

Hormone therapy



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This fact sheet is for men who are thinking about having hormone therapy to control their prostate cancer. It is one of a set of fact sheets to help you decide which treatment is best for you. Partners and family members may also find this information helpful. The fact sheet describes the different types of hormone therapy, how they are used and their possible side effects.

Each hospital or GP surgery will do things slightly differently. Use this fact sheet as a general guide to what to expect and ask your doctor or nurse for more details about the treatment and support available to you. If you would like to know more about anything you read in this fact sheet, you can call our Specialist Nurses on our confidential helpline.

How does hormone therapy treat prostate cancer?

Hormone therapy works by stopping the hormone testosterone from reaching the prostate cancer cells.

Testosterone is produced by the testicles and adrenal glands. One of its roles is to control the development and growth of the sexual organs, including the prostate gland. Normal levels of testosterone do not usually cause any problems, but if there are cancer cells in the prostate gland, testosterone can cause them to grow faster. In other words, testosterone 'feeds' the prostate cancer. If testosterone is taken away, the cancer cells shrink, wherever they are in the body.

Hormone therapy alone will not get rid of your prostate cancer but it can keep it under control for many months or years before you and your doctor may need to consider additional treatment options. It can also be used with other treatments to help make them more effective.

Who can have hormone therapy?

Hormone therapy is a treatment option for many men with prostate cancer, but it is used in different ways depending on the stage of your cancer. Speak to your doctor or nurse about your individual treatment options.

Localised prostate cancer

If your cancer has not spread outside the prostate gland, your doctor may offer you hormone therapy alongside your main treatment.

Radiotherapy

You may be offered hormone therapy for a few months before starting radiotherapy. Radiotherapy uses high energy X-ray beams to destroy the cancer cells. Hormone therapy shrinks the prostate, which makes the cancer easier to treat because there is a smaller area for the radiotherapy to target.

You may continue to have hormone therapy at the same time as radiotherapy. If there is a risk of the cancer spreading outside the prostate gland, you may continue to have hormone therapy for between six months and three years after radiotherapy.

Brachytherapy

You may be offered hormone therapy for a few months before having permanent seed brachytherapy, to shrink the prostate. Permanent seed brachytherapy treats prostate cancer using radioactive seeds implanted in the prostate gland.

You may be offered hormone therapy for a few months before having high dose rate (HDR) brachytherapy, to shrink the prostate. HDR brachytherapy involves inserting a source of high-dose radiation into the prostate gland for a few minutes at a time to destroy cancer cells. You may continue to have hormone therapy after your treatment.

Surgery (radical prostatectomy)

Hormone therapy is not usually offered to men with localised disease who are having surgery.

Locally advanced prostate cancer

You will usually be offered hormone therapy if your cancer has spread to the area just outside

the prostate gland (locally advanced prostate cancer). Hormone therapy treats prostate cancer wherever it is in the body.

You may be offered radiotherapy as well as hormone therapy, depending on how far your cancer has spread. Some research has suggested that a combination of hormone therapy and radiotherapy may be more effective than hormone therapy alone in men with locally advanced disease.

Advanced prostate cancer

Hormone therapy will be a life-long treatment for many men with prostate cancer that has spread to other parts of the body (advanced or metastatic prostate cancer). Hormone therapy treats prostate cancer wherever it is in the body. It cannot cure the cancer but it can keep it under control for many months or years before you may need to consider other treatment options.

Hormone therapy keeps the cancer under control by shrinking it and delaying its growth. How long hormone therapy will control the cancer varies from man to man. It may depend on how aggressive your cancer is and how far it had spread when you started treatment. It is difficult for doctors to accurately predict how long hormone therapy will keep your cancer under control.

Unsure about your diagnosis and treatment options?

If you have any questions about your diagnosis ask your doctor or nurse. They will be happy to explain your test results and talk you through your treatment options. It is important you feel you have enough time and all the information you need before making a decision about treatment. We have more information about diagnosis in our **Tool Kit**. You can also speak to our Specialist Nurses on our confidential helpline.



What types of hormone therapy are there?

There are three main types of hormone therapy for prostate cancer. These are:

- injections or implants to stop your testicles making testosterone

- surgery to remove the testicles or just the parts of the testicles that make testosterone (orchidectomy)
- tablets to block the effects of testosterone.

