

Hyperprolactinemia Diagnosis and Treatment

A PATIENT'S GUIDE

Hyperprolactinemia is the name for higher-than-normal blood levels of the hormone prolactin. This hormone is made by the pituitary gland, which is located at the base of the brain. The main function of prolactin is to stimulate breast milk production after childbirth. High prolactin levels are normal during pregnancy and breastfeeding.

In other cases, prolactin can become too high because of a disease or the use of certain medications. Often, the cause is a prolactin-making tumor on the pituitary gland, called a *prolactinoma*. This tumor is almost always benign, meaning not cancerous. It is more common in women than men. Rarely, children and adolescents develop prolactinomas. Other brain tumors may also cause the pituitary gland to make too much prolactin.

Prolactin lowers levels of sex hormones (estrogen and testosterone) in both men and women. Too much prolactin and the resulting drop in estrogen or testosterone can lead to sexual and menstrual dysfunction.

This guide for patients is based on The Endocrine Society's practice guidelines for physicians about the diagnosis and treatment of hyperprolactinemia.

What are the effects of hyperprolactinemia?

Both men and women with high prolactin levels may have infertility, low sex drive, and bone loss. Also, women may have:

- No menstrual periods or irregular periods
- Vaginal dryness, making sex painful
- Breast discharge when not pregnant or nursing
- Adolescent girls may also have menstrual problems and breast discharge.

Men may have:

- Erectile dysfunction—trouble getting or keeping an erection
- Decreased body hair and muscle mass

Boys may have delayed puberty and low testosterone levels.

Someone with a large prolactinoma may have headaches and/or vision problems. This is because the optic nerve, which is needed for sight, is near the pituitary gland and may be injured by a large tumor.

Some people with hyperprolactinemia have no symptoms.



How is this condition diagnosed?

Doctors detect excess prolactin with a blood test that measures the prolactin level. Most often, a single blood test is all that is needed. For most patients, a level below 25 Qg/L (micrograms per liter) is normal, and above 25 is too high. A prolactin level above 250 Qg/L most often indicates a prolactinoma. However, some drugs can cause levels to be that high.

Your doctor will do other tests to look for the cause of excess prolactin. One cause is an underactive thyroid (*hypothyroidism*), so you may have a blood test to check your thyroid hormone levels. If the doctor thinks you may have a prolactinoma or other pituitary tumor, you likely will get an MRI (magnetic resonance imaging) scan of the brain and pituitary.

If you are a woman of childbearing age, your doctor will rule out pregnancy as a cause of elevated prolactin.

Your medical history also is important in the diagnosis. Your doctor will ask if you have kidney or liver disease, which can cause high prolactin levels.

Also, be prepared to tell your doctor which medicines you take. Some prescription medicines can raise prolactin levels. These include estrogen, opiate painkillers, metoclopramide to treat heartburn or gastroesophageal reflux, and antipsychotics for serious mental illness. Also, some medicines used to treat high blood pressure, depression, and ulcers can increase prolactin levels.

What is the treatment?

People with high prolactin levels who have few or no symptoms may not need treatment. For bothersome symptoms or other problems due to hyperprolactinemia, the type of treatment depends on the cause.

Prolactinoma. The first step in treating this tumor is a prescription medicine that lowers prolactin production and decreases tumor size. The drug most often used is cabergoline, but bromocriptine is another option. Both medications work well for most people with prolactinomas.

After at least 2 years of treatment, if you no longer have the tumor and high prolactin levels, you may be able to slowly lower the dose or even stop taking the medicine. Ask your doctor if this is possible. Because the tumor may grow back once you stop treatment, you will need to return to the doctor for check-ups and tests. Your doctor will tell you how often you need follow-up.

In some patients, the standard dose of medicine does not lower prolactin or shrink the tumor. Should this occur, you will get a higher dose of the medicine. If medicine is not effective or you have troublesome side effects, you may need surgery to remove the tumor.

Rarely, neither medicine nor surgery works. In that case, radiation treatment may be an option to shrink the tumor. Radiation also may be used to shrink a prolactinoma if it is aggressive (growing and spreading quickly) or in the rare cases when it is malignant (cancerous).

Medicine-induced hyperprolactinemia. If your physician thinks a medication you are taking has caused the excess prolactin, the doctor may tell you to stop taking that medicine for at least 3 days. Do not stop taking your medicine unless your doctor instructs you to do so. After a time off the medicine, your doctor will order another blood test for prolactin, to see if the levels have returned to normal. If you cannot be off your medicine, your doctor will give you a similar drug that does not raise prolactin levels.

When no good substitute drug is available, your doctor may give you cabergoline or bromocriptine to lower prolactin production. Or, if you have infertility, low sex drive, and low bone mass, you may receive treatment with estrogen (for women) or testosterone (for men).

Hypothyroidism. An underactive thyroid most often needs treatment with synthetic (laboratory-made) thyroid hormone. Most often this treatment needs to be lifelong.

Idiopathic hyperprolactinemia.

Sometimes doctors cannot find a cause for hyperprolactinemia. This is called *idiopathic*. In some patients with idiopathic hyperprolactinemia, the high prolactin levels return to normal on their own. If this does not happen within a few months, symptomatic patients often receive treatment with cabergoline or bromocriptine.



What is the treatment of prolactinoma during pregnancy?

Sometimes women who have a prolactinoma become pregnant during treatment. These women may need special treatment to ensure their baby's good health. The guidelines for physicians recommend the following for pregnant women with this tumor:

- As soon as you know you are pregnant, it is usually best to stop taking cabergoline or bromocriptine. Do not stop taking the medicine unless your endocrinologist tells you to, however.
- Your doctor may want you to stay on treatment if you have a large prolactinoma that is harming, or could harm, your vision. If you must continue treatment, bromocriptine is the preferred drug for pregnant women.
- There is no need to get prolactin blood tests while you are pregnant. Prolactin levels are normally high during pregnancy.
- Unless a prolactinoma is growing or affecting your vision, you will not need routine MRIs during your pregnancy.

These general recommendations apply to most pregnant women. Talk to your doctor about what is best for you and your baby.

EDITORS

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Note to health care professionals: This patient guide is based on, and is intended to be used in conjunction with, the Endocrine Society's clinical practice guidelines (available at www.endocrine.org/guidelines/index.cfm).