Alcohol Use and Cancer

Drinking alcohol increases the risk of cancer. In fact, alcohol use is one of the most important preventable risk factors for cancer, along with tobacco use and excess body weight.

Alcohol use accounts for about 5% of all cancers and 4% of all cancer deaths in the United States. But many people don't know about the link between alcohol and cancer.

What types of cancer are linked to alcohol use?

Alcohol use has been linked with cancers of the:

- Mouth[1]
- Throat[2] (pharynx)
- Voice box[3] (larynx)
- Esophagus[4]
- Liver[5]
- Colon and rectum[6]
- Breast[7]
- Stomach[8]

Alcohol probably increases the risk of some other cancers as well.

For each of these cancers, the more alcohol you drink, the higher your cancer risk. But for some types of cancer, most notably breast cancer, drinking even small amounts of alcohol can increase your risk.

Cancers of the mouth, throat, voice box, and esophagus

Alcohol use clearly raises the risk of mouth, throat, voice box, and esophagus cancer. Drinking and smoking together raises this risk many times more than drinking or smoking alone.

This might be because alcohol can help harmful chemicals in tobacco get inside the cells that line your mouth, throat, and esophagus. Alcohol might also limit how well these cells can repair damage to their DNA caused by the chemicals in tobacco.

Liver cancer

Long-term alcohol use has been linked to an increased risk of liver cancer. Regular, heavy alcohol use can damage your liver, leading to inflammation and scarring and raising your risk of liver cancer.

Colon and rectal cancer

Alcohol use is linked to a higher risk of cancers of the colon and rectum. There is stronger evidence for this in men, but studies have found a link in women as well.

Breast cancer

Drinking even small amounts of alcohol increases the risk of breast cancer in women. Alcohol can raise estrogen levels in the body, which may explain some of the increased risk. Avoiding or cutting back on alcohol may be an important way for many women to lower their risk of breast cancer.

Stomach cancer

Having 3 or more alcoholic drinks a day raises your risk of stomach cancer.

Do all types of alcohol increase cancer risk?

All types of alcohol increase cancer risk. This includes beer, wine, liquor (distilled spirits), and other drinks. When it comes to cancer risk, the *amount* of alcohol you drink

over time seems to be the most important risk factor. The *type* of alcohol you drink isn't as important.

Most evidence suggests the **ethanol** in alcohol is what increases cancer risk, not other things in the drink. Ethanol is the type of alcohol found in all alcoholic drinks.

Alcoholic drinks have different percentages of ethanol. But in general, one standard-sized serving* of alcohol has roughly the same amount of ethanol (about half an ounce) no matter the type. Of course, larger or 'stronger' drinks can have more ethanol than this.

*One standard-sized serving of alcohol = 12 ounces of beer, 5 ounces of wine, or 1.5 ounces of 80-proof liquor.

How can drinking alcohol raise your risk of cancer?

There are several ways alcohol can raise cancer risk, which might depend on the type of cancer.

Causing damage to body tissues

Alcohol can act as an irritant, especially in the mouth and throat. Cells that are damaged by alcohol may try to repair themselves. This could lead to DNA changes[9] that can be a step toward cancer.

Most alcohol turns into **acetaldehyde** in your body. Acetaldehyde is a chemical that can damage the DNA inside your cells. It has been shown to cause cancer in lab animals.

Drinking alcohol can also lead to **oxidative stress** in your cells. This causes the cells to make too many harmful oxygen molecules (free radicals). This can damage the inside of the cells and might increase your risk of cancer.

Alcohol and its byproducts can also damage your liver, leading to **inflammation** and scarring (cirrhosis). As liver cells try to repair the damage, they can end up with mistakes in their DNA, which could lead to cancer.

Changing how the body absorbs or expels harmful chemicals

Alcohol may help other harmful chemicals more easily enter the cells lining your upper digestive tract. This includes harmful chemicals in tobacco smoke[10]. It might explain why the combination of smoking and drinking is much more likely to cause cancers in

the mouth or throat than smoking or drinking alone.

Alcohol may also slow your body's ability to break down and get rid of some harmful chemicals.

Reducing absorption of folate or other nutrients

Alcohol might affect your body's ability to absorb some nutrients, such as folate. Folate is a vitamin that your cells need to stay healthy. Low folate levels may play a role in the risk of some cancers, such as breast and colorectal cancer.

Absorption of nutrients can be even worse in heavy drinkers, who often consume low levels of folate to begin with.

Raising the levels of estrogen or other hormones

Alcohol can raise the levels of estrogen in the body. Estrogen is a hormone important in the growth and development of breast tissue. This could affect a woman's risk of breast cancer.

