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## Bladder cancer

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### Summary

- Cigarette smoking is the most significant risk factor linked to bladder cancer.
  - Bladder cancer is most common in people over 70 years of age.
  - Treatment depends on the type of bladder cancer that you have.
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Bladder cancer affects twice as many men as women. It is rare in people under 55 years of age and most common among those over 70 years. In Victoria, around 605 people are diagnosed with an invasive bladder cancer every year. In 2011, there were 1031 deaths caused by bladder cancer in Australia.

There is no screening test used routinely to screen for bladder cancer in Australia.

### How the bladder and kidneys work

The bladder is a hollow, muscular, balloon-like organ that sits inside the pelvis and stores urine. Urine consists of water and waste products that are not needed by the body. The bladder is lined with a membrane that stops the urine going into the body. The cells of this membrane are called transitional cells or urothelial cells. The membrane lining is called the urothelium.

The kidneys produce urine, which is carried to the bladder by tubes called ureters. When the bladder is full enough, urine is passed from the body through a tube called the urethra. In women, the urethra is a very short tube in front of the vagina (birth canal). In men, the tube is longer and passes through the prostate and the penis.

### Risk factors for bladder cancer

The exact cause of bladder cancer is unclear. However, it has been linked to several risk factors including:

- Cigarette smoking – some chemicals in cigarettes can cause bladder cancer. If you smoke, your risk is almost four times that of a non-smoker. Smoking heavily or for a long period of time increases your risk.
- Increasing age – most cases occur in people over 70 years of age.
- Long-term chemical exposure – this is especially true for certain occupations. For example, exposure to some of the chemicals used for dyeing in textile and rubber industries is thought to increase the risk of bladder cancer (this can be difficult to prove).
- Repeated or chronic infections of the bladder – these infections have been linked to squamous cell carcinoma of the bladder.
- Treatment for other types of cancers – radiotherapy to the pelvic area can increase your risk of bladder cancer. Also, treatment with the chemotherapy drug cyclophosphamide increases your risk.

### Symptoms of bladder cancer

The symptoms of bladder cancer include:

- blood in the urine
- the need to urinate often
- a painful, burning sensation on urination.

All of these symptoms can be caused by other, much less serious conditions than cancer, such as a urine infection. If symptoms persist, you should always see your doctor.

### Types of bladder cancer

Most bladder cancers are found in the cells of the bladder lining. These are called transitional cells, so the

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condition is known as ‘transitional cell bladder cancer’.

The two main types of transitional cell cancers are:

- **Non-invasive or papillary bladder cancer** – this is early-stage transitional cell bladder cancer. The cancer has not spread beyond the lining of the bladder. Most bladder cancers are non-invasive when they are diagnosed.
- **Invasive bladder cancer** – this means that the cancer has spread into the muscle layer of the bladder or further.

There are other, rarer types of bladder cancers, such as squamous cell carcinomas and adenocarcinomas of the bladder. These types are more likely to spread into the deeper layers of the bladder.

### Diagnosis of bladder cancer

Bladder cancer is usually diagnosed using a number of tests and examinations, including:

- Urine test – a urine sample is sent to a laboratory to be examined under a microscope for cancer cells.
- Physical examination – this includes an examination of the pelvis and other organs.
- Ultrasound – an ultrasound is a painless procedure that uses soundwaves to create a picture that can identify if an abnormality in the bladder is present. A gel is applied to your abdomen and a transducer moves across the lower abdomen, sending the soundwaves to the computer.
- Cystoscopy and biopsy – a small flexible telescope is threaded through the urethra to view the lining of the bladder and urethra. This is a simple procedure, usually done while the person is awake. If abnormalities are seen, another cystoscopy will be done under general anaesthetic and a small sample will be sent to a pathologist for microscopic examination.

If bladder cancer is diagnosed, you may need to have other scans and x-rays to determine the size of the cancer and to see whether or not it has spread (the ‘stage’ of the cancer).

These may include:

- CT IVP (computerised tomography intravenous pyelogram scan or three-phase renal CT scan) – Is a type of x-ray that takes pictures inside your body after contrast dye is injected into a vein. This produces a three-dimensional picture of the kidneys, ureters and bladder.
- MRI (magnetic resonance imaging) scan – use magnetic waves to create detailed cross-section pictures of organs in the abdomen. MRI may be used if a person has an allergy to contrast dye, is pregnant or more detailed examination of pelvic soft tissues is required.
- Bone scan – may be used if a person is found to have a large muscle-invasive tumour or bony lesions from a CT. A radioisotope is injected into a vein and several hours later, the scan is done. This gives time for the bones to absorb the dye as it collects in areas of abnormal bone growth. The scan measures the radioactivity levels.

