

- Glands

Hyperparathyroidism: A parathyroid disorder

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What are parathyroid glands?

The parathyroid glands are four tiny glands situated in the neck behind the thyroid gland, with two on each side.

Parathyroid glands secrete a hormone called parathyroid hormone (PTH), which is responsible for regulating calcium, phosphate, and vitamin D levels in the blood.

Calcium is an important mineral that is closely regulated by the parathyroid glands.

Calcium is not only responsible for bone health but also plays a critical role in the functions of the heart, muscles, and nerves.

Hyperparathyroidism is a disorder where the parathyroid glands secrete excessive quantities of parathyroid hormone (PTH), leading to elevated calcium levels in the blood, known as hypercalcemia.

What Is the Role of Calcium in the Body?

Calcium has numerous functions in the human body, including:

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Formation of strong bones and teeth.

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Facilitating transmission of impulses along nerves.

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Maintaining regularity of heart rhythm.

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Muscle contractility.

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Formation of blood clots.

The recommended average intake required for normal body functioning is approximately 1000 to 1500mg of calcium per day. Calcium levels in the bloodstream are closely regulated by hormones in the body. The typical normal range for the calcium level is 2.2 to 2.6 mmol/L, but normal values and reference ranges vary between laboratories.

There are a number of situations when this regulation is disrupted and the calcium levels are unable to stay in the normal range.

Possible reasons for this include overactive parathyroid glands (hyperparathyroidism), some types of cancer, certain diseases like tuberculosis and sarcoidosis, or even excessive doses of calcium or vitamin D supplements.

What should I do about a high calcium level?

After undergoing a routine health screening at your local clinic, your doctor tells you that your calcium level is higher than the normal range for healthy adults. You are bewildered, as you are unsure why this could be.

You had not noticed any new or unusual symptoms, and you had not taken excessive calcium supplements recently.

Is this something you can just ignore, or is it something you need to take seriously?

A higher than normal calcium level in the blood, otherwise known as hypercalcaemia, is a frequently underdiagnosed condition. This is usually because symptoms of this condition may be

either nonexistent or mild when the degree of calcium elevation is mild.

There have been situations where patients are not been told about their raised calcium level, even though it had been detected on screening tests years before when their old records were scrutinised.

Some patients with high calcium levels experience symptoms, the severity of which usually corresponds to the level of calcium in the blood.

Examples of symptoms include:

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excessive thirst

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frequent urination

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nausea

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vomiting

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constipation

o

bone pain

o confusion

Regardless of the cause, these elevated calcium levels need to be taken seriously and managed appropriately, with the best treatment option depending on the root cause of the hypercalcemia. This is because if left untreated, a number of complications can ensue as a result of the excessively high calcium levels in the blood.

Among the common complications are:

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osteoporosis

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kidney stones

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abnormal heart rhythms

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damage to the kidneys

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problems affecting the nervous system, which may lead to coma

“A patient had come to me for evaluation for persistently high blood calcium levels detected during his routine medical check-ups since 8 years ago but had not previously been referred for further assessment and management,” said Consultant Endocrinologist, Diabetologist, and Physician of KPJ Ampang Puteri Specialist Hospital, Dr. Chooi Kheng Chiew.

“This patient had been having increasing thirst over the years, needing to drink more than 3 litres of fluid in a day, and he had been needing to go to the toilet at least once or twice every hour during the day.

“After a detailed assessment that included further blood tests, an ultrasound of the kidneys, and bone mineral density testing, he was found to have renal stones in both kidneys, chronic kidney disease, and he had also developed osteoporosis”.

He added that these complications could have been prevented had he received an earlier diagnosis and treatment of the cause of the hypercalcemia.

One of the common causes of hypercalcaemia is a condition called primary hyperparathyroidism, where there is overactivity of one or more of the parathyroid glands (pea-sized glands that are on or near the thyroid gland in the neck).

This leads to a raised level of parathyroid hormone (PTH), which can be tested with a blood sample.

The previous estimate for new patients being diagnosed every year with primary hyperparathyroidism used to be on the order of 1 to 10 per 100,000 people. However, this number has increased with the rise in health screening in recent years.

“The specific treatment for primary hyperparathyroidism will be decided after a discussion between the patient and the healthcare provider. Several factors will have a bearing on the modality of treatment, including the patient’s age, overall health status, and other medical problems, as well as the extent of the disease.

“The patient’s expectations regarding the course of the disease as well as personal preferences are also important to this decision. Surgery to remove the affected gland or glands may be needed”, said Dr. Chooi.

He also added that even though surgery is one of the options, it may not always be possible or recommended, especially if the patient is older and frail, and the risks of surgery may outweigh the potential benefits.

If surgery is not possible or not recommended, certain medical treatments may be recommended instead.

“If you suspect that you or your family members may have this condition, you may seek a consultation with an endocrinologist (a specialist who is trained to diagnose and treat hormone imbalances and problems).

“Earlier detection and treatment can prevent the development of complications and help the patient achieve a better outcome”, said Dr. Chooi.