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# Hormone Therapy for Prostate Cancer

Androgens, like testosterone, are male hormones. They're made in the testicles. Prostate cancer cells need androgens to grow. Reducing the amount of androgens in the body or blocking prostate cancer cells from using them can help treat prostate cancer. You may hear this called androgen deprivation therapy, or ADT. This treatment can shrink tumors or help keep them from growing. It does not cure prostate cancer, but it can help control it.

Hormone therapy may be used alone. Or, it might be used with other treatments, like radiation therapy or chemotherapy. It may be used nonstop (continuous ADT), or in cycles (intermittent ADT). You'll work with your healthcare provider to decide what's best for you.

## How the therapy is done

Hormone therapy can be done in many ways, such as:

- **LHRH (luteinizing hormone-releasing hormone) agonists.** These are medicines that lower the amount of hormones made by the testicles. They're given as shots or as small implants that are put just under the skin (often on the inside of the arm). This is done from once a month to once a year. The implants put out a steady dose of medicine over time. When starting an LHRH agonist, there's a brief spike in the testosterone level. This is called a flare. Depending on where the cancer is, it can cause pain and other problems. Because of this, when LHRH agonists are started, anti-androgens (see below) might also be given for the first few weeks.
- **LHRH (luteinizing hormone-releasing hormone) antagonists.** These medicines work like the LHRH agonists, but they don't cause a spike in testosterone and tumor flare. An LHRH antagonist can be taken as a pill every day or given as a shot once a month.
- **Anti-androgens.** These medicines block the receptors on cancer cells so they can't attach to androgens as a way to grow. These come as pills that are taken every day. They're most often used along with other forms of hormone therapy.
- **CYP17 inhibitors.** These medicines stop the prostate cancer cells themselves, as well as other cells in the body, from making androgens. They're taken as pills. They're most often used along with other forms of hormone therapy, which are needed to keep the testicles from making androgens.
- **Other medicines.** These may include estrogens or other medicines (like ketoconazole) that help lower the levels of androgens in the body. They are used much less often than the medicines listed above.
- **Bilateral orchiectomy.** This is surgery to remove both the testicles. This stops the body from making most androgens. Artificial (prosthetic) testicles can be put in the scrotum to give the look of real testicles.

## Possible side effects

Side effects are much the same for most kinds of hormone therapy for prostate cancer. Still, they can vary a bit between medicines.

Possible side effects include:

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- Bone thinning (osteoporosis) and higher risk of breaking a bone
  - Breast tenderness or growth of breast tissue
  - Decrease in size of penis and testicles
  - Diarrhea
  - Problems getting or keeping an erection (erectile dysfunction)
  - Possible increased risk for heart disease, stroke, and diabetes
  - Less interest in sex
  - Loss of muscle mass and strength
  - Low red blood cell count (anemia)
  - Mood changes, such as depression, irritability, or anxiety
  - Nausea
  - Sudden increases in body heat (hot flashes)
  - Tiredness
  - Trouble with memory and concentration
  - Weight gain
  - Increased cholesterol levels
  - Muscle and joint pain

## **Coping with side effects**

Some of the side effects are short-term. Others are long-lasting. It depends on the type of hormone therapy used and how it affects your body. Your healthcare provider can tell you more.

To help cope with side effects, try the tips below.

- Talk with your healthcare provider about any side effects that you notice. You may be given medicines that can help you feel better and reduce problems.
- If you have hot flashes, don't take hot showers. Don't use hot tubs or saunas.
- Get regular physical activity.
- Eat a healthy diet.
- Stay mentally active.
- Work with your partner to manage sexual changes.
- Try counseling or support groups.

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## Follow-up care

During the course of your treatment, you'll have regular visits with your healthcare provider. You may also need tests, like blood tests or DEXA scans to check for osteoporosis. These help your healthcare provider watch for side effects and see how well treatment is working. You and your healthcare provider will discuss the test results, as well as any side effects that you have. You'll also discuss whether you need other cancer treatments.

## To learn more

For more information about cancer and treatment, visit the websites listed below:

- [American Cancer Society](#)
- [National Cancer Institute](#)
- [Malecare](#)