Injections or implants

These work by blocking the message from the brain that tells the testicles to make testosterone. Without testosterone, the prostate cancer cells are not able to grow. There are two main types of drugs that stop your testicles making testosterone. These are LHRH agonists (luteinizing hormone-releasing hormone agonists) and GnRH antagonists (gonadotropin-releasing hormone antagonists).

LHRH agonists

There are several different LHRH agonists and they all work in the same way. They are given by injection into your arm, stomach area (abdomen) or bottom (buttock). Some LHRH agonists are available as a small implant, injected under your skin. You may have the injections at your GP surgery or local hospital once a month, once every three months, or once every six months, depending on the dose. Some of the common LHRH agonist drugs are listed below:

- goserelin (brand names: Zoladex[®], Novgos[®])
- leuprorelin acetate (brand name: Prostav[®])
buserelin acetate (brand name: Suprefact[®])
- triptorelin (brand names: Decapeptyl[®],
Gonapeptyl Depot[®]).

One type of LHRH agonist is available as an implant, injected under the skin of your arm once a year, but it is not as widely available as some of the other LHRH agonists. It is called the histrelin implant (brand name: Vantas[®]). The implant is a small plastic cylinder that is inserted under the skin of your upper arm.

Before you have your first injection of an LHRH agonist, you may have a short course of anti-androgen tablets (see page 4). This is to prevent the body's normal response to the first injection, which is to produce more testosterone. This temporary rise in testosterone could cause the cancer to grow more quickly for a short time, which is known as a flare. The anti-androgen tablets help to stop this flare from happening.

You will usually start taking the tablets a week or so before the first injection and continue taking them for a week or two afterwards.

GnRH antagonists or blockers

At the moment, there is only one kind of GnRH antagonist available in the UK, called degarelix (Firmagon[®]). It is not available in every hospital. It is newer than most other hormone therapies, so we do not know much about side effects or how effective it is in the long term.

You will have an injection of degarelix just under the skin of your stomach area (abdomen) once a month. When you first start this treatment, you will have two injections on the same day. Degarelix does not cause a temporary rise in testosterone with the first treatment, so you will not need to take anti-androgen tablets.

Surgery to remove the testicles (orchidectomy)

This type of hormone therapy involves surgery, called an orchidectomy, to remove the testicles or just the parts of the testicles that make testosterone. Without testosterone, the prostate cancer cells are not able to grow. Surgery is just as effective as injections. It cannot be reversed so it is usually only offered to men who need long-term hormone therapy.

If you are thinking about having an orchidectomy, your doctor may suggest trying injections or implants (see above) for a while first to see how you cope with the side effects of lowered testosterone levels. If you decide to have the surgery, you will have this under general anaesthetic so you will be asleep during the whole process and will not feel anything.

Short term side effects include swelling and bruising of the scrotum, which is the sack containing the testicles. For details of longer term side effects of orchidectomy and other types of hormone therapy, see page 6.

Some men may not like the idea that surgery cannot be reversed. Some may also worry about how their body will look afterwards. Your surgeon can answer any questions you have.

You may be able to have an implant (prosthesis), which looks and feels like a normal testicle, at the same time as the operation.

Tablets to block the effects of testosterone Anti-androgens

Anti-androgens work by stopping testosterone from reaching the prostate cancer cells.

Without testosterone, the cancer cells are not able to grow. Anti-androgens are taken as a tablet, at least once a day. They can be used on their own, before having injections or

implants, together with injections or implants, or together with surgery to remove the testicles (orchidectomy). You can ask your doctor how long you will need to take the tablets for. There are several different anti-androgens, including:

- bicalutamide (one brand name is Casodex®)
- flutamide
- cyproterone acetate (one brand name is Cyprostat®).

