

Understanding Kidney Cancer

A guide for people with cancer, their families and friends



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Note to reader

Always consult your doctor before beginning any health treatment. This booklet is intended as a general introduction to the topic and should not be seen as a substitute for your doctor's or health professional's advice. However, you may wish to discuss issues raised in this booklet with them. All care is taken to ensure that the information in this booklet is accurate at the time of publication.

Cancer Council NSW

Cancer Council is the leading cancer charity in NSW. It plays a unique and important role in the fight against cancer through undertaking high-quality research, advocating on cancer issues, providing information and services to the public and people with cancer, and raising funds for cancer programs.

This booklet is funded through the generosity of the people of NSW. To make a donation to help defeat cancer, visit Cancer Council's website at www.cancerCouncil.com.au or phone 1300 780 113.



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Introduction

This booklet has been prepared to help you understand more about kidney cancer. It is mainly about the two most common types of kidney cancer in adults, renal cell carcinoma and urothelial carcinoma. For information about rarer types of kidney cancer, call the Cancer Council Helpline on 13 11 20.

Many people feel understandably shocked and upset when told they have cancer. We hope this booklet will help you understand how kidney cancer is diagnosed and treated.

We cannot advise you about the best treatment for you. You need to discuss this with your doctors. However, we hope this information will answer your questions and help you think about other questions you want to ask your health professionals.

This booklet does not need to be read from cover to cover – just read the parts that are useful to you. Some medical terms that may be unfamiliar are explained in the glossary. You may also like to pass this booklet on to your family and friends.

How this booklet was developed

This booklet was developed with help from medical experts and people who have been diagnosed with kidney cancer. It is based on clinical practice guidelines for kidney cancer. Cancer Council Victoria's publication *Understanding Kidney Cancer* and information from Macmillan Cancer Support and the American Cancer Society were used as source material.

If you're reading this booklet for someone who doesn't understand English, tell them that the Cancer Council Helpline can arrange telephone support in different languages.



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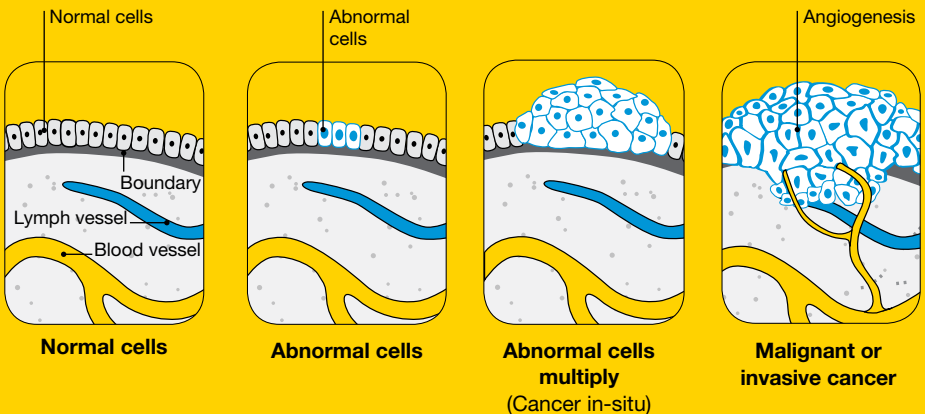
What is cancer?

Cancer is a disease of the cells, which are the body's basic building blocks. Our bodies constantly make new cells to help us grow, to replace worn-out cells and to heal damaged cells after an injury.

Normally cells grow and multiply in an orderly way, but sometimes something goes wrong with this process and cells grow in an uncontrolled way. This uncontrolled growth may result in abnormal blood cells or may develop into a lump called a tumour.

A tumour can be benign (not cancer) or malignant (cancer). A benign tumour does not spread to other parts of the body. A malignant tumour is made up of cancer cells, which grow out of

How cancer starts



control and are able to spread. The place where a cancer begins is called the primary cancer. When it first develops, a malignant tumour may not have invaded nearby tissue. This is known as a cancer in-situ (carcinoma in-situ) or localised cancer. As the tumour grows it may spread, becoming invasive cancer.

Cancer cells can spread to other parts of the body by travelling through the bloodstream or lymphatic system. They may continue to grow into another tumour at this new site. This is called a secondary cancer or metastasis. A metastasis keeps the name of the original cancer. For example, kidney cancer that has spread to the lungs is still called kidney cancer, even though the person may be experiencing symptoms caused by problems in the lungs.

How cancer spreads

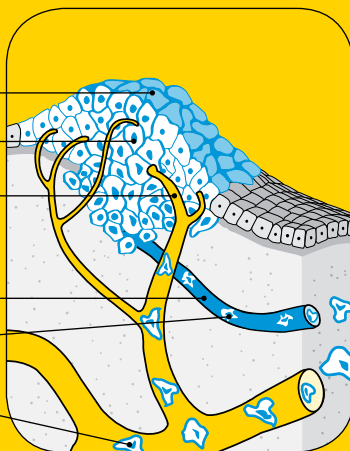
Primary cancer

Local invasion

Angiogenesis –
tumours grow their
own blood vessels

Lymph vessel

Metastasis –
cells invade other
parts of the body via
blood vessels and
lymph vessels





The kidneys

The kidneys are two bean-shaped organs, each about the size of a fist. They are positioned near the middle of your back, on either side of the backbone (spine).

The kidneys are part of the urinary system. Their main role is to filter blood, which removes excess water, salts and waste products. These filtered materials are turned into urine, which then travels from the kidneys to the bladder through tubes called ureters. The urine is stored in the bladder until urination, when it leaves the body through a tube called the urethra.

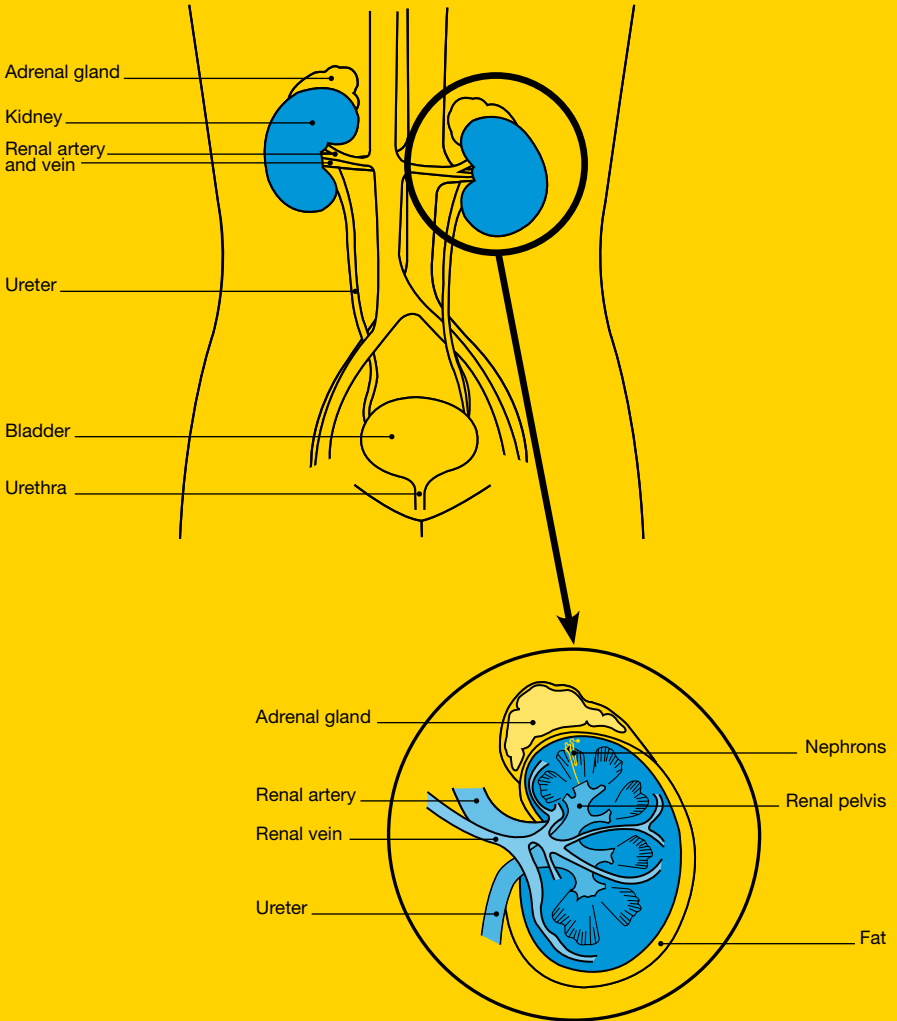
The small sub-units of the kidney that filter the blood are called nephrons. Each kidney has about one million nephrons. Nephrons also regulate blood pressure and volume, the blood's acid-base balance (pH), and the body's levels of chemical substances such as electrolytes and metabolites.

