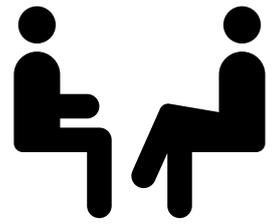


Bisphosphonates for advanced prostate cancer



In this fact sheet:

- What are bisphosphonates?
- Who can have bisphosphonates?
- How do bisphosphonates work?
- What are the advantages and disadvantages?
- What does treatment involve?
- What are the side effects?
- Dealing with advanced prostate cancer
- Questions to ask your doctor or nurse
- More information
- About us

This fact sheet is for men with advanced prostate cancer who have been offered bisphosphonates to treat bone problems or prevent further bone damage. Your partner, family or friends might also find this information helpful.

Each hospital will do things slightly differently, so use this fact sheet as a general guide and ask your doctor or nurse for more information. You can also speak to our Specialist Nurses, in confidence, on 0800 074 8383 or chat to them online.

Symbols

These symbols appear in this fact sheet to guide you to more information:



Speak to our Specialist Nurses



Read our publications

What are bisphosphonates?

Bisphosphonates are a type of drug that can help to strengthen bones that have become weak or thin. This may be caused by cancer that has spread (advanced prostate cancer), but can also happen if you're having hormone therapy. This is because the treatment can change the structure of bones and make them very weak – a condition called osteoporosis.

Bisphosphonates can be given either as tablets or through a drip into a vein in the arm (see page 5).

Who can have bisphosphonates?

You may be offered bisphosphonates if you have:

- bone thinning (osteoporosis) caused by hormone therapy
- bone weakness caused by prostate cancer that has spread to the bones
- bone pain if other pain-relieving treatments aren't helping
- hypercalcaemia – a very rare condition caused by high levels of calcium in the blood.

To treat bone thinning (osteoporosis) caused by hormone therapy

Some types of hormone therapy, a common treatment for prostate cancer, can make your bones weaker and cause a condition called



osteoporosis. This can increase your risk of broken bones (fractures) and cause bone pain (see below). Bisphosphonates can strengthen bones and prevent further bone thinning. Read more in our booklet, **Living with hormone therapy: A guide for men with prostate cancer**.

To treat bone weakness caused by prostate cancer that has spread

If prostate cancer spreads to the bones, the cancer can damage them and cause pain. Bisphosphonates can strengthen the bones and slow down further bone damage. This can help to prevent broken bones and reduce the need for radiotherapy – a treatment to reduce pain when cancer has spread to the bones.

For bone pain

Bisphosphonates are sometimes used to help relieve and prevent further bone pain. They are sometimes given at the same time as painkillers, but are usually only used if other pain-relieving treatments (see below) aren't working very well.

To treat hypercalcaemia

Bisphosphonates can also be used to treat a condition called hypercalcaemia, which is a high level of calcium in the blood. It is very rare, but can sometimes affect men with advanced prostate cancer. You can read more about it in our booklet, **Advanced prostate cancer: Managing symptoms and getting support**.



Are bisphosphonates available in my area?

If you live in England, Wales or Northern Ireland, you should be able to have bisphosphonates if your doctor thinks they are suitable for you.

In Scotland, bisphosphonates aren't widely available for men with prostate cancer. If you live in Scotland, speak to your doctor about whether you can have bisphosphonates.

What else might affect whether I can have bisphosphonates?

If you've had problems with your kidneys, teeth or jaw in the past, you may not be able to have bisphosphonates (see page 4). Talk to your doctor or nurse about whether bisphosphonates are suitable for you.

Other treatment options

Other treatments that can be used to strengthen the bones include:

- **Surgery to support damaged bone**
A metal pin or plate can be inserted into the affected bone to strengthen it and reduce the risk of it breaking. Or, a type of cement can be used to fill the damaged area. This makes the bone stronger and less painful.
- **A drug called denosumab (Xgeva®)**
This can help manage bone thinning. It might be an option if bisphosphonates aren't suitable for you and you live in England, Wales or Scotland. If you live in Northern Ireland, your doctor may be able to apply to your local Health and Social Care (HSC) trust if they think denosumab is suitable for you. This is called an individual funding request.