Increasing body weight

Too much alcohol can add extra calories to your diet, which can contribute to weight gain in some people. Having excess body weight[11] is known to increase the risks of many types of cancer.

Along with these effects, alcohol may contribute to cancer growth in other, unknown ways.

Other long-term health effects from drinking alcohol

Most people know about the short-term effects of drinking alcohol, such as its effects on mood, concentration, judgment, and coordination. But alcohol can also have longer-term health effects. These can vary from person to person.

For some people, alcohol is addictive. Drinking can become heavier over time, leading to serious **health and social problems**.

Heavy drinkers who suddenly stop drinking can have **physical withdrawal symptoms** over the next few days. This includes tremors, confusion, hallucinations, seizures, and

other serious problems.

In some people, these withdrawal symptoms can be life-threatening. This doesn't mean heavy drinkers should *not* stop drinking. But it *does* mean heavy drinkers should talk with their health care team about the safest way to stop.

Over time, excessive alcohol use can:

- Cause inflammation (hepatitis) and heavy scarring (cirrhosis) in the liver, which can lead to liver failure
- Damage other organs, such as the pancreas and the brain
- Raise your blood pressure
- Increase your risk of heart disease and stroke
- Weaken your immune system

Drinking alcohol during pregnancy, especially heavy drinking, can cause birth defects or other problems with the fetus.

What does the American Cancer Society recommend?

According to the American Cancer Society Guideline for Diet and Physical Activity for Cancer Prevention[12], **it is best not to drink alcohol.** People who choose to drink alcohol should limit their intake to no more than 2 drinks per day for men and 1 drink a day for women.

The recommended limit is lower for women because of their smaller body size and because their bodies tend to break down alcohol more slowly.

Alcohol use during and after cancer treatment

Many studies have found a link between alcohol use and the risk of *developing* certain cancers. But it isn't clear if alcohol use after treatment might increase the risk of these cancers coming back (*recurring*).

In theory, it's possible that alcohol use might raise the risk of cancer recurrence. For example, alcohol can raise the levels of estrogens in the body, which might increase the risk for breast cancer recurrence. But this hasn't been studied enough yet to know for sure.

There are some cases **during cancer treatment** in which alcohol clearly should be

avoided. For example:

- Alcohol, even in very small amounts, can irritate mouth sores caused by some cancer treatments. It can also make them worse.
- Alcohol can interact with some drugs used during cancer treatment, which might increase the risk of harmful side effects.

It's important to talk with your cancer care team before you drink alcohol during cancer treatment.

For people who have completed cancer treatment, the effects of alcohol on cancer recurrence risk are largely unknown. It's important to discuss this with your cancer care team.

A few important things to keep in mind during this conversation:

- The type of cancer you had
- Your risk of recurrence
- Your treatment(s)
- Your overall health
- Other possible health effects of drinking

For people who've had cancers of the larynx, head and neck, or liver, some evidence suggests you should limit or avoid alcohol use because it may raise the risk of dying among people who've had these cancers.

Regardless of what type of cancer you had, drinking alcohol can still increase your risk of developing a new (second) cancer.

Know Your Cancer Risk [13]
Take the ACS CancerRisk360™ assessment to learn more about what you can change to improve your health. By taking 5 minutes to answer a few questions, we will give you a personalized roadmap of actions with helpful resources you can use to lower your risk of cancer.

Hyperlinks

1. www.cancer.org/cancer/types/oral-cavity-and-oropharyngeal-cancer.html
2. www.cancer.org/cancer/types/nasopharyngeal-cancer.html
3. www.cancer.org/cancer/types/laryngeal-and-hypopharyngeal-cancer.html
4. www.cancer.org/cancer/types/esophagus-cancer.html
5. www.cancer.org/cancer/types/liver-cancer.html
6. www.cancer.org/cancer/types/colon-rectal-cancer.html
7. www.cancer.org/cancer/types/breast-cancer.html
8. www.cancer.org/cancer/types/stomach-cancer.html
9. www.cancer.org/cancer/understanding-cancer/genes-and-cancer/gene-changes.html
10. www.cancer.org/cancer/risk-prevention/tobacco.html
11. www.cancer.org/cancer/risk-prevention/diet-physical-activity/body-weight-and-cancer-risk.html
12. www.cancer.org/cancer/risk-prevention/diet-physical-activity/acs-guidelines-nutrition-physical-activity-cancer-prevention.html
13. acscancerrisk360.cancer.org/

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Last Revised: January 29, 2025

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