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## Hyperparathyroidism

Janet M. Torpy; Cassio Lynm; Richard M. Glass

*JAMA*. 2005;293(14):1818 (doi:10.1001/jama.293.14.1818)

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# Hyperparathyroidism

The 4 parathyroid glands are located next to the thyroid gland in the lower front part of the neck. Although they are close to the thyroid gland, the parathyroid glands function independently from the thyroid. The parathyroid glands make a substance called **parathyroid hormone (PTH)**, which regulates the level of calcium in the blood. By helping the body absorb calcium from food, PTH maintains a healthful level of calcium for strong bone function. Also, PTH helps to control the amount of calcium that is released from bones and then excreted in urine. When the parathyroid glands make too much PTH, a condition called **primary hyperparathyroidism** exists, causing abnormally high levels of calcium in the blood. Hyperparathyroidism can also occur as a result of other medical problems, such as kidney disease, and is then called **secondary hyperparathyroidism**. The April 13, 2005, issue of *JAMA* includes an article about primary hyperparathyroidism.

## DIAGNOSIS

Because hyperparathyroidism often begins without symptoms, it may be diagnosed by high calcium levels on a routine blood test. Confirmation of high levels of PTH in the blood establishes the diagnosis of hyperparathyroidism. Sometimes x-ray examination of the abdomen shows kidney stones caused by the high calcium levels. Bone density tests may be performed to indicate the extent of calcium loss from the bones.

## RISK FACTORS FOR HYPERPARATHYROIDISM

- Female sex
- Age older than 60 years
- **Multiple endocrine neoplasia** (an inherited condition involving the endocrine glands, including the parathyroid glands)
- Kidney failure (risk factor for secondary hyperparathyroidism)

## SYMPTOMS OF HYPERPARATHYROIDISM

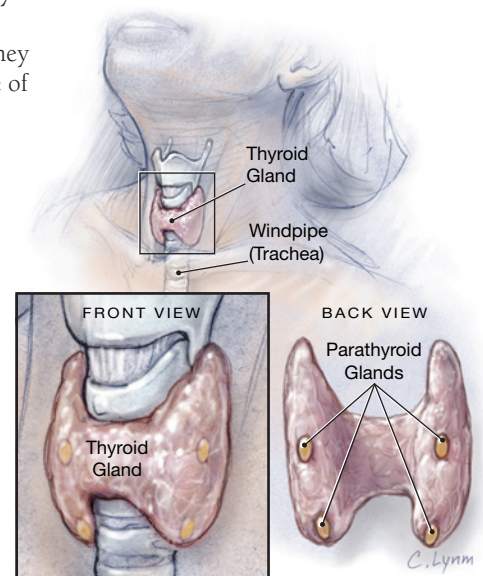
- Fatigue
- Depression
- Memory problems
- Abdominal pain
- Pain in other areas of the body
- Constipation

## COMPLICATIONS

- Kidney stones
- High blood pressure
- **Osteoporosis** (thin bones)
- Fractures of weak bones

## TREATMENT

Surgery is the usual treatment for primary hyperparathyroidism. The glands are surgically removed (**parathyroidectomy**) through a small incision in the neck. The most common complications of this surgery are damage to the nerve supplying the vocal cords (causing hoarseness or voice loss) and low blood levels of calcium (**hypocalcemia**). Hypocalcemia following surgery can be treated with medication and often resolves in a few months after the operation. If an individual does not have any symptoms from hyperparathyroidism, close monitoring of blood calcium levels may be chosen for treatment instead of surgery. This monitoring includes checking blood calcium levels and examinations by a doctor looking for possible complications of hyperparathyroidism. Bone density tests may be used to follow progression of hyperparathyroidism.



## FOR MORE INFORMATION

- National Institute of Diabetes and Digestive and Kidney Diseases  
[www.niddk.nih.gov](http://www.niddk.nih.gov)
- Thyroid Foundation of America  
800/832-8321  
[www.tsh.org](http://www.tsh.org)

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Source: National Institute of Diabetes and Digestive and Kidney Diseases

Janet M. Torpy, MD, Writer

Cassio Lynn, MA, Illustrator

Richard M. Glass, MD, Editor

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