Hypopara Answers™

WHAT IS HYPOPARATHYROIDISM?

DON'T OVERLOOK YOUR SYMPTOMS, LEARN MORE ABOUT HYPOPARA

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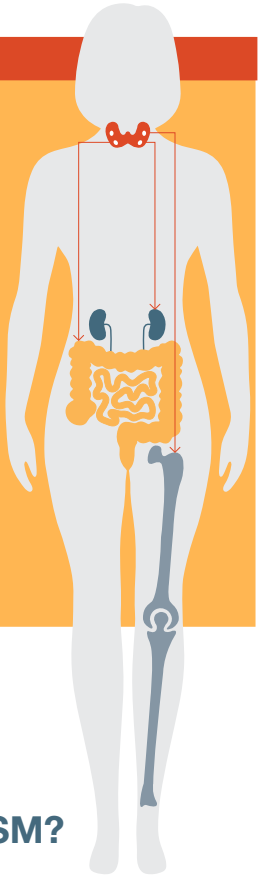
Introduction to hypoparathyroidism

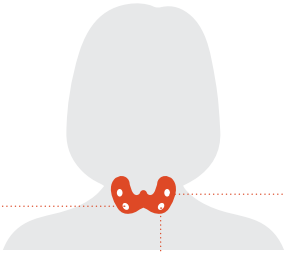
WHAT IS PARATHYROID HORMONE?

Parathyroid hormone (PTH) regulates the levels of calcium and phosphate throughout the body. It is released from the four parathyroid glands, which are located on the thyroid gland in the neck. It is released in response to low blood calcium levels and acts directly on bone, kidney cells and in the gut.



WHAT IS HYPOPARATHYROIDISM?

Hypoparathyroidism (hypopara) is a rare disorder where the body doesn't produce enough, or any, parathyroid hormone (PTH). When PTH levels are too low, it causes blood calcium levels to drop below the normal range. Low calcium levels can cause a number of different effects, if levels become critically low then can produce some harmful effects.



Gut – PTH triggers the conversion of vitamin D in the kidney to the active form, which increases calcium and phosphate absorption in the intestine.

Kidney – The role of PTH in the kidney is to increase the amount of phosphate that is excreted in the urine, and to increase the amount of calcium that is reabsorbed.

Bone – PTH stimulates an increase in calcium and phosphate release from the skeleton.

Hypopara and the bones, gut and kidneys

Reduced levels of PTH causes below normal levels of calcium in the body, which is known as hypocalcaemia. PTH acts on the bones, kidneys and the intestine to restore normal calcium levels in the blood.

A lack of PTH leads to a number of different signs and symptoms in a person suffering from hypopara.

Signs, symptoms and complications

The signs and symptoms of hypopara can vary and can involve almost any part of the body:

- Tingling, twitching and numbness
- Brain fog
- Seizures
- Calcium deposits (calcifications)*
- Kidney stones*
- Irregular heart rhythm (arrhythmias)
- Changes in bone density
- Dental issues
- Dry skin and brittle nails
- Depression and anxiety
- Cataracts*
- Tiredness

*commorbidities

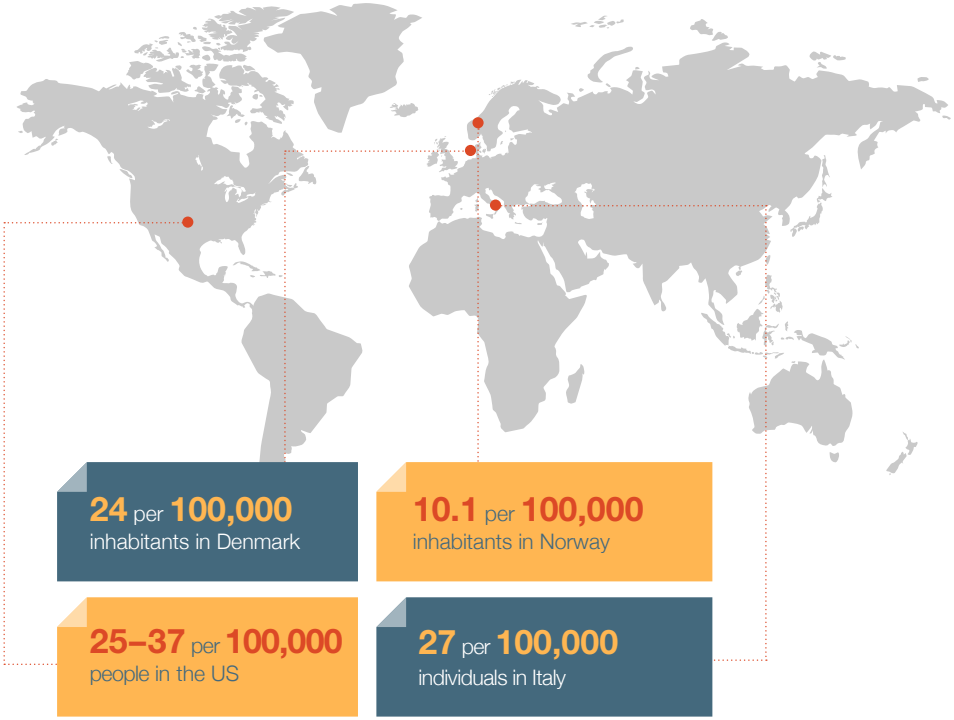
Hypopara is rare and the symptoms differ from person to person. It is important to seek help from a physician if you experience a number of the symptoms above. Hypopara can be serious if untreated and can affect your daily life. If you have already been diagnosed and are being treated, go back to your doctor if: your symptoms worsen; new symptoms appear, even if seemingly unrelated; or if symptoms are a burden on your daily life.