The kidneys also produce certain hormones, which help control the production of red blood cells and regulate the body's calcium levels.

If one kidney is damaged or diseased, the other kidney is usually able to take up the extra work. Many people are able to live quite normally with just one functioning kidney.

Sitting above each kidney is an adrenal gland. These glands are not part of the urinary system but cancer can spread to them.

The urinary system





Key questions

Q: What is kidney cancer?

A: Kidney cancer is a type of cancer that occurs in the cells of the kidney. In the early stages, the primary cancer forms a tumour that is confined to the kidney. As the cancer grows, it may invade organs or structures near the kidney, such as the adrenal glands, ureters or liver. It may also spread to other parts of the body, such as the lungs or bones.

Cancer found in the kidney may also be a secondary cancer that has spread from a primary cancer elsewhere in the body.

Q: What types are there?

A: There are several different types of kidney cancer:

- Renal cell carcinoma (RCC) is the most common type, accounting for about 90% of all kidney cancers. It starts in the kidney's nephrons. Usually only one kidney is affected.
- Urothelial carcinoma – previously called transitional cell carcinoma (TCC) – accounts for 8% of kidney cancers. It begins in the renal pelvis, where the kidney and ureter meet. If it occurs in the ureters, it is called cancer of the ureter.
- Rarer types of kidney cancer are renal sarcoma, which affects the kidney's connective tissue; renal lymphoma, which starts in the kidney's lymphatic tissue; and Wilms' tumour, which is more common in children than adults.

Q: What are the causes?

A: The exact causes of kidney cancer are unknown, but several factors are known to increase the risk of developing it:

- **Gender** – Being male increases the risk.
- **Family history** – People who have family members with kidney cancer, especially a sibling, are at increased risk. Having an inherited condition such as von Hippel-Lindau disease or Birt-Hogg-Dubé syndrome also increases risk.
- **Smoking** – People who smoke have almost twice the risk of developing kidney cancer as non-smokers.
- **Obesity** – Excess body fat may cause changes in certain hormones that can lead to kidney cancer.
- **High blood pressure** – This is especially a risk factor in people who are also obese.
- **Exposure to certain substances** – People with regular exposure to certain chemicals, such as asbestos, cadmium, lead, herbicides or organic solvents, may have more risk.
- **Heavy use of certain medications** – These include diuretics and pain-killers with the ingredient phenacetin. Phenacetin is no longer used, but people who took such medications (most likely prior to 1970) may be affected.
- **Kidney disease** – People with advanced kidney disease have a higher risk of developing kidney cancer.

“ The slightest trace of blood in my urine led to me being diagnosed with kidney cancer. ” *George*

Q: What are the symptoms?

A: Most people with kidney cancer have no symptoms and are diagnosed with the disease when they see the doctor for another reason. Symptoms can, however, include:

- blood in the urine (haematuria)
- a change in urine colour to dark, rusty or brown
- pain in the lower back on one side (not due to an injury)
- pain or a lump in the abdomen or side (flank)
- constant tiredness
- unexplained weight loss
- fever (not caused by a cold or flu)
- swelling of the abdomen or extremities, e.g. ankles, feet.

Your doctor may also find that you have either a low red blood cell count (anaemia) or a high red blood cell count (polycythaemia). Both these conditions can cause fatigue and dizziness, among other symptoms.

As these symptoms are common to other illnesses, having some of them doesn't necessarily mean you have kidney cancer. Only tests can confirm the diagnosis.

Q: How common is it?

A: In NSW, about 1,000 people are diagnosed with kidney cancer each year, accounting for 3% of cancers. It is the eighth most common cancer in NSW. Kidney cancer is more common in people over 55. Men are almost twice as likely to be diagnosed with kidney cancer as women.



Diagnosis

Many kidney cancers are present for some time before they are diagnosed because often people don't have any symptoms. About one in three kidney cancers are advanced at diagnosis.

If your doctor suspects you have kidney cancer, you will have some of the following tests to confirm the diagnosis and show if cancer has spread to other parts of the body. You will not need to have all of these tests.

There are four categories of tests: blood and urine tests, internal examination (cystoscopy), imaging tests, such as an ultrasound, and tissue sampling (biopsy).

Blood and urine tests

Urine test

The most common sign of kidney cancer is blood in the urine (haematuria). Doctors will sometimes request a urine test so they can look for traces of blood that can't be seen with the naked eye and other abnormalities such as proteins or cancer cells.

Blood test

The doctor will ask for a blood sample to check for changes in the blood that can be caused by kidney cancer. A blood count will be done to check the number of the different types of blood cells present. Too few or too many red blood cells can be a sign of kidney cancer. High calcium levels and high levels of certain liver enzymes can also indicate kidney cancer.

Internal examination

If you have blood in your urine, you may need a cystoscopy, which allows the doctor to look directly inside your bladder. In this test, a urologist (a specialist of the urinary system) passes a tiny telescope called a cystoscope through the urethra and into the bladder to check for bleeding, tumours or other abnormalities. You will have a local anaesthetic for this test so it doesn't hurt. If urothelial carcinoma is suspected, the urologist can also examine the ureters by extending the tip of the cystoscope. This part of the procedure is called a ureteroscopy.

Imaging tests

You will usually have at least one of these scans, but you may have more than one if the doctor needs further information to make a diagnosis or to see if the cancer has spread.

Ultrasound

In an ultrasound, soundwaves are used to produce pictures of internal organs. It is painless and takes about 15–20 minutes.

Before the test you may be asked to drink plenty of fluids so your bladder is full and a clear picture can be seen. While you're lying down, a gel is spread over your abdomen or back and a small device called a transducer is passed over the area. The device sends out soundwaves that echo on meeting something dense like an organ or tumour. A computer creates a picture from these echoes.

CT scan

A CT (computerised tomography) scan is a procedure that uses x-ray beams to take pictures of the inside of your body. Unlike a standard x-ray, which takes a single picture, a CT scan compiles many pictures into one complete picture of an area of your body.

CT scans are useful for checking whether cancer has spread to other organs and tissues. These scans provide information about the size, shape and position of a tumour. They help identify enlarged lymph nodes that might contain cancer, as well as secondary cancer sites.

You will have to have an injection of a special dye (contrast medium) into one of your veins before the scan. This injection will help make the scan pictures clearer. It may make you feel flushed and hot for a few minutes. Rarely, more serious reactions occur, such as breathing difficulties or low blood pressure.