Other treatments for pain include pain-relieving drugs, pain-relieving radiotherapy, radium-223 (Xofigo®), and surgery to support damaged bone. For more information, read our fact sheets, **Managing pain in advanced prostate cancer** and **Radiotherapy for advanced prostate cancer**.



Other treatments for hypercalcaemia include passing fluid through a drip in your arm, to flush calcium out of your blood.

How do bisphosphonates work?

Bisphosphonates treat bones that have been damaged by the prostate cancer that has spread there, or by hormone therapy. Your bones are made of living tissue and are constantly changing. In healthy bones, cells are always breaking down and rebuilding bone tissue – this is called the bone cycle (see diagram on page 3). There are two types of bone cells that do this job:

- **osteoclasts** – cells that break down old bone tissue
- **osteoblasts** – cells that make new bone tissue.

In strong and healthy bones, old bone tissue is broken down at the same rate that new bone tissue is made. But if prostate cancer spreads to the bone, this careful balance can change.

Two things can happen.

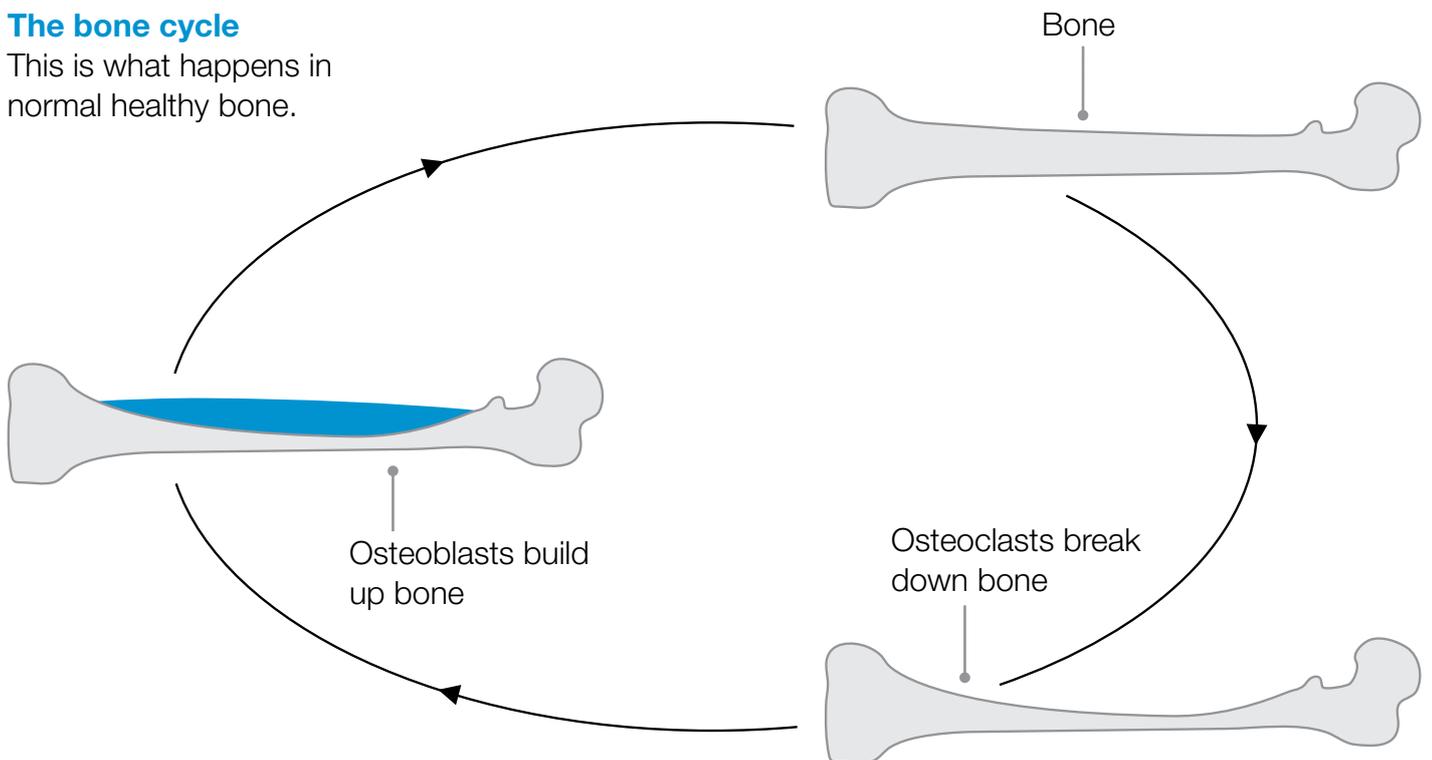
- Bone tissue gets broken down faster than it gets made, so too much bone tissue is destroyed. This can make the bones thinner and weaker. It often happens naturally as men get older and in men who drink lots of alcohol or smoke.
- Bone tissue gets made faster than it gets broken down, so too much bone tissue is made. This is common in men with advanced prostate cancer. When it happens, the bone becomes thicker because of the extra bone tissue. But it is weaker than bone that is made normally, because it doesn't have chance to become hard or strong.