What are the advantages and disadvantages?		
Type of hormone therapy	Advantages	Disadvantages
LHRH agonists	<ul style="list-style-type: none"> • Side effects may be reversed by stopping treatment. • They are just as effective at controlling prostate cancer as orchidectomy. • They are less likely to cause breast swelling than anti-androgens. 	<ul style="list-style-type: none"> • You may need a short course of anti-androgens to help stop 'flare' happening (see page 3). • Side effects include erectile dysfunction and hot flushes. • You will need to visit the GP or hospital every month, every three months or every six months.
GnRH antagonists	<ul style="list-style-type: none"> • Side effects may be reversed by stopping treatment. • They are just as effective at controlling prostate cancer as orchidectomy. • They are less likely to cause breast swelling than anti-androgens. • They do not cause a temporary rise in testosterone so you will not need to take anti-androgen tablets (see above). 	<ul style="list-style-type: none"> • Side effects include erectile dysfunction and hot flushes. • You will need to visit the GP or hospital every month.
Orchidectomy	<ul style="list-style-type: none"> • It is a one-off treatment. • It is just as effective at controlling prostate cancer as LHRH agonists. • It is less likely to cause breast swelling than anti-androgens. 	<ul style="list-style-type: none"> • The operation and the side effects are not reversible. • Side effects include erectile dysfunction and hot flushes. • You will need a general anaesthetic.
Anti-androgens	<ul style="list-style-type: none"> • Side effects may be reversed by stopping treatment. • Because testosterone is still being produced, it may be possible to maintain erections and libido. • They do not cause bone thinning and osteoporosis. 	<ul style="list-style-type: none"> • You need to remember to take tablets every day. • They may cause breast swelling and some erectile dysfunction. • They are less effective than LHRH agonists at treating cancer that has spread to other parts of the body.

What does treatment involve?

The type of hormone therapy you have will depend on the stage of your cancer, the other treatments you are having and your own personal preferences. You may have more than one type of hormone therapy at the same time.

Depending on which type of hormone therapy you have, you may visit the hospital or your GP surgery for treatment. You will have regular prostate specific antigen (PSA) tests which will help to check how well your treatment is working. PSA is a protein produced by some of the cells in your prostate gland. The PSA test is a simple blood test that can measure the amount of PSA in your blood. If your PSA level falls, this usually suggests your treatment is working. You will continue to have the same amount (dose) of hormone therapy even if your PSA level falls. This is because the hormone therapy is controlling the cancer and if you stop having it, the cancer may grow more quickly. You may like to ask your doctor or nurse how often you will have a PSA test.

Your doctor, nurse or GP will also monitor any side effects you have from your treatment and any other symptoms.

Your doctor may suggest different ways of using hormone therapy, such as combined androgen blockade, and stopping and starting treatment (intermittent hormone therapy).

Combined androgen blockade

Your doctor may suggest a way of using hormone therapy called combined androgen blockade. It involves using both an LHRH agonist and an anti-androgen to treat the cancer.

Some studies suggest that combined androgen blockade is slightly more effective than using an LHRH agonist alone in men whose cancer has spread to other parts of the body (advanced prostate cancer). However, we need more research to know for sure whether combined androgen blockade makes a difference to these men.

Because the risk of side effects can be higher with combined androgen blockade, it is not commonly used as a first treatment for prostate cancer. It is usually only offered if the hormone therapy you are taking has become less effective at controlling your prostate cancer.

Stopping and starting treatment (intermittent hormone therapy)

This may be an option for men who are on long-term hormone therapy. It involves stopping treatment when your PSA level is low and steady, and starting treatment again when your PSA starts to rise. This process is repeated for as long as it continues to work. Your doctor will advise you on when you will stop and start treatment.

The advantage of intermittent hormone therapy is that you may be able to avoid side effects during the time that you are not having treatment. However, it can take three to nine months, or sometimes longer, for the side effects to wear off. Researchers think that intermittent hormone therapy may be just as effective at treating prostate cancer as continuous treatment, but this is still being tested in clinical trials. We do not yet fully understand all of the benefits and risks of intermittent hormone therapy and it may not be suitable for all men.

What happens afterwards?

Hormone therapy will be a life-long treatment for many men with prostate cancer. Your original hormone therapy may keep your prostate cancer under control for many months or years. However, over time the behaviour of your cancer cells may change and your cancer may start to grow again. Although the prostate cancer is no longer responding to your original type of hormone therapy, it may still respond to other types of hormone therapy or a combination of other treatments. You can read more about treatments for prostate cancer that is no longer responding to your original hormone therapy in our Tool Kit fact sheet, **Treating prostate cancer after hormone therapy**.



What are the side effects?

Like all treatments, hormone therapy has a risk of side effects. All types of hormone therapy can cause side effects, including surgery to remove the testicles (orchidectomy). It is important to discuss the possible side effects with your doctor or nurse before you start any treatment. If you know what side effects you might get, it can be easier to cope with them.

Hormone therapy affects different men in different ways. There is no way of knowing in advance which side effects you will get and how bad they will be. Some men who are having hormone therapy may have few side effects or may not have any side effects at all. This does not mean that the treatment is any less effective. Some men may find that their side effects get better or easier to cope with the longer they are on hormone therapy.

