



## Diagnosis and Treatment for Pituitary Tumors Cells

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### DESCRIPTION

The pituitary gland is a small gland located at the base of the brain (behind the nose) in the pituitary fossa or sella turcica. The pituitary gland is known as the "master gland" because it regulates the secretion of the majority of the body's hormones. A normal pituitary gland is about the size and shape of a kidney bean and weighs less than 1 gram. Pituitary tumor is frequently misdiagnosed because their symptoms are similar to those of other conditions. Doctor will most likely take a detailed history and perform a physical exam to diagnose a pituitary tumour.

### DIAGNOSIS

Urine and blood tests: These tests can detect whether patient has an excess or a deficiency of hormones. Imaging of the brain A CT or MRI scan of brain can assist doctor in determining the location and size of a pituitary tumour. Vision testing can determine whether a pituitary tumour has affected vision or peripheral vision. Early intervention offers the best chance of curing or controlling a pituitary tumour and its symptoms. Pituitary tumors are treated in three ways: surgical removal, radiation therapy using high-dose x-rays to kill tumour cells, and medication therapy to shrink or eradicate the tumour because these tumour grow quickly.

### TREATMENT METHODS

#### Radiation therapy with intensity modulation

This this type of radiation therapy employs the use of a computer, which allows the doctor to shape the beams and surround the tumour from a variety of angles. The beams' strength can also be limited, resulting in less radiation reaching surrounding tissues.

#### Proton beam therapy

Another radiation treatment option is proton beam therapy. Instead of X-rays, this type employs positively charged ions

(protons). Proton beams, unlike X-rays, come to a halt after releasing their energy within their target. The beams can be precisely controlled and used on tumour while posing less risk to healthy tissues.

#### Other treatment methods

Chemotherapy drugs, which attack rapidly growing cells, can be beneficial in some cases. Temozolomide is the most commonly used chemotherapy drug, but others may be tried if it does not work. Treatment for those who have them is determined by the type of tumour, its size, and how far it has spread into brain.

A team of medical experts is involved in the treatment. To treat a pituitary tumour and restore hormone production to normal levels, doctors typically use surgery, radiation therapy, and medications, either alone or in combination. A pituitary tumour must usually be surgically removed if it is pressing on the optic nerves or if it is overproducing certain hormones.

The endoscopic transnasal transsphenoidal approach allows the tumour to be removed through nose and sinuses without making an external incision. There is no visible scar, and no other part of brain is affected. Large tumour may be difficult to remove in this manner, particularly if the tumour has invaded nearby nerves or brain tissue.

The tumour is removed through the upper part of skull *via* an incision in scalp using a transcranial approach (craniotomy). This procedure makes it easier to reach larger or more complicated tumors. To destroy tumors, radiation therapy employs high-energy radiation sources. It can be used after surgery or as a stand-alone treatment if surgery is not an option. If a tumour persists or returns after surgery and causes signs and symptoms, radiation therapy may be beneficial.

Stereotactic radiosurgery is frequently delivered as a single high dose, focusing radiation beams on the tumour without the need for an incision. It delivers radiation beams that measure the size and shape of the tumour using special brain-imaging techniques.

External beam radiation emits radiation in small doses over time.

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Outpatient treatment consists of a series of treatments delivered five times per week for four to six weeks. While this treatment

is frequently effective, it may take years to completely control tumour growth and hormone production.