

DIAGNOSING AND TREATING KIDNEY CANCER

Urology Care
FOUNDATION™

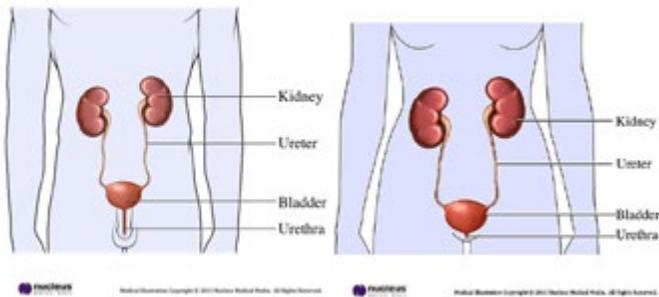
*The Official Foundation of the
American Urological Association*

WHAT ARE THE KIDNEYS AND WHAT DO THEY DO?

Healthy kidneys work around the clock to clean our blood. Our kidneys are needed for life. These two bean-shaped organs are found near the middle of the back below the rib cage.

Male and Female Urinary System

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Our kidneys are our body's main filter. They clean about 150 quarts of blood daily. Every day, they remove about 1-2 quarts of water and waste from the blood in the form of urine. As a filter, the kidneys:

- Detoxify (clean) blood
- Balance fluids
- Maintain electrolyte levels (e.g., sodium, potassium, calcium, magnesium, acid)
- Remove waste (as urine)
- Regulate blood pressure and red blood cell counts

WHAT IS KIDNEY CANCER?

When cells grow out of control in the kidney, it's called kidney cancer. Kidney cancer is fairly common. About 1 in 63 people will develop kidney cancer in their lifetime. Kidney cancer is one of the top 10 most common cancers diagnosed in the United States. There are different types of kidney cancer, they are:

Renal cell carcinoma is the most common kidney cancer in adults.

Transitional cell carcinoma is the second most common kidney cancer in adults.

Wilms Tumor is a type of kidney cancer found in children.

HOW IS KIDNEY CANCER DIAGNOSED?

Most kidney cancers are found during a routine screening or when you go to the doctor for another reason. To clearly diagnose if it's cancer or not, doctors may perform several of these tests:

- History and physical exam
- Blood tests
 - o BMP (basic metabolic panel)
 - o CBC (complete blood count)
 - o Liver function tests
- Urine tests
 - o Urine dipstick
 - o Urinalysis
- X-rays:
 - o CT scan (computed tomography)

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Diagnosing and Treating Kidney Cancer

- o MRI (magnetic resonance imaging)
- o Ultrasound
- o IVP (intravenous pyelography, an x-ray with dye)
- Renal tumor biopsy

HOW IS KIDNEY CANCER TREATED?

The best treatment options for you are based on the grade and stage of cancer found, whether or not it has spread and your general health. With timely diagnosis and treatment, kidney cancer can be cured.

The tumor stage refers to whether the kidney cancer is still within the kidney, has spread to nearby lymph nodes or has metastasized. The tumor grade refers to how quickly the tumor is likely to grow and spread.

Treatment success depends on:

- How aggressive the cancer cells are. Low-grade disease has a lower chance of spreading to other organs. High-grade disease is more aggressive with a higher chance of spreading.
- How far the tumor has spread. If the tumor does not involve nearby lymph nodes or other tissues, then there is a good chance for cure. If the cancer has spread, additional treatment would be recommended.

Watch and Wait ("Active Surveillance")

In some cases, no treatment is recommended. For example, if the tumor is small or you are too sick for surgery then this may be a safe option. Still, you would receive regular follow-up x-rays and doctor's visits to monitor the tumor.

Renal Tumor Ablation

This treatment destroys the tumor with either extreme heat or cold, and spares the remaining normal kidney. This is typically done laparoscopically (surgery done by making several small incisions, rather than one large incision) or percutaneously (surgery done using a needle-puncture) under CT guidance.

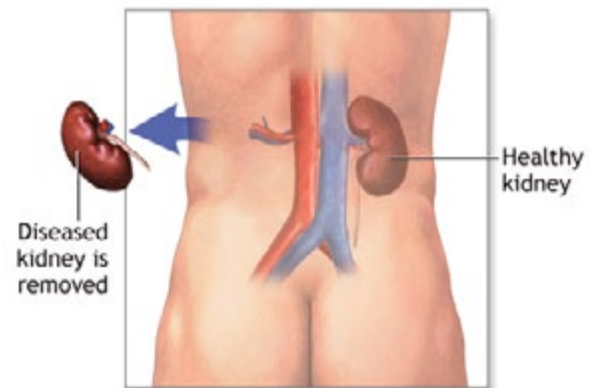
Surgery

Surgery is usually the first step to remove and treat a kidney tumor. A urologic surgeon will try to save as much of the

kidney as possible, if appropriate. Our amazing bodies can function with just part of one working kidney. If both kidneys are removed or not working well, dialysis would be needed. Dialysis is a treatment where a machine outside of the body is used to clean the blood.

