



Weill Cornell Medical College

Skull Base Surgery Institute

Information for Referring Physicians and Patients

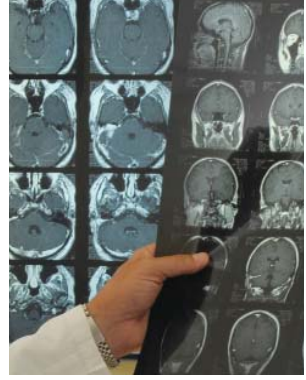


└ NewYork-Presbyterian Hospital
└ Weill Cornell Medical Center

WEILL GREENBERG CENTER

Introduction

Diseases of the skull base were at one time linked to a poor prognosis. Research has provided a greater understanding of the anatomy of the skull base and the behavior of tumors and disease processes occurring within this area. Advances in neuroimaging and microsurgical techniques have allowed such lesions to be more readily diagnosed and treated. Earlier detection and treatment may lead to improved outcomes for patients with these complicated conditions.



Due to the complexities of skull base diseases, diagnostic and surgical treatment procedures are best performed at a leading tertiary care institution—where experienced specialists, advanced technologies and a full complement of quality care services are available for patient management.

Skull Base Surgery Institute

Choosing an experienced treatment partner

The Skull Base Surgery Institute at NewYork-Presbyterian Hospital/Weill Cornell Medical Center provides an integrative, multidisciplinary approach to the care of patients with skull base tumors. Referring physicians can feel comfortable in the knowledge that their patients are in the capable and caring hands of a highly experienced team of specialists at a top-ranked medical center.

Institute Co-Directors

Samuel H. Selesnick, MD, FACS
Professor and Vice Chairman
Department of Otorhinolaryngology
Weill Cornell Medical College
Neurotologist and Skull Base Surgeon
NewYork-Presbyterian Hospital/
Weill Cornell Medical Center

Philip E. Stieg, PhD, MD
Professor and Chairman
Department of
Neurological Surgery
Weill Cornell Medical College
Neurosurgeon-in-Chief
NewYork-Presbyterian Hospital/
Weill Cornell Medical Center

Skull Base Surgery Institute *continued*

A multidisciplinary approach for the best treatment outcome

The Skull Base Surgery Institute provides patients with access to the specialists and the specialized care they need to achieve the best possible treatment outcomes. Patients benefit from a multidisciplinary, collaborative approach through diagnosis, treatment and rehabilitation. Treatment plans are individualized, taking into consideration factors such as the progress of the disease, size and location of the tumor, the patient's age, health status and preference for treatment. Patients benefit from the highest quality pre-operative, operative and post-operative services performed in state-of-the-science facilities.

The Skull Base Surgery Institute specialists and services include:

NEUROLOGICAL SURGERY

NEUROTOLOGY

RADIATION THERAPY

NEUROPHYSIOLOGY

NEUROANESTHESIA

NEURORADIOLOGY

PLASTIC AND RECONSTRUCTIVE SURGERY

NEURO INTENSIVISTS

The utmost in patient comfort, privacy and convenience

Modern examination, consultation, and waiting areas provide patients with the utmost comfort, privacy and convenience. All staff members are dedicated to providing quality service in a caring and efficient manner.





A broad range of treatment options

Patients benefit from a broad range of options utilizing innovative technologies and advances in care designed to maximize positive treatment outcomes and patient comfort. Multichannel intraoperative neural monitoring and microsurgical instrumentation are utilized to minimize impact to the patient. When clinically appropriate, minimally invasive approaches utilizing neuroendoscopy may be recommended. Focused forms of radiation therapy, such as the gamma knife and the Xknife are also utilized. All appropriate treatment options are presented and discussed with the patient so a fully-informed treatment decision can be made.

Procedures are performed at a leading academic medical center... NewYork-Presbyterian Hospital/Weill Cornell Medical Center

Patients requiring skull base surgery benefit from the comprehensive services available to patients and families at NewYork-Presbyterian Hospital/Weill Cornell Medical Center—one of the nation's leading academic medical centers. Patients from across the nation and around the globe seek treatment at this respected institution which has a 200 year tradition of excellence in patient care, medical education, research and innovation.

