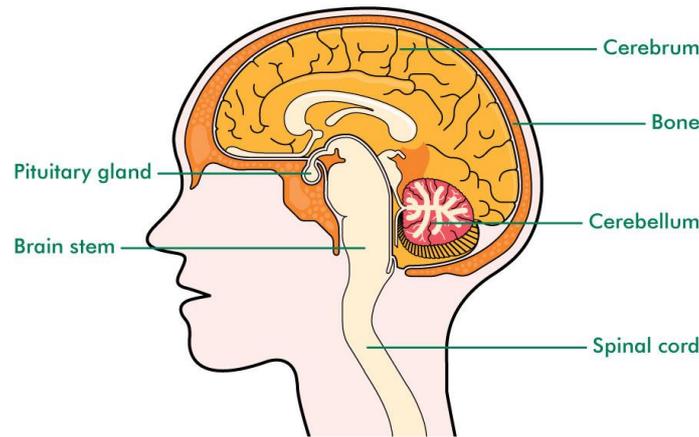


## Hypopituitarism (Multiple Pituitary Hormone Deficiency)

### What are hormones?

Hormones are chemical messengers. They are made in glands and travel round the body in the bloodstream. Hormones affect how other organs in the body work.



### What is the pituitary gland?

The pituitary gland is a pea-sized gland found in the head just below the front part of the brain. It has two parts, the anterior (front) lobe and posterior (back) lobe.

Both lobes of the pituitary gland make hormones, which are needed for normal growth and development in children. Not having enough of some of these hormones can be life threatening.

### Why do children have hypopituitarism?

In some children the pituitary gland does not develop properly and so they are born with hypopituitarism. There are many genes that are involved in the normal development of the pituitary gland, and in some children it may be possible to find a genetic cause for the hypopituitarism.

In some children the hypopituitarism may be associated with other abnormalities in the development of the brain, which may affect their learning, development and sight.

Other causes of hypopituitarism include a head injury, tumours in the region of the pituitary gland, or the treatment given for these (surgery and radiotherapy).

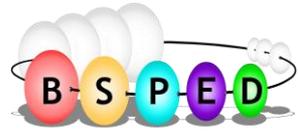
### How does hypopituitarism affect a child?

The hormones made by the pituitary gland are needed for good health and normal growth and development.

The doctor will use the results of blood tests and scans to identify which hormones your child is not able to make. They will then prescribe replacement hormones for your child to take.

Your child will need to come to clinic at least 2-3 times a year and have regular blood tests. This is because hypopituitarism can develop slowly as your child grows, so they may need more of the hormones replaced as they get older.

Treatment is with synthetic copies of either the pituitary hormone or the hormone that should be made by the other glands.



## **What are the hormones produced by the pituitary gland?**

*The anterior pituitary gland makes:*

### ***Growth hormone (GH)***

Growth hormone is needed for growth in childhood. It is important in keeping blood sugar at normal levels in infants and small children. Growth hormone also affects body composition; it is needed to increase lean muscle mass and reduce fat mass.

Replacement treatment for this is by a daily injection of growth hormone.

### ***Thyroid stimulating hormone (TSH)***

TSH stimulates the thyroid gland to make thyroxine, which controls the rate of metabolism. A normal level of Thyroxine is needed for normal growth and brain development/learning.

Replacement treatment for this is a daily tablet of Thyroxine.

### ***Adrenocorticotrophic hormone (ACTH)***

ACTH stimulates the adrenal glands (small glands found on the top of each kidney) to make cortisol. Cortisol is essential for life – it is needed to maintain normal blood pressure and the salt and sugar balance in the body.

It is also needed for normal immune function and is very important during illness or injury. Lack of cortisol can lead to a life threatening adrenal crisis.

Replacement treatment for this is with hydrocortisone as tablets or liquid medicine given 3-4 times each day.

### ***Gonadotrophins (LH & FSH)***

These hormones are needed for physical development at puberty. They stimulate the testes in boys to make testosterone, and the ovaries in girls to make oestrogen.

For boys', replacement treatment for these is with testosterone as monthly injections, daily tablets or gel.

For girls', replacement treatment is with oestrogen as daily tablets or patches applied twice a week.

*The posterior pituitary gland makes:*

### ***Antidiuretic hormone (ADH)***

ADH is needed to maintain the body's water balance. It acts on the kidneys enabling them to retain water. Without ADH the kidneys are not able to retain water and so make lots more urine than usual. This leads to dehydration.

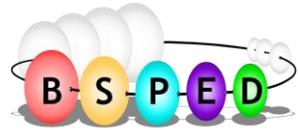
This can be life threatening if the child cannot drink enough fluid to keep up with the amount of urine passed.

This is called Diabetes Insipidus (sometimes referred to as 'water diabetes').

Replacement treatment for this is with DDAVP or Desmopressin as tablets, nasal spray or drops.

## **How long will these treatments be needed?**

It is likely that the child will need to take the replacement hormones for the rest of their life. Your child's doctor or nurse will be able to talk about this in more detail with you.



### **Are there any long-term problems?**

The aim of treatment is to replace the missing hormones and enable the child to achieve their full potential. Having hypopituitarism may affect your child's career choices, as there are some occupations such as the armed forces, which they will not be accepted into.

Children who have other medical conditions associated with hypopituitarism may have other disabilities or learning difficulties. Your child's doctor will be able to give you more information.

Suggested sites for further information:

[www.eurospe.org](http://www.eurospe.org)

[www.childgrowthfoundation.org](http://www.childgrowthfoundation.org)

[www.pituitary.org](http://www.pituitary.org)

<https://patient.info/health/the-pituitary-gland>

[www.yourhormones.info](http://www.yourhormones.info)

[www.explain.me.uk](http://www.explain.me.uk)

This leaflet has been written by members of the BSPED & reviewed by the Clinical Committee. It is designed to give you some general information about your child's condition and treatment. Your child's doctor or specialist nurse will be able to answer any further questions you have about your child.

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