### Treatment for non-invasive bladder cancer

Most bladder cancers are non-invasive. They appear as small, mushroom-like growths that can be removed using a cystoscope, which snips the cancer off at the stem. The area around the cancer is then cauterised (burned) to prevent excessive bleeding. Non-invasive bladder cancer often returns, so you will need follow-up cystoscopies.

Immunotherapy (also known as ‘biological therapy’) is sometimes used to treat superficial bladder cancers. This is the use of substances that encourage the immune system to fight the cancer. The most common immunotherapy used to treat non-invasive bladder cancer is Bacillus Calmette-Guérin (BCG), which is a weakened form of the BCG vaccine. BCG is used to treat high-grade non-invasive bladder cancer.

BCG is administered once a week for six weeks once the bladder has healed (usually two to four weeks after cystoscopy and removal of tumours). Maximum benefit from BCG treatment appears to be obtained with maintenance therapy.

Another treatment for non-invasive low-grade bladder cancer is intravesical chemotherapy. During this treatment, the chemotherapy drugs are instilled directly into the bladder through a catheter. This treatment may be used

immediately after a cystoscopy or within 24 hours. Low-grade tumours may only require one dose. Where there is recurrence of the low-grade cancer, a course of intravesical chemotherapy may be recommended.

### **Stages and grades for bladder cancer**

Staging refers to the size of the cancer and whether it has spread. Grading refers to how quickly the cancer is likely to grow when the cells are looked at under the microscope. It is this information which helps to determine what is the best treatment for your bladder cancer.

### **Stages and grades for superficial (or non-invasive) bladder cancer**

Non-invasive bladder cancer will be staged as:

- Carcinoma in situ (CIS) – this is sometimes described as a flat, reddish coloured disc. The cancer cells are only in the very inner layer of the bladder lining, but CIS has a high potential to recur and if untreated, may become invasive.
- Ta – the cancer is a mushroom-like growth (papillary cancer) growing only in the inner layer of the bladder lining.
- T1 – the cancer has started to grow into the layer of connective tissue beneath the bladder lining.

Non-invasive bladder cancer will be graded as:

- Grade 1 or low grade – the cancer cells look very much like normal bladder cells, are usually slow-growing and less likely to spread.
- Grade 2 or intermediate grade – the cancer cells look more abnormal and grow slightly more quickly than grade 1 cancers.
- Grade 3 or high grade – the cancer cells look very abnormal and are more likely to grow more quickly. Carcinoma in situ (CIS) is always classed as high grade.

### **Stages and grades for invasive bladder cancer**

The stage of the cancer describes its size and whether it has spread. Once your doctors know the stage of the cancer, they can decide on the most appropriate treatment for you. A common staging system uses numbers to indicate the stage of the cancer.

This includes:

- Stage 0a – there is a small area of cancer only in the bladder lining.
- Stage 0is or CIS (carcinoma in situ) – this is sometimes described as a flat tumour. The cancer cells are confined to the inside layer of the lining of the bladder.
- Stage 1 – the cancer has grown into the layer of connective tissue beneath the bladder lining.
- Stage 2 – the cancer has grown into the muscle of the bladder wall under the connective tissue layer.
- Stage 3 – the cancer has grown through the muscle of the bladder and into the fat layer surrounding it. It may have spread to the prostate, uterus or vagina.
- Stage 4 – the cancer has spread to the wall of the abdomen or pelvis, the lymph nodes or to other parts of the body. If bladder cancer spreads to other parts of the body, it will most likely go to the lungs, liver or bones.

The common grading system also uses numbers to indicate the stage of the cancer. This includes:

- Grade 1 – the cancer cells tend to grow slowly and look quite similar to normal cells (they are 'well differentiated'). They are less likely to spread than grade 2 or grade 3 cancers.
- Grade 2 – the cancer cells look more abnormal and grow more quickly than grade 1.
- Grade 3 – the cancer cells tend to grow more quickly, look very abnormal (are 'poorly differentiated') and are more likely to spread.

Invasive bladder cancers are usually grade 2 or grade 3.

Another grading system classes invasive bladder cancer as either 'low grade' or 'high grade'. Low-grade cancers are slower growing and less likely to spread than high-grade bladder cancers.