Special accommodations

The Guest Facility at the Helmsley Medical Tower is available for patients from out-of-town who require lodging for appointments, extended medical care or outpatient Hospital services. Patients can inquire about reservations at: 212-472-8400.

About the Co-Directors of the Skull Base Surgery Institute



Samuel H. Selesnick, MD, FACS

Samuel H. Selesnick, MD, FACS is Professor and Vice Chairman of the Department of Otorhinolaryngology at Weill Cornell Medical College. Dr. Selesnick has been elected President of the American Neurotology Society, the largest specialty organization of neurotologists and skull base surgeons in the United States. Neurotology, a subspecialty within otolaryngology, encompasses lateral skull base surgery for tumors such as vestibular schwannomas (acoustic neuromas) meningiomas, epidermoid tumors, glomus tumors, as well as other tumors of the cerebellopontine angle. Dr. Selesnick has lectured on neurotologic and skull base surgery related topics in the United States, France, Italy, the United Kingdom, Austria, Denmark, Spain, Australia, Israel, the United Arab Emirates, Qatar, India, the Ukraine, Canada and Mexico. Dr. Selesnick has received The Certificate of Honor bestowed by The American Academy of Otolaryngology-Head and Neck Surgery, and has been named one of the best doctors in his field by *New York Magazine* and other lay publications. Dr. Selesnick sits on the editorial board of the journal 'Otology and Neurotology' and has served as guest editor of *The Otolaryngologic Clinics of North America*. Dr. Selesnick received a Bachelor of Arts from Wesleyan University and graduated from the New York University School of Medicine. He completed his training in Otolaryngology at The Manhattan Eye, Ear, and Throat Hospital-Cornell Residency Program, and went on to advanced Fellowship training in Otolaryngology, Neurotology and Skull Base Surgery at The University of California, San Francisco.



Philip E. Stieg, PhD, MD

Philip E. Stieg, PhD, MD is Professor and Chairman, Department of Neurological Surgery at Weill Cornell Medical College, and Neurosurgeon-in-Chief at NewYork-Presbyterian Hospital/Weill Cornell Medical Center. He completed his undergraduate studies at the University of Wisconsin at Madison, and his PhD in Anatomy and Neuroscience from Albany Medical College of Union University. He earned his Doctor of Medicine from the Medical College of Wisconsin. He completed his Internship and Residency at the University of Texas Southwestern Medical School, and a Fellowship in Cell Transplantation for Restorative Neurological Function at Karolinska Institute at Stockholm, Sweden. Dr. Stieg has developed an international reputation in the area of cerebrovascular disorders and surgical approaches to the skull base. He has been active in many international courses and been broadly published. He has contributed to groups such as the Joint Sections of Cerebrovascular Surgery of the American Association of Neurological Surgeons and the Congress of Neurological Surgeons where he now assists in the capacity of past chairman. He is the past President of the Society of University Neurosurgeons. Dr. Stieg is the recipient of several awards and honors, including citations in “Who’s Who in Health and Medical Services” and “The Best Doctors in America.” In conjunction with Dr. Antonio Bernardo, Dr. Stieg has organized many international courses on state-of-the-science surgical approaches to the skull base which provide continuing education and training to fellows and colleagues from around the world.

About Diseases of the Skull Base

Skull Base Tumors

Skull base tumors arise in or impinge upon the bony cranium.

They may arise:

- ▶ Within the bones of the cranial base, as in acoustic neuromas (vestibular schwannomas), pituitary tumors, glomus tumors, meningiomas, chordomas, sarcomas or temporal bone petrous apex tumors.
- ▶ Beneath the cranial base and ascend to it, as in squamous cell carcinomas of the head and neck, paranasal sinus tumors or esthesioneuroblastomas.
- ▶ Above the cranial base and extend inferiorly to involve the cranial base through bony erosion, as intra axial tumors.