Both processes can happen at the same time in different areas of the bone. The damage they cause makes the bones weaker, increasing the risk of broken bones and causing bone pain.

Bisphosphonates can help prevent the breakdown of bone by osteoclasts. They can also help to encourage bone building by osteoblasts. This makes the bone stronger and reduces the risk of broken bones. This might also help to relieve pain, although the evidence for this isn't very strong.

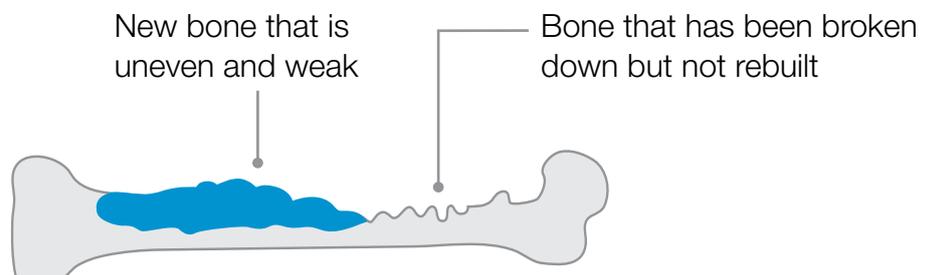
The bone cycle

This is what happens in normal healthy bone.



Bone damaged by cancer

This is what happens when cancer spreads to the bone.



What are the advantages and disadvantages?

As with all drugs, there are advantages and disadvantages of using bisphosphonates. What might be important to one man might not be so important to someone else. If you're offered bisphosphonates, talk to your doctor or nurse about your own situation – they can help you decide if bisphosphonates are right for you.

Advantages

- Bisphosphonates can make your bones stronger. This may help to reduce your risk of broken bones and other bone problems.
- Bisphosphonates can delay the need for other treatments such as radiotherapy to relieve bone pain or surgery to support damaged bone.
- Bisphosphonates may help to relieve bone pain and stop it getting worse.
- You may find it easier to move around if you have less bone pain.
- Bisphosphonates can lower the amount of calcium in your blood if it's high (hypercalcaemia), and treat the symptoms of this.

Disadvantages

- Like all treatments, bisphosphonates can cause side effects (see page 6).
- If you're having a bisphosphonate called zoledronic acid (Zometa®) you may have a hospital appointment every three or four weeks for treatment (see page 5).
- Zoledronic acid is given through a drip (intravenous infusion) into a vein, which can be uncomfortable but shouldn't be painful.
- If you're given bisphosphonate tablets, you'll need to be very careful that you take them correctly (see page 5).

- If you're taking bisphosphonates to help with bone pain, they can take up to three months to start helping.
- You may need regular dental check-ups (see page 7), which some people dislike.
- You'll need regular blood tests to check your kidneys are working properly.
- You'll need regular blood tests to check the levels of certain minerals, such as calcium and phosphate, in your blood. If your levels are low, you may need to take supplements.

What does treatment involve?