The risk of getting each side effect depends on which type of hormone therapy you are having as well as how long you take it for. If you are having hormone therapy alongside another treatment, you may get side effects from that treatment as well.

The side effects of hormone therapy are caused by lowered testosterone levels. In most cases, side effects will last for as long as you are on hormone therapy. If you stop your hormone therapy, your testosterone levels will rise again and some of the side effects may reduce slowly over time. Surgery to remove the testicles (orchidectomy) cannot be reversed but there are treatments that can help to reduce some of the side effects.

If you have any concerns about your side effects or if you get any new symptoms while you are having treatment, speak to your doctor or nurse, or call our Specialist Nurses on our confidential helpline.



We have described the most common side effects of hormone therapy here. For more detailed information about these side effects and ways to help manage or reduce them, read our booklet, **Living with hormone therapy: a guide for men with prostate cancer**.



Loss of sex drive and erection problems

Hormone therapy can affect your sex life in two different ways.

- It can reduce, or cause you to lose, your desire for sex (libido).
- It can give you problems with getting and keeping an erection (erectile dysfunction).

Anti-androgens are less likely to cause erectile dysfunction than other types of hormone therapy. However, if you have advanced prostate cancer, anti-androgens taken on their own are not as effective at controlling the cancer as other types of hormone therapy.

There are several treatments available for erectile dysfunction, including tablets, injections, pellets, vacuum pumps and implants. You can read more about these in our Tool Kit fact sheet,



Sex and prostate cancer.

Hot flushes

Hot flushes are a common side effect of hormone therapy. They give you a sudden feeling of warmth in the upper body and can be similar to those experienced by women going through the menopause. Hot flushes can vary from a few seconds of feeling overheated to a few hours of sweating that can stop you from sleeping or cause discomfort.

There are a number of different options to help you manage hot flushes, including lifestyle changes, drug treatments and complementary therapies.

Bone thinning

Long-term hormone therapy may cause your bones to gradually lose their bulk. LHRH agonists, GnRH antagonists and surgery to remove the testicles (orchidectomy) may all have this effect. If bone thinning is severe, it can lead to a condition called osteoporosis. This can result in an increased risk of bone fractures. Anti-androgens do not cause bone thinning.

There are a number of lifestyle changes such as physical activity and changes to your diet that may help to reduce your risk of bone thinning

and developing osteoporosis. Speak to your doctor or nurse before you start any kind of exercise plan.

Breast swelling and soreness

Hormone therapy may cause swelling (gynaecomastia) and soreness in the breast area. This can affect one or both sides and can range from mild sensitivity to ongoing pain. The amount of swelling can also vary from a small degree of swelling to a more noticeable enlarged breast area.

Breast swelling is more common in men who are having anti-androgens on their own than in other types of hormone therapy. There are a number of options available that can help to reduce your risk of breast swelling and soreness or help to treat it. These include treating the breast area with a single dose of radiotherapy, tablets and surgery.

Tiredness (fatigue)

Hormone therapy for prostate cancer can cause extreme tiredness. While some men may not feel tired at all, other men may experience tiredness that affects their everyday life. You may find that your tiredness improves over time. Many men find that regular resistance exercise such as fast walking, swimming and exercising with small weights gives them more energy and helps them to cope with treatment.

Strength and muscle loss

Hormone therapy can cause a decrease in muscle tissue and an increase in the amount of body fat. This can change the way your body looks and how physically strong you feel. Regular resistance exercise such as fast walking, swimming and exercising with small weights may help to reduce muscle loss and keep your muscles strong.

Weight gain

You may notice that you start to put on weight, particularly around the waist. Some men find this physical change difficult to cope with, particularly if they have never had any problems with their weight in the past.



Physical activity and a healthy diet can help you stay a healthy weight. For more information, read our Tool Kit fact sheet, **Diet, exercise and prostate cancer**.

Risk of diabetes, heart attack and stroke

Some studies have found that men receiving hormone therapy may have an increased risk of diabetes, heart disease and stroke. We need more research before we know the exact link between hormone therapy and these conditions. You may be able to reduce your risk by eating a healthy diet, doing regular physical activity, limiting the amount of salt you eat, avoiding smoking and cutting down on alcohol.



Talk to your GP about how often you should have regular health checks. You can find out more about healthy eating and physical activity in our Tool Kit fact sheet, **Diet, exercise and prostate cancer**.