You will need to lie still on a table while the CT scanner, which is large and round like a doughnut, slowly moves around you. This painless scan will take about 10–30 minutes. Most people are able to go home as soon as their scan is over.

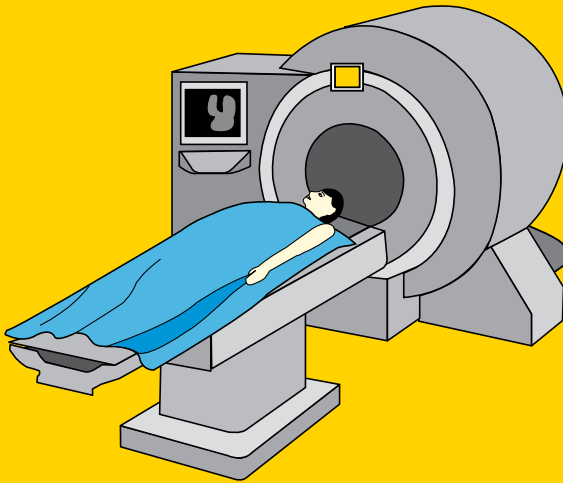
The dye used in a CT scan usually contains iodine. If you're allergic to iodine, fish or dyes, let the person performing the scan know in advance.



MRI scan

The MRI (magnetic resonance imaging) scan uses a combination of magnetism and radio waves to build up detailed cross-section pictures of the body. This test involves lying on a couch inside a metal cylinder – a large magnet – that is open at both ends.

As with a CT scan, a contrast medium may be injected into your veins before a scan. Though the MRI scanner can be quite noisy, the test is painless. It usually takes less than an hour. You will probably be able to go home as soon as your scan is over.



“ I was worried about having an MRI because I’m claustrophobic. The medical team gave me a sedative and I slept through the whole scan. ” Heather

Intravenous pyelogram

An intravenous pyelogram (IVP), or intravenous urography, is a type of x-ray used to find anything unusual in the urinary system. IVPs aren't common because doctors are usually able to gather enough information from a CT scan, MRI or ultrasound.

In an IVP, a dye is injected into a vein, usually in your arm. The doctors watch the dye move through the blood and urinary systems on an x-ray screen. This helps them see any problems the tumour has caused. You may need to wear a compression band (belt) around your body to help the doctors get a clearer picture.

The dye may make you feel hot and flushed for a few minutes, but this feeling quickly passes. You may also feel some temporary discomfort in your abdomen. An IVP usually takes about an hour and you usually can go home when the test is over.

Retrograde pyelogram

If you have a ureteroscopy for urothelial carcinoma, you may have a retrograde pyelogram at the same time. This is a type of x-ray that uses dye to show up problem areas in the ureter and renal pelvis. The dye is put into the body via a thin plastic tube (catheter) that is placed in the ureter during the ureteroscopy.

Chest x-ray

A chest x-ray is used to check for problems in the organs and bones of the chest. If cancer has already been diagnosed, a chest x-ray can show whether the cancer has spread to your lungs or ribs. The x-ray takes only a few minutes and is painless and safe.

Radioisotope bone scan

A radioisotope scan is another way to see if any cancer cells have spread to the bones. For this test, a small amount of radioactive dye will be injected into a vein, usually in your arm. You will need to wait while the dye moves through your bloodstream to your bones, which can take 3–4 hours. A machine that detects radioactivity will then scan you. A larger amount of radioactivity will show up in any areas of bone affected by cancer cells.



The amount of radiation used for a bone scan is small, and the radiation disappears from your body within a few hours.

Tissue sampling

A biopsy is when doctors remove fluid or cells from the body so that the tissue can be examined under a microscope to see if there have been any changes in the cells.

For kidney cancer, a tissue biopsy is not often used for diagnosis but may identify the exact type of cancer cells in the body. You will have either a needle core biopsy or a fine needle aspiration:

- **Needle core biopsy** – A sample of tissue is removed from the kidney with a needle. Local anaesthetic is used to numb the area. It usually takes 30–60 minutes to perform.
- **Fine needle aspiration biopsy** – A thin needle is inserted through the skin into the kidney to remove either fluid or cells. It is a quick procedure done without anaesthetic.

Staging and grading kidney cancer

The tests used to diagnose kidney cancer also show how far the cancer has spread (the stage) and how the cancer cells appear and are likely to behave (the grade). Knowing this helps doctors plan the best treatment for you.

The most common staging system used for kidney cancer is known as the TNM system.

T (Tumour)	Indicates the tumour size and how deep it has spread.
N (Nodes)	Indicates whether the lymph nodes are affected.
M (Metastasis)	Indicates whether the cancer has spread to other parts of the body.

Grading indicates how abnormal the cancer cells appear, how fast the cells will probably grow and if the cancer is likely to spread. The Fuhrman system is commonly used for grading.

Grade 1	The cancer cells look fairly normal, are probably growing slowly and are not likely to spread.
Grade 2	The cancer cells appear slightly abnormal and will probably grow more rapidly.
Grade 3	Most cells appear abnormal and the cancer is likely to grow quickly.
Grade 4	No cancer cells look normal and they are likely to grow and spread rapidly.

Prognosis

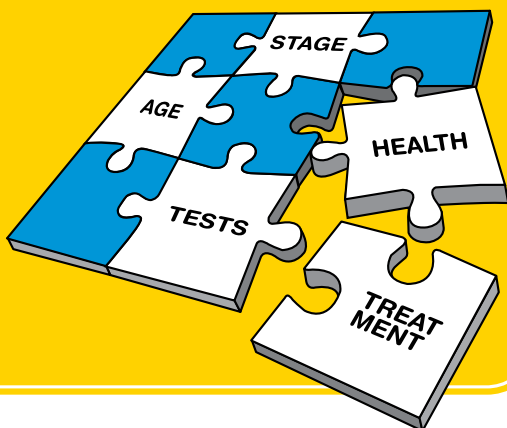
Often people want to know what their chances of getting better are. This is called a prognosis, which means the expected outcome of a disease.

You will need to discuss your prognosis and treatment options with your doctor, but it is not possible for any doctor to predict the exact course of your disease. Instead, your doctor can give you an idea about common issues that affect people with kidney cancer.

In most cases, the earlier that kidney cancer is diagnosed, the better your prognosis. However, your outcome also depends on a number of other factors (see box).

Assessing prognosis

Test results, the type of cancer you have, the rate of tumour growth, how well you respond to treatment, and other factors such as age, fitness and medical history are all important factors in assessing your prognosis.



“ I tried to stay positive, and knowing that other people had recovered from the same type of cancer has helped me. ” *Survivor*

Which health professionals will I see?

Your GP (general practitioner) plays an important role in your ongoing care. They will arrange the first tests to assess your symptoms. If these tests do not rule out cancer, you will usually be referred to a nephrologist, a kidney disease specialist who will arrange further tests and advise you about treatment options.

You will also be cared for by a range of other health professionals who specialise in different aspects of your treatment. This multidisciplinary team will probably include:

Health professional	Job description
urologist	a surgeon who specialises in treating diseases of the urinary system
medical oncologist	prescribes and coordinates the course of chemotherapy
radiation oncologist	prescribes and coordinates the course of radiotherapy
nurses	administer drugs and support you through all stages of treatment
cancer care coordinator	supports patients and families throughout treatment and liaises with other staff
dietitian	recommends the best eating plan to follow while you're in treatment and recovery
social worker, physiotherapist and occupational therapist	link you to support services and help with emotional, physical or practical issues.