Before treatment

Before your first treatment, you will have some tests to check your kidneys are working properly. This is because bisphosphonates may affect how well they work. The kidneys get rid of any waste products in your blood, so it's important to make sure they're working properly before you begin treatment.

You may also have some scans to check where the cancer has spread to. These may include a bone scan, an MRI (magnetic resonance imaging) scan, a PET (positron emission tomography) scan, or a CT (computerised tomography) scan.

If you're on hormone therapy, you may have a different type of scan to check whether any areas of bone tissue have become weak from osteoporosis. You may hear this called a DEXA (dual energy X-ray absorptiometry) scan or a bone density scan. Your doctor or nurse will be able to give you more information about these.

You will need to visit a dentist before you start treatment. This is because bisphosphonates can occasionally cause jaw problems (see page 7). If you need dental treatment, you may not be able to have bisphosphonates until your dental treatment has finished. Speak to your doctor or nurse about any health or dental problems you've had in the past. Let them know about any medicines you are taking.

During treatment

Bisphosphonates may be given as tablets (oral bisphosphonates) or through a drip into a vein in the arm (intravenous bisphosphonates).

Remember that each hospital and doctor will do things slightly differently. Your doctor will tell you which type of bisphosphonate is most suitable for you and how often you will have treatment.

Through a drip

The most common bisphosphonate given to men with advanced prostate cancer is called zoledronic acid (Zometa®). It is given through a drip into a vein in the arm.

Make sure you drink plenty of water before each treatment – this can help lower your risk of getting kidney problems. Advice varies, but your doctor or nurse may suggest drinking 500ml of water (about two glasses).

The needle in your arm may feel uncomfortable during the treatment, but it shouldn't hurt. Each treatment session takes about 15 minutes. You might feel dizzy or get flu-like symptoms for around 24 hours after your treatment. Ask your doctor or nurse about ways to manage this – they may suggest taking a mild pain-relieving drug, such as paracetamol. It may also be a good idea to take a friend or family member with you in case you need help getting home afterwards.

How often you have treatment may depend on whether you're having bisphosphonates to prevent broken bones or for osteoporosis.

- If you're having bisphosphonates to prevent broken bones, you may have treatment every three or four weeks. New research has found that having treatment every 12 weeks can work just as well, but this isn't very common.
- If you're having bisphosphonates for osteoporosis, you may have your treatment every 6 or 12 months.

If you're also having chemotherapy to treat your prostate cancer, you might be given your bisphosphonate treatment at your chemotherapy appointments. If you miss a treatment, it's usually fine to continue at your next appointment. This shouldn't cause you any problems.

Most men don't have problems with zoledronic acid, but if you do, you might be offered tablets instead.

Tablets

The most common bisphosphonate tablets for men with osteoporosis are alendronic acid (Fosamax®) and risedronate sodium (Actonel®). It's important to read the instructions carefully and do the following things when taking bisphosphonate tablets.

- Take the tablet at the start of the day, at least 30 minutes before you eat, drink or take any other medicines.
- Take the tablet with a full glass of water (at least 200ml). This must be plain tap water – mineral water, or water with anything added to it, can interfere with the medicine.
- Swallow the tablet whole – don't suck, crush or chew it.
- Stand up or sit upright in a chair for 30 minutes after taking the tablet – don't lie down.
- Don't eat for at least 30 minutes after taking the tablet.

Alendronic acid is taken once a day. If you forget to take the tablet in the morning, don't take a tablet that day. On the next day, take one tablet as usual. Do not take more than one tablet a day.

Risedronate sodium is taken once weekly. If you forget to take the tablet on the usual day, take it on the first morning after you remember. Then return to taking the tablets on your usual day. Do not take more than one tablet a day.

Ask your doctor or nurse if you're not sure when to take your tablets.

How long will I need bisphosphonates?

This will depend on your own situation, and on whether you're having bisphosphonates for osteoporosis, bone pain or hypercalcaemia.

If you're having bisphosphonates to treat bone thinning or bone pain, you'll usually have them for as long as they're working. Your doctor will probably review your treatment about every two years to check it's working well and not causing you any problems.

