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## Alcohol Use and Cancer

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 6% of all cancers and 4% of all cancer deaths in the United States. Yet many people don't know about the link between alcohol use and cancer.

### Cancers linked to alcohol use

Alcohol use has been linked with cancers of the:

- [Mouth](#)<sup>1</sup>
- [Throat](#)<sup>2</sup> (pharynx)
- [Voice box](#)<sup>3</sup> (larynx)
- [Esophagus](#)<sup>4</sup>
- [Liver](#)<sup>5</sup>
- [Colon and rectum](#)<sup>6</sup>
- [Breast](#)<sup>7</sup>

Alcohol probably also increases the risk of cancer of the [stomach](#)<sup>8</sup>, and might affect 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, consuming even small amounts of alcohol can increase risk.

**Cancers of the mouth, throat, voice box, and esophagus:** Alcohol use clearly raises the risk of these cancers. Drinking and smoking together raises the risk of these cancers 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 the mouth,

throat, and esophagus. Alcohol may also limit how 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 the liver, leading to inflammation and scarring, which might be why it raises the risk of liver cancer.

**Colon and rectal cancer:** Alcohol use has been linked with a higher risk of cancers of the colon and rectum. The evidence for this is generally stronger in men than in women, but studies have found the link in both sexes.

**Breast cancer:** Drinking even small amounts of alcohol is linked with an increased 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.

## Does the type of alcohol matter?

**Ethanol** is the type of alcohol found in alcoholic drinks, whether they are beers, wines, liquors (distilled spirits), or other drinks. Alcoholic drinks contain different percentages of ethanol, but in general, a standard size drink of any type — 12 ounces of beer, 5 ounces of wine, or 1.5 ounces of 80-proof liquor — contains about the same amount of ethanol (about half an ounce). Of course, larger or 'stronger' drinks can contain more ethanol than this.

Overall, the amount of alcohol someone drinks over time, not the type of alcoholic beverage, seems to be the most important factor in raising cancer risk. Most evidence suggests that it is the ethanol that increases the risk, not other things in the drink.

## How does alcohol raise cancer risk?

Exactly how alcohol affects cancer risk isn't completely understood. In fact, there are likely several different ways it can raise risk, and this might depend on the type of cancer.

### Damage to body tissues

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

Once in the body, alcohol can be converted into **acetaldehyde**, a chemical that can damage the DNA inside cells and has been shown to cause cancer in lab animals.

Drinking alcohol can also lead to oxidative stress in cells, causing them to create more reactive oxygen species (chemically reactive molecules that contain oxygen). These can lead to damage inside the cells that might increase the risk of cancer.

Alcohol and its byproducts can also damage the 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.

### **Effects on other harmful chemicals**

Alcohol may help other harmful chemicals, such as those in [tobacco smoke](#)<sup>9</sup>, enter the cells lining the upper digestive tract more easily. This 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.

In other cases, alcohol may slow the body's ability to break down and get rid of some harmful chemicals.

### **Effect on absorption of folate or other nutrients**

Alcohol might affect the body's ability to absorb some nutrients, such as folate. Folate is a vitamin that cells in the body need to stay healthy. Absorption of nutrients can be even worse in heavy drinkers, who often consume low levels of folate to begin with. Low folate levels may play a role in the risk of some cancers, such as breast and colorectal cancer.

### **Effects on estrogen or other hormones**

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

### **Effects on body weight**

Too much alcohol can add extra calories to the diet, which can contribute to weight gain in some people. Being [overweight or obese](#)<sup>10</sup> 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 such as tremors, confusion, hallucinations, seizures, and other serious problems over the next few days. In some people these can be life-threatening. This doesn't mean that heavy drinkers should not stop drinking. It does mean that heavy drinkers should talk with their health care team about the safest way to stop drinking.

Over time, heavy drinking can cause inflammation (hepatitis) and heavy scarring (cirrhosis) in the liver. This can lead to liver failure. Heavy drinking can also damage other organs, such as the pancreas and the brain, and can raise blood pressure. It also increases the risk of heart disease and stroke.

In pregnant women, alcohol use, especially heavy drinking, may lead to 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<sup>11</sup>](#), 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 is not clear whether 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 recurrence. For example, alcohol can increase the levels of estrogens in

the body, which might increase the risk for breast cancer recurrence. But there is no strong evidence from studies to support (or refute) this.

In people who have already been diagnosed with cancer, alcohol intake could also affect the risk of developing a new cancer.

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, and can even make them worse. Alcohol can also interact with some drugs used during cancer treatment, which might increase the risk of harmful side effects. It's important to talk with your doctor about this if you are being treated for cancer.

But 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 doctor. Factors that can be important include:

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

## Hyperlinks

1. [www.cancer.org/cancer/oral-cavity-and-oropharyngeal-cancer.html](http://www.cancer.org/cancer/oral-cavity-and-oropharyngeal-cancer.html)
2. [www.cancer.org/cancer/nasopharyngeal-cancer.html](http://www.cancer.org/cancer/nasopharyngeal-cancer.html)
3. [www.cancer.org/cancer/laryngeal-and-hypopharyngeal-cancer.html](http://www.cancer.org/cancer/laryngeal-and-hypopharyngeal-cancer.html)
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9. [www.cancer.org/cancer/cancer-causes/tobacco-and-cancer.html](http://www.cancer.org/cancer/cancer-causes/tobacco-and-cancer.html)
10. [www.cancer.org/cancer/cancer-causes/diet-physical-activity/body-weight-and-cancer-risk.html](http://www.cancer.org/cancer/cancer-causes/diet-physical-activity/body-weight-and-cancer-risk.html)
11. [www.cancer.org/healthy/eat-healthy-get-active/acs-guidelines-nutrition-physical-activity-cancer-prevention.html](http://www.cancer.org/healthy/eat-healthy-get-active/acs-guidelines-nutrition-physical-activity-cancer-prevention.html)

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