Key points

- Kidney cancer often doesn't cause any symptoms but sometimes urinary problems or pain in the back occurs.
- Cancer may be present for some time before diagnosis. About 30% of kidney cancers have already advanced at diagnosis.
- Several types of tests are used to diagnose kidney cancer and to see if it has spread. These include blood and urine tests, internal examination, imaging tests and tissue examination (biopsy).
- Tests show what type of kidney cancer you have, as well as its stage and grade.
- Most people with kidney cancer have renal cell carcinoma (about 90%). A smaller number have urothelial carcinoma (about 8%).
- The stage of the cancer shows how far the cancer has spread. The TNM system is used for staging. This stands for Tumour, Nodes, Metastasis.
- The grade of the cancer shows how abnormal the cancer cells appear. The Fuhrman system is used for grading (from Grade 1–4).
- Knowing the stage and the grade helps doctors plan the best treatment for the cancer.
- Your prognosis is the expected outcome of the disease, based on the type of cancer you have, your treatment options and other factors such as your age, medical history and fitness. Your doctor can discuss your prognosis with you.

Treatment

Treatments for kidney cancer include surgery, radiotherapy and drug treatments such as chemotherapy. In some cases, your doctor may recommend active surveillance, which is not a type of treatment but allows your health to be monitored regularly. This is sometimes called watchful waiting.

You need to talk to your doctor about the treatment options that are best for you. Read *Making treatment decisions* on page 32 for information about weighing up your different options.

Active surveillance

When small tumours (less than 4 cm) are found in the kidney, they have a reasonably high chance of being benign (not cancer). Many small tumours may not grow during a person's lifetime and pose little risk to health. Doctors may suggest it is better to keep a watch on some small tumours (using regular ultrasounds or CT scans) than to treat them immediately. If the tumour appears to grow at any time – based on the imaging tests – you will then be given treatment such as surgery or radiotherapy. Using the active surveillance method means people can avoid the loss of kidney function and other side effects associated with different types of treatment.

You may feel anxious about not treating tumours in your body right away, even if they are benign. However, this is a common approach and will only be recommended if the doctor thinks it is the best thing to do. If you continue to be worried, discuss this with your urologist or a counsellor.

Surgery

Surgery (resection) is the main treatment for people with kidney cancer, although it is not possible for all patients if the cancer has spread. Even though the whole or part of your kidney will be removed, the remaining kidney can usually carry out the work of two kidneys without any problems. If surgery is an option for you, the type of surgery your doctor recommends will depend on your general health and the stage and grade of the cancer.

Types of surgery

There are different types of surgery, depending on the type of kidney cancer and whether it has advanced.

Radical nephrectomy – Removing the whole affected kidney is the most common type of operation for renal cell carcinoma. The adrenal gland above the kidney, surrounding fatty tissue and nearby lymph nodes may also be removed during surgery.

Partial nephrectomy – Removing the cancer along with only a small part of the kidney is another type of surgery for renal cell carcinoma. This operation has the advantage of preserving more of the kidney and therefore its function, but it is a complex procedure. It may be the best choice for people with a small tumour in one kidney (less than 4 cm). It is also used for people with cancer in both kidneys or only one working kidney.

Nephro-ureterectomy – This is the main procedure for urothelial carcinoma. In this operation, the kidney, top of the bladder and the ureter are removed. Nearby lymph nodes may also be taken out.



For urothelial carcinomas affecting the ureters, people may have a segmental ureterectomy resection for small, low-grade tumours, or a ureteroneocystomy if the cancer is near the bladder. The ureter will be rejoined where the cancer has been taken out so that urine will still be able to flow from the kidney to the bladder.

Surgery for advanced cancer – In some cases, surgery may be an option to remove tumours that have developed in other parts of the body if the cancer has metastasised. Generally, however, surgery is not recommended if the cancer has spread extensively.

The procedure

Surgery is usually carried out under a general anaesthetic. A cut (incision) is made at the side of the abdomen where the affected kidney is located or in another area of the body where the cancer has spread to. The surgeon will remove as much of the cancer as possible.

You may be able to have keyhole surgery (laparoscopy). People who have laparoscopic surgery usually have a shorter hospital stay, less pain and a faster recovery time. In this procedure, the surgeon makes several small cuts and inserts a tiny telescope known as a laparoscope into one of these incisions. The laparoscope takes images of the inside of the body and projects them onto a TV screen. The operation is performed through the other incisions while the surgeon views the organs and surgical instruments on the screen.

After the operation

After surgery, you will be given fluids and medication through a drip inserted into a vein (intravenously). You may have other temporary tubes in place to help drain fluid away from the site of the operation. For example, you will most likely have a urinary catheter in place for a few days. This is a thin tube inserted in your urethra and attached to a bag that collects urine. It is not usually painful. After the catheter is removed, you will be able to urinate normally again.

You will have some pain in the areas where the incisions were made and where the kidney (or part of the kidney) was removed. If you have pain or discomfort, ask for medication to help control it. There are different options available. You may have an anaesthetic injected into the area around the spine (called an epidural), drugs injected into the muscle (intramuscularly) or vein, oral drugs, or a patient-controlled analgesic system, called a PCA system (see illustration).



Taking care of yourself

You will be in hospital for a few days to a week, and you will need to return to the hospital for a checkup some weeks after you've returned home. Whilst in hospital, it is a good idea to see a physiotherapist, who can explain the safest way to move after your surgery and give you exercises to do while you are recovering.

Recovery time varies. When you get home, you will need to take things easy and only do what is comfortable. Let your family know that you need to rest and will need help around the house.

It will be a while before you can exercise, lift things, drive or return to work. Ask your doctor how long you should wait. When your doctor advises you to resume exercise, you can start by walking a short distance, then going a little further each day.

To help you relax and relieve any anxiety, the Cancer Council Helpline can send you free relaxation and meditation CDs. For information on looking after yourself, see page 35.

Arterial embolisation

An arterial embolisation is when the artery providing blood to the kidney is blocked so that the kidney and the tumour in it will die. A tube called a catheter is inserted into the artery, then a substance is injected to block the blood flow. You may have this procedure if you have renal cell carcinoma and are unable to have surgery. It is also sometimes done before kidney surgery to reduce bleeding during and after the operation.

Radiotherapy

Radiotherapy is a type of therapy that uses high-energy radiation to kill or damage cancer cells. The radiation is delivered in a beam that is specifically targeted at the treatment site so as little damage as possible is done to healthy areas of the body.

Radiotherapy is not normally used to treat primary kidney cancer. However, it is sometimes used if a person's general health is too poor to have surgery. Radiotherapy may also ease some of the symptoms of kidney cancer (such as pain and bleeding) and secondary cancer (such as bone pain).

If you have radiotherapy, the total number of treatments and their duration depends on your situation. Sometimes only a couple of treatments are necessary, or you may require several treatment sessions over many weeks.

Radiotherapy can cause temporary side effects such as nausea, loss of appetite, diarrhoea and tiredness. It can also cause mild skin irritation, similar to sunburn. Throughout your treatment, you will need to take precautions with skin care. Talk to your doctor or nurse about washing, shaving, and using any talc powders or lotions on the affected area.

Ask your doctor or nurse about managing the side effects of radiotherapy. The free booklet *Understanding Radiotherapy* also has a lot of useful information. Call the Cancer Council Helpline on 13 11 20 to request a copy or download it from the website at www.cancerCouncil.com.au.

Chemotherapy

Chemotherapy is the use of strong drugs to kill or slow the growth of cancer cells. It is given either as pills or injected into a vein (intravenously). The drugs work by interfering with the way that cancer cells grow and multiply. The aim is to destroy fast-growing cancer cells while causing the least possible damage to healthy cells. Side effects, such as nausea, loss of appetite and fatigue, are common but there are ways to manage these.

