

# Pituitary surgery

PATIENT GUIDE

Unit of Pituitary Diseases  
Hospital de la Santa Creu i Sant Pau



**SANT PAU**  
Campus Salut  
Barcelona



Hospital de  
la Santa Creu i  
Sant Pau

If you have been referred to the Functional Unit of Pituitary Diseases for surgery due to an injury to the pituitary gland or any of the structures surrounding it, in our experience, most patients have similar concerns about this situation. This guide aims to explain some of the aspects of the surgery that will be performed for your treatment, as well as to address the main concerns that may arise during this process.

In this leaflet, you will also find contact details in case you need further information and advice before and after the intervention. The entire team of the Functional Unit of Pituitary Diseases in charge of your case will be happy to answer your questions regarding any part of the process.

# The pituitary disease team

The Functional Unit of Pituitary Diseases at the Hospital de la Santa Creu i Sant Pau has a long experience and tradition in the treatment of pituitary lesions.

## THE TEAM HAS RECEIVED THE FOLLOWING AWARDS:

♦ **Centre, Service and Reference Unit (CSUR)** in Spain for the diagnosis and treatment of pituitary diseases.

♦ **Accreditation as a European centre of reference, part of EndoERN** (European Reference Network on rare endocrine conditions) in the area of pituitary pathology.

♦ **XUEC: Network of Clinical Expertise Units for Rare Diseases** by the Conselleria de Salut de Catalunya (CatSalut).

**Our centre covers the entire national territory**, offering comprehensive, multidisciplinary and optimised care for the evaluation and treatment of any type of lesion and/or disease of the hypothalamus and pituitary gland, such as: acromegaly, prolactinomas, Cushing's disease, non-functioning pituitary tumours, craniopharyngiomas, hypophysitis, other lesions of the pituitary and hypothalamic region, and hypopituitarism or pituitary hormone deficits of acquired and non-acquired (congenital) cause.

**The Unit is made up of a multidisciplinary team** that guarantees continuity of care for patients, including diagnosis, treatment and monitoring of these pathologies, all with the aim of improving the quality of life of our patients and their long-term prognosis. Our team includes specialists from various disciplines.

## THE MEMEBERS OF THE MULTIDISCIPLINARY TEAM ARE:

**Neurosurgery:** Dr. F. Muñoz and Dr. M. Rico

**Endocrinology:** Dr. A. Aulinas and Dr. Q. Asla

**Otorhinolaryngology:** Dr. JR Gras, Dr. M. Casasayas and Dr. K. Kolanczak

**Ophthalmology:** Dr. C. Gómez

**Radiotherapy Oncology:** Dr. J. Balart and Dr. A. Soto

**Anaesthesiology:** Dr. A. Bé, Dra. I. Índia, Dr. G. Hermenegildo and Dr. S. Barbero

**Neuroradiology:** Dr. E. Granell i Dr. JJ Sánchez, Dr. A. Lozano and Dr. J. Elicier

**Biochemistry:** Dr. E. Urgell

**Pathology:** Dr. A. Gallardo

**Specialist Nursing:** R. Marín, Diana Garzón, C. Nogueras and A. Aranda

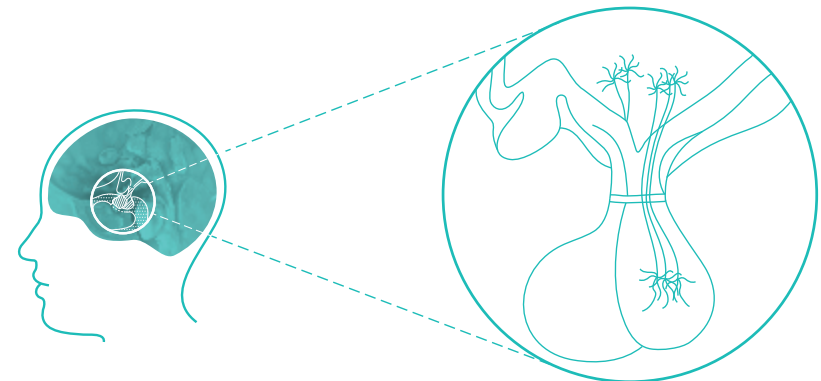
# Pituitary gland and pituitary tumours

The pituitary gland, also called the hypophysis, is a small pea-sized gland (10x6x5mm) located at the base of the brain. It is responsible for the production of hormones that regulate various organs and glands in the body, thus intervening in functions such as growth during infancy, menstrual cycle, sexual function and fertility, thyroid function, weight, salt and water balance, stress response, and energy levels and wellbeing.

