

A PATIENT PARATHYROID DISORDERS GUIDE DURING PRECONCEPTION, PREGNANCY AND LACTATION

Introduction



For women of child-bearing age, non-functioning parathyroid glands can pose certain risks to a normal pregnancy.

The parathyroids are four, very small glands located in the neck just behind the thyroid gland. They secrete a natural chemical called parathyroid hormone (PTH) into the bloodstream. PTH helps to control the levels of two salts in the body: calcium and phosphorus.

If one or more of these glands begin to produce too much or too little PTH, this causes blood calcium levels to either rise or fall. This condition is known as a parathyroid disorder, of which the two most common forms are Primary Hyperparathyroidism (PHPT), and Hypoparathyroidism (HypoPT)

- **PHPT** occurs when there is too much PTH produced.
- **HypoPT** occurs when there is too little PTH produced.

Primary Hyperparathyroidism (PHPT)

What happens when PTH is high?

A high level of PTH causes blood calcium levels to rise (hypercalcemia), and phosphate levels to fall (hypophosphatemia).

What should you know about PHPT before getting pregnant?

PHPT with hypercalcemia can be harmful for the unborn and newborn. The recommended treatment for PHPT is to surgically remove one or more of the parathyroid glands.

It is therefore recommended to defer pregnancy if possible until surgery has been performed, after which PHPT is usually cured.

What are the potential risks of PHPT during pregnancy for the mother and the unborn baby?

Often, PHPT goes undiagnosed during pregnancy when calcium levels are only mildly elevated. However, the potential risks rise with higher calcium levels.

Possible pregnancy complications include:

- miscarriage
- hampered growth of the unborn

For the mother there is a risk of:

- kidney stones
- inflammation of the pancreas
- high blood pressure with problems of other organs (preeclampsia)

If you suffer from PHPT and are planning on becoming pregnant, when should you plan for an operation?

As surgery is recommended for all people below the age of 50, women should elect to have surgery before becoming pregnant.

If women are diagnosed with PHPT while pregnant, surgery is still recommended when calcium levels are high as it lowers the risk of complications. During pregnancy, surgery is recommended to be performed in the second trimester.

How else can PHPT be treated during pregnancy?

Calcium levels can be reduced by increasing fluid intake. This can either be done by mouth or saline infusion. To bridge the time until surgery or if surgery is not performed during pregnancy, medication (e.g. cinacalcet) is recommended to treat PHPT and its high calcium levels. This practice is considered safe but it is not officially approved since it crosses the placenta.

How frequently should women have check-ups during pregnancy in case no operation is performed?

Regular blood tests are recommended every 4 weeks, or more frequently if medication dosage is changed.

What are the potential risks of PHPT for the newborn?

In pregnant women with PHPT, fetal PTH is suppressed due to the increased calcium levels in the mother. Immediately after birth this can lead to low calcium levels in the newborn, which, can cause seizures. Therefore, blood tests for the newborn are recommended in the first few weeks.

However, the parathyroid glands of the newborn usually recover within weeks, enabling calcium levels to return to normal.

If diagnosed with PHPT, should you have any concerns breastfeeding your newborn?

To reduce the potential risk of very high calcium levels in the mother just after labour, calcium should be measured regularly after childbirth.

When the mother is breastfeeding, maternal calcium levels should be measured in the first week after delivery and continue every 4-8 weeks. If surgery is planned, this is recommended a few weeks after delivery, when the mother has recovered from labour.

If medication is needed to keep the calcium low, the mother should discuss the risk/benefits with her doctor, whether to discontinue breastfeeding or accept the potential excretion of medication in the breast milk.

Hypoparathyroidism (HypoPT)

What happens when PTH is low?

A low level of PTH causes blood calcium levels to fall (hypocalcemia), and phosphate levels to rise (hyperphosphatemia).

What should women know about HypoPT before getting pregnant?

It cannot be predicted whether calcium/activated vitamin D supplementation needs will increase or decrease during pregnancy.

Therefore, frequent blood testing is needed to assess what adjustments to calcium and activated vitamin D supplementations are required.

Is it safe to get pregnant while suffering from HypoPT?

Most mothers will have a healthy baby, as long as they maintain their medication daily and perform regular blood tests to assess if any adjustments are needed.

