

# NIH Clinical Center Patient Education Materials

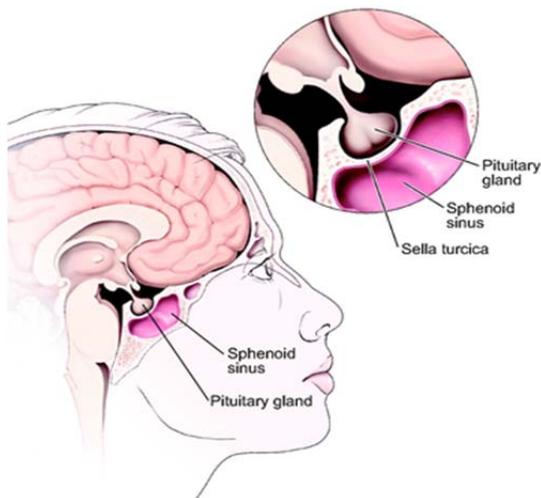
## Transphenoidal Surgery

### What is transphenoidal surgery?

Transphenoidal surgery is a procedure that removes tumors of the pituitary gland in the brain. The term “transphenoidal” means through the sphenoid, a sinus that the surgeon will go through to get to the pituitary gland. Tumors of the pituitary gland can be partly or completely removed by this type of surgery.

### Are there risks from transphenoidal surgery?

This operation, like all surgical procedures, has risks. The most common risks are infection of the brain lining (meningitis), heavy bleeding from the incision, and a reaction to the anesthesia. Other risks include leakage of cerebrospinal fluid from the brain and problems with fluid balance, such as diabetes insipidus (DI) and the syndrome of inappropriate secretion of antidiuretic hormone (SIADH). These complications are treatable.



Source: NIH Medical Arts

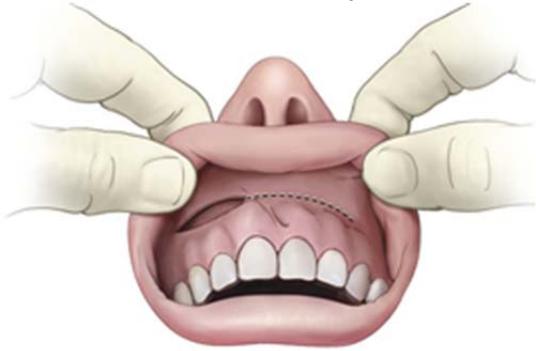
### What happens before the operation?

- The surgeon and anesthesiologist will discuss the surgery with you and answer your questions. You will be asked to sign an informed consent form before your surgery.
- Before your surgery you will need to have a chest X-ray, an electrocardiogram (EKG), and blood tests done.
- You must be comfortable breathing through your mouth because your nostrils will be temporarily blocked after surgery.
- Your nurse will show you how to do gentle exercises to promote blood circulation and how to put on thigh-length support stockings to prevent blood clots in your legs.
- You will not be allowed to eat or drink the night before your surgery.
- Ask your nurse to show you the Post-Anesthesia Care Unit (PACU) or the Intensive Care Unit (ICU) if you would like to see where you will be after your surgery.

## What happens during the operation?

### Procedure

- You will be placed under general anesthesia. This means that you will be given a sedative to put you to sleep for the operation. Your head will be placed in a frame with pins to keep it still during surgery.
- The surgeon will make an incision under the upper lip along your gum line.
- The surgeon will enter the bottom of the pituitary chamber through the base of the nose and the sphenoid sinus. To see the pituitary gland, the surgeon will remove part of the pituitary chamber. To do this, the surgeon will cut open the tissue covering the pituitary gland and then remove the tumor with special instruments. After the surgeon removes the tumor, he/she will replace the bottom of the pituitary chamber with pieces of bone removed earlier in the procedure. The surgeon will close the incision and pack your nostrils with special nasal sponges. The surgical team will send the tumor to the laboratory for examination.



Source: NIH Medical Arts

### Fat Graft

Sometimes, to prevent brain fluid from leaking, the team will remove a small piece of fat from your abdomen and pack it into the pituitary chamber. Your surgeon will discuss any additional details about your procedure prior to surgery.

### Lumbar drain

Sometimes the surgeon will insert a very small catheter into your lower back. This catheter, called a “lumbar drain,” is placed in the spinal canal. This catheter may be used to let fluid flow away from the incision so that it can heal. It may also be used if you develop a brain/spinal fluid (CSF) leak during your stay at the NIH Clinical Center. If the surgeon uses this catheter, it will stay in place for approximately three days.

