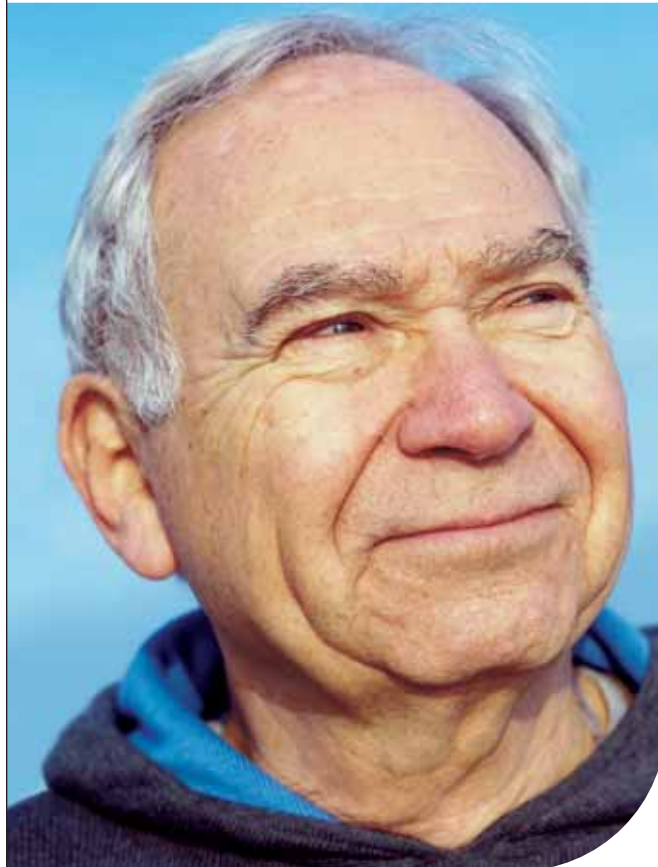




Canadian Cancer Society  
Société canadienne du cancer

# Kidney Cancer

*Understanding your diagnosis*



Let's Make Cancer History

1 888 939-3333 | [cancer.ca](http://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 will have to take in and the decisions you will need to make.

The introductory information in this brochure can help you and your family take the first step 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.

## What is cancer?

Cancer is a disease that starts in our cells. Our bodies are made up of millions of cells, grouped together to form tissues or 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. 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. It is important to find and treat malignant tumours as early as possible.

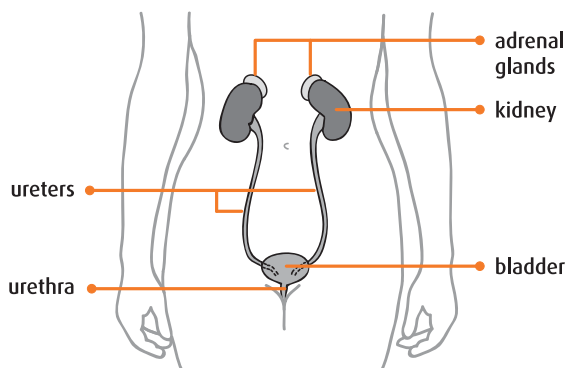
Cancers are named after the part of the body where they start. For example, cancer that starts in a kidney but spreads to the lungs is called kidney cancer with lung metastases.

## What is kidney cancer?

Kidney cancer starts in the cells of the kidney. The two kidneys are found on either side of the backbone, deep inside the upper part of the abdomen, protected by the lower ribs.

Attached to the top of each kidney is an *adrenal gland*. The kidneys make urine by filtering water and waste material from the blood. Urine passes from each kidney to the bladder through tubes called the *ureters*. When the bladder is full, the urine passes out of the body through a tube called the *urethra*.

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 cancer and Wilms' tumour), contact our *Cancer Information Service* at 1 888 939-3333.

## Causes of kidney cancer

Kidney cancer is more common in men than in women. It is most often found in people over 50 years of age.

There is no single cause of kidney cancer, but some factors increase the risk of developing it:

- smoking
- being overweight
- genetic conditions, such as von Hippel-Lindau (VHL) disease
- long-term dialysis

Some studies have suggested that having high blood pressure increases a person's risk of getting kidney cancer but the research isn't clear.

Some people develop kidney cancer without any of these risk factors.

## Symptoms of kidney cancer

Often the first symptom of kidney cancer is blood in the urine (called *hematuria*). The blood can change the colour of the urine to anything from slightly rusty to bright red. Other possible symptoms of kidney cancer include:

- pain in the back and side that does not go away
- a lump in the side or the abdomen
- unexplained weight loss
- fever
- feeling very tired or having a general feeling of illness

Other health problems, such as an infection, a cyst, bladder stones or kidney stones, can cause some of the same symptoms. Testing is needed to make a diagnosis.

## Diagnosing kidney cancer

After taking your medical history and completing a physical examination, including an examination of your stomach area (abdomen and pelvis) and your sides, your doctor may suspect you have kidney cancer. You may also be asked for a urine sample and a blood sample to check how well your kidneys are working. To confirm the diagnosis, your doctor will arrange special tests. These tests may also be used to “stage” and “grade” the cancer. You may have one or more of the following tests.

