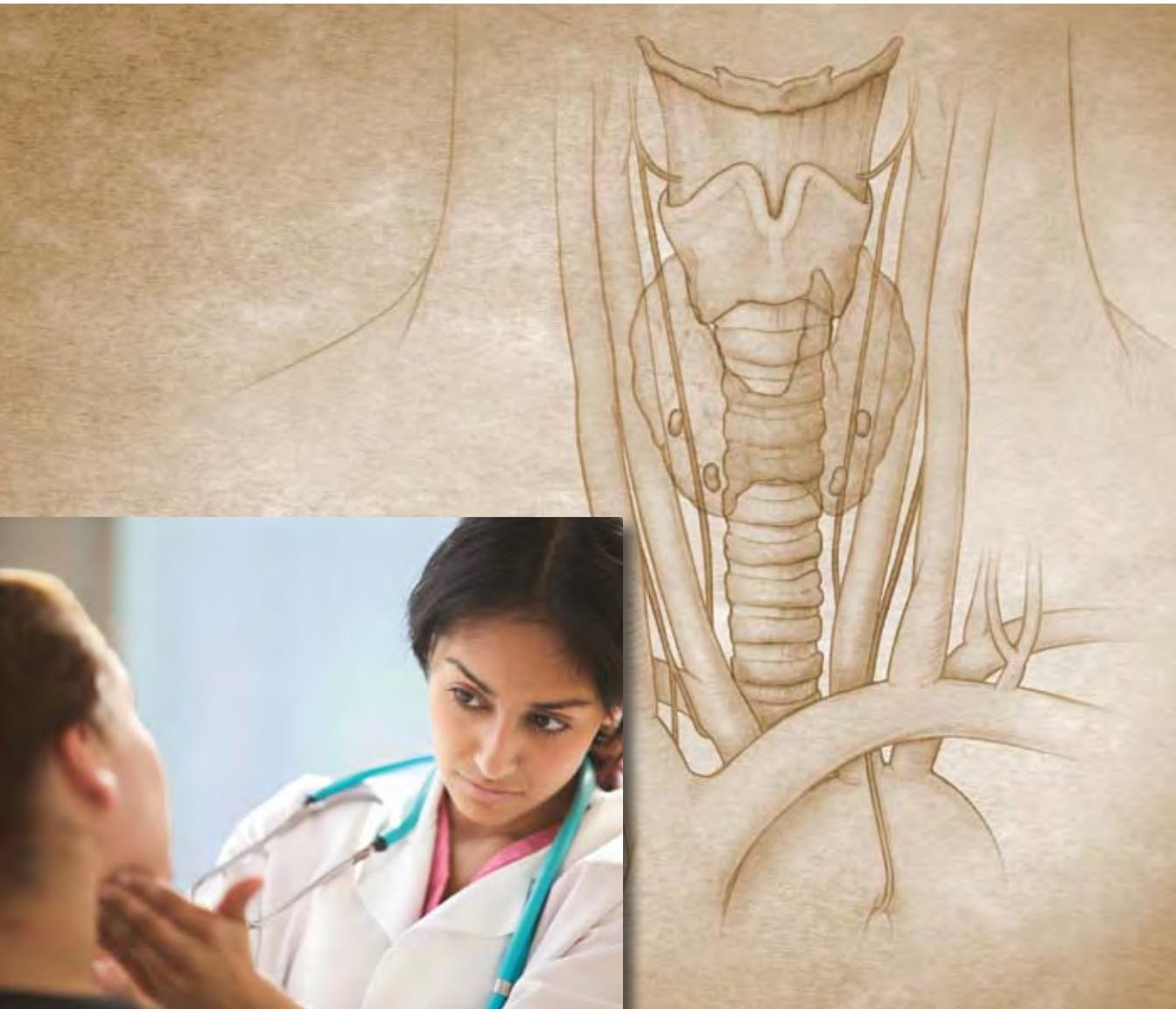


Parathyroidectomy

Surgery for Parathyroid Problems



Why You Need Parathyroid Surgery

Has your doctor just recommended that you have parathyroid surgery? If so, you likely have many questions. What are the parathyroid glands? And why is surgery needed? Read on to learn more about parathyroid surgery.

A Problem with the Parathyroid Glands

The parathyroid glands are four tiny glands located in the neck. These glands control the level of calcium in the blood. The most common problem that affects the parathyroid glands is called **hyperparathyroidism**. This occurs when one or more of the glands is too active, causing a high blood calcium level. Hyperparathyroidism can lead to serious health problems throughout the body, but it can be treated.

What Causes Hyperparathyroidism?