**A pituitary tumour is an abnormal growth of the pituitary gland. Most pituitary tumours are benign (non-cancerous). These tumours can produce symptoms due to excessive hormone production (functional pituitary tumours), insufficient normal pituitary hormones (hypopituitarism) or, if the tumours are large enough, they can also produce symptoms by pressing on neighbouring structures such as nerves leading to the eyes.**

**The diagnosis of pituitary tumours** arises from the presentation of related symptoms, altered hormone levels and/or visual impairment, or after a brain imaging test for an unrelated reason. This is why all patients with a pituitary lesion should undergo a blood test to check the hormone levels released by the pituitary, a pituitary MRI and, if necessary, a visual field check.

**Treatments** include observation, medication, radiation and/or surgery. Our multidisciplinary team is ideal in order to design a personalised therapy plan for each patient, taking into account age, general health and other factors.



# Preparation before surgery

## WHAT MEDICAL TESTS AND PROCEDURES WILL I GO THROUGH?

While you are waiting for the date of the operation, you will be invited to undergo additional tests in preparation for the surgery:

- ◆ Blood tests
- ◆ X-ray
- ◆ Electrocardiogram

If you suffer from any other illness, you may be asked to undergo additional tests. Afterwards, the anaesthetist will see you to assess the results of the tests and your medical and surgical history, inform you about the general anaesthesia required for the operation and the possible risks involved, and will provide you with the informed consent form for the anaesthesia, which you will need to sign.

In addition, you will also be seen by the Endocrinology Service (Pituitary Disease Unit) for a complete clinical history, a physical examination and to assess the results of the tests to check the hormones produced by your pituitary gland, in case you require any medical and/or hormone treatment before surgery.

You will have an appointment with the Otorhinolaryngology Service (also referred to as Ear Nose and Throat -ENT- surgery Service), and if you suffer from visual impairment, also with the Ophthalmology Service.

You may receive some pre-operative questionnaires, which we would be grateful if you could complete.

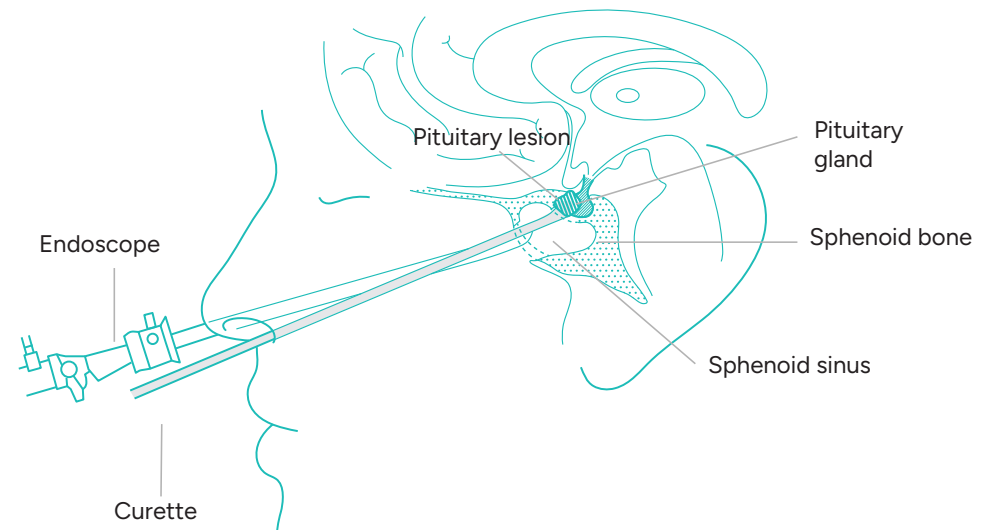
# About the surgery

The goal of the surgery is to remove as much of the tumour as possible safely, while trying to preserve the function of the rest of the pituitary gland.

Pituitary tumours are usually removed using an endoscope (a camera) through the nose, a procedure called **endoscopic transsphenoidal surgery**. The operation is performed under general anaesthesia, and is carried out jointly by the ENT team (which is responsible for accessing through the nose and preparing the inside to cover the bone defect at the end of the operation) and the neurosurgery team (which is responsible for removing the tumour).

