



The Urinary Tract - Source: NIH NIDDK

Approximately 2% of men and 1.2% of women will be diagnosed with kidney cancer during their lifetimes. The most common type of kidney cancer is called renal cell carcinoma. There are several subtypes of renal cell carcinoma that are characterized by the way the cells look under a microscope. Each subtype provides information about treatment options for patients but also information about whether a particular type of kidney cancer is more likely to be hereditary:

- Clear cell subtype: 70% of renal cell carcinomas
- Papillary subtype: 10% of renal cell carcinomas
- Chromophobe subtype: 5% of renal cell carcinomas
- More rare and unclassified renal cell carcinomas make up the remaining subtypes

Renal pelvic cancers make up 5% of kidney cancers and occur in the lining where the ureters attach to the kidney. Because these cancers look like bladder cancer under the microscope, they are often called transitional cell carcinomas.

Sarcoma of the kidney is rare and can occur in the blood vessels or connective tissue.



[Wilms tumor](#) is a type of kidney cancer that nearly always occurs in children, and have been associated with other genetic syndromes.

Finally, there are benign tumors of the kidney. While not cancerous, they can sometimes cause medical problems and may require intervention. Examples include: renal adenomas, angiomyolipomas, and oncocytomas.

Risk Factors for Kidney Cancer

There are many different causes and risk factors for developing kidney cancer, including genetics, environment, and random chance. As with most cancers, a specific cause for the great majority of these cancers cannot be identified. Rather, it is likely that there are multiple factors which play a part in the development of the cancer.

Demographics

- Age: the risk for kidney cancer (and most other cancers) increases as we get older.
- Race: Kidney cancer is slightly more common in African Americans and Native Americans.
- Gender: Compared with women, men are two times more likely to develop kidney cancer

Environmental

- Smokers are at a higher risk of kidney cancer than non-smokers.
- Obesity: Being overweight is a risk factor for many cancers, including kidney cancer.
- Chemical exposure: Exposure to specific organic solvents and the metal Cadmium have been linked to a higher risk of kidney cancer.
- Medications: A pain medication that was available decades ago called phenacetin has been linked with kidney cancer. Diuretics (water pills) are also a possible risk factor for kidney cancer.

Medical history

- High blood pressure: Individuals with high blood pressure are at a higher risk of kidney cancer. Some medications used to treat high blood pressure have also been



suspected to increase risk of kidney cancer.

- Individuals with advanced kidney disease requiring dialysis are at increased risk of kidney cancer.

Family history

- Having a close relative diagnosed with kidney cancer increases one's chance to develop kidney cancer themselves. This may be due to shared genetic risk factors but also shared environmental risk factors.

Hereditary Kidney Cancer

It is estimated that 5% of kidney cancers are due to a hereditary cause. Individuals with bilateral or multifocal renal cell carcinoma or kidney cancer that is early onset (diagnosed at age 46 or younger) should consider genetic counseling. Certain subtypes of renal cell carcinoma are more commonly hereditary, such as papillary, chromophobe kidney cancers or oncocytic kidney tumors. Syndromes associated with hereditary kidney cancer include:

- [Von Hippel Lindau](#)
- Hereditary Leiomyomatosis and Renal Cell Carcinoma (Reed's Syndrome)
- [Tuberous Sclerosis](#)
- Birt-Hogge-Dube syndrome
- [PTEN Hamartoma Tumor syndrome/Cowden syndrome](#)
- Hereditary papillary renal cell carcinoma
- Papillary Renal Neoplasia
- [Adrenal gland cancers](#)

Click [here](#) to learn more about scheduling a genetic counseling appointment for questions about hereditary cancer predisposition.