

Hypothalamic dysfunction

Definition

Hypothalamic dysfunction is a problem with part of the brain called the hypothalamus. The hypothalamus helps control the pituitary gland and regulates many body functions.

Causes

The hypothalamus helps keep the body's internal functions in balance. It helps regulate:

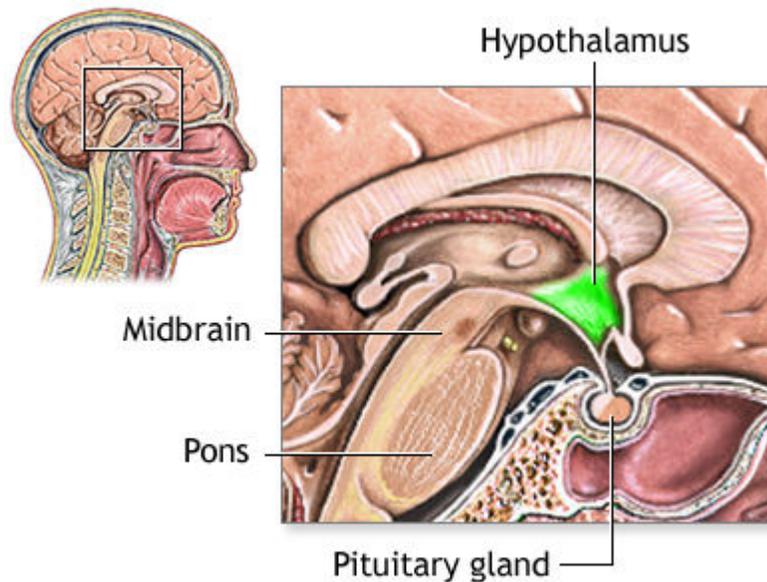
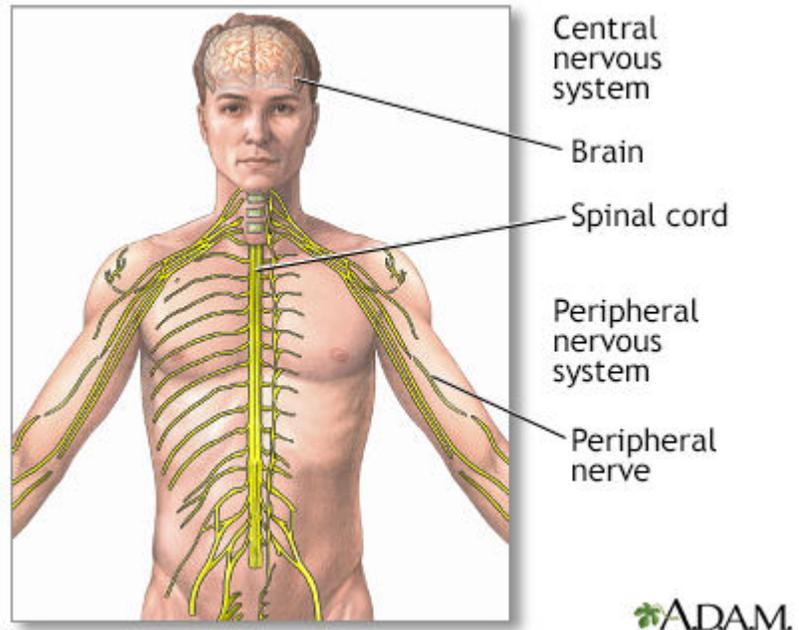
- Appetite and weight
- Body temperature
- Childbirth
- Emotions, behavior, memory
- Growth
- Production of breast milk
- Salt and water balance
- Sex drive
- Sleep-wake cycle and the body clock

Another important function of the hypothalamus is to control the pituitary gland. The pituitary is a small gland at the base of the brain. It lies just below the hypothalamus. The pituitary, in turn, controls the:

- Adrenal glands
- Ovaries
- Testes
- Thyroid gland

There are many causes of hypothalamic dysfunction. The most common are:

- Surgery
- Brain injury
- Brain tumors
- Radiation treatment to the brain



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- Nutrition problems, such as eating disorders (anorexia), extreme weight loss
- Blood vessel problems in the brain, such as aneurysm, pituitary apoplexy, subarachnoid hemorrhage
- Genetic disorders, such as Prader-Willi syndrome, familial diabetes insipidus, Kallmann syndrome
- Infections and swelling (inflammation) due to certain immune system diseases

Symptoms

Symptoms are usually due to the hormones or brain signals that are missing. In children, there may be growth problems, either too much or too little growth. In other children, puberty occurs too early or too late.

Tumor symptoms may include headache or loss of vision.

If the thyroid is affected, there may be symptoms of an underactive thyroid (hypothyroidism). Symptoms may include feeling cold all the time, constipation, fatigue, or weight gain, among others.

If the adrenal glands are affected, there may be symptoms of low adrenal function. Symptoms may include fatigue, weakness, poor appetite, weight loss, and lack of interest in activities.

Exams and Tests

The health care provider will perform a physical examination and ask about your symptoms.

Blood or urine tests may be ordered to determine levels of hormones such as:

- Cortisol
- Estrogen
- Growth hormone
- Pituitary hormones
- Prolactin
- Testosterone
- Thyroid
- Sodium
- Blood and urine osmolality

Other possible tests include:

- Hormone injections followed by timed blood samples
- MRI or CT scans of the brain
- Visual field eye exam (if there is a tumor)

Treatment

Treatment depends on the cause of the hypothalamic dysfunction:

- For tumors, surgery or radiation may be needed.
- For hormonal deficiencies, missing hormones need to be replaced by taking medicine. This is effective for pituitary problems and for salt and water balance.

- Some medicines may help with problems related to appetite regulation and weight gain.

Outlook (Prognosis)

Many causes of hypothalamic dysfunction are treatable or reversible. Most of the time, missing hormones can be replaced.

Possible Complications

Complications of hypothalamic dysfunction depend on the cause.

BRAIN TUMORS

- Permanent blindness
- Problems related to the brain area where the tumor occurs
- Vision disorders
- Problems controlling salt and water balance

HYPOTHYROIDISM

- Heart problems
- High cholesterol

ADRENAL INSUFFICIENCY

- Inability to deal with stress (such as surgery or infection), which can be life threatening by causing low blood pressure

SEX GLAND DEFICIENCY

- Heart disease
- Erection problems
- Infertility
- Thin bones (osteoporosis)
- Problems breast feeding
- Problems with uterine contractions during delivery

GROWTH HORMONE DEFICIENCY

- High cholesterol
- Osteoporosis
- Short stature (in children)
- Weakness

When to Contact a Medical Professional

Contact your provider if you have:

- Headaches
- Symptoms of hormone excess or deficiency

Prevention

If you have symptoms of a hormonal deficiency, discuss replacement therapy with your provider.

Alternative Names

Hypothalamic syndromes

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