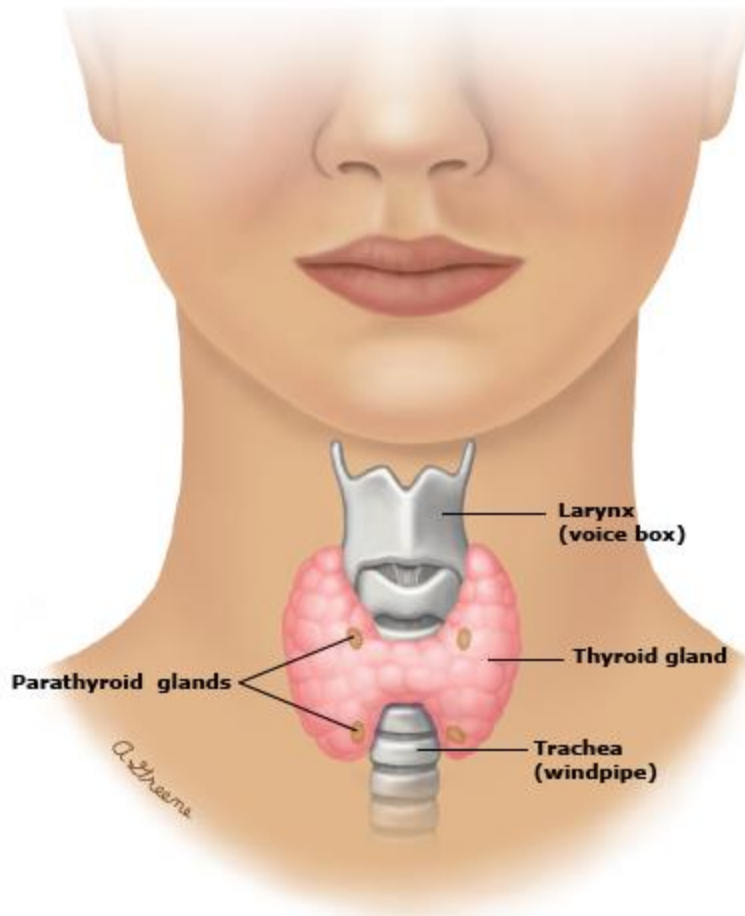


## What is primary hyperparathyroidism?

Primary hyperparathyroidism is a disorder of the parathyroid glands in your neck.



These glands make a hormone that helps control the amount of calcium in the blood. This hormone is called "parathyroid hormone," or "PTH."

Primary hyperparathyroidism is when your parathyroid glands make too much PTH. This can cause too much calcium to build up in your blood. It can happen when a gland develops an abnormal benign (non-cancer) growth. It can also happen when 1 or more of the glands grow bigger than they should. Parathyroid cancer is a very rare cause of primary hyperparathyroidism.

## What are the symptoms of primary hyperparathyroidism?

Most people with this condition have no symptoms. But some people do have symptoms that might be related to having more calcium in their blood than normal. These symptoms include:

- Pain in the joints
- Feeling tired or weak

- Loss of appetite
- Feeling depressed
- Trouble concentrating

If your PTH and blood calcium levels get very high, you might get constipated, feel very thirsty, or urinate more often than usual. Some people have more serious symptoms, such as:

- Problems with how the kidneys work
- Kidney stones
- Weak bones
- Gout (a kind of arthritis) or other problems in the joints
- Chemical imbalances in the blood

"Parathyroid crisis" is a rare but serious problem. It can happen if you have primary hyperparathyroidism and get sick with something that causes you to lose fluids (like vomiting or diarrhea). This causes the amounts of PTH and calcium in the blood to go up suddenly. If this happens, you might have belly pain, nausea, and sometimes problems thinking clearly and staying alert. It is important to see a doctor or nurse right away if you have primary hyperparathyroidism plus lasting vomiting or diarrhea, and can't keep fluids down.