Chemotherapy is not routinely used for renal cell carcinoma because the cancer cells are resistant to many of these drugs. However, in some cases, chemotherapy is beneficial for advanced kidney cancer.

It is also sometimes used following surgery for urothelial carcinoma. When used in conjunction with another type of treatment such as surgery, it is called adjuvant chemotherapy. Used in this way, the aim of the chemotherapy is to get rid of any remaining cancer cells and prevent the cancer from returning.

Researchers are looking for more effective types of chemotherapy for kidney cancer and there may be an experimental treatment available for you to try. Ask your doctor if you are interested in this type of clinical trial.

For more information about chemotherapy, its side effects and how to manage them, talk to your doctor or nurse, or call the Helpline to request a free copy of Cancer Council's booklet, *Understanding Chemotherapy*.

Other drug treatments

Treatment with drugs is usually only used in renal cell carcinoma if the cancer has spread. Depending on your case, drugs may be used instead of surgery or as well as surgery. Other drug treatments are not used for urothelial carcinoma.

Immunotherapy

Immunotherapy (also called biological therapy) has been used for many years for advanced kidney cancer. Its aim is to boost the body's immune system to help it fight off disease and shrink the cancer. The treatment is given intravenously or orally. It is a drug that has been developed from cytokines, which are proteins that naturally occur in the body and stimulate the immune system.

Immunotherapy often works better if the kidney with the tumour is removed, so your surgeon may firstly remove all or part of it.

Side effects of immunotherapy vary, but can include fever, chills, muscle aches, fatigue and soreness at the injection site.

Tyrosine kinase inhibitors and mTOR inhibitors

Recently two classes of drugs, called tyrosine kinase inhibitors (TKIs) and mTOR inhibitors, have been trialled for people with advanced kidney cancer. Both types of drugs block the enzymes (chemical messengers) in the body that help cells survive and tell cells when to divide and grow. The drugs can make both primary and secondary cancers shrink or stop growing. In clinical trials, these drugs caused fewer side effects than treatment with chemotherapy.

Radiofrequency ablation

Radiofrequency ablation (RFA), which is still being assessed in clinical trials, is sometimes used for patients with renal cell carcinoma who are not able to have surgery. It uses radio waves to heat and destroy cancer cells. A needle is inserted into the tumour, usually under the guidance of a CT scan. An electrical current passes into the tumour from the needle, which creates heat, destroys the cells and causes scar tissue to form.

Usually patients only require a single RFA treatment but some may need more. The treatment takes about 15 minutes and you can usually go home a few hours afterwards.

Side effects, including pain or fever, are managed with medication.

Cryotherapy

Cryotherapy (or cryosurgery) freezes and kills cancer cells. A probe is inserted into the tumour (either with surgery or under CT scan guidance) and liquid nitrogen is injected. This freezes the surrounding area and destroys the cancer cells. Afterwards, the frozen tissue thaws and is absorbed by the body.

Cryotherapy takes about an hour. You may need to stay in hospital overnight, and you may have medication to help with any pain.

This emerging treatment is still being evaluated. Trials show that cryotherapy is most suitable for kidney tumours under 4 cm. Not all hospitals offer cryotherapy, so if it is recommended, ask your doctor where it is administered and how much it costs.

Palliative treatment

Palliative treatment helps to improve people's quality of life by alleviating symptoms of cancer without trying to cure the disease. It is particularly important for people with advanced cancer. However, it is not just for people who need end-of-life care; it can be used at different stages of cancer.

Often treatment is concerned with pain relief and stopping the spread of cancer, but it can also involve the management of other physical and emotional symptoms, such as bowel or breathing problems, mobility issues or stress and anxiety. Treatment may include radiotherapy, chemotherapy or other types of medication.

For more information on palliative treatment or advanced cancer, call the Helpline for free copies of *Understanding Palliative Care* or *Living with Advanced Cancer*, or view them online at www.cancercouncil.com.au.



Pain can be a major worry for people with kidney cancer, but there are many ways to manage it. For more information, call the Cancer Council Helpline for a free copy of the booklet and DVD *Overcoming Cancer Pain*. You can also ask for a free relaxation or meditation CD, which may help you reduce your pain and anxiety.



Key points

- If you have a small tumour that is benign (not cancer) and unlikely to grow, your doctor may recommend active surveillance rather than treatment. You will have regular checkups to monitor the tumour. If the tumour changes, treatment may be offered.
- The most common treatment for kidney cancer is surgery. There are different procedures for renal cell carcinoma and urothelial carcinoma. Surgery may also be performed if cancer has spread a little but not extensively.
- If you have renal cell carcinoma but surgery is not possible, you may have an arterial embolisation, which causes both the tumour and the kidney to die, or radiotherapy.
- For renal cell carcinoma, you may also have a drug therapy that aims to shrink the cancer, such as chemotherapy, enzyme inhibitors or immunotherapy.
- Other forms of treatment include radiofrequency ablation and cryotherapy.
- For urothelial carcinoma, you may have chemotherapy or radiotherapy in conjunction with surgery.
- All of the treatments may cause some side effects, such as pain or fatigue. You will also need time to recover from different treatments. Talk to your doctor about how to manage any side effects and your recovery.



Making treatment decisions

Sometimes it is difficult to decide on the right treatment. You may feel that everything is happening so fast you don't have time to think things through, but there is usually time to consider what sort of treatment you want.

Waiting for test results and for treatment to begin can be difficult. While some people feel overwhelmed by information, others want as much information as they can find. Making sure you understand enough about your illness, the treatment and its side effects will help you make your own decisions.

- If you are offered a choice of treatments, you will need to weigh up their advantages and disadvantages. Consider how important any side effects are to you, particularly those that affect your lifestyle.
- If you have a partner, you may also want to talk about treatment options with them. You can also talk to friends and family.
- If only one type of treatment is recommended, ask your doctor to explain why other treatment choices have not been offered.

You have the right to accept or refuse any treatment.

Some people with more advanced cancer will choose treatment, even if it only offers a small chance of cure. Others want to make sure the benefits of treatment outweigh any side effects so they have the best possible quality of life. Some people may choose options that don't try to cure the cancer but make them feel as well as possible.

Talking with doctors

When your doctor first tells you that you have cancer it is very stressful and you may not remember much. You may want to see the doctor a few times before deciding on treatment.

If your doctor uses medical terms you don't understand, it's okay to ask for a simpler explanation. You can also check a word's meaning in the glossary (see page 50).

Before you see the doctor it may help to write down your questions – see the list of suggested questions on page 49. Taking notes or recording the discussion can also help. Many people like to have a family member or friend go with them to take part in the discussion, take notes or simply listen.

See page 49 for a list of questions you might like to ask your doctor.



A second opinion

Getting a second opinion from another specialist may be a valuable part of your decision-making process. It can confirm or clarify your doctor's recommendations and reassure you that you have explored all of your options.

Some people feel uncomfortable asking their doctor for a second opinion, but specialists are used to patients doing this.

Your doctor can refer you to another specialist and send your initial results to that person. You can get a second opinion even if you have started treatment or still want to be treated by your first doctor. You may decide you would prefer to be treated by the doctor who provided the second opinion.

Taking part in a clinical trial

Your doctor may suggest you consider taking part in a clinical trial. Doctors conduct clinical trials to test new or modified treatments to see if they are better than current treatments. Over the years, clinical trials have improved cancer treatment standards and led to better outcomes for patients.

If you are unsure about joining the trial, ask for a second opinion from an independent specialist.

If you decide to join a randomised clinical trial, you will be given either the best existing treatment or a promising new treatment. You will be chosen at random to receive one treatment or the other.

