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## Metastatic Prostate Cancer

The underlined terms are listed in the glossary.

Prostate cancer can spread to other organs or lymph nodes outside the pelvic area. This is called metastatic disease. The tumours in other organs or lymph nodes are called metastases. Your doctor may recommend treating metastatic disease with hormonal therapy.

It is important to realize that metastatic disease cannot be cured. Instead, your doctor will try to slow the growth of the tumour and the metastases. This will give you the chance to live longer and have fewer symptoms.

This section addresses different types of hormonal therapy, which you should discuss with your doctor. This is general information, which is not specified to your individual needs. Keep in mind that individual recommendations may depend on your country and health care system.

### What is metastatic prostate cancer?

If prostate cancer metastasizes, it usually spreads to the bones or the spine. At a later stage, prostate

cancer may also spread to the lungs, the liver, distant lymph nodes, and the brain (**Fig. 1**). Most metastases cause a rise in the level of prostate-specific antigen (PSA) in your blood.

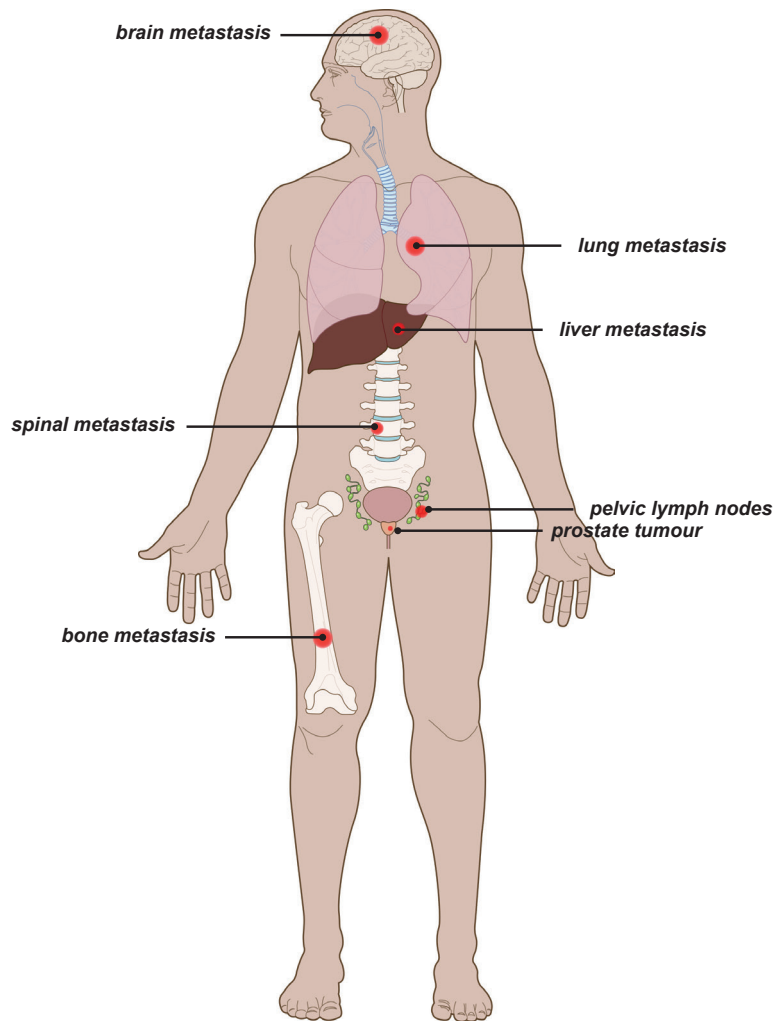
Metastases in the spine can cause symptoms like severe back pain, spontaneous fractures, or nerve or spinal cord compression. They can also be asymptomatic. In rare cases, lung metastases may cause a persistent cough.

Imaging can be used to detect metastases. Bone metastases can be seen on a bone scan. A CT scan may be recommended to get more detailed information about bone metastases, or to detect metastases in the liver, the lungs, or the brain.

### Treatment options

If you have metastatic prostate cancer, your doctor will recommend hormonal therapy. This is part of a palliative care approach. The treatment will slow the growth of the primary tumour and the metastases, and help to manage the symptoms.