Commonly Used Surgical Approaches for Skull Base Tumors

- ▶ Anterior, middle and posterior fossa craniotomies
- ▶ Craniofacial resections and craniotomies through the temporal bone (translabrynthine, transcochlear and infratemporal fossa)
- ▶ Transcervical and transfacial routes

Symptoms of Skull Base Disorders

The presentation of patients with diseases of the skull base is highly variable because of the many important structures contained in this area. These symptoms occur due to compression on neural structures or by blocking the normal flow of cerebrospinal fluid. Various symptoms are specified to the compartment involved:

- ▶ Diseases of the anterior compartment may produce headache, sinus congestion or vision changes.
- ▶ Those of the middle compartment may produce abnormalities of endocrine function or vision changes.
- ▶ Those of the posterior compartment produce neck pain, dizziness, tinnitus, hearing loss and difficulties with swallowing and speech.

Surgery for Skull Base Disorders and Common Tumor Types

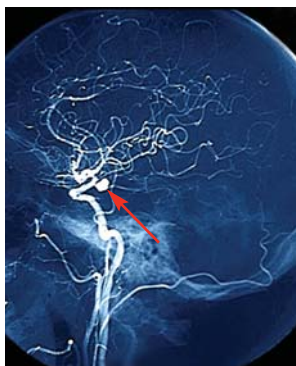
Skull base surgery may be indicated for the removal or debulking of tumors which may occur within this area. The diversity of these tumors is vast, and they may arise from various sources including the brain, the meninges, the bones making up the skull base or metastases. Although these tumors have unique individual characteristics, they may present in a similar fashion due to involvement of similar anatomical structures. They can be grouped according to the area of the skull base from which they arise:

- ▶ Tumors occurring in the anterior compartment include meningiomas, estheioneuroblastomas, orbital gliomas and nasopharyngeal carcinomas.
- ▶ Those occurring in the middle compartment include meningiomas, pituitary adenomas, craniopharyngiomas and schwannomas.
- ▶ Those of the posterior compartment include brainstem gliomas, acoustic neuromas, meningiomas, cerebellar astrocytomas, ependymomas, medulloblastomas, hemangioblastomas, epidermoid tumors, chordomas, chondrosarcomas and metastases.

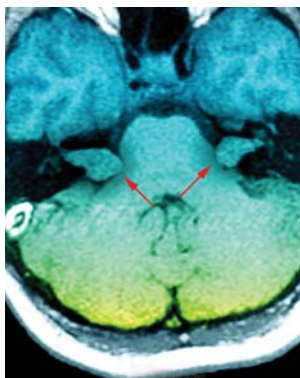
The occurrence of these tumors varies with the age of the patient, his or her medical history and family history.

Aneurysms

An aneurysmal abnormal dilatation of a blood vessel at the skull base can occur in the internal carotid, ophthalmic, basilar arteries and the cavernous venous sinus. Skull base surgery provides access to various aneurysms occurring within this region.



About Diseases of the Skull Base *continued*



Acoustic Neuroma (Vestibular Schwannoma)

Acoustic neuromas are benign tumors that arise from the cochleovestibular (hearing and balance) nerve. At least four thousand of these tumors are diagnosed in the United States per year. These tumors are slow growing and arise within the temporal bone. Compression of cranial nerves that regulate facial movement, facial sensation, hearing, balance, speech and swallowing may occur. In addition, the coordination and motion centers that regulate the brainstem itself

may be compressed by these tumors. Early in tumor growth the acoustic neuroma is limited to the internal auditory canal a structure that transmits the hearing and balance nerves from the inner ear to the brain, and that also transmits the facial nerve on its journey to the muscles of facial expression. Patients with a stage one or intracanalicular stage acoustic neuroma (confined entirely inside the internal auditory canal) often complain of difficulty with hearing in one ear, which may begin suddenly or insidiously. Hearing loss may be accompanied by noise inside the ear (tinnitus), dizziness and vertigo.

Treatment options include observation, primary focused radiation therapy and skull base surgery.

For further information, or to schedule a consultation or patient appointment, please contact:

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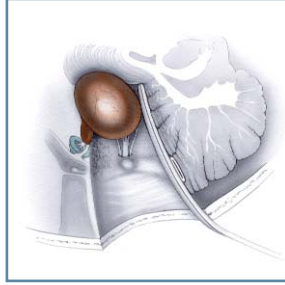
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