

WHAT IS HYPERPARATHYROIDISM?

Hyperparathyroidism is a condition effecting one or more of the 4 parathyroid glands. This condition occurs when the parathyroids become overactive, and produce more PTH than is needed by the body.

There are 3 types of hyperparathyroidism:

1) PRIMARY HYPERPARATHYROIDISM

Occurs when one or more of the four parathyroid glands become overactive and produce more PTH than is needed by the body.

Individuals with primary hyperparathyroidism are at an increased risk of developing osteoporosis, bone fractures, kidney stones, kidney damage, and mood changes. Symptoms associated with primary hyperparathyroidism include thirst, weakness, fatigue, dehydration and depression.

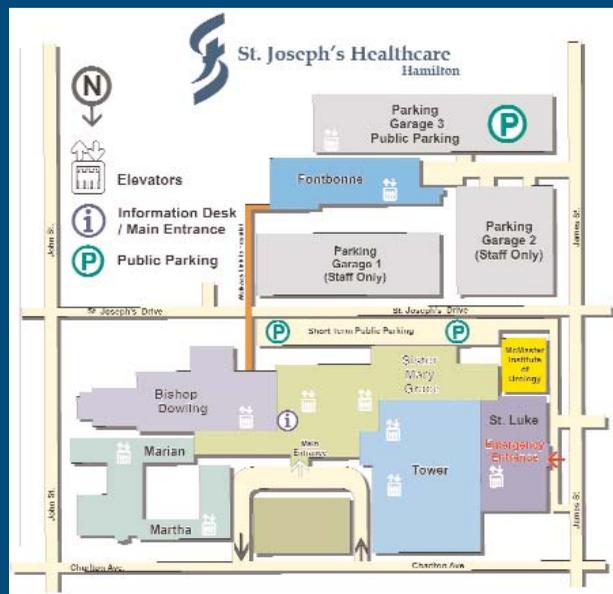
2) SECONDARY HYPERPARATHYROIDISM

This form of hyperparathyroidism may occur in those individuals who do not receive sufficient calcium in their diets or may have malabsorption. The parathyroid glands increase activity to ensure normal blood calcium levels are maintained.

This usually occurs in people with longstanding renal failure or small bowel absorption problems. It can also occur with inadequate dietary calcium or vitamin D.

3) TERTIARY HYPERPARATHYROIDISM

This condition occurs after prolonged periods of secondary hyperparathyroidism. Surgery is often necessary.



WHO WE ARE

The specialized calcium disorders clinic at St. Joseph's Healthcare Hamilton is a centre of excellence for the management of calcium disorders and parathyroid disease.

The clinic is involved in advancing research and in developing new medical and surgical approaches to the treatment of hyperparathyroidism in Canada. In addition, the clinic serves as an education facility for the medical program at McMaster University.

Aliya A. Khan, MD, FRCPC, FACP
Director, Calcium Disorders Clinic,
St. Joseph's Healthcare Hamilton
Professor of Clinical Medicine
McMaster University
Tel: (905) 844-5677
Fax: (905) 844-8966

J.E.M. Young, BSc, MD, FRCSC, FACS
Clinical Professor of Surgery
McMaster University
Chief, Department of Surgery
St. Joseph's Healthcare Hamilton
Tel: (905) 522-1255
Fax: 905-522-9460



Calcium Disorders Clinic

Hyperparathyroidism and You

Outpatient Department
Fontbonne Building
St. Joseph's Healthcare Hamilton
50 Charlton Avenue East
Hamilton, ON L8N 4A6
www.stjosham.on.ca/calcium

WHAT ARE THE PARATHYROID GLANDS?

The parathyroids are a group of four small rice-grained sized glands normally located at the base of the neck. These four tiny glands are located near the thyroid gland.

The parathyroid glands monitor and control blood calcium levels (or the amount of blood calcium that is allowed into the blood stream). The parathyroids do this by manufacturing a hormone known as PTH (parathyroid hormone). The glands produce and deliver appropriate amounts of PTH to blood stream as needed.

PTH is necessary to maintain blood calciums levels within the normal range.

