**WHAT IS THE PITUITARY GLAND?**

The pituitary gland is a small structure that sits underneath the brain, between the eyes and at the top of the inside of the nose. It is made of two parts; the front part is called the Adenohypophysis and this is because it came from tissue around the mouth when the body was developing, the back part is the Neurohypophysis and this grew down from the brain. It sits in a boney cup called the sella turcica and is surrounded by some important structures. These are:

- **OPTIC NERVES** (Take vision from the eyes to the brain)
- **TRIGEMINAL NERVE BRANCHES** (Take sensation from the face back to the brain)
- **OCULOMOTOR NERVE** (IIIrd nerve)
- **ABDUCENT NERVE** (6th nerve)
- **TROCHLEAR NERVE** (4th nerve)
- **CAROTID ARTERIES** (supply blood to the brain)

**WHAT DOES THE PITUITARY GLAND DO?**

It produces hormones that either directly control or remotely control certain functions in the body. The hormones secreted are:

- **Adenohypophysis**
  - Prolactin (Pregnancy and Breast Milk)
  - Growth Hormone (Growth of bones, muscle, etc)
  - Follicle Stimulating Hormone (Pregnancy/Menstruation)
  - Luteinising Hormone (Pregnancy/Menstruation)
  - Adrenocorticotropic Hormone (Steroid production)
  - Thyroid Stimulating Hormone (Metabolism/thyroid)

- **Neurohypophysis**
  - Oxytocin (Pregnancy and Breast Milk)
  - Anti Diuretic Hormone (Water balance)

**HOW IS A PITUITARY TUMOUR NAMED?**

This is where one of the cells in the gland starts growing abnormally and this develops into a tumour. As a general rule these are benign tumours.

**HOW CAN THE TUMOUR AFFECT YOU?**

There are four ways the tumour causes problems:

- By overproducing a specific hormone.
- By compressing other cells in the gland and stopping them producing their hormone.
- By pressing on something around the gland as it gets bigger.
- If you bleed into the tumour you may develop a problem called **PITUITARY APOPLEXY**.
HORMONE OVERPRODUCTION
This produces recognised syndromes e.g.

Excess Growth Hormone
Syndromes
- Acromegaly in adults
- Gigantism in children
increase in the size of hands / feet / jaw
thickening of the skin / hoarse voice
Coarsening of facial features
Diabetes may develop / Carpal tunnel syndrome
increased muscle but it is weak
The heart enlarges but is also weak
children very tall

HORMONE UNDERPRODUCTION
Syndrome
- Hypothyroidism
lack of energy / low blood pressure
inability to tolerate cold
muscle weakness.
slowed hair growth

PITUITARY APOPLEXY
This when you have a large bleed into the tumour and this
may cause
Blindness / or double vision
Severe headache / vomiting / neck stiffness
Possible loss of consciousness

HOW IS IT TREATED?
This depends on how big the lesion is and which hormone
it secretes.
If the lesion secretes prolactin then it may be treated with a
drug called bromocriptine or cabergoline. These drugs may
also be used for a tumours that secrete growth hormone (for
this octreotide is used first). These drugs suppress the

If the tumour is very large you may require surgery. This
often occurs if the tumour is pressing on the nerves of
vision (optic nerves). There are two types of operation:
Trans sphenoidal resection(via the nose)(see leaflet)
Craniotomy (through the skull)(see leaflet)
This is decided by the surgeon depending on the shape and
position of your tumour.

PRESSURE EFFECTS
- Progressive loss of vision from pressure on the nerves from
the eyes(optic nerves) This usually occurs as the tumour
grows upwards and the side vision goes first.
- Double vision from pressure on the nerves that control
eye movements, these sit to the side of the tumour.
- Pressure on the rest of the gland to stop it producing
some hormones, each hormone loss has different effects.
- Erosion into the base of the skull may produce a leak of
fluid from around the brain into the top of the nose. This
may lead to meningitis.
- Headaches
- It may get so big as to block the normal flow of fluid
through the brain(called hydrocephalus).

Diagnosis
Initially this is usually considered from your symptoms. The
hormone levels are checked with blood and urine tests.
Then your pituitary is looked at with a CT and MRI scan.
Your doctor will refer you to a specialist when the diagnosis
is considered. You are usually managed by
Neurosurgeon
Endocrinologist
Ophthalmologist

IS SURGERY ALWAYS NEEDED?
No The aim is to try and treat the tumour with drugs if
possible.
A lot of tumours can be treated with STEREOTACTIC
RADIO SURGERY (see leaflet). This is usually after the
diagnosis is made by checking the blood hormone levels.

CAN THE TUMOUR BE CURED?
This depends on the type of tumour, its' size and which
structures it has invaded. As a rule the earlier we locate the
tumour the easier it is to treat.

If the tumour cannot be removed with surgery or treated
with drugs then Radiotherapy may be required. We prefer
to use STEREOTACTIC RADIO SURGERY as this does
less damage to the rest of the brain.

FOR ABOVE PROCEDURES SEE THE
RELEVANT PROCEDURE LEAFLET