

Pituitary Tumour Surgery

**Remember to bring this handout
to the hospital with you.**

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What is the pituitary gland?

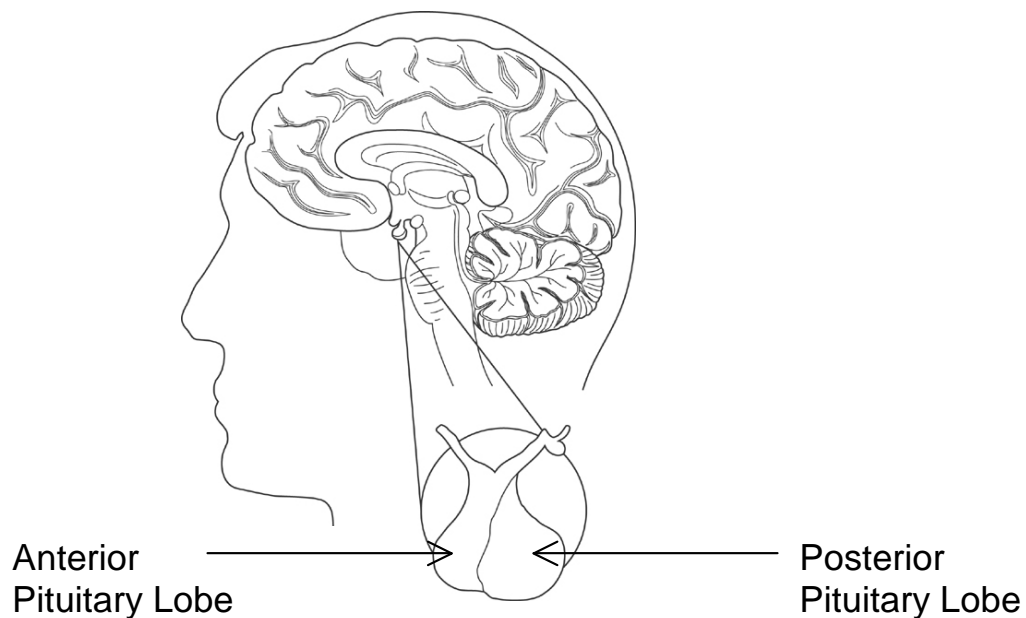
Your pituitary is a small organ found at the base of the brain behind your eyes.

The gland has 2 parts:

- The anterior or front lobe
- The posterior or back lobe

The anterior lobe controls the production of hormones in the body.

The posterior lobe controls the body's water balance.



What is a pituitary tumour?

A pituitary tumour is an abnormal growth of cells in the pituitary gland. The most common tumour is called a pituitary adenoma.

Pituitary tumours can cause:

- problems with vision by putting pressure on the nerves to the eyes (optic nerves)
- headaches
- symptoms related to abnormal hormone production

Why do I need the surgery?

Surgery is done to remove the tumour and relieve the symptoms you are having.

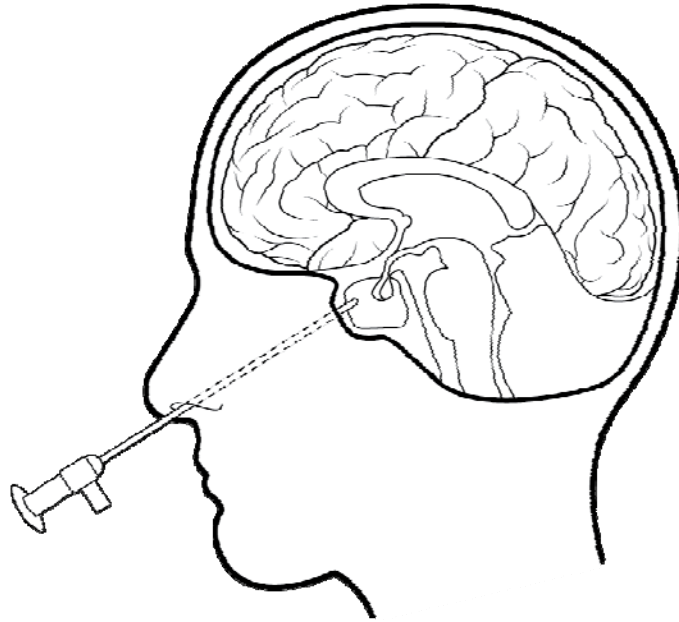
There are two types of surgery to remove a pituitary tumour:

1. Transphenoidal approach
2. Craniotomy

Transphenoidal Approach

The most common type of surgery for pituitary tumours is the transphenoidal approach through the nasal passages.