Hyperparathyroidism most often occurs when one parathyroid gland becomes enlarged. This is almost always because of a benign (noncancerous) growth called an **adenoma**. In some cases, more than one parathyroid gland becomes enlarged.

Risk Factors for Hyperparathyroidism

Anyone can get hyperparathyroidism. It is more common in women than men. The chance of developing hyperparathyroidism also increases with age. Some factors make the problem more likely. These are known as **risk factors**. Risk factors for hyperparathyroidism include:

- Having parents or siblings with hyperparathyroidism
- Getting too little vitamin D in the diet
- Having certain kidney problems
- Taking certain medications
- Having had radiation to the head or neck

Symptoms of Hyperparathyroidism

Most people with hyperparathyroidism don't know they have it. This is because symptoms of this problem can be very mild or are very similar to those of other health problems. Hyperparathyroidism can cause any of the symptoms below:

- Muscle weakness
- Depression
- Tiredness
- Poor memory
- Nausea and vomiting
- Pain in the stomach area (abdomen)
- Hard stools (constipation)
- Stomach ulcers
- Needing to urinate often
- Kidney stones
- Joint or bone pain
- Bone disease (osteopenia or osteoporosis)

What You Can Do

If hyperparathyroidism is not treated, it may get worse over time. Treatment is surgery to remove any enlarged parathyroid glands. This helps restore the level of calcium in the blood to normal. Your doctor will discuss your condition with you and explain the risks and benefits of surgery.



The Parathyroid Glands Versus the Thyroid Gland

The parathyroid glands and the thyroid gland are next to each other in the neck. They sound similar in name, but they have different jobs in the body. If there is a problem with the parathyroid glands, it does not mean that there is a problem with the thyroid gland. The reverse is also true.

Understanding the Parathyroid Glands

The parathyroid glands are usually no bigger than grains of rice. Their main job is to keep the level of calcium in the blood within a certain range. Keeping a normal level of calcium helps the muscles and nerves work properly and also keeps bones strong. When there is a problem with the parathyroid glands, the blood calcium level may get too high. This has effects throughout the body.

The Parathyroid Glands

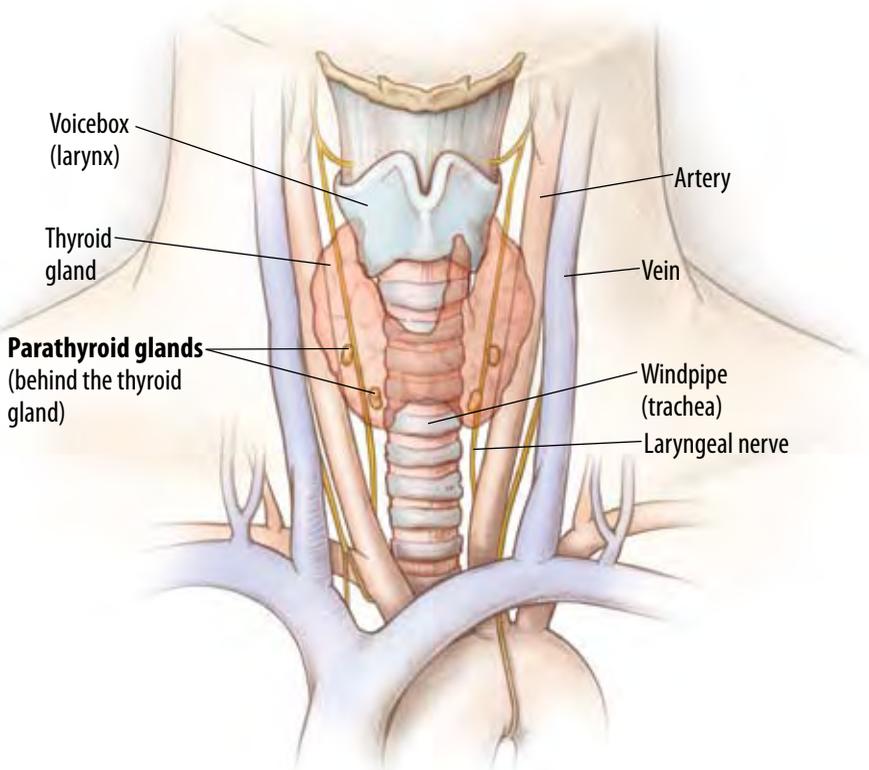
The parathyroid glands are most often found behind the thyroid gland in the neck. The exact locations can vary with each person. The parathyroid glands control the level of calcium in the blood. They do this by making **parathyroid hormone (PTH)**. This is a chemical messenger that tells the body how to control calcium.

