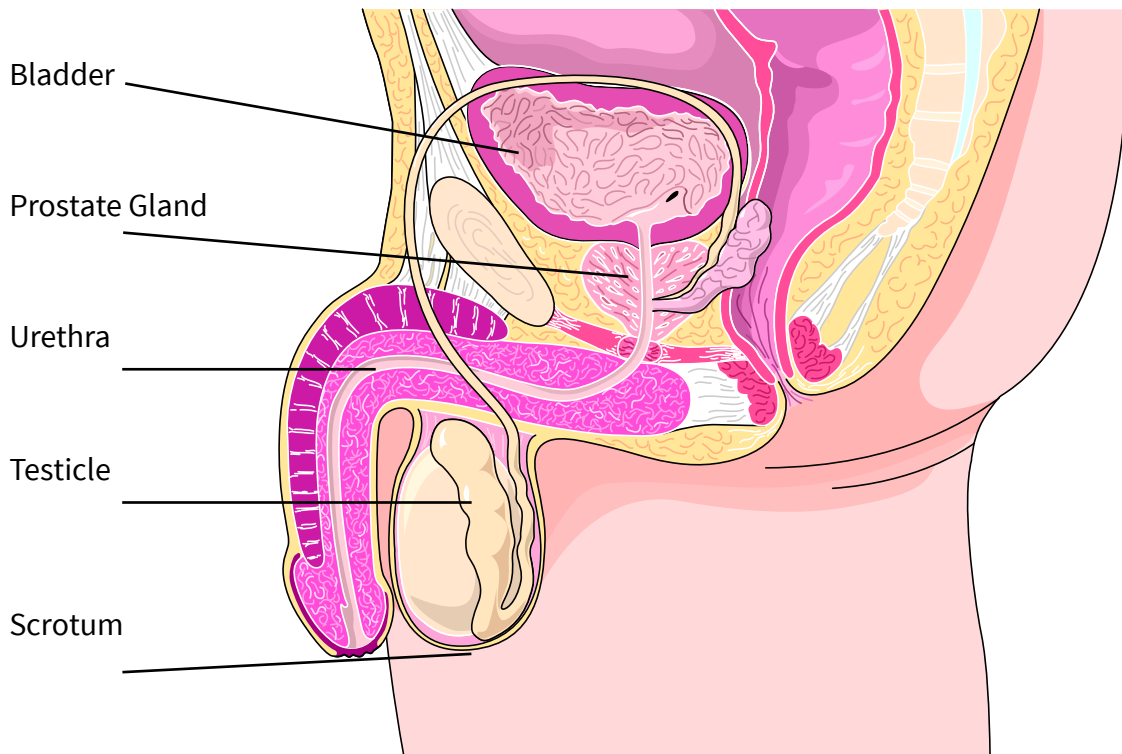


# Hormone Therapy for Prostate Cancer

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## What is the prostate?

The prostate is a gland that makes seminal fluid. Seminal fluid is in semen, which is released through the penis during ejaculation. The prostate is about the size of a walnut. It lies just below the urinary bladder and in front of the rectum (the lower part of the bowel). The prostate gland also surrounds part of the tube that carries urine from the bladder through the penis to the outside of the body. This tube is called the urethra.



## What is prostate cancer?

Prostate cancer is a disease where cancer cells start to grow in the prostate gland. These cancer cells grow into a tumor and can spread to other parts of the body such as the bones and lymph nodes.

## What causes prostate cancer?

There is no single cause of prostate cancer, but some factors may increase the risk of developing it:

- Age, being older than 65
- Family history of prostate cancer
- African ancestry

It is possible to develop prostate cancer without having any of these risk factors.

## What are hormones?

Hormones are chemical messengers made naturally in our bodies. Hormones control many of our body functions. Androgens are hormones that promote characteristics such as facial hair, sexual function and muscle mass. Testosterone is the main androgen.

## What does testosterone do?

Testosterone helps develop adult traits like body and facial hair, a deeper voice and sex drive. Testosterone also stimulates the cells in the prostate gland to make seminal fluid in adults. The testicles (also called the testes) make most of the body's testosterone. However, to make testosterone, the testicles must first receive the "start" signal from special messenger hormones that come from the brain.

Testosterone helps to keep bones strong. It also helps the production of red blood cells that carry oxygen in the blood.

## How does hormone therapy work for prostate cancer?

The growth of prostate cancer cells depends on testosterone. Hormone therapy works by lowering the testosterone in your body. When the testosterone is taken away from the cancer cells, they will either die or slow down and stop growing. Hormone therapy alone is not a cure for prostate cancer.

Hormone therapy may be used:

- after radiation to destroy cancer cells left behind and to reduce the risk of the cancer recurring
  - before, during and after radiation therapy
  - as the primary treatment for advanced prostate cancer
  - to relieve pain from the cancer or to control other symptoms
- › The type of hormone therapy used, doses, and schedule of drugs varies from person to person.



## How can my testosterone levels be lowered?

The amount of testosterone you make can be lowered by:

1. Removing your testicles by surgery - orchiectomy. This is called surgical castration.
2. Using medications to stop the testicles from making testosterone or blocking the action of testosterone - hormonal therapy. This is called chemical castration.

## Hormonal therapy to lower testosterone levels

The most common hormone therapies used to treat prostate cancer are:

## 1. LHRH Agonists (also called GnRH agonists)

LHRH – Luteinizing hormone releasing hormone; GnRH – Gonadotropin release hormone

This therapy uses medication to stop the testicles from making testosterone by convincing the body there is too much testosterone. Common examples of these drugs are:

- Buserelin (Suprefact®)
- Goserelin (Zoladex®)
- Leuprolide (Lupron®, Eligard®, Zeulide®)
- Triptorelin (Trelstar®)

These medications are usually given every 1 to 6 months by an injection into skin or muscle.

