

From VOA Learning English, this is **Science in the News**. I'm Bob Doughty.

And I'm Kelly Jean Kelly. Drinking alcohol is a socially acceptable behavior in many parts of the world. Some medical experts say light drinking may even be good for your health, especially for the heart. But they say such health benefits should be compared to the many health risks connected with alcohol use. Today we report on some of the issues involving alcohol use.

Millions of people around the world have a glass of wine with dinner, drink a beer at a sporting event, or accept alcoholic drinks at a party.

The use of alcohol dates back more than 10,000 years. From then until now, alcohol has played an important part in human civilization. It is used in cultural and religious ceremonies, at social gatherings, and even for medical purposes.

Records of alcohol's effects date back to ancient times. Alcohol has been called both a tonic and a poison. And medical experts continue to debate its value.

Alcohol is created through a process called fermentation. During this process, yeast is used to turn sugar into a simple molecule – ethanol, also called ethyl alcohol. Different kinds of sugar are used to make different alcoholic drinks. For example, the sugar from grapes is used to make wine. Sugar from grain is used to produce vodka and gin. And sugar from sugarcane or molasses can produce rum.

Alcohol affects every organ in the body. When alcohol enters the body, some of it goes immediately to the stomach and the bloodstream. The rest of it, about 80 percent, goes to the small intestine and is released into the bloodstream. Once alcohol enters the blood, it is pumped throughout the body by the heart.

The liver is responsible for detoxifying the alcohol and removing it from the blood. But, the liver can only process a small amount of alcohol at a time. The rest continues to move throughout the body. It mixes with the water in tissue. It also enters the central nervous system and the brain. Ethanol acts as a drug, affecting coordination, emotions and the ability to think.

There has been a large amount of research done on alcohol and its effects on human health. Much of the research has examined the harmful effects. But, some research suggests that having one to two drinks of alcohol a day may offer some health benefits.

Several large studies have shown that this type of moderate drinking may lower the risk of coronary heart disease, cardiovascular disease, ischemic stroke and diabetes. Moderate drinking has also been linked to a reduced risk of death from heart attack and a decreased risk of Alzheimer's and other dementias.

A study last year suggested that drinking small amounts of red wine may help lower the risk of breast cancer in women.

Researchers at Cedars-Sinai Medical Center in California studied 36 women. Each woman drank a glass of red or white wine every day for almost a month. Researchers collected blood samples from the women two times a month to measure their hormone levels.

The next month the women who drank red wine were told to drink white wine instead. The white wine drinkers were told to drink red wine. The researchers found that the women who drank red wine had lower levels of the female hormone estrogen than the white wine drinkers. Estrogen levels are known to increase the growth of cancer cells in the body.

Glenn Braunstein helped to prepare a report on the study. He said red grapes have chemicals that are not found in white grapes. He said the findings suggest that these chemicals may help to lower the risk of breast cancer.

The report was published in the Journal of Women's Health. Both Dr. Braunstein and study organizer Chrisandra Shufelt called for larger studies to measure the safety and effectiveness of red wine in reducing breast cancer risk. They said other recent studies suggested that even small amounts of alcohol may generally increase the risk of breast cancer in women.

Researchers at Harvard University carried out one such study. It found that women who drink four small glasses of wine a week increase their risk of breast cancer by 15 percent.

Many studies have examined the harmful effects of alcohol use on the body. Medical experts say the deciding issues are how much alcohol you drink, and how you drink it. For example, experts say having three drinks in one day is not the same as having one drink a day for three days.

Alicia Ann Kowalchuk serves as medical director for an alcohol and drug intervention program called InSight, at the Harris County Hospital District in Houston, Texas. She is also an assistant professor at the Baylor College of Medicine.

“We think of substance use issues along a continuum now, going all the way from abstinence, to healthy use, to misuse, to abuse and to dependency. Healthy use for adults -- that’s men under age sixty-five -- is no more than four drinks in a day and no more than fourteen drinks in a week. And for women of all ages, it’s no more than seven drinks in a week and no more than three drinks on a day.”

She says that to get the health benefits linked to alcohol, men and women should limit their drinking even more.

“Pretty much all the literature that I’ve seen really shows that when you go above about one drink on average per day for women and two drinks on average per day for men younger than sixty-five, you start negating all of those positive health benefits.”

Dr. Kowalchuk says staying within those limits is considered safe or non-hazardous drinking.

“For misuse you’re drinking above those limits, but you haven’t had a lot of consequences from your drinking. Once you get to abuse you start having consequences and despite the consequences you keep using. So that’s the hallmark of abuse, to continue using for at least a year despite having maybe a DUI (drinking under the influence), a health consequence, a work consequence or a family consequence.”

And, she says, alcohol dependency is further marked by a complete loss of control over alcohol use.

Kim Dennis is medical director at the Timberline Knolls Residential Treatment Center in Illinois. She notes another consideration when talking about alcohol limits.

“When we talk about an alcoholic beverage, we need to be very clear about what we’re talking about because many of my patients at Timberline Knolls would consider a thirty-two ounce glass of beer one alcoholic beverage.

And when we talk about having one alcoholic beverage, we're referring specifically to twelve ounces of beer, five ounces of wine or one and a half ounces of hard liquor."

She says that whether drinking alcohol is a good choice for you will depend on several things.

"If a person has risk factors for developing alcoholism -- family members with alcoholism, difficult early life experiences, other addictive disorders - - the risk to benefit ratio of drinking alcohol for that person would be very, very high."

Excessive alcohol use has been linked to chronic conditions like cirrhosis of the liver, pancreas disease and cardiovascular disease. It has also been linked to many forms of cancer, including cancer of the mouth, throat, larynx, esophagus, breast, colon and rectum.



The World Health Organization says the harmful use of alcohol results in 2,500,000 deaths each year. This number includes more than 300,000 people between the ages of 15 and 29. The WHO says alcohol use is the world's third leading cause of disease, after childhood malnourishment and unsafe sex.

A recent survey suggests that more and more young people are getting the message when it comes to the dangers of alcohol use. The study found that three out of four American high school students say they do not drink alcohol.

Nearly 700 students were questioned. One reason teenagers said they chose not to drink is because underage drinking is illegal. They also noted the effect of alcohol on health and their performance in school as other reasons. In addition, more than half of the teens questioned said they would be less likely to be friends with, or go out with, someone who drinks underage.

The group Mothers Against Drunk Driving, known as MADD, reported the findings last month. MADD and the State Farm insurance company worked together to organize an event called Red Ribbon Week. The aim was to raise understanding about the dangers of drugs and alcohol among youth.

MADD says the survey shows that most students are making intelligent decisions when it comes to alcohol use. But it notes that about 4,700 Americans still die every year as a result of underage drinking.

This Science in the News was written by June Simms, who was also our producer. I'm Bob Doughty.

And I'm Kelly Jean Kelly. Join us again next week for more news about science on the Voice of America.