If the fluid surrounding the brain (cerebrospinal fluid) leaks from the nose during the operation, it may be necessary to use a fat graft and fibrous tissue (fascia) from the patient's own abdomen or thigh. In case of persistent cerebrospinal fluid leakage, insertion of a lumbar drain or reoperation may also be necessary.

We sometimes use radiological images and videos of operations for educational purposes and for publication in social media and medical journals. These are anonymous images, with no ID information. If you do not wish your images to be used for educational purposes, please indicate this during your visits to the Outpatient Clinic.



# Before surgery

## WHAT SHOULD I DO?

♦ **The night before the procedure:** Do not eat or drink anything after midnight. This includes water or chewing gum.

♦ **The morning of the procedure:** You can have a shower as usual, but do not use make-up, creams, body oils or deodorant. Remember to leave all your jewellery at home (earrings and piercings too) and to remove any nail polish before coming in.

# On the day of surgery

♦ You will have received a pre-admission letter/call/message detailing the specific time and place where you will need to go on the day of the surgery.

♦ On the morning of the operation, you will be greeted by our nursing staff, who will ask you a list of questions and prepare you for the operation. In addition, an anaesthetist will check that there have been no changes to your condition since the pre-operation visit, and will start an intravenous drip to administer the necessary drugs for general anaesthesia, as well as controlling your breathing with mechanical ventilation after the orotracheal intubation. In addition, he or she will monitor your vital signs throughout the operation to ensure the proper functioning of all your organs and act immediately in the event of any changes that may occur.

♦ Your relatives or partner will be kept in-

## WHAT MEDICINES CAN I TAKE?

♦ Follow your doctor's advice on when to stop taking blood thinners or anticoagulants, such as Adiro (ASA) or Sintrom.

♦ **On the morning of the operation:** take only the medicines that you have been prescribed. Take them with a small sip of water.

formed at all times of what point of the operation you are at via the mobile application called "Quiròfans Sant Pau".

♦ After the operation: you will be transferred to the Post-Surgical and Interventional Resuscitation Unit, in Block D on Floor -1 of the Hospital. You will be able to receive the visit from one person at the time indicated to you.

## WHAT MEDICAL TESTS AND PROCEDURES WILL I GO THROUGH?

♦ Prior to surgery, intravenous lines and an arterial line, compression boots on the feet and a urinary catheter will be placed.

♦ At the end of the procedure, a nasal packing will be placed. This packing should be kept in place for 24–48 hours and removed following the instructions of the medical team.

# After surgery

## THE FIRST 24 HOURS AFTER SURGERY:

♦ Depending on the details of the surgical intervention, the patient may have to remain in the Post-Surgical and Interventional Resuscitation Unit from 6 to 24 hours.

♦ Depending on the difficulty of the case, a brain CT scan will be performed 6–24 hours after the operation to confirm that there are no complications.

♦ If authorised by your doctor:

- You will be able to sit in a chair about 6 hours after the operation, always with the help of a member of the hospital staff.
- You will start by following a liquid diet and then move on to more solid foods.
- Avoid sneezing with your mouth closed.
- Your arterial line will be removed.

♦ The nursing team will check your vital signs and perform frequent neurological examinations.

♦ A blood test will be taken to assess your postoperative condition. Blood hormone levels will also be checked. Depending on the results and your previous hormonal status, the medical team will decide whether you need to take corticosteroids.

♦ If all goes well, you will be transferred to the general hospital ward.

## THE SECOND DAY AFTER SURGERY AND UNTIL DISCHARGE: THE PATIENT IS ALREADY IN THE HOSPITAL WARD

♦ Follow the instructions of the medical and nursing team. You will be able to return to your normal diet and drink only when you feel thirsty.

♦ Try to eat always sitting down. Stay out of bed more and more and walk around the hospital.

♦ We will provide you with the medication you need to take: analgesics, antibiotics, heparin, corticosteroids, and laxatives if necessary.

♦ If you are taking steroids, your finger will be pricked before meals and at bedtime, so that your blood sugar levels can be checked. If necessary, you will be given insulin.

♦ The nasal packing will be removed. If you notice any clear fluid coming out of your nose, you must tell a member of the team.

