

Kidney Cancer

Information for people with cancer

This information should not be used to diagnose yourself or in place of a doctor's care.

The kidneys are two bean-shaped organs 4.5 inches (11.4 cm) long. They are against the back abdominal wall, one on each side of your spine.

The kidneys filter your body's blood to remove salt, toxins and water. Filtering makes urine (pee). The kidneys also return water to the body to make sure the body tissues have enough water.

You can live with only one kidney. If one kidney is removed, the remaining kidney grows larger over the next few months to handle the extra load.

90% (90 out of 100) of tumours start in the kidney parenchyma and are often called renal cell cancers. Parenchyma is the part of the kidney that filters the blood and collects waste to make pee.

Kidney cancer is not very common. Only 4% (4 out of 100) of all cancers are kidney cancers.

The survival rate for people with early stage kidney cancer is up to 75% (75 out of 100).

Diagnosis and Staging

What are the signs and symptoms of kidney cancer?

Kidney cancer often has no symptoms. It is hard to find kidney cancer in the early stage.

Symptoms of kidney cancer may include:

- Blood in your urine. You may see this when you urinate (go pee) or it may only be seen under a microscope. This is called hematuria.
- A dull pain in the flank region (around the back and side of the abdomen) that does not go away.
- Fullness in the upper abdomen or a lump in this area.

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- 15 - 20% (15 - 20 out of 100) of people with kidney cancer have all three symptoms listed above. These go away when the tumour is removed.
- High blood pressure. 25% (25 out of 100) of people with kidney cancer have this. It goes away when the tumour is removed.
- Fever or a fever that keeps coming back.
- Loss of appetite.
- Nausea (feeling queasy).
- Vomiting.
- Constipation.
- Weakness.
- Fatigue (extreme tiredness).
- Anemia (low red blood cell count).
- Polycythemia (high red blood cell count).
- Unexplained weight loss.

If you have any signs or symptoms that you are worried about, please talk to your family doctor or nurse practitioner.

How is kidney cancer diagnosed?

Tests that may help diagnose kidney cancer include:

- **Urine tests**
- **Blood tests**
- **X-rays:** to see the tumour and if cancer has spread.
- **IVP (intravenous pyelogram):** a special dye is injected into your bloodstream. The dye goes into your urine and allows your doctor to see your urinary system with an x-ray machine.
- **Computed tomography (CT scan):** to see the tumour and if cancer has spread.
- **Ultrasound:** to see tumour the tumour.

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For more information on tests used to diagnose cancer, see our Recommended Websites - Screening and Diagnosis section: bccancer.bc.ca/our-services/services/library/recommended-websites/screening-and-diagnosis-websites

What are the types of kidney cancer?

Renal cell carcinomas (also called adenocarcinomas)

- Most common kidney cancer. 85% (85 out of 100) of kidney cancers.
- Most common in people between age 50 and 70.
- Men are affected twice as much as women [see note, Statistics].

Transitional cell carcinomas

- These tumours grow in the renal pelvis (area of the kidney where two or three of the major chambers of the kidney join together).
- They affect the kidney's collecting systems and behave like cancers of the bladder or ureter. BC Cancer treats these cancers the same way we treat transitional cell carcinomas of the bladder. For information on these cancers: www.bccancer.bc.ca/health-info/types-of-cancer/urinary/bladder
- Not very common. About 8% (8 out of 100) of kidney tumours.
- In 50% (50 out of 100) of people with this cancer, the tumour has grown into the muscle.
- Most common in between people age 60 and 80.

Wilms' Tumour

- Found mostly in children.
- About 5% (5 out of 100) of all kidney cancers.

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What are the stages of kidney cancer?

Staging describes the cancer. Staging is based on how much cancer is in the body, where it was first diagnosed, if the cancer has spread and where it has spread to.

The stage of the cancer can help your health care team plan your treatment. It can also tell them how your cancer might respond to treatment and the chance that your cancer may come back (recur).

Kidney cancer staging:

- **Stage 1:** Tumour is only in the kidney. Tumour is smaller than 7 cm across.
- **Stage 2:** Tumour is only in the kidney. Tumour is bigger than 7 cm across.
- **Stage 3:** Tumour has grown into the blood vessels near the kidney, or into lymph nodes near the kidney or into the fat around the kidney.
- **Stage 4:** Tumour has grown through the outer layer of the kidney or the cancer has spread to other parts of the body (called distant metastasis or metastatic kidney cancer).

For more information on staging, see our About Cancer page:

bccancer.bc.ca/health-info/types-of-cancer/about-cancer

What are the grades of kidney cancer?

The grade of the cancer describes how different the cancer cells look from normal cells and how fast the cancer cells are growing. A pathologist will give the cancer a grade after looking at the cells under a microscope.

Kidney cancer can be grade 1, 2, 3 or 4 (may be called the Fuhrman grade). The lower the number, the lower the grade.

Low grade: cells are abnormal but look a lot like normal cells. Low grade cancers usually grow slowly and are less likely to spread.

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High grade: cells are abnormal and do not look like normal cells. High grade cancers usually grow more quickly and are more likely to spread.

The grade of the cancer can help your health care team plan your treatment.

Treatment

What is the treatment for kidney cancer?

Cancer treatment may be different for each person. It depends on your particular cancer. Your treatment may be different from what is listed here.

Kidney cancers in children, including Wilms' Tumours, are treated at BC Children's Hospital:

www.bcchildrens.ca/our-services/clinics/cancer-blood-disorders

Surgery

- Preferred treatment because it offers the best chance for cure.
- Nephrectomy is the removal of the kidney with cancer. Sometimes large portions of the surrounding tissues are also removed. Some lymph nodes may be removed, to see if the cancer has spread.
- If the tumour is causing you pain, this should go away once the kidney is removed.
- Usually used to treat renal pelvis tumours. In most, cases the kidney and the ureter are also removed.