If you're having bisphosphonates to treat hypercalcaemia, you'll usually stop treatment once your calcium levels are back to normal.

Regular blood tests

Some bisphosphonates can cause the levels of minerals in your blood, such as calcium, magnesium and phosphate, to become low. These are minerals that the body uses to make new bone. So you'll have regular blood tests to check you have enough of these minerals. If your levels are low, you may need to take supplements. Some doctors might offer you calcium and vitamin D supplements as soon as you start having bisphosphonates. Your doctor or nurse can tell you more about this.

What are the side effects?

Like all treatments, bisphosphonates can cause side effects. Bisphosphonates affect men in different ways, but the side effects are usually mild. Ask your doctor or nurse for more information before you begin your treatment.

We describe some of the possible side effects below. Tell your doctor or nurse if you get any of these. There are usually treatments or ways to manage them. But if your side effects start causing you serious problems or they affect your daily life, your doctor might suggest you stop taking the bisphosphonates.

Common side effects

Flu-like symptoms

You may get a high temperature, headache, chills, and muscle and joint pain with some bisphosphonate treatments. This usually only lasts around 24 hours and should go away after the first or second treatment.

Feeling sick (nausea) and being sick (vomiting)

You may feel or be sick after having bisphosphonates. This shouldn't last for more than a few days. It is more common with zoledronic acid and risedronate sodium than with alendronic acid.

Loss of appetite

You may feel less hungry after having treatment. This should improve in a few days. It's important to drink lots of water and eat a healthy balanced diet while you're having bisphosphonates. This can help to prevent health problems, including kidney problems. Tell your doctor or nurse if your appetite doesn't improve. They can suggest ways of dealing with this.

Increased pain

Some men get slightly more joint, muscle or bone pain when using bisphosphonates. This can happen with most bisphosphonates, but is more common with alendronic acid. The pain can begin days or months after starting treatment. Pain-relieving drugs can help, but speak to your doctor or nurse if the pain doesn't improve after a few days.

Kidney problems

Bisphosphonates can change how well your kidneys work. These changes could be serious, so you'll have regular blood tests to check this. Your kidneys will return to normal if you stop using bisphosphonates.

Red or sore eyes

Your eyes may feel itchy, sore or dry. Your doctor or nurse can give you eye drops to help with this. This is more common if you're having zoledronic acid.

Stomach or bowel problems

You may get some stomach pain or changes in your bowel habits. For example, you may have loose and watery bowel movements (diarrhoea). Or you may find it hard to empty your bowels (constipation). This is more common if you're taking bisphosphonate tablets, rather than a drip.

Less common side effects

Rash or itching

You may get a rash on your skin or feel quite itchy. This can be uncomfortable but shouldn't last more than a few days. Itching is more common with alendronic acid.

Risk of heart problems and stroke

Bisphosphonates may slightly increase your risk of heart problems (including a fast and irregular heartbeat) and stroke. Talk to your doctor about this if you're worried, or if you've had heart problems before.

Jaw bone problems (osteonecrosis of the jaw)

This is when healthy bone tissue in the jaw becomes damaged and dies. Although jaw bone problems are more likely in people using bisphosphonates, it still isn't very common, particularly if you're taking bisphosphonate tablets.

The following things may increase your risk of getting jaw bone problems.

- **Gum disease, problems with dentures and some dental treatments.** Visit your dentist before starting bisphosphonates and let them know you'll be having this treatment. You may want to show them this fact sheet. Tell your doctor or nurse about any dental problems you have before starting treatment, such as loose teeth, gum problems (pain, swelling or infections) and numbness or heaviness in the jaw. Make sure you keep your teeth and mouth clean. It's important to visit the dentist regularly while you're having bisphosphonates, and to tell your doctor if you get any dental problems while you're having bisphosphonates.

- **Smoking.** If you smoke, try to stop or smoke less. For information on stopping smoking, talk to your doctor or nurse or visit the NHS Choices website.
- **Some medicines.** Ask your doctor or nurse if any of the medicines you are taking can increase your risk of getting jaw problems.

