understands that each patient experiences a unique set of challenges, and our goal is to optimize function and quality of life.



Sports Neurology Center

Norton Neuroscience Institute Sports Neurology Center treats sports-related concussions in a state-of-the-art facility.

The Sports Neurology Center combines the expertise of nationally known sports concussion providers with a progressive and rehabilitative approach to treating athletes and getting them back in the game.

The center is the first of its kind in Kentucky and is equipped with a treadmill, elliptical, stationary bike, heavy bag and other sports-specific equipment. Baseline and postinjury testing, visual and vestibular therapy, and telemedicine capabilities allow for seamless care during recovery.

What we treat

Early intervention and treatment are key to successfully recovering from a concussion. The team provides care for patients ages 5 and older at all sports levels. Patients should be referred if they are experiencing any of these symptoms following head trauma:

- Headache
- Dizziness
- Confusion
- Memory loss
- Difficulty concentrating

Neuropsychology

We are home to the largest team of fellowship-trained and board-certified neuropsychologists in Greater Louisville.

Part of our comprehensive patient care includes evidence-based evaluation by our board-certified neuropsychology team. Working in partnership with neurologists and neurosurgeons, the neuropsychology team provides comprehensive diagnoses, functional brain characterization and assessments of the behavioral impact of neurological conditions to inform a robust treatment plan for each patient.

The neuropsychology team uses comprehensive psychiatric interviews and formal cognitive assessment tools to arrive at these goals. Most patients are seen in an outpatient setting. Examination involves a thorough assessment with a neuropsychologist and a psychometrist. Some patients also benefit from advanced brain imaging tools like functional MRI and invasive brain mapping. Our goal is to determine a precise diagnosis and functional brain characterization that will inform medical and surgical treatment options and safety, as well as planning for post-care rehabilitation.



Integrated team of specialists

Often, comprehensive medical and surgical treatment for neurological conditions requires a neuropsychologist who can evaluate the psychiatric and neurologic components of a disorder in order to distinguish the components that require different treatments. Neuropsychologists provide a road map of the patient's unique brain function in order to determine the safety of a surgical procedure or to suggest other, safer approaches. This integrated approach to brain care and treatment takes advantage of the expertise of multiple specialists who all can be involved in an individual patient's care to provide the best — and safest — treatments.

Neurology and neurosurgery can function separately, but our integrated model is a unique collaboration that supports an elevated patient care experience.

Neurosurgery

Norton Neuroscience Institute is a regional leader in the field of neurosurgery. Our providers use cutting-edge, minimally invasive procedures to treat neurological conditions in a multidisciplinary setting to improve patients' lives.

Our board-certified and fellowship-trained surgeons bring experience from nationally recognized training centers. Our neurosurgeons work collaboratively with neurologists, neuropsychologists, therapists and other specialists to augment our disease-focused specialty centers. Whether patients are experiencing seizures, headache, Parkinson's disease, stroke or memory loss, the neurosurgery team provides a surgical perspective to help diagnose and provide care for each individual.

Endovascular and cerebrovascular neurosurgery

In addition to providing lifesaving care for patients with acute stroke and hemorrhage, our endovascular and cerebrovascular neurosurgery team works to reduce the risk of stroke or brain bleed in the first place. Our neurosurgeons are trained in both open and minimally invasive techniques to repair carotid and vertebral stenosis, cerebral aneurysms and arteriovenous malformations using state-of-the-art options, including radial artery approach, transcarotid artery revascularization and radiation therapy.

Chronic subdural hematomas are older blood clots along the surface of the brain. While many resolve over time, some require surgical drainage. Middle meningeal artery embolization is a novel technique offered by our endovascular neurosurgeons to reduce recurrence of these blood clots — a common risk with surgery.

Cranial neurosurgery

Our neurosurgeons provide advanced treatment options for patients who are candidates for brain surgery. Whether it's a minimally invasive biopsy, laser surgery via a single suture or a large skull base procedure, our neurosurgeons work with head and neck colleagues to provide comprehensive care. In collaboration with our surgical neuropsychologists, we perform functional MRI scans and awake surgeries when appropriate to ensure that we are protecting essential tissue.

Additionally, disorders like hydrocephalus, Chiari malformation and idiopathic intracranial hypertension are evaluated and treated using traditional as well as neuro-endoscopic and endovascular techniques.

Functional and restorative neurosurgery

Functional and restorative neurosurgery focuses on techniques to assist patients with symptom control across a range of conditions, including epilepsy, Parkinson's disease, and face, neck, back or nerve pain. Face pain patients may be offered microvascular decompression, minimally invasive nerve ablation or incision-free radiosurgery. Neuromodulation via implantation of brain stimulators is a major component of functional and restorative neurosurgery for epilepsy and movement disorders. Spinal cord and nerve stimulation are used to reduce pain caused by failed back surgery and even diabetic neuropathy.

Our neurosurgery program offers advanced technology to treat unique and challenging cases, participation in academic research and the prioritization of continued medical training.



Norton Leatherman Spine

Norton Healthcare is the first health system in the nation to be recognized as an Advanced Orthopedic & Spine Center of Excellence by DNV, representing the highest level of competence for spine procedures

Norton Leatherman Spine is a combined team of neurosurgeons from Norton Neuroscience Institute, orthopedic spine surgeons from Norton Orthopedic Institute and pain management specialists who provide care for adults and children from Louisville, Southern Indiana, across the region, and even the nation and world. The Norton Leatherman Spine team evaluates over 9,000 patients a year and performs more than 4,000 surgeries each year.

Multidisciplinary care

Our team approach to diagnosis, treatment and rehabilitation of spine conditions involves primary care providers and a variety of specialists to develop a treatment plan as unique as each individual. Additionally, the Norton Leatherman Spine team includes more than 20 advanced practice providers and collaborates with specialists from Norton Pain Management Associates and rehabilitation services to provide a team-based approach to care.

Spine and spinal cord tumors

Our spine surgeons work collaboratively with colleagues from the Brain Tumor Center to develop individualized treatment plans for patients with primary or metastatic tumors of the spine or spinal cord.

Treatment options

The Norton Leatherman Spine team has expertise from a variety of specialties to offer a comprehensive array of treatment options that include minimally invasive and nonsurgical therapies. Because not every patient requires surgical intervention, our team works closely with pain management, physical therapy and other specialists to offer the full spectrum of back and neck pain care.

We use the EOS Imaging system, which collects high-resolution images while exposing the patient to 50% to 85% less radiation than traditional X-rays and 95% less than basic CT scans. The system is especially beneficial to scoliosis patients who often need repeated imaging to monitor their progress.

Back & Neck Pain Clinics

Norton Leatherman Spine Back & Neck Pain Clinics are a new solution for patients. They are designed as an opportunity to provide better access to acute medical care for neck- or back-related symptoms while reducing emergency room visits and unnecessary hospital admissions. Clinic providers are available Monday through Friday and will work to see patients within one to three business days. Patients see an advanced practice provider with expertise in back and neck pain assessment and treatment. These providers can answer patients' questions and expedite next steps for their care. The clinics are part of a collaborative team approach. Patients who are candidates for surgery are evaluated by our surgical team.