**Urine tests:** A urine sample is taken and checked for blood and other signs of disease.

**Blood tests:** Blood is taken and studied to see if the different types of blood cells are normal in number and appearance. 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, released into the blood by organs and tissues in the body. A high level of creatinine 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.

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

For a *kidney biopsy*, the doctor may use ultrasound or CT 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.

## Staging and grading

Once a definite diagnosis of cancer has been made and your healthcare team has the information it needs, the cancer will be given a stage and a grade.

The cancer stage describes the tumour size and tells whether it has spread beyond the place where it started to grow.

For kidney cancer, there are four stages.

Stage	Description
1	The tumour is found only in the kidney and is less than 7 cm in size.
2	The tumour is found only in the kidney and is more than 7 cm in size.
3	The tumour has spread outside the kidney to the main blood vessels close to the kidney, to the layer of fatty tissue around the kidney or to the adrenal gland, but not beyond the renal fascia (fibrous tissue surrounding the kidney). <b>OR</b> 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.

To find out the grade of a tumour, the biopsy sample is examined under a microscope. 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. There are four grades.

Grade	Description
1	Slow growing, less likely to spread
2	Slow growing, but faster than grade 1
3	Growing quickly
4	Growing very quickly

It is important to know the stage and grade of the cancer. This information helps you and your healthcare team choose the best treatment for you.

## Treatments for kidney cancer

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

Treatments affect everyone in different ways. It's hard to predict which side effects you will have. Your healthcare team will tell you what to expect with each treatment. They will also let you know what side effects you should report right away and which ones you can wait to tell them about at your next appointment. If you notice any side effects or symptoms that you did not expect, talk to a member of your healthcare team as soon as possible.

Patients often worry about the side effects of cancer treatment. However, side effects can often be well managed and even prevented. Be open with your healthcare team. Tell them your concerns and ask questions. They will help you get the care and information you need.

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 removed. Surgery is done under a general anesthetic and you will stay in the hospital for several days 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 take over the job of both kidneys.

There are three types of kidney cancer surgery. What type you have depends on the stage of the cancer and whether or not it has spread.

- **Radical nephrectomy:** The surgeon removes the entire kidney, along with the adrenal gland and some tissue around the kidney. Some of the nearby lymph nodes may also be removed. Kidney cancer is usually treated with 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 will not have to get up to go to the bathroom. The catheter is usually removed after a couple of days.

**Arterial embolization:** Arterial embolization helps shrink 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 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.

**Biological therapy:** Biological therapy (sometimes called *immunotherapy*) uses natural body substances or drugs made from natural body substances to boost the body's own defences against illness. Interferon is a 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 usually become less severe as your body becomes used to the drug. Side effects will disappear once treatment is finished. Be sure to discuss the risks and benefits of this treatment with your healthcare team.

**Targeted therapies:** Targeted therapies use drugs or other substances that can find and attack specific types of cancer cells without damaging healthy cells. These drugs work by stopping the growth of cancer cells and the growth of blood vessels to the tumour. The targeted therapy drugs used to treat kidney cancer are taken in pill form or intravenously. 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 centres.

**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 and effective 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.

**Complementary therapies:** Complementary therapies are used *together with* conventional treatments. 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 for safety or effectiveness. It is still unknown whether they will harm you or be effective in the treatment of cancer.

If you are thinking about using a complementary or alternative therapy, find out 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 regular treatments.

## 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.

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 could feel anxious as well. If you are worried about your treatment ending, talk to your healthcare team. They are there to help you through this transition period.

## Living with cancer

There are many sources of help 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:** Those 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 have had a similar experience:** Consider visiting a support group or talking with a cancer survivor in person, over the telephone or online. Talking with and learning from others who have had similar experiences can be helpful. Try more than one option to see which one suits you best.

**Yourself:** Try to stay positive. Staying positive is about figuring out how to deal with cancer in the best way that you can – and everyone will do this their own way. It doesn’t mean that you must seem happy or cheerful all the time, or avoid talking or thinking about the difficulties of having cancer. But it can mean looking after yourself by finding relaxing, enjoyable activities that refresh you mentally, spiritually or physically.

## The Canadian Cancer Society

*Helping you understand cancer*

Now that you have been introduced to the basics of kidney cancer, you may want to learn more. Please contact the Canadian Cancer Society for more detailed information on kidney cancer. Our services are free and confidential.

If you would like to talk to someone who has had a similar cancer experience, we can help you connect with a trained volunteer – in person, over the phone or in a group setting.

To contact the Canadian Cancer Society:

- Call an information specialist toll-free at **1 888 939-3333** Monday to Friday 9 a.m. to 6 p.m.
- E-mail us at [info@cis.cancer.ca](mailto:info@cis.cancer.ca).
- Visit our website at [cancer.ca](http://cancer.ca).
- Contact your local Canadian Cancer Society office.





## 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, our services or to make a donation.



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**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.

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