Memory and concentration

Some studies have shown that hormone therapy can affect your memory and ability to concentrate. But we do not know for sure whether this is caused by the hormone therapy or whether other factors, such as hot flushes and fatigue, may play a part. You may find it helps to keep your mind active, for example, by doing crosswords or other puzzles.

Changes to your mood

Hormone therapy may affect your mood. You may feel more emotional than usual or just 'different' to how you felt before. Some men may also experience low moods or depression. This can be as a direct result of hormone therapy, a response to the shock of diagnosis or the impact that treatment can have on your life. Talking to someone about this may help. If you think you might be depressed, try to get help early on. Anti-depressants are often good at treating hormone therapy-related depression.

Where can I get support?

As well as getting medical help to treat your cancer, you may find that it helps to talk to your partner, family or friends about how you are feeling. Sharing concerns can help you to cope better and make decisions about your treatment or side effects easier to deal with. If people close to you know about your feelings and concerns they may be able to help. You could also speak to your doctor or nurse, or speak to one of our Specialist Nurses by calling our confidential helpline.



If you would like to speak to a professional counsellor, you can ask your GP if there is one available on the NHS or you can get a list of private counsellors from the British Association of Counselling and Psychotherapy (see page 11 for contact details).

Some people find that it helps to talk to other men with prostate cancer. There are prostate cancer support groups throughout the country. You can ask your specialist nurse for details or you can find a list of support groups on our website at **prostatecanceruk.org**

We can also arrange for one of our support volunteers, who has experience of hormone therapy, to speak to you over the phone.



Please call our Specialist Nurses on our confidential helpline for more information.

If you have access to the internet, you can sign up to Prostate Cancer UK's online community, where you can share your views and experiences with others affected by prostate cancer. Our website address is **prostatecanceruk.org**

You can find more information on support for men having hormone therapy in our booklet, **Living with hormone therapy: a guide for men with prostate cancer.**



Questions to ask your doctor or nurse



You may find it helpful to keep a note of any questions you have to take to your next appointment.

What is the aim of treatment?

What type of hormone therapy are you recommending for me and why?

How often will I have follow-up appointments?

How long will it be before we know if the hormone treatment is working?

What are the possible side effects?

What other treatments are available if the cancer starts to grow again?

What will happen if I decide to stop my treatment?

More information

British Association for Counselling and Psychotherapy (BACP)

www.itsgoodtotalk.org.uk

Telephone: 01455 883300

BACP will help you find qualified counsellors. They are happy to discuss any queries or concerns you have about choosing a counsellor or the counselling process.

CancerHelp UK

www.cancerhelp.org.uk

Freephone: 0808 800 4040

(9am–5pm, Mon–Fri)

CancerHelp is the patient information website of Cancer Research UK and provides information about living with cancer.

Macmillan Cancer Support

www.macmillan.org.uk

Freephone: 0808 808 0000

(9am–8pm, Mon–Fri)

Provides practical, financial and emotional support for people with cancer, their family and friends.

UK Prostate Link

www.prostate-link.org.uk

Guide to reliable sources of prostate cancer information.

About us

Prostate Cancer UK fights to help more men survive prostate cancer and enjoy a better life.

This fact sheet is part of the Tool Kit. You can order more Tool Kit fact sheets, including an  **A-Z of medical words**, which explains some of the words and phrases used in this fact sheet.

All of our publications are available to download and order from the website. You can also order printed copies by calling **0800 074 8383** or emailing literature@prostatecanceruk.org

At Prostate Cancer UK, we take great care to provide up-to-date, unbiased and accurate facts about prostate cancer. We hope these will add to the medical advice you have had and help you to make decisions. Our services are not intended to replace advice from your doctor.

References to sources of information used in the production of this fact sheet are available at prostatecanceruk.org

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If you have any comments about our publications, you can email:

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Speak to our Specialist Nurses

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Donate today – help others like you

Did you find this information useful? Would you like to help others in your situation access the facts they need? Every year, 40,000 men face a prostate cancer diagnosis. To help us continue providing free information, you could make a donation of any amount. Please call us on **020 8222 7666**, visit **prostatecanceruk.org/donations** or text **PROSTATE** to **70004****

There are many other ways to support us. For more details please visit:
prostatecanceruk.org/get-involved

**You can donate up to £10 via SMS and we will receive 100% of your donation. Texts are charged at your standard rate. For full terms and conditions and more information, please visit prostatecanceruk.org/terms



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The helpline is open Mon - Fri 10am - 4pm, Wed 7pm - 9pm

*Calls are recorded for training purposes only.

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