

**NORDIC HPTH ORGANISATION** is a patient driven alliance for patients with the disease Hypoparathyroidism (HPTH), and their close relatives, in the Nordic countries of Europe. Interested professionals may also become associated members. It was founded November 24, 2005, in Norway.



**THE ASSOCIATION PROPOSES TO PROMOTE ACTIVITIES IN FAVOR OF:**

- **Access to information and support for members with the disease.**
- **Raising awareness and increasing understanding about the condition.**
- **Fighting for better treatment and care.**
- **Increasing contact between members with this rare disorder.**
- **Promoting and following scientific and clinical research and the exchange of good practices.**
- **Cooperation with other National HPTH Organisations.**

**NORDIC HPTH ORGANISATION** is a member of EURORDIS (European Organisation for Rare Diseases), Rare Diseases Sweden and the Danish Centre for Rare Diseases and Disabilities (CSH).

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**Læresenteret**  
Oslo universitetssykehus, Ullevål



**Sällsyna diagnoser**

[www.hpth.no](http://www.hpth.no)

# Hypo parathyroidism



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# Hypoparathyroidism



Hypoparathyroidism (HPTH) is due to insufficient function of the parathyroid glands. **This disease is NOT related to the thyroid glands (hypothyroidism).**

**The function of the parathyroid glands** is to produce parathyroid hormone (PTH). PTH has several functions in the body.

PTH performs its effect on target cells, through binding to receptors on the cell membrane. This binding is modulated by so-called G-proteins, and affects many different functions inside the cells, all the way to the cell nucleus.

The **most important** function of the hormone is to regulate the calcium and phosphate levels in the blood, and inside the cells of our body.

**Normal levels of calcium in the blood are essential to many functions in the body:**

1. Muscle contractions
2. Nerve function
3. Neuromuscular contractions
4. Heart contractions and rhythm
5. Blood coagulation
6. Hormone and neurotransmitter release
7. Bone resorption and formation (bone remodeling)

**Calcium in the blood is normally regulated within a very narrow normal range and with an individual**

**variation of max. 2 %. In hypoparathyroidism, the individual variation increases significantly.**

Insufficient PTH reduces the release of calcium from the bones into the blood, and increases the loss of calcium through the kidneys. Insufficient PTH also lowers the absorption of calcium from food in the intestines via impaired synthesis of vitamin D. All of which lead to lower blood calcium concentrations.

**The active vitamin D (Calcitriol), which is used in the treatment of the disease today, does not resolve all the lost functions from lack of parathyroid hormone.**

The main symptoms of decreased parathyroid function are low blood calcium concentrations (hypocalcaemia) and high blood phosphate concentrations (hyperphosphatemia). Low blood magnesium (hypomagnesemia) is also a common symptom.

**Symptoms:** In the worst cases of low blood calcium, severe muscle spasms can occur throughout the whole body. Very low calcium levels can also cause a prolonged QT interval in the heart, low blood pressure and heart failure.

Symptoms of chronic hypoparathyroidism include muscle spasms in the hands and feet, numbness and tingling around the mouth, in fingers, toes and legs. Swelling and painful feet, are also common. Symptoms may also include tiredness and confusion. Extra-pyramidal symptoms (similar to the symptoms seen in Parkinson's disease) may occur over time and are caused by calcification of structures deep in the brain. Calcification of the kidneys and other organs may occur, as may cataracts in the eye.

Nerve pain can also occur, similar to that seen in polyneuropathy. Bone pain and muscle pain/weakness is common. Muscle pain may increase with activity.

**Hypoparathyroidism (HPTH) can be congenital or acquired. There are many different reasons for its occurrence with the following being the most common:**

## CONGENITAL:

**Idiopathic hypoparathyroidism** means that the reason for the decreased function is unknown.

**Isolated hypoparathyroidism.** HPTH can occur sporadically. A familial form of the disease also exists with several siblings or generations in the same family may exhibit hypoparathyroidism.

**Di George Syndrome** is a disease, which is characterized by an absence of parathyroid glands and hearing problems. The disease **APS 1** also presents with hypoparathyroidism. In both cases there will also be other manifestations.

**Pseudohypoparathyroidism (Albright Hereditary Osteodystrophy)** occurs when the production of the parathyroid hormone is intact, but bone and kidney cells are incapable of responding to the hormone.

## ACQUIRED:

**Hypoparathyroidism after injury (Iatrogenic hypoparathyroidism).** The four tiny parathyroid glands are located right behind the thyroid glands. Surgery in this area may lead to injury/removal of these tiny glands. Radiotherapy to this area may also damage the parathyroid glands.

**Autoimmune hypoparathyroidism.** The immune system can, for unknown reasons, create antibodies (autoimmunity), which may destroy parathyroid cells over time.

This leaflet has been edited and quality secured by Professor Erik Fink Eriksen, Department of Endocrinology, Oslo University Hospital, Aker, Norway.