The Brain Tumor Center at Smilow Cancer Hospital is an internationally recognized lead center for comprehensive and multidisciplinary brain tumor care. A hub of excellence in clinical care and research, our team of specialists is dedicated exclusively to the care of patients with all types of brain tumors. Our specialists have extensive experience with:

- Primary brain tumors, such as glioblastomas, astrocytomas, oligodendrogliomas, primary CNS lymphomas, and others
- Brain metastases and leptomeningeal metastases, which originate from other cancers in the body
- Other primary tumors, such as meningiomas and ependymomas
- Rare brain tumors including craniopharyngiomas, medulloblastomas, ependymomas, pineal tumors, pituitary tumors, and others
- All types of neurological complications of cancer and their treatments

The Brain Tumor Center comprises experts from multiple disciplines including Neurosurgery, Neuro-Oncology, Radiation Oncology, Neuropathology, Neuroradiology, and Genetics. In addition to physicians, our team includes specialized nurses, nurse practitioners, and physician assistants, as well as clinical trial coordinators and social workers - all working together to deliver the most effective, compassionate, and personalized care.

The Center’s expertise covers all the critical components to successfully care for patients with brain tumors, starting with comprehensive diagnostic evaluation and state-of-the-art genomic profiling of the tumor, and providing the latest treatment options and cutting-edge clinical trials. We also offer an extensive program to improve patients’ quality of life before, during, and after treatment, including psychosocial support, rehabilitation for memory impairment, and other resources.

Our highly coordinated team of specialists meets weekly during our multidisciplinary Brain Tumor Board and Precision Medicine Brain Tumor Board to discuss each patient’s diagnosis on an individual basis, arriving at the most appropriate treatment plan for each person.

We treat all patients, whether they are newly diagnosed or have already received extensive treatment. We are readily available to offer second opinions for patients from all over the country, and rapidly accommodate our patients for prompt evaluation and initiation of care.

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Primary Brain Tumors: (203) 785-2791   |   Metastatic Brain Tumors: (203) 785-2808

For Kaitlin's story: yalecancercenter.org/kaitlin
BRAIN TUMOR SURGERY

Removing as much tumor as safely as possible is a benefit for patient survival and outcomes. Our primary goals are always to establish a minimally invasive access route to remove as much of the tumor as is safely possible, while preserving brain function. Towards this end, the Yale Brain Tumor Center is equipped with state-of-the-art facilities and technology. Our internationally renowned neurosurgeons are exclusively dedicated to brain tumor surgery. They perform the most number of brain tumor surgeries in Connecticut, and routinely treat patients traveling from all over the nation.

Functional mapping and neurophysiology, sophisticated techniques used during microsurgery, allow our chief surgeon to remove tumors that threaten vital brain function. For example, our neurosurgeons are masters of “tumor mapping.” Reserved for selected patients, this well-documented technique allows the surgeons to remove tumors located in high functioning parts of the brain, while the patient is completely awake. The collaboration with specialized neuroanesthesiologists is critical for these more technically challenging microsurgical procedures to be performed, allowing tumors previously judged “inoperable” to be safely removed.

In addition to unparalleled surgical expertise, the use of intraoperative ultrasound and intraoperative MRI, the latter being the state-of-the-art MRI actually located within the operating room, provides our neurosurgeons with real-time feedback, as they can remove as much tumor as can be removed without damaging critical brain function. Shriners Hospital’s unique intraoperative hybrid angiography suite also allows our surgeons to decrease the tumor’s blood supply, making surgery even safer. Our Brain Tumor Center’s use of the state-of-the-art electrophysiological mapping system that allows the patient to be fully active for individualized surgical care for each tumor, regardless of its location. Importantly following the surgery, our specialized ICU’s are equipped with the latest technology to ensure a smooth recovery.

Our surgeons are also one of the first groups nationally to offer a novel minimal invasiveness treatment for brain tumors known as Laser Interstitial Thermal Therapy (LITT). Through a small scalp incision, a laser fiber is placed into the tumor. This technique can often be sent home the day after surgery with minimal discomfort and almost no interruption to other daily functions.

LITT, as well as other minimally invasive techniques, allow us to be able to understand tumors at a molecular and level and to better target the tumor’s vulnerabilities in each patient.

NEURO-Oncology

In addition to neurosurgical evaluation, all of our patients are assessed for the need of specialized oncology treatment. Many brain tumor patients require chemotherapy, targeted therapies, or other medical treatments, often combined with radiation therapy and surgery.

Our Neuro-Oncology team has extensive expertise in delivering exceptional oncology treatments for brain tumor patients, with a focus on achieving optimal efficacy and maximal safety. Each patient is evaluated and offered an individualized and coordinated treatment plan. Taking into consideration the tumor type, molecular and genomic information on the tumor, and the patient’s own needs and choices.

Our Neuro-Oncology team is extensively involved in pursuing new treatments for brain tumors: our patients have first-hand access to cutting-edge clinical trials exploring multiple novel strategies to fight brain cancer. Our Neuro-Oncology team is continuously working closely with Yale laboratory researchers throughout the institution, to rapidly translate scientific discoveries into meaningful treatments for brain tumors.

A strong research program at Yale is focused on the development of immunotherapies for brain tumors, which use the patient’s own immune system to treat cancer. Our Neuro-Oncology team took the lead in using immuno-checkpoint inhibitors in brain tumors, which led to discoveries that are now paving the way to new, optimized immunotherapies that can be more effective in the brain. Another major focus of research is to explore ways to translate the information derived from gene sequencing to treat the patient. Our state-of-the-art whole-exome sequencing enables our physicians to match patients with the best available trials, taking full advantage of the knowledge of the molecular “fingerprint” of each tumor to devise personalized treatment strategies in partnership with pharmaceutical companies.