How These Glands Work

When the blood calcium level is low, the glands make more PTH. This tells the body to increase the amount of calcium in the blood. To increase the blood calcium level, the body may absorb more calcium from food in the intestines. It may also take calcium from the bones. When the blood calcium level is high, the glands make less PTH. This tells the body to decrease the amount of calcium in the blood. To decrease the blood calcium level, calcium is filtered out of the blood by the kidneys.



Normal parathyroid glands
(behind thyroid gland)

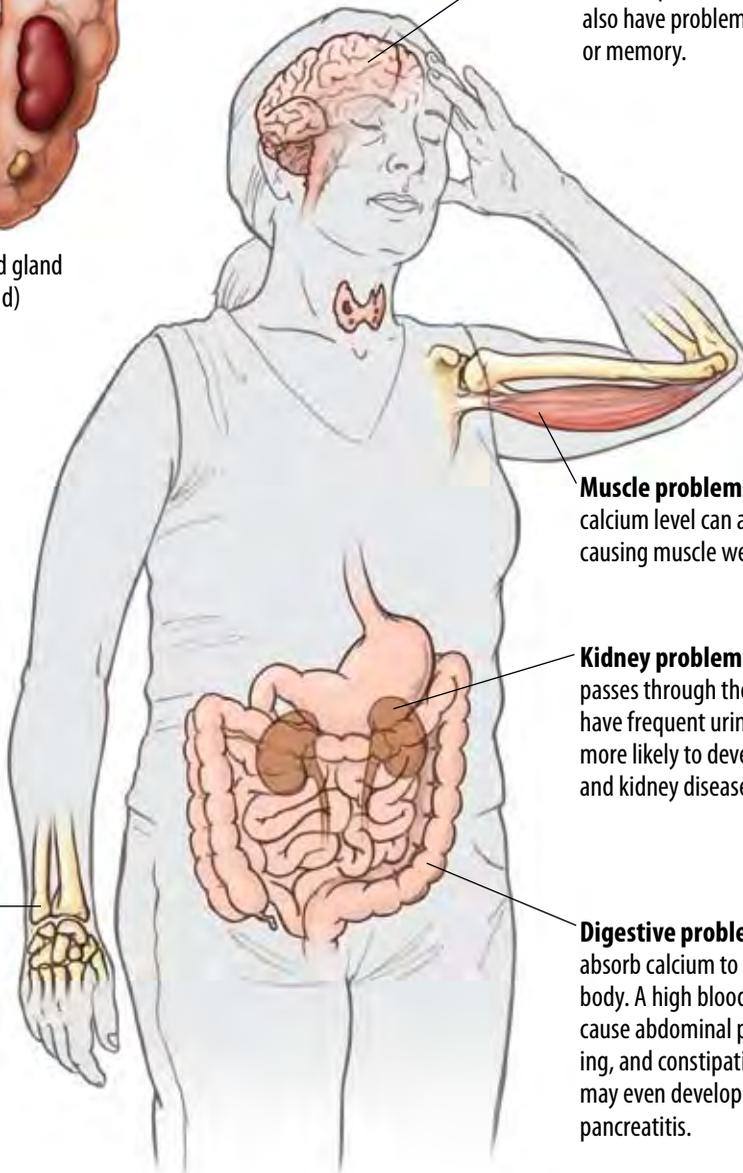


When You Have Hyperparathyroidism

With hyperparathyroidism, one or more of the parathyroid glands become larger. It then makes too much PTH. As a result, the body continues to increase the level of calcium in the blood. This causes a condition called **hypercalcemia** (an above-normal level of blood calcium). Hypercalcemia can lead to a number of problems throughout the body.



Enlarged parathyroid gland (behind thyroid gland)



Nervous system problems. A high blood calcium level can make you feel tired, depressed, or irritable. You may also have problems with concentration or memory.

Muscle problems. A high blood calcium level can affect the muscles, causing muscle weakness and pain.

Kidney problems. As extra calcium passes through the kidneys, you may have frequent urination. And, you're more likely to develop kidney stones and kidney disease.

Bone and joint problems.

To increase blood calcium, calcium may be taken from bones. This can cause bone pain and make fractures and bone disease more likely.

Digestive problems. The intestines absorb calcium to be used by the body. A high blood calcium level can cause abdominal pain, nausea, vomiting, and constipation. Over time, you may even develop stomach ulcers or pancreatitis.

Your Evaluation

To learn more about your condition, your doctor will evaluate you. A thorough medical history is taken and you are examined. Some tests may also be done. This evaluation gives your doctor information needed to plan your surgery.