Another name for hormonal therapy is androgen deprivation therapy (ADT). It can be performed surgically or with drug treatment. In surgical therapy,



**Fig. 1: Metastatic prostate cancer can spread to the bones, spine, lungs, liver, or brain.**

both testicles are removed in a procedure called bilateral orchiectomy. Drug therapy to stop the production of androgens is done with LHRH agonists or LHRH antagonists. These drugs are available as depot injections right under the skin or into the muscle. Anti-androgens are drugs that block the action of androgens. They come as a pill. All of these therapies cause castration.

Castration has physical and emotional consequences. The most common are hot flushes, lower sex drive, and erectile dysfunction. The effects of surgical castration are permanent. In chemical castration, some of the symptoms may disappear after the treatment. Do not hesitate to discuss any concerns with your doctor.

If you have bone metastases which cause symptoms while you receive drug treatment, radiation therapy may help to relieve them and prevent fractures.

LHRH agonists are the most commonly recommended treatment for metastatic prostate cancer, but the choice of treatment is always based on your individual situation. These are some things your doctor will consider when planning your care pathway with you:

- Your age
- Your medical history
- Where the cancer has spread to
- Your symptoms
- The kind of treatment available at your hospital
- Your personal preferences and values
- The support network available to you

# Hormonal therapy

Hormonal therapy is a treatment option for metastatic prostate cancer. It aims to slow down the growth of the tumours.

The growth of prostate cancer cells is dependent on male sex hormones called androgens. Testosterone is the most important androgen. Androgens are mainly produced in the testicles.

Hormonal therapy either stops the production of androgens, or blocks their action. This is known as castration. Another name for hormonal therapy is androgen deprivation therapy (ADT). It can be performed surgically or with drug treatment.

In surgical hormonal therapy both testicles are removed in a procedure called bilateral orchiectomy. This procedure can be performed under local anaesthesia. Hormonal drug therapy to stop the production of androgens includes LHRH agonists and LHRH antagonists. These drugs are available as pills or as depot injections right under the skin or into the muscle. Anti-androgens are drugs that block the action of androgens. They come as a pill.

The effect of hormonal therapy will not last and leads to castration-resistant prostate cancer. You can read more about this stage of the disease in the section *Castration-Resistant Prostate Cancer*.

To delay castration resistance, your doctor may recommend to pause the hormonal drug therapy. This is called intermittent hormonal therapy. During the treatment pause, you will have to visit your doctor every 1-3 months. The doctor will monitor the level of prostate-specific antigen (PSA) in your blood.

## Bilateral orchiectomy

Bilateral orchiectomy, or surgical castration, is a surgery to remove both testicles. It is a treatment option for metastatic prostate cancer and aims to stop the production of androgens. The surgery can be done under local anaesthesia.

If you have a history of cardiovascular disease, your doctor may advise you to see a cardiologist before starting with hormonal therapy.

## How is bilateral orchiectomy performed?

During surgery, you will lie on your back. You generally receive local or spinal anaesthesia. In some cases your doctor may recommend general anaesthesia. The surgeon makes an incision in the scrotum to remove both testicles. Because the tissue that surrounds the testicles is not removed, the scrotum will not look totally empty.

## How do I prepare for the procedure?

Your doctor will advise you in detail about how to prepare for the procedure. If you need general anaesthesia, you must not eat, drink, or smoke at least for 6 hours before surgery. If you are taking any prescribed medication, discuss it with your doctor. You may need to stop taking it several days before surgery. Your doctor will advise you on when you can start taking it again.

## What are the side effects of the procedure?

Complications after a bilateral orchiectomy are rare and include pain around the scrotum, bleeding, infection, or delayed healing of the wound. In most cases, the way the scrotum looks will not be affected by the surgery.

Recommendations for 2-3 weeks after the surgery:

- Avoid heavy exercise
- Avoid hot baths
- Avoid the sauna

You have to see your doctor or go back to the hospital if you experience one of the following symptoms:

- Fever
- Severe pain
- The wound starts to bleed or leak a transparent fluid

Bilateral orchiectomy results in permanent castration. This has physical and emotional consequences. Do not hesitate to discuss any concerns with your doctor. Together you can decide if other treatment options are more suitable for you.