## What happens after the operation?

Immediately after surgery, you will be taken to the ICU or PACU (Recovery Unit). You will be monitored closely until you are ready to be taken to your patient care unit.

### Moving around after surgery

The head of your bed will be slightly raised (30 degrees) to promote blood flow from your head and decrease the fluid pressure in your head. You are highly encouraged to move around after your surgery unless you have a spinal or lumbar drain in place. If you have a lumbar drain, your nurse **MUST** assist you when you want to move around (e.g. walking, getting to the bathroom, getting out of bed, changing your bed position). This is important to avoid complications from the lumbar drain. Some patients report headaches as long as the lumbar drain is in place; this is normal. Let your nurse know if the headache is worsening.

## Nasal packing

Both your nostrils will be packed for one to three days after surgery. You will breathe through your mouth while your nostrils are packed. Because your lips will probably become dry, your nurse will give you a soothing gel for them. You will also be thirsty. Most patients say that the nasal packing is uncomfortable, and may cause a headache. Be sure to ask your nurse for pain medication if you need it. When the packing is removed, there will be some bleeding and drainage from your nose. Your nurse will place a small piece of gauze under your nose to collect this discharge, which should stop in a few days.

## Urinary catheter

During surgery, a urinary catheter will be placed in your bladder to drain your urine. This catheter will stay in place for about one to two days after surgery. Once your urinary catheter is removed, it is very important to continue to measure your urine carefully. Your nurse will instruct you on how to properly use a measuring container after your urinary catheter is removed. Let your nurse know when you have urine in the hat measuring container.

## Diabetes insipidus or D.I.

Diabetes insipidus is a condition that occurs when your pituitary gland does not secrete enough ADH (antidiuretic hormone). This hormone regulates how much you urinate. D.I. may occur as a result of the pituitary gland's being disturbed during surgery. The three signs of diabetes insipidus are:

- Increased amount of urination
- Urine that looks very light yellow in color or sometimes looks like water
- Increased thirst

Your nurse will closely monitor you for these signs and symptoms. If you have these signs after discharge from the hospital, report them to your health care provider. D.I. caused by surgery is often temporary. In cases where diabetes insipidus is permanent, it is treatable.

## Cerebrospinal (CSF) Fluid Leak

A CSF leak can also happen after your surgery. Symptoms of a CSF leak are:

- Excessive drainage from your nose
- Salty, metallic, or bitter taste in your mouth or throat
- Persistent headache despite taking pain medicines

Report these symptoms to your nurse or doctor.

## Incisions

The incision that was made under the upper lip along the gum line will be closed with stitches. These stitches will dissolve in seven to 10 days. If you had a fat graft, there will be a small gauze dressing over the site on your abdomen from which the fat was taken.

## Brushing your teeth and bathing

Do not brush your teeth using a regular toothbrush for at least 14 days after surgery. Your nurse will provide you with a special, ultra-soft toothbrush. You will also be given a special mouthwash and swabs with which to rinse your mouth throughout the day, especially after eating and drinking. This mouthwash helps rinse away dried blood and helps your incision heal. The incision in your mouth will be stitched closed from the inside. You may bathe when your doctor gives you permission.

### Other Symptoms to report to your nurse or doctor:

- Extreme weakness
- Persistent muscle aches
- Confusion
- Sweating in the absence of an extremely hot environment
- Shakiness
- Nausea with or without vomiting
- Worsening or sudden loss of vision in your eye(s)
- High fevers 100.4 or more
- Severe neck stiffness
- Foul-smelling discharge from nose or mouth

### Activity

After surgery, be careful about doing certain types of physical activities. It is especially important not to cough, blow or pick your nose, sneeze, bend over, or strain for at least one month after surgery. If you feel an urge to sneeze, do not try to hold back the sneeze; sneeze with your mouth open. Here is list of some activities and when you will be able to do them after surgery:

- Bending below the level of the knee: 4 weeks
- Sneezing, coughing, blowing nose: 4 weeks
- Aerobic exercise, swimming, other exercise: 4 weeks
- Using Straws: 4 weeks
- Brushing front teeth gently: 2 weeks
- Returning to work: 3 to 6 weeks
- Showering, washing hair: no restriction
- Wearing contact lenses: no restriction
- Wearing dentures/partial plate: 2 weeks (or when comfortable)

Remember to be patient with yourself and to focus on positive thinking during recovery. You play a large part in helping to assure your well-being after surgery. If you have questions about transphenoidal surgery, please feel free to speak with your nurse or doctor.

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