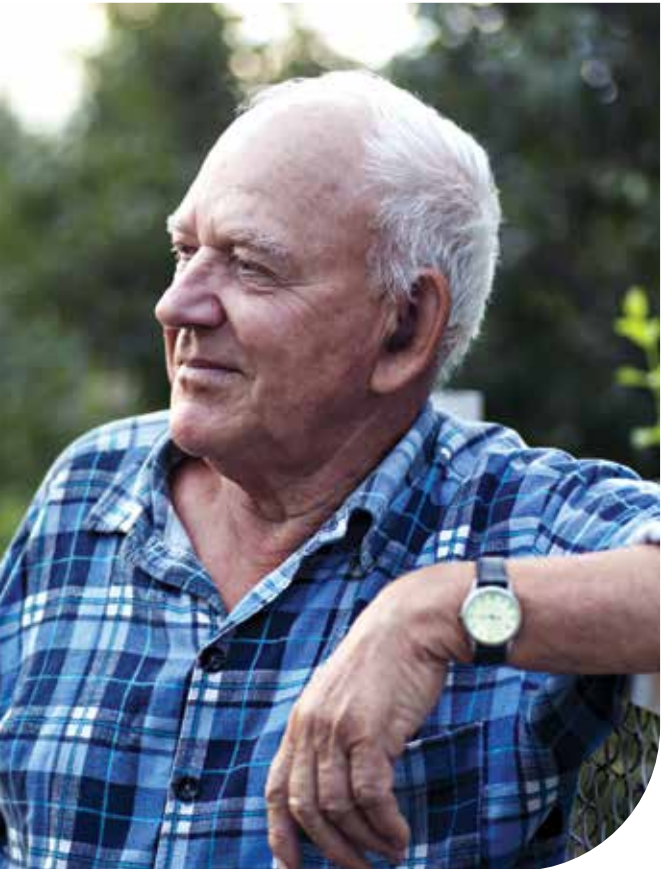




Canadian
Cancer
Society

Kidney Cancer

Understanding your diagnosis



1 888 939-3333 | cancer.ca

Kidney Cancer

Understanding your diagnosis

When you first hear that you have cancer, you may feel alone and afraid. You may be overwhelmed by the large amount of information you have to take in and the decisions you need to make.

“ *All I could hear was ‘cancer.’ I heard my doctor say something like, ‘We’re going to try and get the surgery done as soon as possible.’ I didn’t hear one word after that.* ”

The introductory information in this brochure can help you and your family take the first steps in learning about kidney cancer (renal cell cancer). A better understanding may give you a sense of control and help you work with your healthcare team to choose the best care for you.

For more information

The information in this brochure provides an introduction to kidney cancer. More in-depth information is available on cancer.ca. You can also call our Cancer Information Service at 1-888-939-3333 to learn more about cancer, diagnosis, treatment, support and the services we offer.

What is cancer?

Cancer is a disease that starts in our cells. Our bodies are made up of trillions of cells, grouped together to form tissues and organs such as muscles and bones, the lungs and the liver. Genes inside each cell order it to grow, work, reproduce and die. Normally, our cells obey these orders and we remain healthy.

But sometimes the instructions in some cells get mixed up, causing them to behave abnormally. These cells grow and divide uncontrollably. After a while, groups of abnormal cells form lumps, or tumours.

Tumours can be either benign (non-cancerous) or malignant (cancerous). Benign tumour cells stay in one place in the body and are not usually life-threatening. Malignant tumour cells are able to invade nearby tissues and spread to other parts of the body. It's important to find and treat malignant tumours as early as possible. In most cases, finding cancer early increases the chances of successful treatment.