## Chemical castration

If you prefer not to undergo surgical hormonal therapy, there are drugs which can stop the production of androgens. The most common drugs are LHRH agonists and LHRH antagonists. The aim of these drugs is to stop the growth of the tumour by chemical castration. How they do this varies for each group of drugs. Each drug is different in how it is applied.

If you have a history of cardiovascular disease, your doctor will advise you to see a cardiologist before starting with hormonal therapy.

### LHRH

The production of testosterone is regulated by the brain. The brain produces several hormones which help regulate other hormones. These are called releasing hormones. The specific releasing hormones of androgens are called luteinizing-hormone releasing hormones (LHRH). In prostate cancer treatment, drugs that affect LHRH are used to stop the production of androgens.

### LHRH agonists

LHRH agonists stop testosterone production in the testicles. They are the most commonly used drugs to treat metastatic prostate cancer. The drug is administered as a depot injection right under the skin or in the muscle. These injections can last for 1, 3, 6 or 12 months. Discuss with your doctor which option is best for you.

In the first days after the first injection, LHRH agonists increase your testosterone level, before they decrease it. This is known as a flare. The increase in testosterone level can cause the tumour to swell. In

rare cases this could be dangerous and can cause difficulties urinating. Your doctor might give you a low dose of anti-androgen drugs to prevent damage from rising testosterone levels.

### LHRH antagonists

LHRH antagonists are a new form of hormonal therapy. They do not need to be combined with an anti-androgen for the first weeks because they do not cause a flare. Degarelix is the most commonly used LHRH antagonist. It needs to be administered every month by an injection under the skin.

### Anti-androgens

Anti-androgens block the action of testosterone. As a result, the tumour and metastases will grow slower or stop growing completely. The most commonly used anti-androgens are cyproterone acetate, flutamide, and bicalutamide. They all come as a pill, and are taken every day.

Cyproterone acetate is usually administered in two or three daily dosages. Flutamide is administered three times daily. Bicalutamide is the most common anti-androgen, and it is taken once a day.

### What are the side effects of hormonal therapy?

Hormonal therapy stops the production or blocks the action of male hormones, and causes castration. Your body can react to castration in different ways. The most common side effects of castration are:

- Hot flushes
- Lower sex drive
- Erectile dysfunction
- Osteoporosis
- Increased risk of heart disease
- Diabetes

You could also experience pain, for example in your joints, your back, your bones, or muscles.

Changing hormone levels can affect your blood and cause high blood pressure, dizziness, and bruising.

You may also be at higher risk of infection, especially in the nose or throat, or urinary tract infections.

Loss of appetite and weight loss can also be a result of castration. These may be related to diarrhoea, constipation, or vomiting caused by the hormone changes.

Other side effects may include coughing, shortness of breath, headaches, and [peripheral oedema](#).

The different treatments may cause side effects as well.

LHRH antagonists may cause an allergic reaction.

Anti-androgens may cause swelling of your breasts. This is called [gynaecomastia](#) and can be painful in some cases. To prevent gynaecomastia your doctor may recommend radiation therapy of your chest before the start of the hormonal therapy. In rare cases, you may need surgery to remove the [mammary glands](#).

Anti-androgens could worsen hot flushes. These can be treated with low-dose oestrogens. Oestrogens can increase the risk of heart disease. Flutamide can cause diarrhoea.

How bothersome the side effects of hormonal therapy are, and when they appear, varies from person to person. This is related to your general health and the type of treatment you get. Read more about how to deal with the side effects of hormonal therapy in the section *Support for Hormonal Therapy* on page 9.

It is generally recommended to visit your doctor every 3 months after you start hormonal therapy, to monitor the disease. Each visit includes a physical examination and a PSA test. These tests are used to see how you are responding to the treatment. During these visits you can discuss with your doctor if there is a treatment option to manage side effects.

Your doctor will adjust the follow-up visits according to your needs.

With time, prostate cancer cells will become resistant to hormonal therapy, and the cancer will start to grow again. This is known as castration-resistant prostate cancer. How long this takes to develop varies from person to person, but it generally happens 2-3 years after starting hormonal treatment. You can read more about this stage of the disease in the section *Castration-Resistant Prostate Cancer*.