Medical History and Physical Exam

During the medical history, you'll be asked about your risk factors and symptoms. Be sure to describe any symptoms you have, even if they seem minor. Also mention other medical problems you have or have had in the past. You may be asked about the foods you eat and medications you take. During the physical exam, your doctor will check your head and neck. Other parts of the body may also be examined to rule out other conditions.

Diagnostic Tests

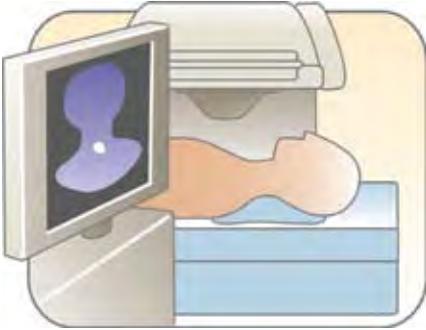
Certain tests are done to check for hyperparathyroidism and the risk of related health problems, such as kidney and bone disease. Tests may include:

- **Blood tests.** Samples of blood are drawn from a vein. These are checked for high levels of calcium and PTH. The levels of vitamin D, magnesium, alkaline phosphatase, and phosphorus may also be checked.
- **Urine tests.** Samples of urine are taken over a 24-hour period. These are checked for high levels of calcium and problems with the kidneys.
- **Bone density study.** Scans of the hip, lower back, or forearm are taken. This test measures the amount of calcium in the bones to check bone health.



Imaging Tests

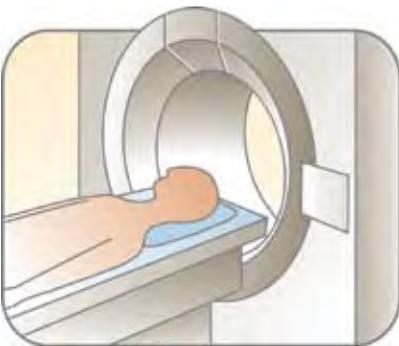
Imaging tests may be done to help the doctor find the parathyroid glands and see which are enlarged. Each test is usually performed by a doctor or a trained technologist. In some cases, enlarged parathyroid glands can't be seen on imaging tests.



A sestamibi scan is used to find any enlarged parathyroid glands. The test can take up to 3 to 4 hours. During the test, a safe radioactive fluid is injected into the veins. This fluid helps make enlarged parathyroid glands show up clearly when a special camera is used.



An ultrasound can also be used to find enlarged parathyroid glands. Normal glands are too small to be seen, but enlarged parathyroid glands will usually be visible. During this quick test, harmless sound waves are used to form pictures of the parathyroid glands. The pictures are then viewed on a computer screen.



A CT (computed tomography) scan combines x-rays and computer processing technology to form pictures. An **MRI (magnetic resonance imaging) scan** uses magnets and radio waves to form pictures. These tests are done less often, but they can also be used to locate enlarged parathyroid glands.

Your Surgery

Enlarged parathyroid glands are removed with surgery. Your doctor can tell you more about this surgery and what to expect. Once you and your doctor schedule surgery, you'll be told how to prepare. Follow all instructions. Also, be sure to ask any questions you have.

Preparing for Surgery

To prepare for surgery, you may need to:

- Have various tests to make sure you're healthy enough for surgery.
- Tell your doctor of any medications you're taking, including vitamins and supplements. You may need to stop taking certain medications, such as aspirin or ibuprofen, a week or two before surgery.
- Have nothing to eat or drink for 6 to 8 hours before surgery. The doctor will give you specific instructions in advance.
- Arrange for an adult family member or friend to give you a ride home after surgery.

The Day of Surgery

Arrive for surgery on time. Before going to surgery:

- You'll need to register. This may be done ahead of time during an earlier visit, online, or over the phone. Be prepared to fill out forms. Have identification and insurance information ready.
- You'll change into a hospital gown.
- An IV (intravenous) line will be placed in a vein in your arm or hand. This is used to give fluids and medications.
- Medication used to keep you free from pain during surgery is called **anesthesia**. Before surgery, an anesthesiologist or nurse anesthetist (doctor or nurse trained to give anesthesia) will discuss with you what type you'll receive.

