

Prostate cancer briefsheet

Prostate cancer is the most common cancer in UK men.* Each year around 35,000 men are diagnosed with the disease in the UK, and it claims more than 10,000 lives.**

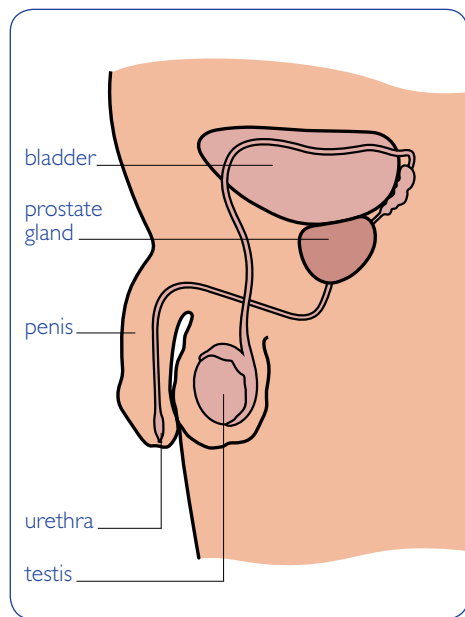
About prostate cancer

In the UK, prostate cancer accounts for a quarter of all cancers diagnosed in men.

A new case of prostate cancer is diagnosed every 15 minutes.

It is the second most common cause of cancer death in UK men.

The number of cases has increased rapidly over the last decade. But this is largely due to more widespread use of the 'PSA test' (see box below), leading to more cases being detected.



What is prostate cancer?

The prostate is a small gland in men that is about the size and shape of a walnut. It lies at the base of the bladder and surrounds the urethra, the tube that carries urine from the bladder and out of the body.

The prostate produces a fluid that both protects the urethra and mixes with sperm during ejaculation.

Prostate cancer occurs when a cell in the gland is damaged and starts multiplying out of control.

How is prostate cancer treated?

The main treatment options for prostate cancer are surgery, radiotherapy and hormone therapy. Chemotherapy is used for advanced disease that has returned.

The most appropriate treatment depends on the patient's situation, for example if their cancer has spread beyond the prostate. The disease can be slow growing, so some men may choose to be monitored rather than having treatment straight away. For more information, please visit www.cancerhelp.org.uk

What is Cancer Research UK doing about prostate cancer?

Cancer Research UK is one of the largest funders of prostate cancer research in the UK.

What could affect your risk?

Age

The risk of prostate cancer increases as men get older. Around nine out of ten cases occur in men over the age of 60.

Family history

A man's risk is greater if a close relative – a father, brother, or son – has the disease, especially if they were diagnosed before the age of 60. A small proportion of cases are caused by inheriting a faulty high-risk gene, such as the BRCA2 gene. Our scientists have also recently discovered subtle variations in some of our genes that slightly affect prostate cancer risk.

Race

Prostate cancer is most common in black Caribbean and black African men. The lowest rates of the disease are seen in Asian men.

Diet

We don't yet fully understand the role of diet in prostate cancer. But there is some evidence to suggest that eating foods containing lycopene (for example tomatoes) or selenium (for example brazil nuts) may reduce the risk, while a diet high in calcium may slightly increase risk.

The PSA test

Prostate-specific antigen (PSA) is a protein produced by the prostate that can be measured using a blood test. The higher a man's PSA level, the more likely it is that he has prostate cancer. But a raised PSA level isn't always a sign of cancer, and not all men with the disease have a high level.

Unfortunately it is difficult to distinguish between prostate cancers that grow quickly and are life-threatening, and those that grow slowly and do not require treatment. This means that although treatment may help some men with prostate cancer, others may receive unnecessary treatment for a cancer that may not cause any problems. The treatment itself has risks, and can cause unpleasant side effects such as incontinence.

Because of these uncertainties, many experts do not think that routine screening using the PSA test would be helpful.

The government introduced the Prostate Cancer Risk Management Programme in 2001, and it was updated in 2009. This aims to assist GPs in helping men to make an informed decision about whether to have a PSA test, outlining the potential risks and benefits.

Together we will beat cancer

September 2009 *excluding non-melanoma skin cancer **latest available figures

CANCER RESEARCH UK



Our research into prostate cancer

Understanding the causes

Our DNA is made up of thousands of genes. These are the instructions that control our cells' behaviour. If certain genes in a cell are damaged, it can start multiplying out of control, in some cases leading to cancer.