# Treatment of bone metastases

Prostate cancer cells can spread to the bones, generally to the spine. The treatment of bone metastases can have severe side effects. Your doctor will help to prevent and treat possible complications and side effects. This may allow you to live longer and with fewer symptoms.

Bone metastases can cause back pain. Your doctor will prescribe painkillers to manage the pain. In some cases your doctor may recommend a very strong painkiller, like morphine.

When tumours in the spine grow, they may cause spinal cord compression. This is a rare complication, but it is an emergency situation because it can lead to paralysis of the legs. The main signs of spinal cord compression are:

- Pain in a specific spot in your spine that is different from your usual pain
- New pain in the spine which gets worse and does not respond to painkillers
- A tingling sensation down your spine, into your legs or arms
- Pain in your spine which changes when you change position
- Numbness in your legs
- Stiffness or heaviness in your legs that make you lose your balance
- Pain down your legs or arms
- Weakness in your legs or arms

**If you think your spinal cord may be compressed you should contact your medical team immediately.**

Bones that are affected by tumours fracture more easily. If you are at risk of bone fractures, your doctor may recommend drugs to stabilize your bones. The most common are bisphosphonates and denosumab. Your doctor may recommend a procedure to strengthen your bones by injecting material that helps harden your bone. This is known as cementoplasty. In rare cases, surgery is needed to stabilize your bones.

Bisphosphonates are administered with an IV every 4 weeks. They increase your bone mass, and can reduce pain and prevent fractures. Because bisphosphonates can damage your jaws, your doctor will advise you to see a dentist before you start treatment.

Denosumab is administered under the skin every 4 weeks. It also increases bone mass and generally causes fewer side effects than bisphosphonates.

If the bone metastases cause symptoms while you receive drug treatment, radiation therapy may help to relieve them and prevent fractures.

To keep your bones healthy you could exercise regularly, keep a healthy weight, stop smoking, and drink alcohol in moderation.

The risk of bone complications increases with age. To prevent complications from bone metastases, you may need to take nutritional supplements like calcium or vitamin D3.



# Support

Getting diagnosed with cancer has a great impact on your life and the lives of your loved ones. Cancer can make you feel powerless. It can cause feelings of anxiety, anger, fear, or even depression. Undergoing treatment for cancer is intense and will affect your work, your social life, and your sexuality.

To find support, approach your doctor or nurse in the hospital, or ask your family doctor. They will be able to give you contact information about patient organizations or others who can help you with psychological support, or practical matters such as financial and legal advice.

## Preparing for a consultation

Preparing for a consultation can be very useful. It will help you and your doctor better address your questions and concerns. It can also help you prepare for treatment and the possible side effects. Here are some things you can try:

- Write down the questions you would like to ask the doctor. This will help you remember things that you want to ask. Writing down questions can also help you organize your thoughts
- If you can, take someone with you to the visit. It is good to have someone to discuss what the doctor said and you probably remember different things
- Ask for information about your specific type of prostate cancer
- If the doctor uses words you do not understand, ask for an explanation
- Tell your doctor what medicine you take and if you take any alternative medicine. Some of these medicines can affect the treatment

After the consultation you can:

- Search the Internet or go to the library for more information about your type of cancer. Be aware that not all the information you see online is of good quality. Your doctor or health care team can point you to reliable websites

- Contact a patient organization, they can offer support and information
- Discuss with your health care team the possible financial consequences of your treatment. They might be able to direct you to people or places where you can get advice about your economic situation or even financial help
- If you want, you should ask for a second opinion from another specialist

## How to find a patient organization nearby

Patient organizations can be very helpful. To find one close to you, ask your family doctor, nurse, or doctor at the hospital. You can also search the Internet for a patient group.

## Support during hormonal therapy

All types of hormonal therapy cause castration, to which your body can react in various ways. The most common side effect of castration is hot flushes. To manage this, your doctor will advise you to monitor your weight and avoid alcoholic drinks. If you experience hot flushes, you can:

- Dress in layers
- Wear natural fabrics like cotton or linen, which let the body breathe
- Sleep under layers of light blankets so that you can remove some if you need to
- Avoid hot baths, saunas, or whirlpools
- Avoid hot or spicy food
- Drink plenty of water, and carry a bottle with you when you leave the house

Discuss with your doctor possible treatments to manage hot flushes or any of the other consequences of castration and side effects of hormonal therapy.