Treatment for osteonecrosis of the jaw includes pain-relieving drugs and antibiotics. It will also help if you stop taking bisphosphonates. You may be referred to a specialist for further treatment and support.

Reporting unusual side effects

If you get any unusual side effects from your treatment, tell your doctor or nurse.

You can also visit the Medicines and Healthcare products Regulatory Agency (MHRA) website at www.mhra.gov.uk to report unusual side effects, or call them on 020 3080 6000.

Dealing with advanced prostate cancer

Having advanced prostate cancer can change the way you feel about life. You might feel scared, stressed or even angry. There's no 'right' way to feel and everyone reacts differently. There are things you can do to help yourself and people who can help. Your loved ones may also need support – this section might be helpful for them too.

How can I help myself?

- **Look into your treatment options** – ask your nurse or doctor about any side effects so you know what to expect and how to manage them.
- **Talk to someone** – it could be someone close or someone trained to listen, like a counsellor or your doctor or nurse.
- **Set yourself some goals and things to look forward to** – even if they're just for the next few weeks or months.

- **Look after yourself** – learn some techniques to relax and manage stress, like breathing exercises or listening to music.



For more ideas read our booklet, **Living with and after prostate cancer: A guide to physical, emotional and practical issues**. Or contact Macmillan Cancer Support, Maggie's Centres, Penny Brohn UK or your nearest cancer support centre.

Eat a healthy, balanced diet

Eating well is important for your general health, including your bone health. Make sure your diet includes enough calcium and vitamin D. Good sources of calcium include dairy products, fish where you eat the bones (such as sardines), and green leafy vegetables.

Most of your vitamin D is made inside the body when your skin is exposed to sunlight. But it can be difficult for your body to make enough vitamin D, especially in winter. You can also get vitamin D from eating oily fish and foods with added vitamin D, such as margarine and some breakfast cereals. You may need to take calcium and vitamin D supplements – speak to your doctor about this.



For more information, read our fact sheet, **Diet and physical activity for men with prostate cancer**.

Be as active as you can

Keeping active can improve your physical strength and fitness, and can lift your mood. We don't yet know whether exercise can help to prevent bone thinning in men who are on hormone therapy. But regular physical activity could help to keep you strong and prevent falls that could cause broken bones.

Gentle resistance exercise, such as lifting light weights or using elastic resistance bands, may be particularly good if you're on hormone therapy and are at risk of bone thinning or weakness.

If you have thin or weak bones, you're more likely to break a bone if you fall – so check what types of physical activity are safe for you. Even a small amount of physical activity can help. Take things at your own pace. Always speak to your doctor or nurse before starting any new exercise.



For more information, read our fact sheet, **Diet and physical activity for men with prostate cancer**.

Exercise safely

- Avoid activities where you could fall.
- Wear clothing and trainers that fit properly, and don't exercise on uneven surfaces, to avoid tripping over.
- Make sure you drink enough water.
- Don't exercise if you feel unwell, or have any pain, sickness or unusual symptoms.

Drink less alcohol and stop smoking

Drinking a lot of alcohol and smoking increase your risk of health problems such as heart disease and some cancers. They also increase your risk of bone thinning. Stopping smoking can reduce your overall risk of bone thinning. We don't know if drinking less alcohol reduces your risk – but the government recommends that men should not regularly drink more than 14 units of alcohol each week. For information about drinking less or stopping smoking, talk to your doctor or visit the NHS Choices website.

Our online self-management guide for advanced prostate cancer

Find out how to manage symptoms of advanced prostate cancer and side effects from treatment with our interactive online guide: prostatecanceruk.org/guides

Who else can help?

Your medical team

It may be useful to speak to your nurse, doctor, GP or someone else in your medical team. They can explain your diagnosis, treatment and side effects, listen to your concerns, and put you in touch with other people who can help.

Trained counsellors

Many hospitals have counsellors or psychologists who specialise in helping people with cancer – ask your doctor or nurse at the hospital. Your GP may also be able to refer you to a counsellor, or you could see a private one.

Local support groups

At local support groups, men get together to share their experiences of living with prostate cancer. Some groups have been set up by local health professionals, others by men themselves.

