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Bile Duct Cancer 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 bile duct cancer.

- [Bile Duct Risk Factors](#)
- [What Causes Bile Duct 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 Bile Duct Cancer Be Prevented?](#)

Bile Duct Risk Factors

A risk factor is anything that affects your chance of getting a disease like 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, does not mean that a person will get

the disease. And many people who get the disease have few or no known risk factors.

Researchers have found some risk factors that make a person more likely to develop bile duct cancer.

Certain diseases of the liver or bile ducts

People who have chronic (long-standing) inflammation of the bile ducts have an increased risk of developing bile duct cancer. Certain conditions of the liver or bile ducts can cause this, these include:

- **Primary sclerosing cholangitis (PSC)**, a condition in which inflammation of the bile ducts (cholangitis) leads to the formation of scar tissue (sclerosis). People with PSC have an increased risk of bile duct cancer. The cause of the inflammation is not usually known. Many people with this disease also have inflammation of the large intestine, called **ulcerative colitis**.
- **Bile duct stones**, which are a lot like but much smaller than gallstones, can also cause inflammation that increases the risk of bile duct cancer.
- **Choledochal cyst disease**, a rare condition some people are born with. It causes bile-filled sacs along the bile ducts. (Choledochal means having to do with the common bile duct.) If not treated, the bile sitting in these sacs causes inflammation of the duct walls. The cells of the duct wall often have areas of pre-cancerous changes, which, over time, can progress to bile duct cancer.
- **Liver fluke infections**, which occur in some Asian countries when people eat raw or poorly cooked fish that are infected with these tiny parasite worms. In humans, these flukes live in the bile ducts and can cause bile duct cancer. There are several types of liver flukes. The ones most closely related to bile duct cancer risk are *Clonorchis sinensis* and *Opisthorchis viverrini*. Liver fluke infection is rare in the US, but it can affect people who travel to Asia.
- **Abnormalities where the bile duct and pancreatic duct normally meet** which can allow digestive juices from the pancreas to reflux (flow back) into the bile ducts. This backward flow keeps the bile from moving through the bile ducts the way it should. People with these abnormalities are at higher risk of bile duct cancer.
- **Cirrhosis**, which is damage to the liver caused by scar tissue. It's caused by irritants like alcohol and diseases like hepatitis. Studies have found it raises the risk of bile duct cancer.
- **Infection with hepatitis B virus or hepatitis C virus** which increases the risk of intrahepatic bile duct cancers. This may be at least in part because long-term

infections with these viruses can also lead to cirrhosis.

Other rare diseases of the liver and bile duct that may increase the risk of developing bile duct cancer include **polycystic liver disease** and **Caroli syndrome** (a dilation of the intrahepatic bile ducts present at birth).

Inflammatory bowel disease

Inflammatory bowel disease includes ulcerative colitis and Crohn's disease. People with these diseases have an increased risk of bile duct cancer.

Older age

Older people are more likely than younger people to get bile duct cancer. Most people diagnosed with bile duct cancer are in their 60s or 70s.

Ethnicity and geography

In the US, the risk of bile duct cancer is highest among Hispanic Americans. Worldwide, bile duct cancer is much more common in Southeast Asia and China, largely because of the high rate of infection with liver flukes in these areas.

Obesity

Being [overweight or obese](#)¹ can increase the risk of cancers of the gallbladder and bile ducts. This could be because obesity increases the risk of gallstones and bile duct stones, as well as the risk of non-alcoholic fatty liver disease. But there may be other ways that being overweight can lead to bile duct cancers, such as changes in certain hormones.

Non-alcoholic fatty liver disease

Non-alcoholic fatty liver disease is the build-up of extra fat in the liver cells that's not caused by alcohol. Over time, this can cause swelling and scarring that can progress to cancer.

Exposure to Thorotrast

A radioactive substance called **Thorotrast** (thorium dioxide) was used as a contrast agent for x-rays until the 1950s. It was found to increase the risk for bile duct cancer, as well as some types of liver cancer, and is no longer used.

Family history

A history of bile duct 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. Most bile duct cancers are not found in people with a family history of the disease.

Diabetes

People with diabetes (type 1 or type 2) have a higher risk of bile duct cancer. This increase in risk is not high, and the overall risk of bile duct cancer in someone with diabetes is still low.