Being part of a trial gives you important rights. You have the right to withdraw at any time; doing so will not jeopardise your treatment for cancer.

For more information about clinical trials – such as questions to ask your doctor and how to find a trial that is suitable for you – download a copy of *Understanding Clinical Trials* from www.cancercouncil.com.au.



Looking after yourself

Cancer can cause physical and emotional strain. Eating well, exercising and relaxing may help reduce stress and improve well-being. Addressing changes in your emotions and relationships early on is also very important.

Healthy eating

Eating nutritious food will help you to keep as well as possible and cope with cancer and treatment side effects. Depending on your treatment, you may have special dietary needs. A dietitian can help you to plan the best foods for your situation – ones that you find tempting, easy to eat and nutritious.

The Cancer Council Helpline can send you information about nutrition, including the free booklet *Food and Cancer*.

Being active

You will probably find it helpful to stay active and to exercise regularly if you can. Physical activity – even if gentle or for a short duration – helps to improve circulation, reduce tiredness, decrease joint and muscle pain, and elevate mood. The amount and type of exercise you do will depend on what you are used to, how well you feel and what your doctor advises.

If you aren't used to exercise or haven't exercised for a while, make small changes to your daily activities. You could walk to the shops, take the stairs or do some gardening. To do more vigorous exercise or weight-bearing exercise, ask your doctor what is best for you.

Complementary therapies

Complementary therapies may help you cope better with side effects such as pain. They may also increase your sense of control over what is happening to you, decrease your stress and anxiety, and improve your mood.

There are many types of complementary therapies, such as yoga, massage, acupuncture, hypnotherapy, meditation, herbal medicine and nutrition. While some cancer treatment centres offer such therapies as part of their services, you may need to go to a private practitioner. Ask what's available at your hospital. Self-help CDs or DVDs can also guide you through different techniques.

Let your doctor know about any complementary therapies you are using or thinking about trying. This is important, as some therapies may not be appropriate, depending on your conventional treatment. For example, some herbs and vitamin supplements may interact with your medication, resulting in harmful side effects. Massage and exercise may also need to be modified.

For more information, call the Helpline on 13 11 20 for a free copy of the booklet *Understanding Complementary Therapies*.



Alternative therapies are commonly defined as those used instead of conventional treatments. They may be harmful if people with cancer delay or stop using medical treatment in favour of them. Examples are high-dose vitamins, coffee enemas and magnet therapy.

“ I was diagnosed with renal cell carcinoma and had a kidney removed within seven days. At that time, they said I had three months to live. It was a very traumatic period. When I was told there weren't many options, complementary therapies took on a new meaning for me. That was four years ago. ” *Richard*

Relationships with others

The strong emotions you experience as a result of cancer may affect your relationships. Your experiences may cause you to develop a new outlook on your values, priorities and life in general. Sharing those thoughts and feelings with your family, friends and work colleagues may strengthen your relationships.

If you feel uncomfortable talking about your feelings, take your time and approach others when you are ready. People usually appreciate insight into how you are feeling and guidance on providing support during and after treatment.

While you are giving yourself time to adjust to cancer, do the same for your friends and family. Everyone will react in a different way – by putting on a happy face, playing down your anxiety, or even ignoring you. They are also adjusting in their own way to changes.

If someone's behaviour upsets you, it will probably help to discuss how you both feel about the situation.

Sexuality, intimacy and cancer

Having cancer can affect your sexuality in both physical and emotional ways. The impact of these changes depends on many factors, such as treatment and side effects, the way you and your partner communicate, and your self-confidence. Knowing the potential challenges and addressing them will help you adjust to these changes.

Some people with cancer have the support of a partner, while others do not. If you meet a new partner after your diagnosis or treatment, it can be difficult to talk about cancer with them, particularly if it has had an impact on your sexuality. Sexual intercourse may not always be possible during and after treatment, but closeness and sharing are vital to a healthy relationship.

Contraception

If women are having chemotherapy or radiotherapy, it is important that they avoid pregnancy, as the chemicals from the drugs or the radiation could harm the unborn baby. These treatments can also affect the quality of sperm, so men in treatment should avoid getting their partner pregnant.

As a precaution against transferring any chemicals to your partner, if you have sexual intercourse within 48 hours of chemotherapy treatment, you should use a condom.

Talk to your doctor about how these issues affect you and for advice on contraception. See also Cancer Council's free booklet *Sexuality, Intimacy and Cancer* for further information.

Changing body image

Cancer treatment can change the way you feel about yourself (your self-esteem). You may feel less confident about who you are and what you can do. This is common whether your body has changed physically or not.

Give yourself time to adapt to any changes. Try to see yourself as a whole person (body, mind and personality) instead of focusing only on the parts of you that have changed.

For practical suggestions about hair loss, weight changes and other physical changes, call the Helpline.

Look Good... Feel Better Program

This free program teaches techniques to help restore appearance and self-esteem during treatment.

Call **1800 650 960** or visit
www.lgfb.org.au.



Life after treatment

You may be surprised to find out that life after cancer treatment can present its own challenges. You will need to take some time to adjust to physical and emotional changes.

You may have mixed emotions. Beforehand, you may have been busy with appointments and focused on treatment, but afterwards you may feel anxious rather than secure. You might worry about every ache and pain and wonder if the cancer is coming back.

Some people say that after cancer they have changed priorities and see life with a new clarity. For example, you may decide to travel, spend more time with family, or do volunteer work.

Although you might feel pressure to return to normal life, it's important to remember you may not want your life to return to how it was before cancer.

You might find it helpful to:

- take time to adjust to physical and emotional changes
- re-establish a new daily routine at your own pace
- maintain a healthy diet and lifestyle
- schedule regular checkups with your doctor
- share your concerns with family and friends and tell them how to support you
- call the Helpline on 13 11 20 to connect with other people who have had cancer, or to request a free copy of the booklet *Living Well After Cancer*.

If you have continued feelings of sadness, have trouble getting up in the morning or have lost motivation to do things that previously gave you pleasure, talk to your doctor. You may be clinically depressed, and counselling or medication may help you.

After treatment: follow-up

After treatment, you will need regular checkups to confirm that the cancer hasn't come back. If your doctor has recommended active surveillance, you will also continue your regular checkups. Blood tests, cystoscopies, x-rays or other scans may be done.

Checkups will become less frequent if you have no further problems. Between follow-up appointments, let your doctor know immediately of any health problems.

What if the cancer returns?

For some people kidney cancer does come back after treatment, which is known as a relapse. This is why it is important to have regular checkups.

Kidney cancer may have spread beyond the kidney. If it has spread – and you have renal cell carcinoma – you may be offered other treatment, such as immunotherapy, chemotherapy or radiotherapy. If you have urothelial carcinoma that has spread, your doctor may suggest radiotherapy or chemotherapy to help control any symptoms.

Some people with urothelial carcinoma may develop bladder cancer many years later. This can also be treated.



Seeking support

When you are first diagnosed with cancer, and throughout the different stages of your treatment and recovery, it is normal to experience a range of emotions, such as fear, sadness, anxiety, anger and frustration. If sadness or anxiety is ongoing or severe, talk to your doctor.

It may help to talk about your feelings. Your partner, family members and friends can be a good source of support, or you might prefer to talk to:

- members of your treatment team
- a counsellor, social worker or psychologist
- your religious or spiritual adviser
- a support group – see page 44
- the Cancer Council Helpline.

If you need assistance, such as help around the house, it may be hard to tell people what would be useful. Some people prefer to ask a family member or friend to coordinate offers of help.