How common is hypoparathyroidism?

Hypopara is rare. Recent data collected in the United States, Denmark and Italy show that 24–37 individuals per 100,000 have the condition. This is estimated to be approximately 60,000 – 80,000 people in the United States, but in other countries the incidence is reported to be lower.

Hypopara and gender

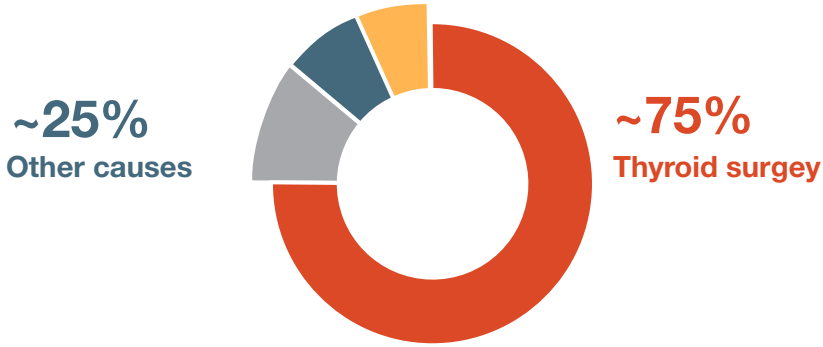
Hypopara that develops after surgery is more common in women than men, as women are more likely to have thyroid disease and are therefore more likely to need thyroid surgery.



Causes

Causes of hypopara

Hypopara can vary between individuals depending on what caused their disease. Below is a chart of the main causes of hypopara:



Secondary causes - Hypopara can be caused secondarily as a result of other conditions.

Autoimmune - Damage and destruction of the thyroid gland can occur through autoimmune causes, attack by the body's immune system. This is the second most common cause of hypopara.

Radiotherapy - to the head and neck during cancer treatment, which may result in damage to the parathyroid gland, and hypomagnesaemia (a lack of magnesium in the blood), which results in a lack of PTH secretion.

Genetic – Genetic causes can either be due to a random point mutation in genes or can be a component of a genetic syndrome, where a person may also experience other comorbidities.

Idiopathic – Some cases of hypopara have unknown causes and are referred to as idiopathic.

Surgery – In approximately 75% of cases, hypopara is caused by removal of, or accidental damage to, the parathyroid glands during surgery.

The main cause of hypopara is removal of, or accidental damage to, the parathyroid glands during neck surgery. 25–30% of people who have neck surgery will develop **transient post-surgical hypoparathyroidism**. This is the absence of PTH, or low PTH levels, lasting up to 6 months after surgery.

Where PTH levels remain too low after 6 months, it is considered to be **permanent or chronic post-surgical hypoparathyroidism**.

Diagnosis

Diagnosing hypopara

Your doctor may do some preliminary checks to see whether there is a clear cause of your symptoms. This may include some of the checks listed below:

Medical history

Before doctors diagnose hypopara, they may look into medical records and review them for previous neck surgeries or a history of other conditions.

If hypopara does not appear to have an obvious cause, such as neck surgery, then genetic testing may be considered. This would be to identify any potential genetic causes of hypopara, particularly if someone is diagnosed with hypopara at a young age, has multiple endocrine gland failure or a family history of hypopara.

Physical examination

One of the major **physical** signs of hypopara is muscular excitability, where your muscles are agitated and may twitch or contract easily. When diagnosing hypopara, a doctor may perform, or ask you to perform, a number of simple movements to assess muscular excitability.

Diagnostic tests

The major biochemical sign of hypopara is having hypocalcaemia combined with absent or deficient levels of parathyroid hormone (PTH). Having either hypocalcaemia or PTH deficiency on its own is not enough to make a diagnosis, both are needed for a conclusive diagnosis of hypopara. If only one of these is tested, it could be mistaken for another, similar condition.

The doctor will carry out a blood test on at least two separate occasions at least two weeks apart, to assess the calcium and PTH levels.

Calcium and PTH levels will naturally fluctuate for 6 months following neck surgery. Therefore, to be diagnosed with chronic hypopara, symptoms must still be occurring 6 months after surgery.

After diagnosis

Urine test – Calcium levels may be monitored after diagnosis through urine tests. Taking calcium supplements can cause higher than normal amounts of calcium excreted in the urine. If this is untreated, it may lead to complications, such as calcium deposits in the kidneys and kidney stones. Therefore, calcium levels may need to be closely monitored to minimise the risk of side-effects.

Physical examination – Physical examination following diagnosis looks at the skeleton, which is commonly affected by the disease. Doctors may take an x-ray to identify calcium deposits, an ultrasound or CAT scan to identify any kidney stones, or a duel x-ray absorptiometry to determine bone density.

Biochemical tests – The doctor may be interested in other biochemical features such as phosphate, magnesium, calcitriol, creatinine, and the rate of creatinine clearance from the kidney.

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