



# Primary Hyperparathyroidism

## WHAT IS PRIMARY HYPERPARATHYROIDISM?

The body's parathyroid glands—four pea-sized glands in the neck—produce parathyroid hormone (PTH). Primary hyperparathyroidism (PHPT) is a condition in which an overactive parathyroid gland makes too much PTH.

PTH keeps calcium at a normal level in the blood, so it can do its job in the body. For instance, calcium helps nerves work properly and maintains a healthy blood pressure. When blood calcium gets low, PTH brings it back to normal by moving calcium from the bones, kidneys, and intestines into the blood.

Too much PTH causes more calcium to be released from the bones, and raises levels of calcium in the blood and urine above normal. Over time, this can result in osteoporosis (weak bones that break easily), kidney stones (small clumps of calcium), and a decline in kidney function.

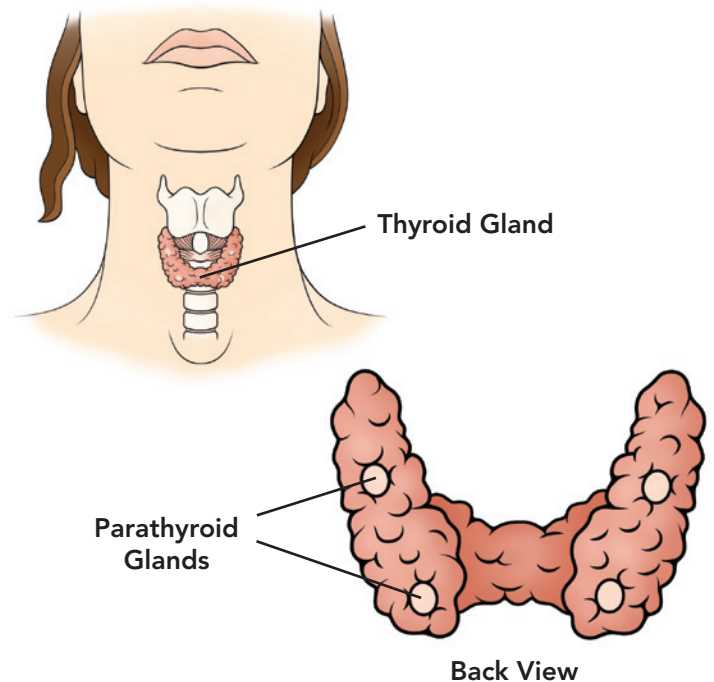
## DID YOU KNOW?

**Women are more likely than men to develop primary hyperparathyroidism, and the risk increases with age.**

## WHAT CAUSES PHPT?

The most common cause is a single noncancerous (benign) growth called an adenoma on one of the parathyroid glands. An adenoma causes the gland to become overactive and make more PTH.

Less often, all four parathyroid glands become enlarged and produce too much PTH. Sometimes PHPT results from radiation to the neck area or the use of certain medications (thiazide diuretics or lithium). In a small number of cases, people inherit a gene that leads to PHPT. Rarely, parathyroid cancer causes PHPT.



## SIGNS AND SYMPTOMS OF PHPT

Mild	Severe
<ul style="list-style-type: none"><li>• Fatigue (feeling very tired)</li><li>• Depression</li><li>• Anxiety</li><li>• General aches and pains</li><li>• Flank pain or blood in the urine from kidney stones</li></ul>	<ul style="list-style-type: none"><li>• Nausea and vomiting</li><li>• Bone pain</li><li>• Increased thirst and urination</li><li>• Constipation</li><li>• Forgetfulness</li><li>• Confusion</li></ul>

Some people have no symptoms (what you feel) at all. While most people with benign PHPT do not have severe symptoms, those with parathyroid cancer almost always do.

## HOW IS PHPT DIAGNOSED?

Health care providers most often diagnose PHPT with blood tests that detect high calcium and PTH levels. When PHPT is found, further tests may be done to check for complications, including

- Blood tests to check how well the kidneys are working
- A measure of calcium levels in urine to look at kidney function
- Imaging tests such as ultrasound or CT scan to look for kidney stones
- A blood test for vitamin D to see if a low vitamin D level is affecting PHPT
- A bone mineral density test called a DEXA scan—a type of X-ray that checks bone strength

In some cases, patients also receive testing for genetic forms of the condition.

## WHAT IS THE TREATMENT FOR PHPT?

The doctor chooses a treatment based on a patient's age, test results, and which signs or symptoms are present.

### Surgery

Surgical removal of adenomas or enlarged parathyroid glands is recommended for all patients under the age of 50, whether or not they have symptoms. This is because young people tend to develop more complications over time if they are untreated.

Surgery also is suggested for people with

- Osteoporosis or kidney stones
- High levels of blood calcium (above a certain level)
- Impaired kidney function

### Non-surgical treatment: checkups and medicines

For some patients without signs or symptoms, doctors recommend regular checkups instead of surgery. Tests should include blood calcium levels, blood tests to check kidney function, and checks of bone density.

A doctor may also prescribe medicines, including

- Calcimimetics. These drugs tell the body to make less PTH, helping to lower blood calcium levels.
- Bisphosphonates. These drugs help keep bones strong by keeping calcium in the bones.

Surgery is highly successful for people with PHPT and provides a cure. In those for whom surgery is not the best option, regular checkups and medicines can help control symptoms and reduce complications. Doctors continue to research the best ways to diagnose and treat PHPT.

## Questions to ask your doctor

- Do I have PHPT?
- If so, what caused my PHPT?
- Will I need surgery? What are my other treatment options?
- What are the benefits and risks of each treatment?
- Should I see an endocrinologist?

## RESOURCES

- Find-an-Endocrinologist: [www.hormone.org](http://www.hormone.org) or call 1-800-HORMONE (1-800-467-6663)
- Hormone Health Network information about high blood calcium or osteoporosis:
  - [www.hormone.org](http://www.hormone.org) (search for calcium or osteoporosis)
  - [www.hormone.org/Resources/upload/Bisphosphonates-Web.pdf](http://www.hormone.org/Resources/upload/Bisphosphonates-Web.pdf)
- National Endocrine and Metabolic Diseases Information Service (National Institutes of Health–NIH): [endocrine.niddk.nih.gov/pubs/hyper/index.aspx](http://endocrine.niddk.nih.gov/pubs/hyper/index.aspx)
- MedlinePlus (NIH): [www.medlineplus.gov](http://www.medlineplus.gov)
- Mayo Clinic information about PHPT: [www.mayoclinic.com/health/hyperparathyroidism/DS00396](http://www.mayoclinic.com/health/hyperparathyroidism/DS00396)

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The Hormone Health Network offers free, online resources based on the most advanced clinical and scientific knowledge from The Endocrine Society ([www.endo-society.org](http://www.endo-society.org)). The Network's goal is to move patients from educated to engaged, from informed to active partners in their health care. This fact sheet is also available in Spanish at [www.hormone.org/Spanish](http://www.hormone.org/Spanish).

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[www.hormone.org](http://www.hormone.org)