You may find that while some people you know are supportive, others may not even know what to say to you. Cancer Council's booklet *Emotions and Cancer* may help if this happens to you. If you have children, the prospect of telling them that you have cancer can be frightening and unsettling. The booklet *Talking to Kids About Cancer* can help you prepare for this conversation.



Call **13 11 20** for these booklets or download them from www.cancercouncil.com.au.

Practical and financial help

A serious illness often causes practical and financial difficulties. This can add to the stress and anxiety you may already be feeling about having cancer and going through treatment.

Many services are available to help so you don't have to face these difficulties alone:

- Financial assistance, through benefits and pensions, can help pay for prescription medicines and travel to medical appointments.
- Home nursing care may be available through community nursing services or local palliative care services.
- Meals on Wheels, home care services, aids and appliances can make life easier.

To find out more, talk to the hospital social worker, occupational therapist or physiotherapist, or the Cancer Council Helpline.

Understanding Cancer program

If you want to find out more about cancer and how to cope with it, you may find Cancer Council's Understanding Cancer program helpful. It offers practical information and discussions about many cancer-related issues, such as symptoms, treatment, side effects, palliative care, diet and complementary therapies.

Understanding Cancer programs are held frequently at hospitals and community organisations throughout NSW. Call the Helpline for more information.

Talk to someone who's been there

Getting in touch with other people who have been through a similar experience can be beneficial. There are many ways to contact others for mutual support and to share information.

In these support settings, most people feel they can speak openly, share tips with others, and just be themselves. You will probably find that you feel comfortable talking about your diagnosis and treatment, your relationships with friends and family, and your hopes and fears about the future.

Ask your nurse or social worker about support groups in your area. Call the Helpline or go to www.cancerCouncil.com.au to access the Cancer Services Directory and to find out how you can connect with others.



Support services available in your community

- **Face-to-face support groups** – often held in community centres or hospitals
- **Online discussion forums** – where people can connect with each other any time – see www.cancerconnections.com.au
- **Telephone support groups and forums** – for certain situations or types of cancer, which trained counsellors facilitate
- **Cancer Council Connect** – a program that matches you with a volunteer who has been through a similar cancer experience.

Caring for someone with cancer

You may be reading this booklet because you are caring for someone with cancer. Being a carer can be very stressful. Try to look after yourself – give yourself some time out and share your worries and concerns with somebody neutral such as a counsellor or your doctor.

Many cancer support groups are open to carers as well as people with cancer. A support group can offer a valuable opportunity to share experiences and ways of coping.

Support services such as Home Help, Meals on Wheels or visiting nurses can help you in your caring role. There are also many organisations and groups that can provide you with information and support, such as Carers NSW. To contact Carers NSW, call 1800 242 636 or visit www.carersnsw.asn.au.

Call the Cancer Council Helpline to find out more about different services or to request a free copy of the booklet *Caring for Someone with Cancer*.



Cancer Council Helpline 13 11 20

The Cancer Council Helpline is a telephone information service provided by Cancer Council NSW for people affected by cancer.

For the cost of a local call, you, your family, carers or friends can talk about any concerns and needs confidentially with oncology health professionals. Helpline consultants can send you written information and put you in touch with appropriate services in your area. If you need information in a language other than English, there is a telephone interpreting service available for you.

You can call the Cancer Council Helpline, Monday to Friday, 9am to 5pm.

If you have difficulty communicating over the phone, contact the National Relay Service (www.relayservice.com.au), a government initiative to assist people who are hearing and/or speech impaired. This service will help you to communicate with a Cancer Council Helpline consultant.



If calling outside business hours, you can leave a message and your call will be returned the next business day.



Useful websites

The Internet has many useful resources, although not all websites are reliable. The websites listed below are good sources of information.

Australian

Cancer Council NSW	www.cancercouncil.com.au
Cancer Council Australia	www.cancer.org.au
Cancer Institute NSW.....	www.cancerinstitute.org.au
Health Insite	www.healthinsite.gov.au
Kidney Health Australia	www.kidney.org.au
Virtual Cancer Centre	www.virtualcancercentre.com

International

American Cancer Society.....	www.cancer.org
National Cancer Institute (US).....	www.cancer.gov
Macmillan Cancer Support.....	www.macmillan.org.uk
Kidney Cancer Association	www.kidneycancer.org



Cancer Council library

Following a cancer diagnosis, many people look for information about new types of treatment, the latest research findings and stories about how other people have coped.

The Cancer Council Library has more than 3,000 resources in the collection, including books, CDs, DVDs, videos and a large range of medical journals.

You can visit the library at 153 Dowling Street, Woolloomooloo (Monday to Friday, 9am to 5pm), borrow by post or ask your local librarian to organise an inter-library loan. Contact the librarian on 13 11 20 or email library@nswcc.org.au.



Related publications

You might also find the following free Cancer Council publications useful:

- *Emotions and Cancer*
- *Food and Cancer*
- *Understanding Radiotherapy*
- *Understanding Complementary Therapies*
- *Sexuality, Intimacy and Cancer*
- *Living with Advanced Cancer*
- *Talking to Kids about Cancer*
- *Caring for Someone with Cancer*
- *Living Well After Cancer*
- *Overcoming Cancer Pain* booklet and DVD.

Call the Helpline for copies, or download them from www.cancercouncil.com.au/cancerinformation.



Question checklist

You may find this checklist helpful when thinking about the questions you want to ask your doctor about the disease and treatment. If your doctor gives you answers that you don't understand, it is okay to ask for clarification.

- What type of kidney cancer do I have?
- How extensive is the cancer? What is the stage and grade of the cancer?
- What treatments do you recommend and why?
- Are there other treatment choices for me? If not, why not?
- What are the risks and possible side effects of each treatment?
- How long will treatment take? Will I have to stay in hospital?
- How much will treatment cost?
- Will I have a lot of pain with the treatment? What will be done about this?
- Are the latest tests and treatments for this type of cancer available in this hospital?
- Are there any clinical trials of new treatments?
- How frequently will I need checkups?
- Are there any complementary therapies that might help me?



Glossary

You may come across new terms when reading this booklet or talking to health professionals. You can check the meaning of other health-related words on Cancer Council's website at www.cancer council.com.au/words.

abdomen

The part of the body between the chest and hips, which contains the stomach, liver, bowel, bladder and kidneys.

adjuvant therapy

A treatment given with or shortly after another treatment to enhance its effectiveness.

adrenal glands

Glands resting on top of each kidney that produce hormones.

anaemia

Deficiency in the number or quality of red blood cells in the body.

anaesthetic

A drug that stops the feeling of pain during a medical procedure. A local anaesthetic numbs part of the body; a general anaesthetic causes a temporary loss of consciousness.

arterial embolisation

A treatment for kidney cancer

that blocks the blood to the artery, causing the kidney and tumour to die.

benign

Not cancerous or malignant.

bladder

The hollow muscular organ that stores urine.

biological therapy

A range of drugs made from purified versions of chemicals that are naturally found in the body. They include immunotherapy. Also called biotherapies.

biopsy

The removal of a small sample of tissue from the body, for examination under a microscope, to help diagnose a disease.

Birt-Hogg-Dubé syndrome

A rare disorder that may increase the risk of getting kidney cancer.

catheter

A hollow, flexible tube through which fluids can be passed into the body or drained from it.

cells

The basic building blocks of the body. A human is made of billions of cells that are adapted for different functions.

chemotherapy

The use of cytotoxic drugs to treat cancer by killing cancer cells or slowing their growth.

contrast medium

A substance injected into the vein or taken orally before a scan (such as a CT scan), which help make pictures clearer. Also called a contrast agent or dye.