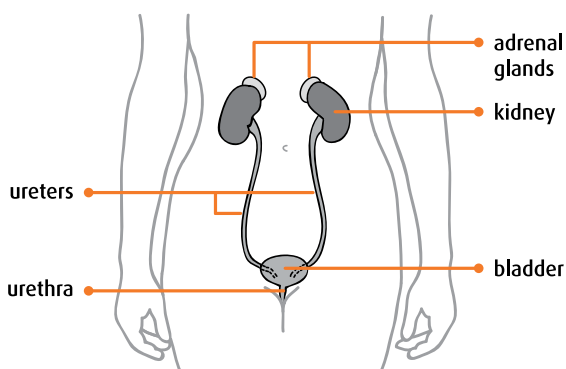
Cancer cells that spread to other parts of the body are called metastases. The first sign that a malignant tumour has spread (metastasized) is often swelling of nearby lymph nodes, but cancer can spread to almost any part of the body.

Cancers are named after the part of the body where they start. For example, cancer that starts in a kidney but spreads to the lungs is called kidney cancer with lung metastases.

What is kidney cancer?

Kidney cancer starts in the cells of the kidney. The 2 kidneys are on either side of the backbone, deep inside the upper abdomen, protected by the lower ribs. An adrenal gland is attached to the top of each kidney. The kidneys make urine by filtering water and waste from the blood. Urine passes from each kidney to the bladder through tubes called ureters. When the bladder is full, the urine passes out of the body through a tube called the urethra.

Location of the Kidneys



There are several types of kidney cancer. The information in this publication is about renal cell carcinoma, which is the most common type.*

* For information about other kidney cancers (such as transitional cell carcinoma and Wilms' tumour), contact our Cancer Information Service at 1-888-939-3333 or visit cancer.ca.

Diagnosing kidney cancer

Your doctor may suspect you have kidney cancer after taking your medical history and completing a physical examination. To confirm the diagnosis, your doctor will arrange special tests. These tests may also be used to “stage” and “grade” the cancer and help plan treatment.

Symptoms of kidney cancer: The most common signs and symptoms of kidney cancer include:

- blood in the urine (called hematuria)
- pain in the back and side that does not go away
- a lump in the abdomen
- swelling of the legs and ankles
- unexplained weight loss
- feeling very tired or generally feeling sick

Other health problems, such as an infection, a cyst, bladder stones or kidney stones, can cause some of the same symptoms. The process of diagnosis may seem long and frustrating, but it is important for the doctor to make sure there are no other possible reasons for a health problem.

Your doctor will do one or more of the following tests to make a diagnosis.

Urine tests: A urine sample is taken and checked for blood and other signs of disease. A urine cytology test looks for abnormal cells in the urine. Your doctor may order it if the first urine test showed blood in the urine.

Blood tests: Blood is taken and studied to see if the different types of blood cells are normal in number and how they look. Other blood tests can show how well your organs are working and may suggest whether or not you have cancer. The blood sample may also be checked to measure the amounts of certain substances, such as creatinine or urea, released into the blood by organs and tissues in the body. High levels of creatinine and urea may mean the kidneys are not doing their job.

Imaging studies: Imaging studies allow tissues, organs and bones to be looked at in more detail. Using x-rays, ultrasounds, CT scans, MRIs or bone scans, your healthcare team can get a picture of the size of the tumour and see if it has spread. These tests are usually painless and do not require an anesthetic (freezing).

Biopsy: Kidney cancer is not usually diagnosed using a biopsy because imaging tests showing the tumour usually confirm the diagnosis. A biopsy may be used to identify the type of cancer when a kidney tumour cannot be removed by surgery or if your doctor suspects the tumour has spread to the kidney from another part of the body.

For a kidney biopsy, the doctor may use an ultrasound or a CT scan to guide a thin needle through the skin into the kidney to remove a small amount of tissue from the abnormal area. The tissue is then checked under a microscope. If the cells are cancerous, they may be studied further to see how fast they are growing.

Further testing: Your doctor may order more tests to find out if the cancer has spread and to help plan your treatment.

Will I be OK?

Most people with cancer want to know what to expect. Can they be cured?

A prognosis is your doctor's best estimate of how cancer will affect you and how it will respond to treatment.

A prognosis looks at many factors, including:

- the type, stage and grade of cancer
- the location of the tumour and whether it has spread
- your age, sex and overall health

Even with all this information, it can still be very hard for your doctor to say exactly what will happen. Each person's situation is different.

