

[Home](#) > [Types of Cancer](#) > [Kidney Cancer](#) > [Kidney Cancer - Overview](#)

PDF generated on July 24, 2016 from <http://www.cancer.net/cancer-types/kidney-cancer/overview>

## **[Kidney Cancer - Overview](#) [1]**

This section has been reviewed and approved by the [Cancer.Net Editorial Board](#) [2], 08/2015

**ON THIS PAGE:** You will find some basic information about this disease and the parts of the body it may affect. This is the first page of Cancer.Net's Guide to Kidney Cancer. To see other pages, use the menu on the side of your screen. Think of that menu as a roadmap to this full guide.

### **About the kidneys**

Every person has two kidneys, which are located above the waist on both sides of the spine. These reddish-brown, bean-shaped organs are each about the size of a small fist. They are located closer to the back of the body than to the front.

The kidneys filter blood to remove impurities, excess minerals and salts, and extra water. Every day, the kidneys filter about 200 quarts of blood to generate two quarts of urine. The kidneys also produce hormones that help control blood pressure, red blood cell production, and other bodily functions.

Although most people have two kidneys, each works independently. This means the body can function with less than one complete kidney. With dialysis, a mechanized filtering process, it is possible to live without functioning kidneys.

### **About kidney cancer**

Kidney cancer begins when healthy cells in one or both kidneys change and grow uncontrollably, forming a mass called a tumor. A tumor can be malignant, indolent, or benign. A malignant tumor is cancerous, meaning it can grow and spread to other parts of the body. An indolent

tumor is also cancerous, but this type of tumor rarely spreads to other parts of the body. A benign tumor means the tumor can grow but will not spread.

## Types of kidney cancer

There are several types of kidney cancer:

- **Renal cell carcinoma.** Renal cell carcinoma is the most common type of adult kidney cancer, making up about 85% of diagnoses. This type of cancer develops in the proximal renal tubules that make up the kidney's filtration system. There are thousands of these tiny filtration units in each kidney. The [treatment options](#) [3] for renal cell carcinoma are discussed later in this guide.
- **Transitional cell carcinoma.** This is also called urothelial carcinoma and accounts for 10% to 15% of the kidney cancers diagnosed in adults. Transitional cell carcinoma begins in the area of the kidney where urine collects before moving to the bladder, called the renal pelvis. This type of kidney cancer is similar to [bladder cancer](#) [4] and is treated in a similar way.
- **Sarcoma.** [Sarcoma](#) [5] of the kidney is rare. This type of cancer develops in the soft tissue of the kidney; the thin layer of connective tissue surrounding the kidney, called the capsule; or surrounding fat. Sarcoma of the kidney is usually treated with surgery. However, sarcoma commonly comes back in the kidney area or spreads to other parts of the body. More surgery or chemotherapy may be recommended after the first surgery.
- **Wilms tumor.** [Wilms tumor](#) [6] is most common in children and is treated differently than kidney cancer in adults. This type of tumor is more likely to be successfully treated with radiation therapy and chemotherapy than the other types of kidney cancer when combined with surgery. This has resulted in a different approach to treatment.

## Types of kidney cancer cells

Knowing which type of cell makes up a kidney tumor helps doctors plan treatment. Pathologists have identified as many as 20 different types of kidney cancer cells. Pathologists are doctors who specialize in interpreting laboratory tests and evaluating cells, tissues, and organs to diagnose disease.

The most common types of kidney cancer cells are listed below.

- **Clear cell.** About 70% of kidney cancers are made up of clear cells. Clear cells range from

slow growing (grade 1) to fast growing (grade 4). Clear cell kidney cancer is particularly responsive to immunotherapy and targeted therapy (see the [Treatment Options](#) [3] section).

- **Papillary.** Papillary kidney cancer develops in 10% to 15% of patients. It is divided into two different subtypes, called type 1 and type 2. Papillary kidney cancer is currently treated in the same way as clear cell kidney cancer. However, many doctors recommend treatment through a [clinical trial](#) [7] because treatment with targeted therapy is often not as successful for people with papillary kidney cancer as it is for people with clear cell kidney cancer.
- **Sarcomatoid.** This is the fastest-growing and most aggressive type of kidney cancer cell. It may develop from any cell type, including clear cell, papillary, and chromophobe. It is called sarcomatoid because it looks like sarcoma under a microscope.
- **Collecting duct.** This is a rare cancer that behaves in a similar way to transitional cell carcinoma. It is best treated with chemotherapy. Many doctors believe it is less responsive to chemotherapy than transitional cell carcinoma but more responsive than the clear cell or sarcomatoid types.
- **Chromophobe.** Chromophobe is another rare cancer that is different from the other types. It may form indolent tumors.
- **Oncocytoma.** This is a slow-growing type of kidney cancer that rarely, if ever, spreads.
- **Angiomyolipoma.** Angiomyolipoma is a benign tumor that has a unique appearance on a computed tomography (CT or CAT) scan (see the [Diagnosis](#) [8] section) and when viewed under a microscope. Usually, it is less likely to grow and spread. It is generally best treated with surgery, or if it is small, careful observation.

## Looking for More of an Overview?

If you would like additional introductory information, explore these related items. Please note these links will take you to other sections on Cancer.Net:

- [ASCO Answers Fact Sheet](#) [9]: Read a one-page fact sheet (available as a PDF) that offers an easy-to-print introduction to this type of cancer.

- [Cancer.Net Patient Education Video](#) [10]: View a short video led by an ASCO expert in this type of cancer that provides basic information and areas of research.
- [Cancer.Net En Español](#) [11]: Read about kidney cancer in Spanish. [Infórmase sobre el cáncer de riñón en español.](#) [11]

*The [next section in this guide is Statistics](#) [12], and it helps explain how many people are diagnosed with this disease and general survival rates. Or, use the menu on the side of your screen to choose another section to continue reading this guide.*

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### **Links**

- [1] <http://www.cancer.net/cancer-types/kidney-cancer/overview>
- [2] <http://www.cancer.net/about-us>
- [3] <http://www.cancer.net/node/18976>
- [4] <http://www.cancer.net/node/18527>
- [5] <http://www.cancer.net/node/31379>
- [6] <http://www.cancer.net/node/31257>
- [7] <http://www.cancer.net/node/18977>
- [8] <http://www.cancer.net/node/18974>
- [9] [http://www.cancer.net/sites/cancer.net/files/asco\\_answers\\_kidney.pdf](http://www.cancer.net/sites/cancer.net/files/asco_answers_kidney.pdf)
- [10] <http://www.cancer.net/node/32206>
- [11] <http://www.cancer.net/es/node/31358>
- [12] <http://www.cancer.net/node/18970>