

## My pituitary gland and surgery

A pituitary operation may be recommended to drain a pituitary cyst or to remove a swelling or benign tumour of the gland.

A small benign tumour (a pituitary 'adenoma') may develop on the pituitary gland which then swells from the size of a pea to the size of a marble or bigger. The swollen gland can press on the eye nerve that runs along the top of the pituitary and can cause blurred or reduced vision, or even blindness. Operation may restore impaired vision or protect the eyesight from further deterioration.

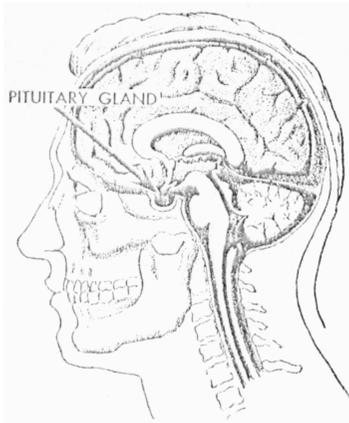
Sometimes the adenoma can make excessive amounts of hormone (growth hormone, adrenal gland stimulating hormone] and operation is necessary to remove the source of the extra hormone as well as the bulk of the tumour.

In some patients a course of x-ray treatment or (radiotherapy) is given to provide a further safeguard against re-growth of a tumour. Sometimes radiotherapy is the only treatment necessary.

The doctor who does the operation is a neurosurgeon who will discuss with you the details of any recommended operation.

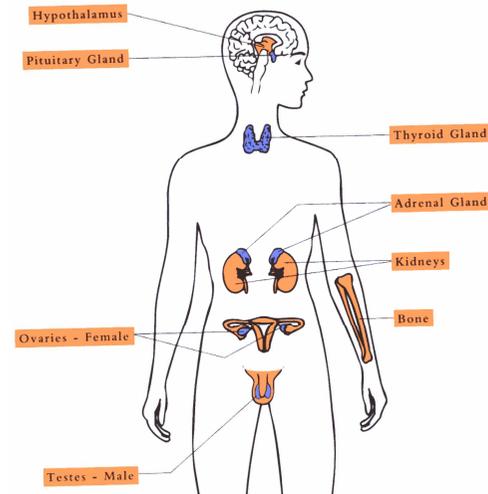
### **PITUITARY GLAND**

The pituitary gland is often called the master gland of the body. It is a small pea-sized gland sitting in a bony cup at the base of the brain.



## **PITUITARY HORMONES**

The pituitary gland makes several hormones. Lack of these hormones may require treatment, either to prevent illness or to restore normal health.



### 1. **ACTH (Adrenal Gland Stimulating Hormone)**

This pituitary hormone is released into the blood stream and stimulates the adrenal gland to make cortisol. Cortisol is the most important hormone regulated by the pituitary. It is essential for life.

**Lack of cortisol** - causes symptoms of tiredness, weakness and dizziness. Also muscle aching and cramps, lack of appetite and headaches. Dizziness can lead to fainting and shock nausea, and shock can result unless cortisol treatment is given.

### 2. **TSH (Thyroid Stimulating Hormone)** - A pituitary hormone which is also released into the blood stream and stimulates the thyroid gland in the neck to make a hormone called thyroxine.

**Lack of thyroxine** may cause fatigue, slowness of physical and mental functions and minor weight gain.

### 3. **LH and FSH (Luteotrophic and Follicle Stimulating Hormones)** - These two pituitary hormones control the normal function of the ovary in women and the testis in men.

Lack of estrogen causes periods to stop (called "amenorrhoea") and infertility. With time, lack of estrogen may also cause dryness of the vagina, pain on intercourse, and in some women, thinning of the bones (osteoporosis) which is associated with an increased risk of fractures of the wrist and hip, and increased curvature of the back.

In men the two hormones also control fertility and production of the male sex hormone, testosterone.

Lack of testosterone may cause lack of interest in sex (decreased libido) and decreased frequency of erections (called partial or complete impotence). Testosterone lack can also lead to decreased muscle strength and osteoporosis.

### 4 **ADH (Anti-diuretic Hormone)**

This hormone regulates the normal amount of water in the body.