Your doctor is the only person who can give a prognosis. Ask your doctor about the factors that affect your prognosis and what they mean for you.

Staging and grading

Once a definite diagnosis of cancer has been made, the cancer is given a stage and a grade. This information helps you and your healthcare team choose the best treatment for you.

The cancer stage describes the tumour size and tells whether it has spread.

For kidney cancer, there are 4 stages.*

| Stage | Description |
|-------|---|
| 1 | The tumour is found only in the kidney and is 7 cm or smaller. |
| 2 | The tumour is found only in the kidney and is larger than 7 cm. |
| 3 | The tumour has spread outside the kidney but not beyond the renal fascia (fibrous tissue surrounding the kidney). The tumour may be found in the main blood vessels close to the kidney, the layer of fatty tissue around the kidney or the adrenal gland. OR the tumour has spread to one nearby lymph node. |
| 4 | The tumour has spread beyond the renal fascia or to nearby lymph nodes or to other parts of the body, such as the lungs or the brain. |

* This table summarizes the stages of kidney cancer according to the TNM classification system used by the Union for International Cancer Control (UICC). For more in-depth information, visit cancer.ca.

A grade is given based on how the cancer cells look and behave compared with normal cells. This can give your healthcare team an idea of how quickly the cancer may be growing. To know the grade of a tumour, the biopsy sample is examined under a microscope.

There are 4 grades for kidney cancer.[†]

| Grade | Description |
|-------|---------------------------------------|
| 1 | Slow growing |
| 2 | Slow growing, but faster than grade 1 |
| 3 | Growing quickly |
| 4 | Growing very quickly |

Treatments for kidney cancer

Your healthcare team considers your general health and the type, stage and grade of the cancer to recommend what treatments are best for you. You'll work together with your healthcare team to make the final treatment choices. Talk to them if you have questions or concerns.

For kidney cancer, you might receive one or more of the following treatments.

Surgery: A decision to have surgery depends on the size of the tumour and where it is. During the operation, all or part of the tumour and some healthy tissue around the tumour are

[†] This table summarizes the grades of kidney cancer according to the Fuhrman grading system, which is based on the shape and size of the tumour cells. For more in-depth information, visit cancer.ca.

removed. Surgery is done under a general anesthetic (you will be unconscious), and you will stay in the hospital for several days or longer after the surgery.

Surgery is the most common treatment for kidney cancer. An operation to remove a kidney is called a nephrectomy. The remaining kidney is usually able to do the job of both kidneys.

There are 3 types of kidney cancer surgery. Your surgery depends on the stage of the cancer and whether or not it has spread.

- *Radical nephrectomy*: The surgeon removes the entire kidney along with some nearby tissue and the adrenal gland. Some of the nearby lymph nodes may also be removed. Kidney cancer is usually treated with a radical nephrectomy.
- *Simple nephrectomy*: The surgeon removes only the kidney. A simple nephrectomy may be used for some people with early stage (stage 1) kidney cancer.
- *Partial nephrectomy*: The surgeon removes only the tumour and some of the tissue around the tumour. This type of surgery spares some of the kidney and may be used when the cancer affects both kidneys or if you have only one kidney because of a previous surgery.

After surgery, you may have some pain or nausea or may not feel like eating. These side effects are temporary and can be controlled. To help with your recovery after surgery, a narrow tube (called a catheter) may be put into your bladder through the urethra to drain the urine into a collecting bag. This means you won't have to get up to go to the bathroom. The catheter is usually removed after a couple of days.

Arterial embolization: Arterial embolization shrinks the tumour by blocking the flow of blood into the kidney. This stops the tumour from getting oxygen and other nutrients it needs to grow. The doctor inserts a narrow tube (catheter) into a blood vessel through a small cut in the leg. The tube is passed up to the main blood vessel (renal artery) that supplies blood to the kidney. Small pieces of a special gelatin sponge are injected through the catheter into the blood vessel to block the blood flow to the kidney. Arterial embolization is sometimes done before a nephrectomy to make surgery easier.