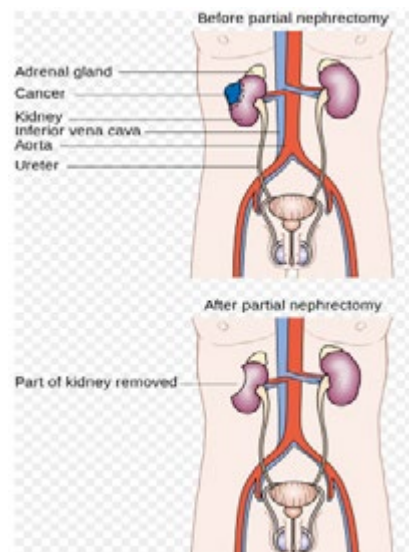
There are two types of surgery to treat kidney cancer:

- **Radical Nephrectomy:** Remove an entire kidney and surrounding fatty tissue. Sometimes this includes the nearby adrenal gland, lymph nodes and other surrounding tissue.



ADAM

- **Partial Nephrectomy:** Remove the kidney tumor and spare the remaining normal kidney.



Cancer Research UK

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Targeted Therapy

Targeted therapy uses drugs that can kill just the kidney cancer cells in the body. They are used to block proteins or new blood vessels that the cancer cells need in order to grow. These treatments are typically used for advanced (metastatic) disease. Targeted therapy has been shown to shrink kidney tumors or slow their growth.

Immunotherapy, also called Biologic Therapy

Biologic therapy is a way to jump-start our immune system to fight cancer. The immune system is the body's natural defense against diseases. The main biologic drugs used in kidney cancer are small proteins called cytokines. The cytokines used most often are interleukin-2 (IL-2) and interferon-alpha. Both of these treatments can shrink kidney tumors in a small percent of patients.

Radiation Therapy

Radiation therapy is used to relieve the symptoms of kidney cancer, rather than as a cure. It uses high-energy radiation to shrink the kidney cancer cells that metastasize to other organs such as the brain or bones. Bone pain can be relieved by radiation. It can be used alone or with other therapies.

Chemotherapy

Kidney cancer cells are usually resistant to chemotherapy. However, these drugs may be used if targeted drugs and/or immunotherapy haven't worked or for rare tumor types. It is important to ask about how to manage chemotherapy side effects before starting.

Clinical Trials

Clinical trials are research studies to test if a new treatment or procedure is safe and effective. These studies aim to find treatment strategies that work best for certain illnesses or groups of people. Many people find hope in clinical trials and want to participate. Cancer clinical trials never use a placebo (sugar pill). You will either be given a standard treatment or the treatment being tested.

WHAT CAN I EXPECT AFTER TREATMENT?

The speed of your recovery depends on your treatment and overall health. A minimally invasive approach (less injury to the body) will lead to a quicker recovery. The best treatment is often the one that offers the best long-term outcome.

After treatment, you will need continued checkups to watch for a re-growth of cancer. After treatment, your doctor will perform many of the same tests used to diagnose the cancer. These visits and tests should continue at least yearly throughout your life.

If your surgeon removed one kidney and the remaining kidney works well, you should enjoy a good quality of life and health. One good kidney can usually do the work of two.

Diagnosing and Treating Kidney Cancer

RESOURCES

National Cancer Institute at the National Institutes of Health

<http://www.cancer.gov/types/kidney>

The Kidney Cancer Association

www.kidneycancer.org

The National Library of Medicine's MedlinePlus

<http://www.nlm.nih.gov/medlineplus/kidneycancer.html>
(English)

<http://www.nlm.nih.gov/medlineplus/spanish/kidneycancer.html>
(Español)

Urology Care Foundation

UrologyHealth.org

- You may find more information about Kidney Cancer at **www.urologyhealth.org/urologic-conditions/kidney-cancer**.
- To search for information on current or recent clinical trials for the treatment of kidney cancer, visit the **[UrologyHealth.org/ClinicalTrials](http://www.urologyhealth.org/ClinicalTrials)**

For more information, contact:

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