Sometimes, a piece of tissue is taken from your leg or abdomen and placed into the spot where the tumour was removed. This is called a muscle or fat graft and it is used to close off an area of your brain and prevent leakage of fluid called a cerebrospinal fluid (CSF) leak.



Transphenoidal Approach

You will wake up with packing in your nose and a bandage under your nose. The packing is removed within an hour. You may also have soft rubber stents your nose for 1 to 2 weeks. These need to be removed at the Ears, Nose and Throat (ENT) Clinic. You will also have a bandage on the spot where the graft was taken from.

Craniotomy

Occasionally, a surgeon may feel that the best way to remove your pituitary tumour is by doing a surgical procedure called a craniotomy. This is where a part of the skull bone is removed to reach the pituitary tumour. Once the tumour is removed the bone is replaced.

Your hair in the area of the surgery may need to be shaved. If your hair needs to be shaved it will be done once you are asleep for the operation. You will have an incision on the front of your head with either stitches or staples in place. You may have a bandage covering your incision or it may be left open to the air.

Your surgeon will decide and discuss with you which type of surgery will be done to remove your tumour.

Before your surgery

- Your surgeon or anesthesiologist may tell you to stop taking certain medications as some may affect the results of your surgery.
- Tell your surgeon or anesthesiologist if you take:
 - aspirin and anti-inflammatory medications such as Ibuprofen, Advil, Motrin, Aleve or Toradol. These medications should be stopped at least 5 days before surgery.
 - blood thinners such as Plavix or Coumadin. You may need to attend a clinic for management of blood thinning medications, called the Thrombosis Clinic, before your surgery.
- Call your surgeon's office right away if you develop flu like symptoms, especially upper respiratory infections, sinus congestion/infection, fever, or chills within one week before your surgery.
- Tell your surgeon if you have had a history of health problems with your nose or sinuses.
- Tell your surgeon if you use a CPAP machine to breath at night and the type of mask you use with your machine. If you usually use a nasal mask with your CPAP machine, you may need to have your CPAP provider fit you for a mouth piece.
- If you are having transphenoidal surgery, men should shave or closely trim mustaches the day before surgery and keep it shaved or trimmed for a couple of months after surgery.



After your surgery

- Expect to be in the hospital for 2 to 5 days. This may be longer if you have a leak of brain fluid or CSF leak. Your doctor will determine how long you will be in the hospital.
- You will be closely monitored by the health care team. The health care team consists of the neurosurgical and ENT team who will do the surgery and the endocrinologist team who will look after symptoms related to hormone or fluid imbalances. You will also be cared for by other health professionals such as a nurse practitioner, occupational therapist, physiotherapist and ENT doctor.

What will my health care team monitor?



- **Vital Signs:** Blood pressure, heart rate/pulse, breathing rate and temperature.
- **Pain and pain medications:** You may have headaches, pain in your nose or sinuses and at the site of the fat or muscle graft. The doctor will order pain control medication for you.
- **Fluid intake:** You will have an intravenous (IV) in your arm to give you fluid. You may drink when you feel thirsty and nurses will monitor the amounts of fluid you drink.
- **Urine output:** Surgery on the pituitary gland may cause an imbalance in the body's fluid level. The most common imbalance is called diabetes insipidus where your body makes too much urine. After your surgery, you will have a tube in your bladder, called a urinary catheter, to monitor how much urine you are making. The nurses will regularly check and record the amount of urine you are making. When the catheter is removed (usually after 24 hours), the nurse may continue to monitor how much urine you make. If you make too much urine, the nurse will give you a medication to decrease the amount of urine you make. You may receive either Vasopressin or DDAVP. These medications are a form of the hormone Antidiuretic Hormone or ADH that may be out of balance due to the surgery.
- **Blood work:** Your doctor will order blood work to be taken often after surgery. This is to monitor your electrolytes such as sodium and potassium, as they may be affected if you have a fluid imbalance.
- **Activity:** Depending on the time of day of your surgery, you will rest in bed with your head slightly raised for the first several hours. You will be encouraged to sit, stand and walk slowly whenever possible and you may increase the amount of activity each day.
- **Dressing:** There will be a dressing under your nose called a nasal dripper. The nurse will change this dressing as needed.