**Is there a test for primary hyperparathyroidism?**

Yes. A doctor or nurse can do tests to measure the levels of PTH and calcium in your blood. Many people with primary hyperparathyroidism do not notice any symptoms. The condition is often found when a doctor or nurse does a blood test for some other reason.

If you have primary hyperparathyroidism, your doctor or nurse might do other tests, too. You will probably get a special kind of X-ray to see if your bones are weaker than normal. Plus, you might get checked for kidney stones.

**Is there anything I can do on my own to help my condition?**

Yes. Even if you do not have any symptoms, there are things you can do to help prevent problems:

- Drink plenty of liquids, and try not to get dehydrated. This can help to prevent kidney stones.
- Stay active. This can help keep your calcium levels normal and your bones healthy.
- Try to get about 1000 milligrams of calcium each day. These tables show how much calcium is in certain foods and vitamin supplements:

Food	Calcium in milligrams
Milk (skim, 2%, or whole; 8 oz [240 mL])	300

Yogurt (6 oz [168 g])	250
Orange juice (with calcium; 8 oz [240 mL])	300
Tofu with calcium (0.5 cup [113 g])	435
Cheese (1 oz [28 g])	195 to 335 (hard cheese = higher calcium)
Cottage cheese (0.5 cup [113 g])	130
Ice cream or frozen yogurt (0.5 cup [113 g])	100
Soy milk (8 oz [240 mL])	300
Beans (0.5 cup cooked [113 g])	60 to 80
Dark, leafy green vegetables (0.5 cup cooked [113 g])	50 to 135
Almonds (24 whole)	70
Orange (1 medium)	60

#### Elemental calcium content per pill of different calcium supplements

	Elemental Ca/tablet	Ca compound	Vitamin D
<b>Caltrate 600 + D3</b>	600 mg	Carbonate	800 units
<b>Caltrate 600 + D3 Soft Chews</b>	600 mg	Carbonate	800 units
<b>Caltrate Gummy Bites</b>	250 mg	Tribasic calcium phosphate	400 units
<b>Caltrate 600 + D3 Plus Minerals Chewables</b>	600 mg	Carbonate	800 units
<b>Caltrate 600 + D3 Plus Minerals Minis</b>	300 mg	Carbonate	800 units
<b>Citracal Petites</b>	200 mg	Citrate	250 units

<b>Citracal Maximum</b>	315 mg	Citrate	250 units
<b>Citracal Plus Magnesium &amp; Minerals</b>	250 mg	Citrate	125 units
<b>Citracal + D Slow Release</b>	600 mg	Citrate + carbonate blend	500 units
<b>Citracal Calcium Gummies</b>	250 mg	Tricalcium phosphate	500 units
<b>Citracal Calcium Pearls</b>	200 mg	Carbonate	500 units
<b>Os-Cal Calcium + D3</b>	500 mg	Carbonate	200 units
<b>Os-Cal Extra + D3</b>	500 mg	Carbonate	600 units
<b>Os-Cal Ultra</b>	600 mg	Carbonate	500 units
<b>Os-Cal Chewable</b>	500 mg	Carbonate	600 units
<b>Tums</b>	200 mg	Carbonate	–
<b>Tums Extra Strength</b>	300 mg	Carbonate	–
<b>Tums Ultra Strength</b>	400 mg	Carbonate	–
<b>Tums Chewy Delights</b>	400 mg	Carbonate	–
<b>Viactiv Calcium plus D + K</b>	500 mg	Carbonate	500 units (or 1000 units in sugar-free)

It is better to get your calcium from foods and drinks rather than supplements. But if you aren't getting enough calcium from the foods you eat, you might need a supplement. Your doctor will let you know.

- Try to get about 400 to 600 international units (IU) of vitamin D each day ([table 3](#)). This is the same as 10 to 15 micrograms of vitamin D. Not having enough vitamin D can weaken your bones.
- Do not take certain medicines that can affect the amount of calcium in the blood. Your doctor or nurse can tell you which medicines to avoid.

