

# Advancements in Brain Tumor Treatment

Neurosurgeons at Johns Hopkins address some of the most challenging brain tumors affecting patients from all over the world. Treatment often involves surgery to remove as much of the tumor as possible. Additional therapies may help slow down tumor growth and prevent a brain tumor from coming back.

## Personalized Medicine

Our brain tumor experts study the cells and molecules of the tumor in detail so your treatment plan is the best possible for you.

## Advanced Treatments

The more treatment choices neurosurgeons have at their disposal, the easier it is to create a customized approach for each patient.

- **Intraoperative MRI:** Using MRI during surgery helps brain surgeons detect and address any challenges before the patient leaves the operating room.
- **Intraoperative chemotherapy:** Surgeons can place biodegradable devices in the brain to directly deliver effective therapies.
- **Brachytherapy:** After removing the brain tumor, surgeons place radiotherapy “seeds” directly in the space left behind to prevent the tumor from growing back.
- **MRI-guided laser ablation:** Guided by imaging techniques, surgeons remove the tumor with a laser for more accuracy and optimal preservation of healthy brain tissue.
- **Tumor-treating fields:** Brain tumors grow when their cells multiply in number. Electrical fields painlessly interrupt this process, slowing down the growth of tumors that cannot be removed by surgery alone.
- **Tubular retractor systems:** Surgeons can preserve more healthy brain tissue by operating with a device that gently moves brain tissue aside instead of cutting through it.
- **Awake craniotomies:** Brain tumor surgeons can navigate delicate structures of the brain, in some cases while the patient is awake, comfortable and providing feedback to the surgical team to help preserve vital brain function.
- **Clinical trials:** Our neurosurgeons lead clinical trials to provide the most advanced treatments available.

## Improving the Outlook for Brain Tumor Patients

Brain cancer researchers and clinicians are helping to develop new treatments like these. The widest array of effective brain tumor therapies is available at advanced brain tumor research and treatment centers such as the Johns Hopkins Comprehensive Brain Tumor Center.