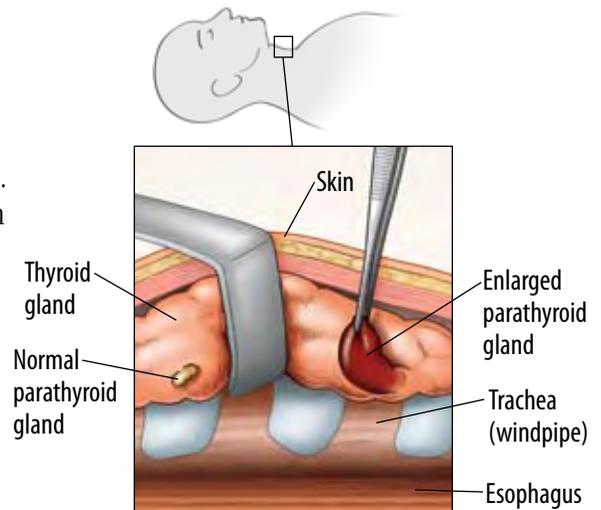


During Surgery

You may need one or more parathyroid glands removed. The decision about how many glands to remove is often made during surgery. Be sure to ask your doctor for more information, if you have specific questions.

Removing the Glands

- An incision is made in the neck.
- The enlarged parathyroid gland or glands are found and removed. This should return the level of calcium in the blood to normal.
- In some cases, all four glands are enlarged. When this happens, three and a half of the glands may be removed. The remaining half gland often makes enough hormone to replace four normal glands. In rare cases, all of the glands are removed. Parts of one gland are then placed in another location in the body, usually in the neck or arm. This is called a **parathyroid autotransplantation**. The moved gland continues to work from this new location.
- When surgery is complete, the incision is closed with sutures (stitches), strips of surgical tape, or surgical glue.



During surgery, an incision is made in the neck. Then, any enlarged parathyroid glands are removed.

Risk and Complications

Your doctor will discuss the risks and possible complications of surgery with you. These include:

- Injury to laryngeal nerves
- Failure to locate the enlarged gland or glands, requiring more surgery
- Bleeding
- Infection
- Reaction to anesthesia
- Thyroid gland complications

Your Recovery

Recovery from parathyroid surgery is usually quick. You may go home on the day of surgery or you may need to stay overnight. Once you're ready to go home, you'll be given instructions for how to care for yourself. Follow these instructions carefully. See your doctor for follow-up visits to be sure your recovery goes smoothly.



Right After Surgery

You can expect the following after surgery:

- You'll be taken to a recovery area to rest. Here, your blood pressure, heart rate, and breathing are carefully monitored.
- Your incision may be covered with a dressing or bandage. The incision site is checked often for bleeding or other problems.
- You'll receive pain medication as needed to keep you comfortable.
- You'll gradually be given food and drink.
- Your blood calcium and PTH levels may be tested.

Taking Supplements

It will take time for your body to adjust after the removal of any parathyroid glands. To maintain a normal level of calcium in the blood, you may be told to start taking calcium supplements in the hospital. You'll continue these at home for as long as needed. Your doctor may also prescribe vitamin D supplements. These can help your body absorb calcium. Take all supplements exactly as directed.

Recovery at Home

You may feel tired and have some soreness and stiffness in your neck. Also, a sore throat is common and may last for a few days after surgery. Take care of your incision and ease back into your normal routine as instructed by your doctor.

Caring for Your Incision

Proper care for your incision can speed healing. You may need to see your doctor after surgery to have any stitches removed. Be sure to keep your incision clean and dry. Check with your doctor first before applying any creams or ointments to the incision.

Easing Back into Activity

You can get back to your normal routine as soon as you feel comfortable. Walking is fine, but avoid any heavy lifting or strenuous exercise for a few weeks. Your doctor may advise you to wait a week before driving. Return to work when you feel ready. For most people, this takes at least a few days.

When to Call Your Doctor

Call your doctor if you notice any of the following during your recovery:

- Numbness or tingling in the fingertips or around the mouth
- Muscle cramping or spasms
- Neck swelling
- Fever over 100.4°F (38°C)
- Increasing redness, swelling, or drainage at the incision site
- Nausea or vomiting
- Hoarse voice that worsens
- Trouble breathing
- Trouble swallowing
- Irregular heartbeat



Follow-up Care

Keep all follow-up appointments. Your doctor will discuss the surgery results with you and let you know when you're fully recovered. Blood tests are often done to check if your blood calcium level has returned to normal. If you had symptoms such as bone or kidney problems, these may be treated. Your doctor will give you more information, if needed. Your doctor may also recommend that you have your blood calcium level checked yearly.

Feeling Better

Surgery can correct your parathyroid problem and help keep your body working normally. After surgery, you may notice that you feel more energetic and alert. If you have lost bone, the great news is that you can make up for lost ground. You can take steps to restore the calcium in your bones and keep them strong and healthy.



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