Even if you feel healthy, your doctor or nurse should still check your blood calcium every 6 months. He or she will also do regular tests to check your kidneys and bones. (People whose bones are weakened because of their condition can get medicines to help protect their bones.)

**How is primary hyperparathyroidism treated?**The main treatment is surgery to remove the gland or glands that are causing the problem. In most cases, surgery cures the condition. Still, people who have no symptoms do not always need surgery.

You will most likely need surgery if:

- The amount of calcium in your blood is much higher than normal
- Your primary hyperparathyroidism is causing problems with your kidneys or bones
- You are younger than 50
- You are not able to get regular checkups and tests

### **What is hypoparathyroidism?**

Hypoparathyroidism is a rare condition of the parathyroid glands in your neck. These glands make a hormone that helps control the amount of calcium in the blood. The hormone is called "parathyroid hormone," or "PTH."

You get hypoparathyroidism when you have too little PTH in your body. This causes the levels of calcium in your blood to get too low.

Neck surgery on the thyroid or parathyroid glands or major surgery for head and neck cancer is the most common cause of hypoparathyroidism. After this surgery, some people have hypoparathyroidism that lasts only a short time. Other people have hypoparathyroidism for the rest of their lives, but this is less common. Other conditions can also cause hypoparathyroidism.

### **What are the symptoms of hypoparathyroidism?**

The symptoms are different depending on the cause of hypoparathyroidism.

People who develop hypoparathyroidism after neck surgery can have the following symptoms:

- Tingling in the hands or feet, or around the mouth
- Unusual muscle movements, such as jerking, twitching, or spasms
- Muscle cramps
- Feeling tired, irritable, anxious, or depressed

People with long-lasting hypoparathyroidism caused by other medical conditions can have:

- Eye problems, especially cataracts
- Dry, thick skin

- Coarse hair that breaks easily and can fall out, causing bald spots
- Fingernails that break easily, with ridges that go from left to right

### **Is there a test for hypoparathyroidism?**

Yes. A doctor or nurse should be able to tell if you have hypoparathyroidism by doing blood tests to measure your calcium and PTH levels. They might also test the levels of other minerals and vitamin D in your blood. You might have tests to measure calcium and magnesium levels in your urine.

### **How is hypoparathyroidism treated?**

Taking calcium and vitamin D supplements is the main treatment for hypoparathyroidism. Your doctor might also give you medicines, such as diuretics (water pills) to prevent too much calcium from leaving your body in your urine.

When you start taking supplements, your doctor or nurse will test your blood and urine every week. The tests will show if your calcium level is coming back to normal. Your doctor or nurse can also check that the supplements are not causing other health problems. When your calcium level is normal again, you only need blood and urine tests every 3 to 6 months.

If you have permanent hypoparathyroidism, you will need to take supplements for life. If your parathyroid glands stop working for a short time, such as after surgery, you might only need treatment until the glands start working again.

If you have permanent hypoparathyroidism and supplements are not enough to keep your calcium levels up, your doctor might give you another medicine, too. This is called "parathyroid hormone" and is given as a shot once or twice each day. It is very expensive.

### **What if I want to get pregnant?**

If you want to get pregnant, talk to your doctor, nurse, or midwife about your hypoparathyroidism. They will measure your levels of calcium, PTH, and vitamin D while you are pregnant and after you give birth. Testing is especially important in the later months of pregnancy and while you are nursing your baby. Your doctor, nurse, or midwife can help you get the right supplements and any medicines you need to have a healthy baby.

### **What will my life be like?**

Most people with hypoparathyroidism are able to live normal lives. If your doctor or nurse gives you supplements or medicines, take them the way they tell you to. Make sure you get any tests you need on time. If you have questions, ask your doctor or nurse. They will watch for problems and treat them if they happen.