Alcohol

People who drink [alcohol](#)² are more likely to get intrahepatic bile duct cancer. The risk is higher in those who have liver problems from drinking alcohol.

Other possible risk factors

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

- [Smoking](#)³
- Chronic pancreatitis (long-term inflammation of the pancreas)
- Infection with [HIV](#)⁴ (the virus that causes AIDS)
- Exposure to [asbestos](#)⁵
- Exposure to [radon](#)⁶ or other radioactive chemicals
- Exposure to dioxin, nitrosamines, or polychlorinated biphenyls (PCBs)

Hyperlinks

1. www.cancer.org/cancer/cancer-causes/diet-physical-activity/body-weight-and-cancer-risk.html
2. www.cancer.org/cancer/cancer-causes/diet-physical-activity/alcohol-use-and-

[cancer.html](#)

3. www.cancer.org/cancer/cancer-causes/tobacco-and-cancer/health-risks-of-smoking-tobacco.html
4. www.cancer.org/cancer/cancer-causes/infectious-agents/hiv-infection-aids.html
5. www.cancer.org/cancer/cancer-causes/asbestos.html
6. www.cancer.org/cancer/cancer-causes/radiation-exposure/radon.html

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See all references for Bile Duct Cancer (www.cancer.org/cancer/bile-duct-cancer/references.html)

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What Causes Bile Duct Cancer?

We don't know the exact cause of most bile duct cancers, but researchers have found some risk factors that make a person more likely to develop bile duct cancer. There seems to be a link between this cancer and things that irritate and inflame the bile ducts, whether it's bile duct stones, infestation with a parasite, or something else.

Scientists are starting to understand how 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.

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

Cancers 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.

We usually look like our parents because they are the source of our DNA. But DNA affects more than how we look. 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 bile duct cancers.

Gene mutations related to bile duct cancers are usually acquired during life rather than being inherited. For example, acquired changes in the *TP53* tumor suppressor gene are found in most bile duct cancers. Other genes that may play a role in bile duct cancers include *KRAS*, *HER2*, and *ALK*. Some of the gene changes that lead to bile duct cancer might be caused by 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.

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Can Bile Duct Cancer Be Prevented?

There's no known way to prevent most bile duct cancers in the US. Many of the known [risk factors](#) for bile duct cancer, such as age, ethnicity, and bile duct abnormalities, are beyond our control. But there are things you can do that might help lower your risk.

Getting to and staying at a healthy weight is one important way a person may reduce their risk of bile duct cancer, as well as many other types of cancer. The American Cancer Society recommends that people try to stay at a [healthy weight](#)¹, keep [physically active](#)², and follow a [healthy eating pattern](#)³ that includes plenty of fruits, vegetables, and whole grains, and that limits or avoids red and processed meats, sugary drinks, and highly processed foods. To learn more, see the [American Cancer Society Guidelines for Diet and Physical Activity for Cancer Prevention](#)⁴.

Other ways that people might be able to reduce their risk of bile duct cancer include:

- Get vaccinated against the hepatitis B virus (HBV) to prevent infection with this virus and the cirrhosis it can cause.
- Take precautions to avoid blood-borne or sexually transmitted infections like HBV and other viruses (like hepatitis C virus) to help prevent cirrhosis.
- Treat hepatitis infections (such as B and C) to help prevent cirrhosis.
- Avoid or limit [alcohol](#)⁵. If you do drink, have no more than 1 drink per day for women or 2 drinks per day for men.
- [Quit \(or don't start\) smoking](#)⁶.
- Protect yourself against exposure to certain chemicals (see [Risk Factors for Bile Duct Cancer](#)).

Hyperlinks

1. www.cancer.org/healthy/eat-healthy-get-active/take-control-your-weight.html
2. www.cancer.org/healthy/eat-healthy-get-active/get-active.html
3. www.cancer.org/healthy/eat-healthy-get-active/eat-healthy.html
4. www.cancer.org/healthy/eat-healthy-get-active/acs-guidelines-nutrition-physical-activity-cancer-prevention.html
5. www.cancer.org/cancer/cancer-causes/diet-physical-activity/alcohol-use-and-cancer.html
6. www.cancer.org/healthy/stay-away-from-tobacco/guide-quitting-smoking.html

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