



Causes, Risk Factors, and Prevention

Risk Factors

A risk factor is anything that affects your chance of getting a disease such as cancer. Learn more about the risk factors for adrenal cancer.

- [What Are the Risk Factors for Adrenal Cancer?](#)
- [Do We Know What Causes Adrenal Cancer?](#)

Prevention

Since there are no known preventable risk factors for this cancer, it is not possible to prevent this disease.

What Are the Risk Factors for Adrenal Cancer?

A risk factor is anything that changes your chance of getting a disease such as cancer. Different cancers have different risk factors. Some risk factors, like smoking, can be changed. Others, like a person's age or family history, can't be changed.

Scientists have found few risk factors that make a person more likely to develop adrenal gland tumors. Even if a patient does have one or more risk factors for adrenal gland tumors, it is impossible to know for sure how much that risk factor contributed to causing the cancer.

But having a risk factor, or even several, does not mean that you will get the disease. Many people with risk factors never develop adrenal cancer, while others with this disease may have few or no known risk factors.

Genetic syndromes

The vast majority of adrenal cortex cancers are sporadic (not inherited), but some (up to 15%) are caused by a genetic defect. This is more common in adrenal cancers in children.

Li-Fraumeni syndrome

The Li-Fraumeni syndrome is a rare condition which is most often caused by a defect in the *TP53* gene. People with this syndrome have a high risk of several types of cancers, including include [breast cancer](#), [bone cancer](#), [brain cancer](#), and [adrenal cortex cancer](#).

Beckwith-Wiedemann syndrome

People with this problem have large tongues, are large themselves, and have an increased risk for developing cancers of the [kidney](#), [liver](#) and [adrenal cortex](#).

Multiple endocrine neoplasia (MEN1)

People with MEN1 have a very high risk of developing tumors of 3 glands: the [pituitary](#), parathyroid, and [pancreas](#). About one-third to one-half of people with this condition also develop adrenal adenomas or enlarged adrenal glands. These usually do not cause any symptoms. This syndrome is caused by defects in a gene called *MEN1*. People who have a family history of MEN1 or pituitary, parathyroid, pancreas, or adrenal cancers should ask their doctor if they might benefit from [genetic counseling](#).

Familial adenomatous polyposis (FAP)

People with this syndrome develop hundreds of polyps in the large intestine. These polyps will lead to [colon cancer](#) if the colon is not removed. FAP also increases the risk of other cancers, and may increase the risk for adrenal cancer. Still, most adrenal tumors in patients with FAP are benign adenomas. This syndrome is caused by defects in a gene called *APC*.

Hereditary nonpolyposis colorectal cancer

Patients with hereditary nonpolyposis colorectal cancer (HNPCC, also called *Lynch syndrome*) have a high risk of colorectal cancer as well as, in women, [endometrial cancer](#). They also have an increased risk of some other cancers, including cancer of the

adrenal cortex.

In most cases, this disorder is caused by an inherited defect in either the gene *MLH1* or the gene *MSH2*, but other genes can also cause HNPCC. HNPCC is discussed in more detail in [Colorectal Cancer](#).

Lifestyle and environmental factors

Risk factors such as a high-fat diet, smoking, sedentary lifestyle, and exposure to cancer-causing substances in the environment have a great impact on a person's risk of developing many types of cancer. Although none of these factors has been definitely found to influence a person's risk of developing adrenal cancer, smoking has been suggested as a risk factor by some researchers.

- [References](#)

[See all references for Adrenal Cancer](#)

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Do We Know What Causes Adrenal Cancer?

We do not know exactly what causes most adrenal cortical tumors. Over the past several years, experts have made great progress in understanding how certain changes in a person's DNA can cause cells in the adrenal gland to become cancerous. DNA is the molecule that carries the instructions for nearly everything our cells do. We usually look like our parents because they are the source of our DNA. However, DNA affects more than the way we look. It also determines our risk for developing certain diseases, including some types of cancer.

Some [genes](#) (parts of our DNA) control when our cells grow and divide. Some genes that promote cell division are called *oncogenes*. Other genes that slow down cancer cell division or make them die are called *tumor suppressor genes*. We know that cancers

can be caused by DNA mutations (changes) that turn on oncogenes or turn off tumor suppressor genes. Some people with cancer have DNA mutations they inherited from a parent, which increase their risk for developing the disease. But most DNA mutations that are seen in cancers happen during life rather than having been inherited. These mutations may result from exposure to radiation or carcinogens (cancer-causing chemicals). But most of these mutations happen for no apparent reason.

The DNA mutations that cause tumors in people with the genetic syndromes discussed in the [previous section](#) have been identified. Overall though, these rarely cause adrenal cortical cancer. However, because adrenal cancer is so rare, if you have adrenal cancer, it may be worthwhile to consider [genetic testing](#) to find out if you have one of these syndromes. If you do, you (and your family members) may have an increased risk to develop other cancers also.

The Li-Fraumeni syndrome is caused by inherited mutations that inactivate the p53 tumor suppressor gene. This syndrome causes few cases of adrenal cancer in adults (1 of every 20), but is often the cause of adrenal cancer in children. In fact, about 8 of every 10 cases of adrenal cancer in children are caused by Li-Fraumeni syndrome. Many other adrenal cancers have also been found to have abnormal p53 genes that were acquired after birth (not inherited).

- [References](#)

[See all references for Adrenal Cancer](#)

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Can Adrenal Cancer Be Prevented?

Since there are no known preventable [risk factors](#) for this cancer, it is not now possible to prevent this disease, specifically. Learn more about what is known.

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