Immunotherapy (treatments that help the immune system fight cancer)

- Interferon-alpha is sometimes used to treat kidney cancer that has spread (metastases).

Radiation therapy (high energy x-rays that kill or shrink cancer cells)

- May be used to help with pain or other symptoms.

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- For more information about radiation therapy go to:

bccancer.bc.ca/our-services/treatments/radiation-therapy

Systemic therapy (chemotherapy)

- Does not usually work well to treat kidney cancer, except for renal pelvis tumours (transitional cell carcinomas).
- For people with metastases, drugs called anti-angiogenesis inhibitors may be helpful. These are drugs that stop blood vessels from forming and helping the tumour grow.
- For more information about systemic therapy go to:

[bccancer.bc.ca/our-services/treatments/systemic-therapy-\(chemotherapy\)](http://bccancer.bc.ca/our-services/treatments/systemic-therapy-(chemotherapy))

What is the follow-up after treatment?

- Follow-up testing and appointments are based on your type of cancer.
- Guidelines for follow-up after treatment for kidney cancer are on our website: www.bccancer.bc.ca/health-professionals/clinical-resources/cancer-management-manual/genitourinary/kidney#Follow-up-
- These are guidelines written for your doctor, nurse practitioner or specialist. You can look at them to see what appointments and tests you might need after treatment.
- After treatment, you may return to the care of your family doctor or specialist for regular follow-up. If you do not have a family doctor, please talk to your BC Cancer health care team.
- If you were treated with a nephrectomy (kidney was removed), you should see your doctor every 6 months for the first two years after treatment. After that, you should see your doctor once each year. At each visit, you should have a chest x-ray. Every other visit, you should have an ultrasound of your other kidney.
- The BC Cancer Life after Cancer page has information on issues that cancer survivors may face: bccancer.bc.ca/lifeaftercancer

More Information

What causes kidney cancer and who gets it?

These are some of the risk factors for this cancer. Not all of these risk factors may cause this cancer, but they may help the cancer start growing.

- It affects men two to three times more than women [see note below, Statistics].
- Black people have a slightly higher risk of kidney cancer.
- Being overweight.
- Having high blood pressure.
- If your brother or sister has kidney cancer, you may be more likely to get it.
- This cancer is most common in people between the ages of 30 and 70, but especially in men aged 40-75 [see note, Statistics].
- Exposure to tobacco smoke. Smokers are about 2 times more likely to get kidney cancer than non-smokers.
- Excessive use of drugs with phenacetin. The use of phenacetin in prescription or over-the-counter drugs was discontinued in Canada in 1973. This is a not a big risk factor for most of the general population. However, illegal drug dealers are sometimes cut cocaine with phenacetin.
- Long-term use of diuretic drugs (drugs that make you pee).
- Long-term dialysis (treatment for kidney failure. Dialysis helps to clean your blood).
- Long-term use of pain medications, including over-the-counter medications like ibuprofen.
- Exposure to cadmium. Cadmium is in batteries, paint and welding materials. Your risk is greater if you are also a smoker.
- A gene mutation, called Von Hippel-Lindau, may be cause over 40% (40 out of 100) of clear cell kidney cancers.

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- Coke oven workers appear to have a slightly higher risk of kidney cancer. Coke ovens are used in the aluminum, steel, graphite, electrical, and construction industries.

Statistics

B.C.: www.bccancer.bc.ca/health-info/disease-system-statistics/statistics-by-cancer-type

Canada: www.cancer.ca/en/cancer-information/cancer-type/kidney/statistics/?region=bc

Note: Available statistics do not have information about the inclusion of transgender and gender diverse participants. It is unknown how these statistics apply to transgender and gender diverse people. Patients are advised to speak with their primary care provider or specialists about their individual considerations and recommendations.

Can I help prevent kidney cancer?

Here are some things you can do to lower your risk of kidney cancer:

- **Do not smoke:** If you smoke, stop. Also, try to avoid breathing in cigarette smoke. Even if you have been using tobacco for many years, quitting will lower your cancer risk. Support is available to help you successfully quit.
 - Visit the BC Cancer Tobacco and Cancer Prevention page: www.bccancer.bc.ca/health-info/prevention/tobacco
- **Get regular physical activity:**
 - Visit the BC Cancer Physical Activity and Cancer Prevention page: www.bccancer.bc.ca/health-info/prevention/physical-activity
- **Monitor and manage your blood pressure.**
- **Eat healthy, nutritious foods:**
 - Follow Canada's Food Guide: www.canada.ca/en/health-canada/services/canada-food-guides.html

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- Visit the BC Cancer Food choices and Cancer Prevention page: www.bccancer.bc.ca/health-info/prevention/food-choices

Is there screening for kidney cancer?

There is no screening for this cancer.

If you have a family history of kidney cancer or if a member of your family develops kidney cancer at a young age (less than 45 years old), you should talk to your doctor or nurse practitioner.

Where can I find more information?

- If you have questions about kidney cancer, please talk to your health care team.
- Our librarians can help you find the information you need. Visit our Library page: bccancer.bc.ca/our-services/services/library
- BC Cancer Library Recommended Kidney Cancer Websites: bccancer.bc.ca/our-services/services/library/recommended-websites/types-of-cancer-websites
- Managing Your Symptoms: <http://www.bccancer.bc.ca/health-info/coping-with-cancer/managing-symptoms-side-effects>
- Emotional Support: www.bccancer.bc.ca/health-info/coping-with-cancer/emotional-support