WHAT IS THE RELATIONSHIP BETWEEN MY THYROID AND PARATHYROID GLAND?

Although the parathyroid glands are located close to the thyorid gland, the two glands perform different tasks.

The principle task of the parathyroid glands is to regulate blood calcium levels, while the thyroid regulates the body's metabolism and organ functions.

HOW DOES PTH (Parathyroid Hormone) WORK?

PTH keeps blood calcium within the normal range, through its effects on the kidney, skeleton and digetive tract. PTH decreases calcium losses through the kidney, increases calcium released from the skeleton and increases calcium absorption from the digestive tract. These actions raise the blood calcium into the normal range.

IS PARATHYROID DISEASE AN INHERITED ILLNESS?

The majority of individuals diagnosed with primary hyperparathyroidism have no family history of parathyroid disease.

HOW IS HYPERPARATHYROIDISM DIAGNOSED?

Hyperparathyroidism is normally diagnosed with blood and urine tests. Once the condition has been detected, your doctor may complete the additional tests. These may include:

- *Abdominal x-ray or ultrasound* - may be necessary to check for suspected kidney stones
- *Bone Density tests* - completed to determine the density or overall strength of bone
- Parathyroid scans - to assist in localizing the abnormal parathyroid glands

WHAT ARE MY TREATMENT OPTIONS?

Surgery is an effective cure for the majority of patients with hyperparathyroidism. However, for individuals for whom surgery is not possible there are a number of effective prescription drug treatments available. This is an area of active investigation and research.

WHAT DO I NEED TO KNOW ABOUT SURGERY?

In recent years, major advances have been made in surgical approaches to the treatment of hyperparathyroidism. Parathyroid scans are a type of imaging study that can help localize abnormal parathyroid tissue in greater than 50% of cases and often makes it possible to complete the surgery with an extremely small incision. Parathyroid operations are normally very short procedures and patients often are sent home the same day. It is recommended that the surgery be performed by an experienced parathyroid surgeon. It should be noted that surgery is still the most effective treatment for hyperparathyroidism offering a success rates of over 95%. With the new advances in surgical treatments, it is possible to treat hyperparathyroidism safely, effectively, and simply.

WHAT FOLLOW-UP IS NEEDED AFTER SURGERY?

It is important to do blood tests to confirm that all abnormal parathyroid gland(s) have been successfully removed.

WHAT SHOULD I DO WHEN SURGERY IS NOT RECOMMENDED?

For individuals not proceeding with surgery, it is important to make sure plenty of fluids are consumed. Dehydration can result in dangerously high blood calcium levels. Diuretics and water pills should be avoided.

WHAT ARE THE ALTERNATIVES TO SURGERY?

Clinical research trials have shown that medications are effective in the management of mild hyperparathyroidism. This is an area of active investigation and research.

HOW OFTEN SHOULD I BE TESTED?

If you have primary hyperparathyroidism and you cannot correct this surgically, the new Canadian guidelines indicate that blood calcium be checked every six months. Kidney function, and bone density tests should be performed by your physician on a yearly basis. If the condition is corrected surgically, your doctor will complete follow-up tests to ensure that you are receiving adequate calcium and vitamin D to allow mineralization of the skeleton.

MANAGING HYPERPARATHYROIDISM

There are a number of important lifestyle changes which can help prevent many of the complications associated with hyperparathyroidism.

They are as follows:

- Exercise - daily walking programs help to maintain bone health.
- Drink plenty of fluids to prevent dehydration.
- Avoid smoking.
- Check with your doctor before taking calcium or vitamin supplements.
- Be aware of other medical conditions such as diarrhea and vomiting, which may increase blood calcium levels.

CURRENT RESEARCH AND TREATMENTS ON THE HORIZON

New therapies for hyperparathyroidism are being investigated.

In the future, it may become possible to cure primary hyperparathyroidism without surgery.

For additional information and resources on parathyroidism, please visit the Calcium Disorders Clinic at St. Joseph's Healthcare or visit our website on-line at www.stjosham.on.ca/calcium