What are the risks of HypoPT during pregnancy to the mother or unborn baby?

The full risks and complications of HypoPT during pregnancy remain unclear. The majority of mothers do not encounter problems with their own health or that of the baby.

There is a suggestion that maternal HypoPT is associated with a higher incidence to induce labour and lower birth weights. There is also a suggestion that HypoPT may increase the risk of fetal loss and preterm delivery.

If the mother has low calcium levels this may lead to higher PTH levels in the unborn baby, potentially resulting in disturbed skeletal development.

Similarly, if the mother has high calcium levels, the fetal parathyroid tissue may become suppressed and the fetus may develop transient hypocalcemia after birth.

Therefore, close monitoring is advised. If calcium levels are properly regulated no real problems for mother and unborn child are encountered.

How should HypoPT be treated during pregnancy?

During their pregnancy, mothers should be treated with calcium and activated vitamin D supplements. Calcium dose adjustments may be necessary as the pregnancy advances. Treatment aim is albumin-adjusted calcium levels in the lower end of the reference range.

How frequently should women with HypoPT have checkups during pregnancy?

Blood tests are recommended every 3–4 weeks, and each week during the last month of pregnancy.

During the lactation period, surveillance is recommended weekly within the first month after labour and continue every 4 weeks thereafter.

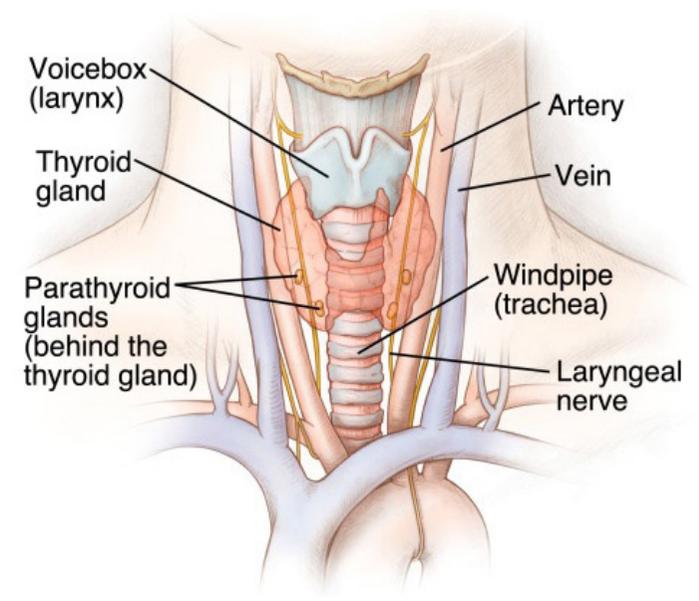
What are the potential risks of HypoPT for the newborn?

Depending on the calcium regulation of the mother with HypoPT, high or low levels of calcium may appear in the newborn. It is therefore recommended to measure the calcium levels of the newborn every second day during the first week of life.

However, low or high calcium levels in the newborn are often temporary and normally stabilise within weeks.

If diagnosed with HypoPT, should you have any concerns breastfeeding your newborn?

Breastfeeding poses few risks to the newborn, but surveillance of the mother should continue to make necessary adjustments to calcium and activated vitamin D supplementations.



Parathyroid glands location



European Society
of Endocrinology

Patients: The concise information in this guide reflects the latest expert recommendations on managing this condition. Please consult your own family doctor or patient advisory group for further advice and support.

Clinicians: This introductory patient guide reflects the latest expert consensus recommendations of PARAT - the ESE educational programme on parathyroid disorders. The guide should not replace clinical consultation with individual patients.

Please view “European Expert Consensus on Practical Management of Specific Aspects of Parathyroid Disorders in Adults and in Pregnancy”. *European Journal of Endocrinology* 186 (2) February 2022, for recommendations in full.

Faculty members, Elizabeth Winter (The Netherlands), Claudio Marcocci (Italy), Luis Cardoso (Portugal), Elena Tsourdi (Germany) and Nik Screen (ESE/Versatility.org.uk) prepared this patient information guide.

Further detailed patient information guides for PHPT and HypoPT, plus all other PARAT educational materials are available at www.ese-hormones.org or by searching; bit.ly/paratlz

©2022 European Society of Endocrinology. Last updated Feb 2022.