## Lifestyle advice

It is important to maintain a healthy lifestyle during

treatment. Try to get physical exercise regularly. Find an activity that you enjoy doing. If you have doubts about what you can do, ask your doctor to refer you to a physiotherapist.

Try to eat a balanced diet with a mix of vegetables, fruit, and dairy. Also include starchy food like bread and potatoes, rice or pasta, and protein-rich food like meat, fish, eggs, or legumes. Try to eat less sugar, salt, and fatty food. If you have any questions, ask your doctor to refer you to a dietician.

## **Psychological support**

During treatment you may worry about your prognosis, the impact of cancer on your social or financial situation, or other issues.

If you feel the need to have someone to talk to, you can ask your doctor for a referral to a psychologist. A patient organization can also offer support.

Discuss the possible financial consequences of your treatment with your health care team. They might be able to direct you to people or places where you can get advice about your economic situation or even financial help. They can also help you find legal advice about your will and related matters.

Changes in your daily life as a result of the disease or the treatment can lead to isolation. Talk to your doctor or nurse. They can help you find the support and treatment you need.

A cancer diagnosis can make you look at life in a different way and you may realize you now have different priorities. This will affect your work or relationships and can make you feel disoriented and uncertain. Talk to family, friends, or your spiritual advisor about your feelings and wishes. If you do not feel comfortable addressing these issues with those close to you, you can ask your health care team for a referral to a psychologist. The psychologist can give you the tools to deal with these feelings.

Cancer treatment can affect your sexuality. Feelings of depression and fatigue can also have a negative

effect on your sex life. It is important that you talk to your partner about your feelings. There are many ways in which you can be intimate. If it is difficult to be sexually active, be near each other, touch each other, give and take hugs, and just sit or lay down close to each other.

## **Support for family and friends**

A cancer diagnosis not only affects the patient, but also the people around them. As a loved one, you can offer support in many different ways. Sometimes you can help with practical things like laundry, gardening, or grocery shopping.

It may also be helpful to go to the doctor together. You could offer to drive to the visit or help formulate questions to ask during consultation. Being there for the consult can also be good. You may remember different things or focus on other details, which you can later discuss together. You could also ask the doctor how the treatment may impact your lives in terms of caregiving and psychological effects.

The diagnosis and treatment can be very emotional for everybody involved. Cancer treatment is intense and your life may change suddenly. Questions about prognosis, effects of the treatment, and death will come up. As a friend or loved one you can be there and listen. You don't need to have the answers.

If you feel you need somebody to talk to, approach your family doctor or the medical team to get support. Patient organizations also offer support for family members or friends of people who have been diagnosed with cancer.

## **Support for partners**

A cancer diagnosis can put pressure on your relationship. Often talking to each other becomes more difficult because of the time and energy spent on treatment. You could decide to discuss any difficulties with a therapist.

You may experience a similar degree of stress, anger, and depression as your partner. You could feel exhausted, both physically and emotionally. This can



be a result of the responsibilities of caring for your partner, and taking on extra tasks around the house. Be sure to make time for yourself and think about your own needs and wishes.

Your partner's cancer treatment can affect your sex life. Try to talk to your partner about your feelings. There are many ways in which you can be intimate. Be near each other, touch each other, give and take hugs, and just sit or lay down close to each other.

It is normal to worry about being left alone. If you feel you need somebody to talk to, approach your family doctor or your spiritual advisor. Patient organizations also offer support for partners. They can also help you find people or organizations who can help you with practical things like legal and financial issues.

### **This information was updated in January 2015.**

This leaflet is part of EAU Patient Information on Prostate Cancer. It contains general information about this disease. If you have any specific questions about your individual medical situation you should consult your doctor or other professional healthcare provider. No leaflet can replace a personal conversation with your doctor.

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The content of this leaflet is in line with the EAU Guidelines.

You can find this and other information on urological diseases at our website: <http://patients.uroweb.org>

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