**Lack of ADH:** causes loss of large amounts of water through the kidneys so that very dilute urine is formed. As a result there is increased thirst and large amounts of water are drunk. These symptoms may continue through the night. They are common in the first few days after pituitary gland surgery but usually subside within one week.

Other pituitary hormones include growth hormone (important for normal growth in childhood) and prolactin (regulates milk production in pregnancy and breast feeding). Lack of these hormones does not cause illness in adults. Presently growth hormone replacement therapy is not prescribed after pituitary surgery.

### **Hormone Tablet Treatment**

Before or after any pituitary operation you may need blood tests in order to decide whether or not a tablet supplement is necessary.

The hormone tablet supplements are natural substances identical to those normally produced by the body. The most important of these to learn about is hydrocortisone (= cortisol).

#### **1 Hydrocortisone**

This comes in 20 mg or 5 mg strength tablets, as well as in an injection form for use in emergencies. The daily dose of hydrocortisone for an adult depends on your size and degree of cortisol lack. The usual dose is 15 to 20 mg per day for women and 20 to 30 mg per day for men depending on body size.

#### **Warning Symptoms:**

As noted above, symptoms of cortisol lack include increasing tiredness, muscle weakness, cramps, headaches and an inability to concentrate. There is lack of appetite and nausea which may progress to vomiting. Dizziness may lead to faintness on standing and eventually profound weakness and collapse.

#### **What to Do:**

It is most important that should you have any of the early symptoms you should assume there is a lack of adequate amounts of cortisol and take a double or triple dose of hydrocortisone until you can contact your doctor.

#### **When to Take Extra:**

Typical reasons for increased need for cortisol include the stress of 'flu fever', or other infections such as gastroenteritis. A useful rule of thumb is to double your usual dose if you have to stay in bed, (e.g. with fever or 'flu'), and to continue taking the double-dose throughout the period of extra demand.

#### **Notify your GP:**

You should also notify your General Practitioner. If you are vomiting you must contact your GP urgently so that you can receive hydrocortisone by injection.

Admission to hospital is usually essential if vomiting or diarrhoea continues for longer than 8-12 hours, as it is vital that you be kept under close medical observation.

#### **MedicAlert:**

Any accident will also need to be covered with extra Hydrocortisone. It is for this reason that any person taking hydrocortisone is asked to obtain a MedicAlert pendant or bracelet. You should wear this to indicate your need for extra Hydrocortisone should you ever lose consciousness.

Emotional shocks, minor colds, and undue exertion would not normally require an increased dose.

***Remember - if you have any of the symptoms suggesting lack of cortisol take extra. No harm can come from a short course of extra hydrocortisone whereas your life can be threatened if you disregard the warning symptoms.***

#### **How to take hydrocortisone:**

You will usually be advised to take your tablets in two or three doses during the day. It is best to take the first dose immediately on waking. The tablets can sometimes be helpful to take the first dose of the day on waking with a cup of tea or a glass of milk and a biscuit. Most people find that a lunchtime dose and a late afternoon dose gives the best effect e.g. 10 mg on waking, 5 mg at lunch and 5 mg at 5 pm would be a typical schedule.

#### **Thyroxine:**

This will usually be given in the form of Thyroxine, which comes in two strengths, 0.05 mg and 0.1 mg tablets. The dose may vary between 1 and 3 tablets daily depending upon your needs and degree of deficiency. These tablets can be taken as a single daily dose and the correct level in the blood is easily monitored by an occasional blood sample.

#### **Sex, Hormone Replacement Treatment:**

**Women** may be asked to take hormone replacement therapy (HRT) just as other women take after the menopause. This can usually be as combined continuous therapy without the need for regular withdrawal bleeding.

**Men** may require testosterone, which is presently best given by an injection into muscle every 3-4 weeks to replace the normal hormone testosterone requirements.

#### **Anti-Diuretic Hormone treatment:**

When the amount of urine passed is more than 3-4 litres a day, often with the need to urinate 2-3 times at night with large volumes of urine, than replacement therapy with Minirin nasal spray may be advised. One to two sprays before bed may be sufficient to restore a normal water balance.