After arterial embolization, you may have back pain or develop a fever. Other side effects include nausea and vomiting. These side effects go away soon after treatment.

Targeted therapies: Targeted therapies use drugs or other substances to find and attack specific cancer cells without damaging healthy cells. These drugs stop the growth of cancer cells and the growth of blood vessels to the tumour. Targeted therapy drugs for kidney cancer are taken as pills

or intravenously (injected into a vein). Side effects are usually mild, but they depend on the type of drug. Your healthcare team will tell you what to expect. These drugs may not be available in all cancer centres.

Biological therapy: Biological therapy uses natural body substances or drugs made from natural body substances to boost the body's own defences against illness. Interferon is an immunotherapy (a type of biological therapy) used to treat kidney cancer that has spread. It's given by injection. The side effects can be severe, causing flu-like symptoms such as chills, fever, muscle aches, loss of appetite, nausea, vomiting and diarrhea. Some people may get a skin rash. The side effects are usually milder after your body gets used to the drug and disappear when the treatment is done. Talk to your healthcare team about the risks and benefits of this treatment.

Radiation therapy: External beam radiation therapy may be used to relieve pain or control the symptoms of advanced kidney cancer (palliative radiation therapy). In external beam radiation therapy, a large machine is used to carefully aim a beam of radiation at the tumour. The radiation damages the cells in the path of the beam - normal cells as well as cancer cells.

Radiation side effects depend on what part of the body receives the radiation. You may feel more tired than usual, have some diarrhea or bladder problems, or notice changes to the skin (it may be red or tender) where the treatment was given.

Clinical treatment trials: Clinical treatment trials investigate new approaches to treating cancer, such as new drugs, new types of treatments or combinations of existing treatments. They are closely monitored to make sure that they are safe for the participants. Ask your doctor if there is a clinical trial suitable as a treatment option for you. You may benefit and so may future cancer patients.

Our brochure *Clinical Trials* has more information, including how to find a clinical trial.

Complementary therapies: Complementary therapies – for example, massage therapy or acupuncture – are used *together with* conventional cancer treatments, often to help ease tension and stress as well as other side effects of treatment. They don't treat the cancer itself. More research is needed to understand if these therapies are effective and how they work.

Alternative therapies are used *instead of* conventional treatments. Alternative therapies haven't been tested enough for safety or effectiveness. Using alternative treatments alone for cancer may have serious health effects.

If you're thinking about using a complementary or alternative therapy, learn as much as you can about the therapy and talk to your healthcare team. It's possible that the therapy might interfere with test results or other treatments.

Our booklet *Complementary Therapies* has more information.

Side effects of treatments

Some cancer treatments cause side effects, such as fatigue, hair loss or nausea. Because treatments affect everyone differently, it's hard to predict which side effects - if any - you may have.

Side effects can often be well managed and even prevented. If you're worried about side effects, tell your healthcare team about your concerns and ask questions. They can tell you which side effects you should report right away and which ones can wait until your next appointment.

If you notice any side effects or symptoms that you didn't expect, talk to a member of your healthcare team as soon as possible. They'll help you get the care and information you need.

After treatment

Follow-up care helps you and your healthcare team monitor your progress and your recovery from treatment. At first, your follow-up care may be managed by one of the specialists from your healthcare team. Later on, it may be managed by your family doctor.

The schedule of follow-up visits is different for each person. You might see your doctor more often in the first year after treatment and less often after that. After treatment has ended, you should report new symptoms and symptoms that don't go away to your doctor without waiting for your next scheduled appointment.

Maintaining a healthy diet: When the remaining kidney is healthy, you usually do not need to make any changes to your diet.

If the remaining kidney is not completely healthy, or you have only part of a kidney remaining, talk to a dietitian about changing your diet. You may need to:

- Eat less protein (meat, fish, eggs, milk and milk products, beans).
- Reduce the amount of salt in your diet.
- Limit the amount of alcohol you drink (less than 2 drinks a day for men and less than 1 drink a day for women).

Dialysis: Some people with kidney cancer may require dialysis after surgery if the remaining kidney or partial kidney does not work properly or if both kidneys have been removed. Dialysis removes waste from the blood in people who do not have working kidneys.