Our team of experts includes intracranial radiation oncologists with a focus on the use of image-guided radiation therapy for brain tumors, using advanced treatment delivery systems. Our patients with brain tumors, we have the capability to deliver radiation therapy using multiple cutting-edge platforms, specialized and innovative radiotherapy through a multitude of scientific and translational research endeavors. For our patients with brain tumors, we have the capability to deliver radiation therapy using multiple cutting-edge platforms. In addition, we have first-hand access to unique clinical trials aimed at improving the treatment efficacy through new drug combinations.

BRAIN TUMOR CENTER

Established as one of the original Radiation Oncology departments in the country in 1958, the Yale Department of Therapeutic Radiology has played a foundational role in the national development of radiation therapy as a cancer treatment. Building on this long tradition of excellence, our internationally renowned Radiation Oncology provides specialized and innovative radiotherapy through a multitude of scientific and translational research endeavors. For our patients with brain tumors, we have the capability to deliver radiation therapy using multiple cutting-edge platforms. In addition, we have first-hand access to unique clinical trials aimed at improving the treatment efficacy through new drug combinations.

In close collaborations with our Neuro-Oncology team, our patients receiving radiation therapy at Yale have access to unique clinical trials aimed at improving the treatment efficacy through novel drug combinations.
BRAIN TUMOR SURGERY

Removing as much tumor as safely as possible is a benefit for patient survival and outcomes. Our primary goals are always to establish a clear diagnosis, remove as much of the tumor as safely as possible, while preserving brain function, and a smooth recovery.

In addition to unparalleled surgical expertise, the use of intraoperative ultrasound and intraoperative MRI, the latter of Therapeutic Radiology has played a foundational role in the national development of radiotherapy as a cancer treatment. Building on this long tradition of excellence, our internationally renowned Radiation Oncologists provide state-of-the-art facilities and technology. Our internationally renowned neurosurgeons are exclusively dedicated to brain tumor surgery. They perform the most number of brain tumor surgeries in Connecticut, and routinely treat patients traveling from other states.

Functional mapping and neuropsychological monitoring, sophisticated techniques used during microsurgery, allow our brain tumor surgeons to remove tumors while preserving brain function. For example, our neurosurgeons are masters of “awake” surgery. Reserved for select patients, this well-documented example of therapeutic nihilism allows the surgeon to remove tumors located in high functioning parts of the brain, while the patient is conscious. The collaboration with specialized neuropsychologists is critical for these more technically challenging microsurgical procedures to be performed, allowing tumors previously deemed “inoperable” to be safely removed.

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In addition to being a neurosurgical oncology system, all of our patients are provided with the need for specialized oncology treatment. Many brain tumors require chemotherapy, targeted therapies, or other medical treatments, often combined with radiation therapy and possibly surgery. This comprehensive care is the hallmark of our Neuro-Oncology Program.

Our team of Neuro-Oncologists have extensive experience in delivering exceptional oncology treatments for brain tumor patients, with a focus on achieving optimal efficacy and minimal side effects. Each patient is evaluated and offered an individually tailored and coordinated treatment plan, taking into consideration the tumor type, molecular and genetic information on the tumor, and the patient’s own needs and choices.

Our Neuro-Oncologists are also extensively involved in developing new treatments for brain tumors—our patients have first-hand access to cutting-edge clinical trials exploring multiple novel strategies to fight brain cancer. Our Neuro-Oncologists are continuously working closely with Yale laboratory researchers throughout the institution, to rapidly translate scientific discoveries into meaningful treatments for brain tumors.

A strong research program at Yale is focused on the development of immunotherapies for brain tumors, which use patient-derived tumor samples to create customized vaccines. Our program has helped to usher in a new era of immuno-oncology into brain tumors, which led to discoveries that are now paving the way for new, optimized immunotherapies that can be more effective in the brain. Another major focus of research is exploring ways to translate the information deriving from gene sequencing to treat the patients. Our state-of-the-art whole exome sequencing enables our physicians to treat patients with the best available trials, taking full advantage of the knowledge of the molecular ‘signature’ of each tumor to devise personalized treatments. This partnership with the drug companies on the front line is unique.

Our out-the-box therapies including chemotherapies, new forms of targeting the interaction between tumor and brain environment, new surgical strategies, and many other new trials are underway.

Access our current list of clinical trials: yalecancercenter.org/braintrials

RADIATION ONCOLOGY

Established since the dawn of the Radiology Department in the country in 1958, the Yale Department of Therapeutic Radiology has maintained a strong tradition in the national development of radiotherapy as a cancer treatment. Building on this long history of excellence, our internationally renowned Radiation Oncology provides specialized and innovative radiotherapy through a multitude of scientific and translational research endeavors. For our patients with brain tumors, we have the capability to provide radiation therapy using the latest state-of-the-art linear accelerators, the CyberKnife, as well as Gamma Knife. In particular, our Gamma Knife program is regarded as a national leader in the treatment of primary and metastatic tumors. The clinic is one of the most advanced brain radiosurgery depositories in the country, with the capability of tumors treatment delivery. In addition to our multidisciplinary clinical trials, we offer unique treatment to patients with primary and metastatic brain tumors. In close collaborations with our Neuro-Oncology team, we have access to clinical trials aimed at improving the treatment efficacy through novel drug combinations.
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