Some men are at a greater risk of prostate cancer due to gene faults that they inherit. Subtle variations in our genes can also influence risk. Dr Ros Eeles at the Institute of Cancer Research in Sutton and Professor Doug Easton in Cambridge are leading experts in cancer genetics. Together with collaborators across the world, they are identifying genetic changes that increase prostate cancer risk. This vital research should help doctors offer more tailored screening and treatment to men at higher risk.

Cancer spread

Stopping cancer spread is the key to saving thousands more lives. Professor Anne Ridley in London is investigating how cancer cells move around the body. Her work should lead to new ways to prevent and slow the spread of cancers including prostate cancer.

Prevention and early detection

Up to half of all cancers could be prevented through diet and lifestyle changes. Cancer Research UK aims to ensure that by 2020 three-quarters of the UK public are aware of the lifestyle choices they can make to reduce their risk.

Rebecca Gilbert in Bristol is investigating whether the vitamins A, D and E could help protect against prostate cancer. She is comparing the levels of these vitamins in the bloodstreams of men with prostate cancer to those of healthy men.

Diagnosing cancers earlier could save as many as 5,000 more lives a year in the UK. This is why, together with the Department of Health, we are leading the National Awareness and Early Diagnosis Initiative (NAEDI) to help promote early diagnosis.

With funding from Cancer Research UK and the NHS, Dr Joan Austoker in Oxford developed an information pack to help men understand the benefits and limitations of PSA testing. The pack has recently been updated, and is being sent out to every GP in England and Wales.

Professor David Neal in Cambridge is analysing tissue samples from more than 10,000 men to find new ways to diagnose prostate cancer and predict how fast it will grow or spread. Researchers have collected the samples as part of the ProtecT study, which aims to discover the best treatment for early stage prostate cancer.

Improving treatment

Developing new treatments

One of Cancer Research UK's goals is to develop better treatments for cancer with fewer side effects.

Prostate cancer is often treated with radiotherapy. Professor David Hirst in Belfast hopes to improve this treatment using tiny particles of gold called nanoparticles. These are taken up by cancer cells, making them more sensitive to radiotherapy. This pioneering research could revolutionise the treatment in the future.

Some prostate cancers are caused by a faulty gene called PTEN. Professor Alan Ashworth in London is investigating an exciting new generation of drugs called PARP inhibitors to find out if they could target these cancers and save even more lives.

One of the biggest challenges in treating prostate cancer is distinguishing between cancers that will grow slowly and simply need monitoring, and those that need immediate treatment. Dr Daniel Berney in London is analysing patient tissue samples to find molecules that could predict the way the disease will behave. This will pave the way for more personalised treatment for men with prostate cancer in the future.

Many men with prostate cancer are treated with hormone therapy, which can slow or even stop tumour growth. But after a few years of treatment some cancers can start to grow again. Dr Luke Gaughan in Newcastle is looking for more effective ways to block the hormones that drive the growth of prostate cancer. And Professor Simon Mackay at the University of Strathclyde in Glasgow is working to discover new drugs that could be used when hormone therapy no longer works.

Immunotherapy is a new type of cancer treatment that aims to harness the power of the body's own immune system to target

and destroy cancer cells. Dr Steven Lee in Birmingham is investigating how immune cells called T cells could be used to treat prostate cancer.

Clinical trials

Before treatments can be given to patients, they must first be tested in clinical trials to make sure they are effective and safe. Cancer Research UK plays a unique and pivotal role in funding clinical trials across the UK.

Surgery is commonly used to treat prostate cancer that has not spread, but doctors don't yet know what the best follow-up treatment is. A trial at the Royal Marsden Hospital in London is finding out if using radiotherapy after surgery, alone or in combination with hormone therapy, can improve survival.

Some prostate cancers can become resistant to hormone therapy and begin to grow again. Researchers in Birmingham are investigating whether giving a combination of drugs alongside hormone therapy improves survival and is more effective at stopping the cancer from growing.

Radiotherapy is a crucial tool in the fight against prostate cancer. Researchers at the Royal Marsden Hospital in London are finding out if giving higher doses less frequently works better and has fewer side effects than standard radiotherapy.

Our impact

- Cancer Research UK's work is transforming our understanding of prostate cancer and how best to treat it.
- We helped to develop the drug abiraterone, now showing promise in international clinical trials for prostate cancer.
- We funded studies of more than 50,000 men that revealed 16 gene variants linked to prostate cancer risk. This discovery could open doors to new treatments and help identify men at increased risk of the disease.
- We supported an early trial showing that a type of drug called a PARP inhibitor gave encouraging results for patients with inherited prostate cancer.