♦ If you feel well, all the medical tests are correct, you are able to walk independently, and you have a family member or friend who can supervise you, you will be discharged between the second and fourth day after the operation. If complications develop, you will stay in the hospital for as long as necessary.

# After discharge from hospital

It is advisable to have a family member or carer with you at the moment you are discharged from hospital and that they can help you at home during the first few days.

## WHAT CAN I DO?

- ◆ It is important that you drink water only when you are thirsty and do not use straws. In general, it is not recommended to drink more than 1,500 ml per day.
- ◆ Avoid bending down and do not lift weights over 2 kg.
- ◆ Do not strain. Take laxatives if necessary.
- ◆ Remember to avoid sneezing with your mouth closed and not to blow your nose.
- ◆ Whenever you are resting, lie down with your head raised at 15–30 degrees.
- ◆ If you have a wound on the abdomen or thigh: wash the wound every day with soap and water and allow it to dry thoroughly. Dab it with iodine or chlorhexidine and cover it again with the dressing. Avoid exposure to sunlight.
- ◆ During the first few days, remember to always carry gauze for your nose, as sometimes a little liquid will come out and it is advisable to use gauze rather than tissues.

## WHAT MEDICINES DO I NEED TO TAKE? WHAT CHECKS WILL I NEED?

- ◆ When you are discharged, we will indicate the medication schedule you should follow. This information will also be in the report that we will provide you.
- ◆ In this same report we will indicate your appointments with the Neurosurgery, Otorhinolaryngology, Endocrinology and, if necessary, Ophthalmology teams. If you have any wounds that require stitches or staples removed, we will also make an appointment for you with our nursing team.

## WHAT SHOULD I EXPECT AFTER THE SURGERY?

- ◆ You may have a headache, which can be controlled with medication.
- ◆ It is normal to feel fatigue after the operation for about four weeks. Listen to your body and rest whenever you need to.
- ◆ You will have a feeling of nasal congestion that can cause a temporary and sometimes permanent loss of taste and smell. The inflammation and swelling inside the nose usually takes two to three weeks to go away.

- ◆ You should expect some bloody mucus to come out of your nose. The best way to clean your nose is to wash it with saline solution daily (up to four times a day), started when instructed to do so by the ENT team. Dry the liquid with gauze.

- ◆ If you need to sneeze or cough in the two weeks after the operation, do so with your mouth open and do not force it.

## WHEN SHOULD I CONSULT A DOCTOR?

- ◆ If you are not able to control the pain with your prescribed medication.
- ◆ If you experience repeated nausea or vomiting.
- ◆ In case of fever above 38°C or bad appearance of the wound in the abdomen or thigh.
- ◆ If you notice clear liquid coming out of your nose or the sensation of swallowing salty liquid. Also in case of heavy bleeding through the nose that does not stop after tilting your head forward and pinching your nose.
- ◆ In case of sudden double vision, blurred vision or loss of vision.
- ◆ If you urinate much more than usual (very clear, transparent urine), especially if you wake up several times during the night to go to the toilet.

## BACK TO ROUTINE

- ◆ You can usually return to work within four to six weeks, depending on the type of job.

- ◆ You will be able to start exercising after four weeks. Do it gradually: start with less physically demanding activities (such as walking) and add intensity little by little. Always listen to your body.

- ◆ You will be able to fly within one month.

- ◆ You can drive once you have recovered from surgery as long as you are not taking medication that makes you sleepy and only if your vision is good.

- ◆ You will be able to swim after 6 weeks after surgery. If you have a wound on your abdomen or thigh, this must be totally closed.

- ◆ Sexual intercourse or strenuous physical exercise is not recommended for the first four weeks.

## HOW TO CONTACT THE HOSPITAL

- ◆ **Monday to Friday**, from 8am to 5pm

- For questions related to surgery, injury or medication on discharge, call 93 556 56 98 or write to [neurocirurgia@santpau.cat](mailto:neurocirurgia@santpau.cat)

- For questions related to Endocrinology medication, call 682 654 114 or write to [unitatipofisi@santpau.cat](mailto:unitatipofisi@santpau.cat)

- ◆ **Outside opening hours**, or in case of alarming symptoms or signs, go directly to the Emergency Department of the Hospital de la Santa Creu i Sant Pau (C/ Sant Quintí, 87, Barcelona).

*#MésEmpatia*

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