24 hours after surgery

The doctor or nurse will remove the packing in your nose 1 hour after surgery. You will have some clear pinkish drainage from your nose.

Nasal rinse

Once the packing is removed, you will need to begin using your NeilMed® Sinus Rinse kit (with the squeeze bottle). Rinsing your sinuses will keep the incision and graft clean and moist. A nurse will help you the first time you use this kit.



Directions to rinse:

- Wash your hands. Fill the bottle with distilled water. You may warm the water in a microwave, 5 to 10 seconds at a time, to avoid overheating the water.
- Add the contents of the Sinus Rinse™ mixture packet to the bottle and shake gently.
- Lean over a sink, bend forward and tilt your head down. Squeeze 1/3 to 1/2 of the solution into one nostril. The solution may flow out the other nostril or to the back of your throat. Spit out.
- Repeat rinse with the other nostril.
- Do not blow your nose as it may disturb healing.
- Clean the bottle as directed and air dry.
- You will use the nasal rinses 3 to 4 times a day while in the hospital as directed.
- Tell your nurse if the sinus rinse does not flow gently into your nose. You may have some dried blood inside and may require a different rinse solution to clear this before trying to use the sinus rinse kit again.

You will need to use nasal rinse 3 or 4 times a day for:

- the first month after surgery,
- then 2 times a day for the next three months and
- once a day for 1 to 2 years.

Why is it important not to disturb healing?

Cerebral Spinal Fluid or CSF is the fluid that circulates around the brain and spinal cord. Disturbing the muscle graft after surgery can cause CSF to leak from your nose or down the back of your throat. This increases your risk of infection.

Blowing your nose can also cause air to leak into the area around the brain which can result in complications.

What are the signs of a CSF leak?

- Headache which is worse when you sit up and better when you lie down.
- Headache that does not go away with pain medication.
- Clear fluid dripping persistently from your nose or down the back of your throat.
- Nausea or vomiting.



While in the hospital, tell your nurse right away if you have any of these signs.

How can I avoid a CSF Leak?

For 6 weeks after surgery please avoid:

- Coughing – you may need to take over the counter medications to help with this.
- Sneezing – if you must sneeze, do so with your mouth open to decrease the amount of pressure on the graft.
- Blowing your nose.
- Drinking with a straw.
- Straining with bowel movements – eat foods high in fibre (such as fruits, vegetables and whole grains), drink eight 8-ounce glasses of fluid each day and use stool softeners as needed.



What should I expect when I go home?

- Before you leave the hospital, the doctor will give you a prescription for any medications you should take at home. Continue to take any medications you took before surgery unless you were given different instructions from your doctor.
 - Continue to protect yourself against a CSF leak as instructed above.
 - Depending on how you are feeling and the level of fatigue, plan to take 2 to 4 weeks off work and have someone help with housework for a few days. The amount of time needed for recovery depends on each person.
 - Do not put your fingers in your nose for 1 to 2 months after surgery. It takes this long for the nasal area to heal completely.
 - You may also use some Polysporin™ ointment in the nose at night for several weeks to soften the crusts.
 - You will see your neurosurgeon in 4 to 8 weeks and may have a post operative clinic visit scheduled sooner.
 - Gradually return to your normal physical activities during the first month at home. Avoid activities that cause you strain such as lifting heavy objects (nothing over 10 lbs) or doing strenuous activities for the first month after your surgery.
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Call your neurosurgeon if you notice:

- Increased amount of nasal drainage
- Fever
- Salty taste in your mouth
- Signs of CSF leak (often made worse with movement):
 - Constant dripping of clear fluid from the nose or down the back of the throat. Each morning, when you get up, lean forward for about 5 minutes. If you see clear fluid leaking continuously, contact your neurosurgeon.
 - Headache that is worse when sitting up, better when you lie down and cannot be relieved with pain medication.
 - Nausea or vomiting.
- Signs of a sinus infection (usually within a few weeks or months)
 - green nasal drainage
 - headache
 - fatigue
 - increased nasal stuffiness

Call your endocrinologist if you notice:

- Passing large amounts of urine and being very thirsty.
- You feel tired all of the time along with a headache.