CT scan

A computerised tomography scan. This scan uses x-rays to create a picture of the body.

cystoscope

A thin, viewing instrument with a light that is inserted into the urethra and bladder.

cystoscopy

A procedure that uses a

cystoscope to see inside the bladder and remove tissue samples or small tumours.

cytokines

Proteins that activate the immune system. Cytokines are used in immunotherapy.

electrolyte

A substance in the body that conducts electricity and carries impulses (such as muscle contractions) to cells. The kidneys keep electrolyte levels in your blood constant.

grade

A score that describes how aggressive a tumour is (how fast it is likely to grow).

haematuria

Blood in the urine.

immune system

A network of cells and organs that defends the body against attacks by foreign invaders, such as bacteria and viruses.

immunotherapy

Using substances that alter the immune system's response to help prevent or treat disease.

intramuscular

Administered (injected) into a muscle.

intravenous

Administered (injected) into a vein.

intravenous pyelogram

A scan used to see abnormalities in the urinary system. Also called an intravenous urography.

kidneys

A pair of organs in the abdomen that remove waste from the blood and make urine. The kidneys also produce hormones that control red blood cell production and regulate calcium levels.

laparoscope

A tiny telescope through which structures within the abdomen and pelvis can be seen.

laparoscopy

Surgery using a laparoscope,

which is inserted into the body through a very small incision.

Also called keyhole surgery.

lymph glands

Small, bean-shaped structures that form part of the lymphatic system. Also called lymph nodes.

lymphoma

A type of cancer that starts in and affects lymphatic tissue.

malignant

Cancer. Malignant cells can spread (metastasise) and can eventually cause death if they cannot be treated.

metabolite

The substance produced when food or drugs are broken down in the body.

metastasis

A cancer that has spread from another part of the body. Also known as secondary cancer.

MRI scan

A magnetic resonance imaging scan. A scan that uses magnetism and radio waves to take detailed cross-sectional pictures of the body.

mTOR inhibitors

Drugs that block enzymes in the body that are connected with cell growth and survival.

nephrology

The branch of medicine relating to the function and diseases of the kidneys. A nephrologist is a doctor specialising in this field.

nephrons

The basic units of the kidney that filter the blood. Nephrons also regulate blood volume, pressure and pH, and levels of electrolytes and metabolites.

oncologist

A doctor who specialises in the study and treatment of cancer.

palliative care

The holistic care of people with a life-limiting illness and their families. It aims to improve quality of life by addressing physical and emotional issues. It is not just about end-of-life care but this is one aspect of care.

partial nephrectomy

The surgical removal of part of a kidney.

patient-controlled analgesic (PCA) system

An intravenous system that allows a person to administer a dose of pain relief by pressing a button.

phenacetin

A pain-relieving drug that has not been used since the 1970s, as it has been linked to kidney damage and cancer.

polycythaemia

A condition in which red blood cell levels are higher than normal, which can result in dizziness, headaches, tiredness, itchy skin and disturbed vision.

primary cancer

The original cancer. Cells from the primary cancer may break away and be carried to other parts of the body, where secondary cancers may form.

prognosis

The expected outcome of a person's disease.

radiation

Energy in the form of waves or particles, including gamma rays, x-rays and ultraviolet (UV) rays. This energy is harmful to cells and is used in radiotherapy to destroy cancer cells.

radical nephrectomy

The surgical removal of the whole of a diseased kidney. The adrenal gland, surrounding fatty tissue and nearby lymph nodes are sometimes removed during this procedure.

radiofrequency ablation

A treatment that uses radio waves to heat and destroy cancer cells.

radiotherapy

The use of radiation, usually x-rays or gamma rays, to kill cancer cells or injure them so they cannot grow and multiply.

renal cell carcinoma

The most common type of kidney cancer, starting in the nephrons.

renal sarcoma

A rare cancer that affects the connective tissues of the kidney.

staging

Performing tests to determine how far a cancer has spread.

TNM system

A type of staging system to show the spread of cancer. T stands for tumour, N for lymph nodes and M for metastasis.

transitional cell carcinoma

Now called urothelial carcinoma.

tumour

A new or abnormal growth of tissue on or in the body.

A tumour can be benign or malignant.

tyrosine kinase inhibitors (TKIs)

Drugs that block the enzyme tyrosine kinase, which is a chemical messenger that tells cells when to divide and grow.

ultrasound

A scan that uses soundwaves to create a picture of part of the body. It is used to measure the size and position of a tumour.

ureterectomy resection

Surgery to remove a tumour in the middle or upper parts of the ureter, then rejoin the remaining parts of the ureter to each other.

ureteroneocystomy

Surgery to remove a tumour in the lower part of the ureter and rejoin the remaining section of the ureter to the bladder.

ureteroscopy

An internal examination of the ureters. A special instrument with a light is inserted into the ureters via the urethra and bladder.

ureters

The tubes that carry urine from each kidney to the bladder.

urethra

The tube that carries urine from the bladder to the outside of the body. For men, the urethra also carries semen.

urinary system

Removes wastes from the blood and expels them from the body in urine. Includes the kidneys, ureters, bladder and urethra.

urologist

A surgeon who specialises in treating diseases of the urinary and sex organs in males, and the urinary organs in females.

urothelial carcinoma

Cancer that occurs in urothelial cells. It can start in the renal pelvis of the kidney, the ureter or bladder. Previously known as transitional cell carcinoma (TCC).

urothelial cells

Cells that line parts of the urinary tract, such as where the kidney joins the ureter, in the ureter itself, in the bladder and in some parts of the urethra. Also called transitional cells.

von Hippel-Lindau disease

A rare genetic condition that increases the risk of developing kidney cancer.

Wilms' tumour

A rare kidney cancer that mainly affects children.



How you can help

At Cancer Council we're dedicated to defeating cancer. As well as funding cancer research, we advocate for the highest quality of care for cancer patients and their families and create cancer-smart communities by empowering people with knowledge about cancer, its prevention and early detection. These achievements would not be possible without community support, great and small.

Join a Cancer Council event – Join one of our community fundraising events like Daffodil Day, Australia's Biggest Morning Tea, Relay For Life, Girls Night In and Pink Ribbon Day, or hold your own fundraiser or become a volunteer.

Make a donation – Any donation, whether large or small, will make a meaningful contribution to our fight to defeat cancer.

Buy sun protection products from our retail stores – Every purchase helps you prevent cancer and contributes financially to our work.

Help us speak out and create a cancer-smart community – Cancer Council is a leading advocate for cancer prevention and improved patient services. You can help us speak out on important cancer issues and help us defeat cancer by living and promoting a cancer-smart lifestyle.

Join a research study – Cancer Council does research to investigate the causes, management, outcomes and impacts of different cancer types.

To find out more about how you or your family and friends can help, please call 1300 780 113.

REGIONAL OFFICES

Central and Southern Sydney Region

153 Dowling Street
Woolloomooloo
NSW 2011
(PO Box 572
Kings Cross NSW 1340)
Ph: (02) 9334 1900
Fax: (02) 9334 1739

Far North Coast Region

101-103 Main Street
Alstonville
NSW 2477
Ph: (02) 6627 0300
Fax: (02) 6628 8659

Hunter Region

22 Lambton Road
Broadmeadow
NSW 2292
Ph: (02) 4923 0700
Fax: (02) 4961 0955

Mid North Coast Region

121 High Street
Coffs Harbour
NSW 2450
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North West Region

Shop 2
218 Peel Street
Tamworth
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Call the Cancer Council Helpline for support and information on cancer and cancer-related issues. This is a free and confidential service. Our website also has many resources. Please visit www.cancercouncil.com.au.