## 2. LHRH Antagonists

This therapy uses medication to stop the testicles from making testosterone by blocking an important natural way of making more testosterone. An example is degarelix (Firmagon®).

## 3. Anti-androgens Receptor Axis Therapies

These medications block the action of testosterone or the body's process of making testosterone above and beyond what traditional hormone therapies accomplish.

Common examples of these drugs are:

- abiraterone acetate (Zytiga®)
  - › taken with prednisone or dexamethasone
- bicalutamide (Casodex®)
- enzalutamide (Xtandi®)
- darolutamide (Nubeqa®)
- apalutamide (Erleada®)

These medications are usually pills taken by mouth every day.

The cost of these medications varies but many can be quite expensive.

For additional information on Medication Coverage, please refer to the handout:

Medication Coverage: Frequently Asked Questions

## **How long will I be on Hormone Therapy?**

The length of time a person will be on hormone therapy can vary. Your doctor will use the best information available to help decide on the right length of treatment for you. The side effects from hormone treatment will continue for the whole time you are on this treatment. You may wish to discuss stopping your hormone therapy early. This is a good conversation to have with your doctor. Your doctor might not be able to tell you for certain if more (or less) hormone therapy will be helpful. It is possible that for some people, there is a better chance of controlling the cancer if the hormone treatment is given for a longer time.

## **What are the side effects of hormone therapy?**

Side effects can occur with any type of treatment for prostate cancer but not everyone has them or experiences them in the same way. Side effects can happen anytime during hormone therapy. Some may happen during, immediately after or a few days or weeks after hormonal therapy. Most side effects go away after hormonal therapy is over. Some side effects may last a long time, be permanent, or require physical therapy to improve.

### **Fatigue**

Fatigue is the most common side effect. You will be provided with information on fatigue and strategies to help manage fatigue.

### **Hot flashes**

Sudden sweating and feeling of warmth is called hot flashes. Night sweats are often occur as well and can disrupt sleep leading to daytime fatigue. The severity varies from person to person. They usually get better as the body gets used to the treatment. Medications are available to help control hot flashes.

### **Decrease in sexual desire**

Decrease sexual desire affects almost all people taking hormonal therapy. It will generally continue as long as the hormone therapy is taken, but sometimes it may persist after stopping hormone therapy.

### **Erectile dysfunction (impotence)**

Erectile dysfunction (ED) is also called impotence. ED is the inability to keep an erection sufficient for sexual intercourse. This is a very common side effect of hormonal therapy. Once a patient recovers from hormone therapy, there may be treatments available to help treat ED.

### **Permanently lowered testosterone levels**

For some people, testosterone levels will remain low, even after the hormone treatment finishes.

## **Weight gain/Muscle Loss**

Weight gain and muscle loss are common side effects of hormonal therapy for prostate cancer. If people lose muscle, they sometimes notice weakness of the arms and legs. Diet and exercise help to reduce weight gain and muscle loss. Walking at least 30 minutes every day and doing light weight training three times per week will help prevent losing muscle. The right fitness program differs from person to person. Please discuss a personal exercise plan with your family physician.

## **Osteoporosis**

Hormone therapy can affect the strength of your bones. If your bones become weak it is more likely that you will break a bone. This problem is called osteoporosis. You should talk with your family doctor about being checked for osteoporosis. You should also talk with your doctor or pharmacist about taking vitamin D and calcium supplements which might help prevent your bones from losing strength. Exercise and quitting smoking may also help proving bone loss.

## **Cardiovascular events, such as a stroke or heart attack**

Hormone therapy can increase your chance of having a stroke or a heart attack. This risk is larger if you have had a stroke, heart attack, or other heart related issues in the past. It is important that you try to minimize any weight gain, stay active, and work on limiting or removing other risks factors. These include smoking and alcohol use. If you need help with eating, smoking, or alcohol use, there are support programs we can refer you to.

## **Breast swelling or tenderness**

Hormone therapy can cause growth of the breast tissue called gynecomastia. Tenderness and swelling may also occur. Some changes may be related to weight gain

## **Mood changes**

It is very normal to experience a widened range of emotions on ADT. People tell us they often feel a mix of hope, anger, fear, feeling out of control and tearfulness. Depression may also occur It is important to share what you are feeling with your healthcare team. We are here to answer any questions you may have.

## **Other changes**

Hormonal therapy results in loss of body hair as well as a decrease in the size of testicles. A decrease in penis length may also occur. Hair on the head, face, or pubic area is usually not affected.

### **Increase risk of diabetes**

Hormone therapy may increase your risk of diabetes or make control of your blood sugar more difficult if you have diabetes. This is because the hormone therapy causes weight gain and increased blood levels of lipids and glucose.

It is important for you to see your family doctor regularly for close monitoring of your weight, blood sugar, blood pressure and cholesterol levels.

If you smoke cigarettes, you should talk to your family doctor about smoking cessation programs.

**For more detailed information on specific drugs, please refer to the specific drug handout.**

### **Additional Resources**

Canadian Cancer Society [www.cancer.ca](http://www.cancer.ca)

The Androgen Deprivation Therapy Educational Program: [www.LIFEonADT.com](http://www.LIFEonADT.com)

Androgen Deprivation Therapy. An Essential Guide for Prostate Cancer Patients and their Loved Ones. (2018)  
Wasswesug, R., Walker, L., Robinson, J.

Sexuality for the Man with Cancer 2013. American Cancer Society. Type title into 'Search' and you can print off booklet.

### Looking for more health information?

Find this brochure and all our patient resources here: <http://library.nshealth.ca/cancer>

Contact your local public library for books, videos, magazines, and other resources.

For more information, go to <http://library.novascotia.ca>

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