Self-image and sexuality: It's natural to be concerned about the effects of kidney cancer and its treatment on your sexuality. You may be worried about how your body looks after treatment, about having sex with a partner or that you may be rejected. The effects of your treatment may make sex more difficult. Or you may no longer have the same interest in sex. It may help to talk about these feelings with someone you trust. Your doctor can also refer you to specialists and counsellors who can help you with the emotional side effects of kidney cancer treatment.

Our booklet *Sex, Intimacy and Cancer* has more detailed information.

The end of cancer treatment may bring mixed emotions. You may be glad the treatments are over and look forward to returning to your normal activities. But you might feel anxious as well. If you're worried about the end of your treatment, talk to your healthcare team. They're there to help you through this transition period.

Living with cancer

Our booklet *Coping When You Have Cancer* has more detailed information and resources.

Many sources of help are available for people with cancer and for their caregivers.

Your healthcare team: If you need practical help or emotional support, members of your healthcare team may be able to suggest services in your community or refer you to cancer centre staff or mental health professionals.

Family and friends: People closest to you can be very supportive. Accept offers of help. When someone says, “Let me know how I can help,” tell them what they can do. Maybe they can run errands, cook a meal or give you a ride to your doctor’s office.

People who’ve had a similar experience: Talking with and learning from others who’ve had similar experiences can be helpful. Consider visiting a support group or talking with a cancer survivor in person, over the telephone or online. Try more than one option to see which one works best for you.

Yourself: Coping well with cancer doesn’t mean that you have to be happy or cheerful all the time. But it can mean looking after yourself by finding relaxing, enjoyable activities that refresh you mentally, spiritually or physically. Take some time to find coping strategies to help you through this experience. You may also want to talk to a counsellor for more help.

Talking to someone who's been there

If you would like to talk to someone who's had a similar cancer experience, you can connect by phone with a trained volunteer who will listen, provide hope and suggest ideas for coping – all from the shared perspective of someone who's been there.

Register for this free program at match.cancer.ca or call us at 1-888-939-3333.

Want to connect with people online?

If you'd like to join our online community, visit CancerConnection.ca. You can read news, join discussion groups that interest you, get support and help others at the same time. You'll find caring, supportive people there.

What causes kidney cancer?

There is no single cause of kidney cancer, but some factors increase the risk of developing it. Some people can develop kidney cancer without any risk factors, while others who have these factors do not get it.

Risk factors for kidney cancer include:

- smoking
- being overweight or obese
- high blood pressure
- genetic conditions, such as von Hippel-Lindau (VHL) syndrome
- long-term dialysis
- family history
- horseshoe kidney (a birth defect)

Canadian Cancer Society

We're here for you.

When you have questions about treatment, diagnosis, care or services, we will help you find answers.

Call our toll-free number 1 888 939-3333.



Ask a trained cancer information specialist your questions about cancer. Call us or email info@cis.cancer.ca.



Connect with people online to join discussions, get support and help others. Visit CancerConnection.ca.



Browse Canada's most trusted online source of information on all types of cancer. Visit cancer.ca.

Our services are free and confidential. Many are available in other languages through interpreters.

Tell us what you think

Email cancerinfo@cancer.ca and tell us how we can make this publication better.



What we do

The Canadian Cancer Society fights cancer by:

- doing everything we can to prevent cancer
- funding research to outsmart cancer
- empowering, informing and supporting Canadians living with cancer
- advocating for public policies to improve the health of Canadians
- rallying Canadians to get involved in the fight against cancer

Contact us for up-to-date information about cancer and our services or to make a donation.



Canadian
Cancer
Society

1 888 939-3333 | cancer.ca
TTY 1 866 786-3934

This is general information developed by the Canadian Cancer Society. It is not intended to replace the advice of a qualified healthcare provider.

The material in this publication may be copied or reproduced without permission; however, the following citation must be used: *Kidney Cancer: Understanding Your Diagnosis*. Canadian Cancer Society 2014.