## Treatment for invasive bladder cancer

Treatment for invasive bladder cancer may include one or a combination of:

- Surgery (cystectomy) – surgical removal of part (partial cystectomy) or all of the bladder (radical cystectomy). Fewer people have a type of bladder cancer that can be treated with partial cystectomy. If the cancer has spread beyond the bladder, more extensive surgery outside the bladder has the potential to stop the cancer spreading further.
- Chemotherapy – is the use of cancer-killing medication. Some chemotherapy medication is injected into a vein to circulate around the body.
- Radiotherapy – is the use of radiation to kill cancer cells.
- Complementary and alternative therapies – when used alongside your conventional cancer treatment, some of these therapies can make you feel better and improve your quality of life. Others may not be so helpful and in some cases may be harmful. The Cancer Council Victoria booklet called *Understanding complementary therapies* may be a useful resource.

All treatments can have side effects. Your medical team will discuss these with you before you begin any type of treatment.

### After surgery for bladder cancer

After a partial cystectomy, you will be able to pass urine as usual, but your bladder will be smaller and hold less urine. This means that you will need to pass urine more often. Fewer people have a type of bladder cancer that can be treated with partial cystectomy.

After a radical cystectomy, a new place to store the urine will need to be created. The most common way of doing this is to make a urostomy by forming an ileal conduit. This is an artificial opening (stoma), which is created using a piece of your small bowel. It opens into the abdomen and is covered with a flat, watertight bag that will catch your urine. Your doctor will discuss this and other possible options before surgery.

### Living with a stoma

Most people find it takes time to come to terms with having a stoma. It is a big change in your life. People often worry about how they will care for their stoma. A stomal therapy nurse will explain how to care for your stoma with clear, practical advice and link you to support services.

### Prognosis for bladder cancer

A person's prognosis depends on the type and stage of cancer, as well as their age and general health at the time of diagnosis.

Bladder cancer can be effectively treated if it is found early, before it spreads outside the bladder. The five-year survival rate for Australians with bladder cancer is 58 per cent.

### Research into bladder cancer

Early detection and better treatment have improved survival for people with bladder cancer. Research for bladder cancer is ongoing. Clinical trials can test the effectiveness of promising new treatments or new ways of combining cancer treatments. Always discuss treatment options with your doctor.

### Your sexuality and bladder cancer

Having bladder cancer and its treatment can affect the way you feel about your body, who you are, your relationships, the way you express yourself sexually and your sexual feelings (your sexuality). These changes can be very upsetting. You may also be very concerned about the effect it can have on your personal relationships.

You may find it difficult or embarrassing to talk about cancer and sexuality. However, most doctors and nurses are very understanding and, will be able to give you some support. They are able to refer you to a doctor or therapist who specialises in body image, sexual and relationship issues.

If you have a partner, it helps to be as open as possible with them about how you are feeling. If you would like to discuss things further, ask your doctor for a referral to a counsellor, or call Cancer Council Victoria, Cancer Information and Support on 13 11 20. The Cancer Council Victoria booklet called *Sexuality, intimacy and cancer*

may also be helpful to read.

### **Caring for someone with bladder cancer**

Caring for someone with cancer can be a difficult and emotional time. If you or someone you know is caring for someone with bladder cancer, there is support available. The Cancer Council Victoria booklet called *Caring for someone with cancer* may also be helpful to read.

### **When a cure for bladder cancer isn't possible**

If bladder cancer has been diagnosed in its later stages, the cancer may have spread to the stage where a cure is no longer possible. At this time, treatment focuses on improving quality of life by relieving the symptoms (this is called palliative treatment).

You may be given chemotherapy, radiotherapy and surgery to help with this. You may be referred to a Palliative Care Service that will be able to provide specialist care and support for you and your family. You may also have medication to relieve pain, nausea and vomiting. The Cancer Council Victoria booklets called *Living with advanced cancer* and *Understanding palliative care* may be helpful to read.

### **Where to get help**

- Your doctor
- Urologist
- Cancer Council Victoria Information and Support Service Tel. 13 11 20
- Multilingual Cancer Information Line, Victoria Tel. 13 14 50

### **Things to remember**

- Cigarette smoking is the most significant risk factor linked to bladder cancer.
- Bladder cancer is most common in people over 70 years of age.
- Treatment depends on the type of bladder cancer that you have.

**This page has been produced in consultation with and approved by:**

Cancer Council Victoria

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