Gallbladder Cancer Causes, Risk Factors, and Prevention

Learn about the risk factors for gallbladder cancer and what you might be able to do to help lower your risk.

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 gallbladder cancer.

- Risk Factors for Gallbladder Cancer
- What Causes Gallbladder Cancer?

Prevention

There's no way to completely prevent cancer. But there are things you can do that might help lower your risk. Learn more.

- Can Gallbladder Cancer Be Prevented?

Risk Factors for Gallbladder Cancer

Scientists have found some risk factors that make a person more likely to develop gallbladder cancer. Many of these are related in some way to chronic inflammation

(long-lasting irritation and swelling) in the gallbladder.

What is a risk factor?

A risk factor is anything that affects 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.

But having a risk factor, or even many risk factors, doesn't mean that a person will get the disease. And many people who get the disease may have few or no known risk factors.

Gallstones

Gallstones are the most common risk factor for gallbladder cancer. Gallstones are pebble-like collections of cholesterol and other substances that form in the gallbladder and can cause chronic inflammation. Up to 4 out of 5 people with gallbladder cancer have gallstones when they're diagnosed. But gallstones are very common, and gallbladder cancer is quite rare, especially in the US. And most people with gallstones never develop gallbladder cancer.

Porcelain gallbladder

Porcelain gallbladder is a condition in which the wall of the gallbladder becomes

history of gallbladder cancer in the family seems to increase a person's chances of developing this cancer, but the risk is still low because this is a rare disease.

Other possible risk factors

Studies have found other factors that might increase the risk of gallbladder cancer, but the links are not as clear. These include:

- Smoking
- Exposure to chemicals used in the rubber and textile industries
- Exposure to nitrosamines

References

Abou-Alfa GK, Jarnagin W, Lowery M, D'Angelica M, Brown K, Ludwig E, Covey A, Kemeny N, Goodman KA, Shia J, O'Reilly EM. Liver and bile duct cancer. In: Neiderhuber JE, Armitage JO, Doroshow JH, Kastan MB, Tepper JE, eds. *Abeloff's Clinical Oncology*

What Causes Gallbladder Cancer?

release bile more slowly. This means that cells in the gallbladder are exposed to the chemicals in bile for longer than usual. This could lead to irritation and inflammation.

In another example, defects in the ducts that carry fluids from the gallbladder and pancreas to the small intestine might allow juices from the pancreas to flow backward (reflux) into the gallbladder and bile ducts. This reflux of pancreatic juices might inflame and stimulate growth of the cells lining the gallbladder and bile ducts, which might increase the risk of gallbladder cancer.

Scientists are starting to understand how risk factors like inflammation might lead to certain changes in the DNA of cells, making them grow out of control and form cancers. DNA is the chemical in each of our cells that makes up our genes, the instructions for how our cells function. We usually look like our parents because they are the source of our DNA. But DNA affects more than how we look.

- Some genes control when cells grow, divide into new cells, and die. These genes are called **oncogenes**.
- Genes that slow down cell division or cause cells to die at the right time are called **tumor suppressor genes**.

Cancer can be caused by DNA changes (mutations) that turn on oncogenes or turn off tumor suppressor genes. Changes in many different genes are usually needed for a cell to become cancer.

Some people inherit DNA mutations from their parents that greatly increase their risk for certain cancers. But inherited gene mutations are not thought to cause very many gallbladder cancers.

Gene mutations related to gallbladder cancers are usually acquired during life rather than being inherited. For example, acquired changes in the *TP53* tumor suppressor gene are found in many cases of gallbladder cancer. Other genes that may play a role in gallbladder cancers include *KRAS*, *BRAF*, and *PIK3CA*. Some of the gene changes that lead to gallbladder cancer might be caused by chronic inflammation. But sometimes the cause of these changes is not known. Many gene changes might just be random events that sometimes happen inside a cell, without having an outside cause.

