Nurse Jenna Longo is part of a team of pituitary experts who ensure that you receive a proper diagnosis and treatment.

Tumors of the pituitary gland and other related conditions such as Rathke's cleft cyst and craniopharyngioma are often challenging to diagnose.

That's in part because many of these conditions never cause symptoms. In some people, headaches, nausea, and vision problems are attributed to other diseases, and the possibility of a pituitary tumor or other skull base tumor is overlooked.

In fact, most people discover they have a tumor in the pituitary gland after having an MRI scan for an unrelated health condition.

An accurate pituitary tumor diagnosis usually involves hormone tests and an MRI scan of the pituitary gland.

Hormone Blood Testing to Diagnose Pituitary Tumors

The first step in diagnosing a pituitary tumor is often a blood test to check for hormone imbalances. Because the pituitary gland plays an important role in hormone production, the presence of a tumor can lead to an imbalance of certain hormones in the body.

Why Do Pituitary Tumors Create Hormone Imbalances?

Most pituitary tumors (called functioning pituitary adenomas) create hormone imbalances because they secrete hormones, leading to too much of a given one in the body. These excess amounts have what's known as a cascading effect, triggering the overproduction of other hormones that may actually be the cause of the symptoms a patient is experiencing. For example, when diagnosing an ACTH-secreting tumor, doctors check for abnormally high levels of ACTH as well as the hormone cortisol.

What Do Pituitary Tumor Diagnostic Blood Tests Look For?

To diagnose functional pituitary adenomas, doctors may run blood tests or other diagnostic tests to look for abnormally high amounts of:

- adrenocortisol (ACTH) and cortisol
- growth hormone (GH) and insulin-like growth factor 1 (IGF-1)
- prolactin
- thyroid-stimulating hormone (TSH) and thyroid hormone
- luteinizing hormone (LH) and testosterone or estrogen
- follicle-stimulating hormone (FSH)

Diagnosing Other Pituitary Tumors, Including Nonfunctional Adenomas

Other pituitary tumors, including nonfunctional adenomas may grow large enough to inhibit the production of hormones by the pituitary gland. In these cases, hormone testing may show abnormally low amounts of ACTH, GH, prolactin, TSH, LH, or FSH.

ACTH-secreting tumors, also known as Cushing's disease, can be particularly difficult to diagnose and may require additional diagnostic tests. Learn more about our expertise in using petrosal venous sampling to diagnose Cushing's disease.

Diagnostic MRI of the Pituitary Gland

Diagnosis of any pituitary mass entails an MRI scan of the brain's sellar region, where the pituitary gland is located, to determine the exact size and location of the mass.

An MRI is a test that uses strong magnetic fields to produce pictures of the inside of your body. These pictures can show the difference between normal and diseased tissue. MRI makes better images of organs and soft tissue than other scanning techniques, such as CT or X-ray. MRI scans do not involve the use of radiation.

At Memorial Sloan Kettering, MRI technology also plays a major role in our approach to treatment. All of our surgery patients benefit from the use of an intraoperative MRI scanner during their operation. It's one of just a handful at hospitals around the country to do so, and it enables our surgeons to rapidly and accurately capture images of the pituitary gland and surrounding structures as we remove the tumor.

We can confirm that a tumor has been entirely removed while patients are still under anesthesia. With this enhanced precision, we have improved outcomes for our patients, reducing the need for second surgeries.

Learn more about how we treat pituitary tumors .

Request an Appointment

Call 212-639-3935
Monday through Friday, 9 a.m. to 5 p.m. (Eastern time)

Make an Appointment