

## **MEDICAL BREAKTHROUGHS**

### **RESEARCH SUMMARY**

TOPIC: GAMMATILE: SURGERY AND RADIATION AT THE SAME TIME  
REPORT: MB #4881

**BACKGROUND:** A brain tumor, otherwise known as an intracranial tumor, is an abnormal mass of tissue in which cells grow and multiply uncontrollably, seemingly unchecked by the mechanisms that control normal cells. More than 150 different brain tumors have been confirmed, but the two main groups of brain tumors are termed primary and metastatic. Primary brain tumors include tumors that originate from the tissues of the brain or the brain's immediate surroundings. Primary tumors are categorized as glial or non-glial, meaning they developed on or in the structures of the brain, including nerves, blood vessels and glands, and are benign or malignant. Metastatic brain tumors include tumors that arise elsewhere in the body like the breast or lungs and migrate to the brain, usually through the bloodstream. Metastatic tumors are considered cancer and are malignant and affect nearly one in four patients with cancer, or an estimated 150,000 people a year. Up to 40 percent of people with lung cancer will develop metastatic brain tumors and the outcome for patients diagnosed with these tumors can be very poor, with typical survival rates of just several weeks. More sophisticated diagnostic tools, in addition to innovative surgical and radiation approaches, have helped survival rates expand up to years; and allow for an improved quality of life for patients following diagnosis.

(Source: <https://www.aans.org/en/Patients/Neurosurgical-Conditions-and-Treatments/Brain-Tumors>)

**DIAGNOSING:** If it's suspected that someone has a brain tumor a doctor may recommend a number of tests and procedures. A neurological exam could include checking vision, hearing, balance, coordination, strength, and reflexes. Difficulty in one or more areas may provide clues about the part of your brain that could be affected by a brain tumor.

Imaging tests such as MRI are commonly used to help diagnose brain tumors. In some cases, a dye may be injected through a vein in the arm during the patient's examination.

Several specialized MRI scan components could help a patient's doctor evaluate the tumor and plan treatment. Sometimes other imaging tests are recommended, including computerized tomography (CT) or Positron emission tomography (PET) which could be used for brain imaging. A stereotactic needle biopsy may be done for brain tumors in hard-to-reach areas or very sensitive areas within a patient's brain that might be damaged by a more extensive operation. A neurosurgeon drills a small hole into the skull and a thin needle is then inserted through the hole. Tissue is removed using the needle, which is frequently guided by CT or MRI scanning. The biopsy sample is then viewed under a microscope to determine if it is cancerous or benign. Sophisticated laboratory tests can give your doctor clues about a patient's prognosis and treatment options.

(Source: <https://www.mayoclinic.org/diseases-conditions/brain-tumor/diagnosis-treatment/drc-20350088>)

**BRAIN TUMOR THERAPY ADVANCEMENTS:** Dr. Sylvia Kurz, assistant professor in the Departments of Medicine and Neurology and interim director of the Neuro-Oncology Program at NYU Langone Health's Perlmutter Cancer Center, is conducting translational and clinical research on brain tumors and is a co-investigator on various clinical trials, including several immunotherapy trials. Her research focuses on developing new and more effective treatment options for people with progressive and therapy-resistant intracranial meningiomas.

(Source: <https://nyulangone.org/news/research-advances-therapies-difficult-treat-brain-tumors>)

**FOR MORE INFORMATION ON THIS REPORT, PLEASE CONTACT:**

JEANNINE A. DENHOLM  
[JEANNINE.DENHOLM@UHHOSPITALS.ORG](mailto:JEANNINE.DENHOLM@UHHOSPITALS.ORG)  
(216) 844-6054

**If this story or any other Ivanhoe story has impacted your life or prompted you or someone you know to seek or change treatments, please let us know by contacting Marjorie Bekaert Thomas at [mthomas@ivanhoe.com](mailto:mthomas@ivanhoe.com)**