References

Abou-Alfa GK, Jarnagin W, Lowery M, D'Angelica M, Brown K, Ludwig E, Covey A, Kemeny N, Goodman KA, Shia J, O'Reilly EM. Liver and bile duct cancer. In:

Neiderhuber JE, Armitage JO, Doroshow JH, Kastan MB, Tepper JE, eds. *Abeloff's Clinical Oncology*. 5th ed. Philadelphia, PA. Elsevier; 2014:1373-1395.

Patel T, Borad MJ. Carcinoma of the biliary tree. In: DeVita VT, Lawrence TS, Rosenberg SA, eds. *DeVita, Hellman, and Rosenberg's Cancer: Principles and Practice of Oncology*. 10th ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2015:715-735.

Last Revised: July 12, 2018

Can Gallbladder Cancer Be Prevented?

There's no known way to prevent most gallbladder cancers. Many of the known risk factors for gallbladder cancer, such as age, sex, ethnicity, and bile duct defects, are beyond our control. But there are things you can do that might help lower your risk.

Taking these steps helps maintain good health[1] and may reduce a person's risk of gallbladder cancer, as well as many other types of cancer:

- Get to and stay at a healthy weight
- Keep physically active and limit the time you spend sitting or lying down
- Follow a healthy eating pattern that includes plenty of fruits, vegetables, and whole grains, and limits or avoids red and processed meats, sugary drinks, and highly processed foods
- It's best not to drink alcohol[2]. If you do drink, have no more than 1 drink per day for women or 2 per day for men

To learn more, see the American Cancer Society Guidelines on Nutrition and Physical Activity for Cancer Prevention[3].

Since gallstones are a major risk factor, removing the gallbladders of all people with gallstones might prevent many of these cancers. But gallstones are very common, and gallbladder cancer is quite rare, even in people with gallstones. Most doctors don't recommend people with gallstones have their gallbladder removed unless the stones are causing problems. This is because, in most cases, the possible risks and complications of surgery probably don't outweigh the possible benefit. Still, some

doctors might advise removing the gallbladder if long-standing gallstone disease has resulted in a porcelain gallbladder.

Hyperlinks

1. www.cancer.org/cancer/risk-prevention/diet-physical-activity.html
2. www.cancer.org/cancer/risk-prevention/diet-physical-activity/alcohol-use-and-cancer.html
3. www.cancer.org/cancer/risk-prevention/diet-physical-activity/acs-guidelines-nutrition-physical-activity-cancer-prevention.html

References

Abou-Alfa GK, Jarnagin W, Lowery M, D'Angelica M, Brown K, Ludwig E, Covey A, Kemeny N, Goodman KA, Shia J, O'Reilly EM. Liver and bile duct cancer. In: Neiderhuber JE, Armitage JO, Doroshow JH, Kastan MB, Tepper JE, eds. *Abeloff's Clinical Oncology*. 5th ed. Philadelphia, PA. Elsevier; 2014:1373-1395.

Patel T, Borad MJ. Carcinoma of the biliary tree. In: DeVita VT, Lawrence TS, Rosenberg SA, eds. *DeVita, Hellman, and Rosenberg's Cancer: Principles and Practice of Oncology*. 10th ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2015:715-735.

Rock CL, Thomson C, Gansler T, et al. American Cancer Society guideline for diet and physical activity for cancer prevention. *CA: A Cancer Journal for Clinicians.* 2020;70(4). doi:10.3322/caac.21591. Accessed at https://onlinelibrary.wiley.com/doi/full/10.3322/caac.21591 on June 9, 2020.

Last Revised: June 9, 2020

Written by

The American Cancer Society medical and editorial content team (https://www.cancer.org/cancer/acs-medical-content-and-news-staff.html)

Our team is made up of doctors and oncology certified nurses with deep knowledge of cancer care as well as editors and translators with extensive experience in medical writing.

cancer.org | 1.800.227.2345