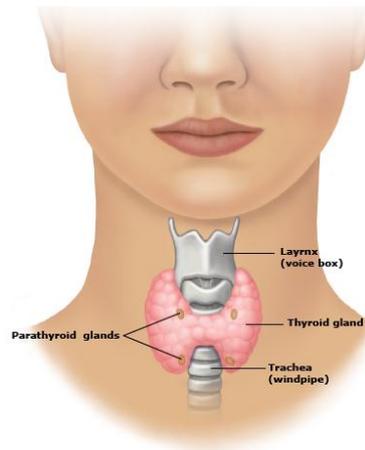


## **PRIMARY HYPERPARATHYROIDISM**

The parathyroid glands, of which there are usually 4, are located around the thyroid gland, above the collarbones and below the larynx (voicebox) in the neck. These glands produce Parathyroid hormone. Parathyroid hormone is vital in maintaining normal blood calcium levels. It increases blood calcium by resorption of calcium from bone.



If the parathyroid glands are functioning normally, high blood calcium levels lead to a reduction in the level of parathyroid hormone so levels of calcium is stabilised. If the parathyroid glands are overactive (primary hyperparathyroidism), parathyroid hormone secretion continues even in the presence of normal or high blood calcium levels, and calcium levels in the blood become too high.

### **Symptoms & Signs**

Although symptoms due to primary hyperparathyroidism with high blood calcium are uncommon (80% of patients have no symptoms), symptoms from high blood calcium levels can include:

- Joint aches
- Fatigue
- Weakness
- Loss of appetite, nausea
- Mild depression
- Difficulty concentrating
- Constipation
- Thirst and drinking a lot
- urinating frequently

High levels of Parathyroid hormone and calcium in the blood for a prolonged period of time may lead to:

- impaired kidney function
- kidney stones
- gout/ other joint disorders

Disclaimer: This advice is intended for general information purposes only. It should not be used as a substitute for medical advice, diagnosis or treatment and may not be applicable to individual patients. Always seek the advice and treatment of your own doctor.

- osteoporosis and fractures
- low phosphate levels and high magnesium levels

### **Causes of hyperparathyroidism**

- parathyroid gland adenoma (non-cancerous tumor) – majority
- parathyroid hyperplasia – excessive growth of one or more of the parathyroid glands
- parathyroid cancer – rare (<1%)

### **Diagnosis**

The presence of high blood calcium levels & low blood phosphate levels in the presence of high parathyroid hormone levels is diagnostic of primary hyperparathyroidism.

Tests to investigate the cause of this may include:

- 24 hour urine collection to check calcium levels
- Ultrasound of the neck to see if any parathyroid tumours (adenoma) can be identified
- Nuclear medicine scan of the parathyroid glands
- Bone density scans will often be recommended to check on bone loss/ osteoporosis

If blood calcium and phosphate levels are normal, and parathyroid hormone levels are high, this may suggest another cause, such as Vitamin D Deficiency or impairment of kidney function (causing secondary hyperparathyroidism).

### **Treatment**

#### **1. Surgical**

Surgery will generally be recommended if a parathyroid adenoma is identified, the calcium is elevated and/or there is evidence of osteoporosis/ bone loss or impairment of kidney function. Depending on the individual case, this surgery is often minimally invasive and well tolerated.

#### **2. Non-surgical**

Occasionally, the calcium levels will remain high-normal or mildly elevated with no symptoms. In addition, there are situations in which surgery is not considered to be in the best interests of the patient. In these situations, it may occasionally be decided to treat with medications which inhibit loss of bone (bisphosphonates). If possible, patients should remain physically active, keep well-hydrated and avoid calcium and vitamin D supplements.