Hospices

Your local hospice or community palliative care team can provide a range of services, including emotional, spiritual, practical and financial advice and support, as well as treatment to manage symptoms such as pain. Hospices aren't just for people at the end of their life. You can often use their services while still living at home.

Occupational therapists

An occupational therapist can suggest practical things that might make daily life easier, such as changes to your home or workplace, or special equipment to help with everyday tasks. This could help you to avoid falls, which is important if you have weak bones. Ask your social services department or GP for details.

Spiritual support

You might begin to think more about spiritual beliefs as a result of having advanced prostate cancer. It's important to get spiritual support if you need it. This could be from your friends, family, religious leader or faith community.

Prostate Cancer UK services

We have a range of services to help you deal with problems caused by prostate cancer or its treatments:



- **our Specialist Nurses**, who can answer your questions in confidence
- **our one-to-one support service**, where you can speak to someone who understands what you're going through
- **our online community**, a free forum to ask questions or share experiences
- **our fatigue support service**, delivered over the phone by our Specialist Nurses.



To find out more about any of our services, visit prostatecanceruk.org/get-support or call our Specialist Nurses on 0800 074 8383.

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.

Are bisphosphonates suitable for me?

How often will I have treatment, and for how long?

What are the main benefits of bisphosphonates?

What are the main side effects of bisphosphonates, and who do I contact if I get any?

Am I likely to get osteonecrosis of the jaw?

What other treatments are available to strengthen my bones?

Should I take any supplements while I am on bisphosphonates?

What types of physical activity are safe for me to do?

Can you refer me to an occupational therapist?

More information

British Association for Counselling & Psychotherapy

www.bacp.co.uk

Telephone: 01455 883 300

Information and details of therapists in your area.

Macmillan Cancer Support

www.macmillan.org.uk

Telephone: 0808 808 0000

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

Maggie's Centres

www.maggiescentres.org

Telephone: 0300 123 1801

Drop-in centres for cancer information and support, and an online support group.

National Osteoporosis Society

www.nos.org.uk

Telephone: 0808 800 0035

Support for people with weak bones.

NHS Choices

www.nhs.uk

Information about conditions, treatments and lifestyle, including advice on quitting smoking.

Oral Health Foundation

www.dentalhealth.org

Telephone: 01788 539 780

Information about the mouth and teeth, and a helpline for questions about dental health.

Pain Concern

www.painconcern.org.uk

Telephone: 0300 123 0789

Information and support for people with pain.

Penny Brohn UK

www.pennybrohn.org.uk

Telephone: 0303 3000 118

Physical, emotional and spiritual support for people with cancer and those close to them.

About us

Prostate Cancer UK has a simple ambition: to stop men dying from prostate cancer – by driving improvements in prevention, diagnosis, treatment and support.

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

Download and order our fact sheets and booklets from our website at prostatecanceruk.org/publications or call us on **0800 074 8383**.

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

This publication was written and edited by our Health Information team.

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- Our Specialist Nurses
- Our Volunteers.

Tell us what you think

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

yourfeedback@prostatecanceruk.org



**Speak to our
Specialist Nurses**

0800 074 8383*

prostatecanceruk.org

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. Thanks to our generous supporters, we offer information free to all who need it. If you would like to help us continue this service, please consider making a donation. Your gift could fund the following services:

- £10 could buy a Tool Kit – a set of fact sheets, tailored to the needs of each man with vital information on diagnosis, treatment and lifestyle.
- £25 could give a man diagnosed with a prostate problem unlimited time to talk over treatment options with one of our Specialist Nurses.

To make a donation of any amount, please call us on **0800 082 1616**, visit **prostatecanceruk.org/donate** 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



f Like us on Facebook: **Prostate Cancer UK**

t Follow us on Twitter: **@ProstateUK**

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To be reviewed November 2020

Call our Specialist Nurses from Monday to Friday 9am - 6pm, Wednesday 10am - 8pm

* Calls are recorded for training purposes only.
Confidentiality is maintained between callers and Prostate Cancer UK.

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