

# Alcohol and the Body

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*Alcohol is the oldest and widely used drug in the world. Primitive cultures believed alcohol to be a magical, mysterious cure for nearly every ailment. Clinical research has removed the mystery of what happens when a person drinks alcohol. We have learned a great deal about what alcohol is, what it does to the body, and how it effects behavior.*

## WHAT IT IS

Alcohol belongs to a family of chemicals that contain carbon and hydrogen. The active ingredient in alcoholic beverages is ethyl alcohol, also known as ethanol. It is a colorless and nearly tasteless liquid that is easily and quickly absorbed by the body.

Many people think that alcohol is a stimulant, but actually it is a depressant. It slows down the function of all living cells, especially those of the brain. Alcohol belongs in the same group of drugs as anesthetics and tranquilizers.

## HOW IT IS ABSORBED

Alcohol does not need to be digested after having been consumed. It moves with tremendous speed throughout the body, affecting every single tissue and organ. It quickly appears in the bloodstream and its intoxicating effects are felt within minutes.

The body begins immediately to try to get rid of the alcohol. It is absorbed through the stomach or small intestine directly into the bloodstream. It then proceeds to the

liver, where it is broken down or metabolized. This process takes place in several steps, but the end products are carbon dioxide (which is breathed out through the lungs), water (which passes out in the urine) and sugar (which provides energy or calories).

However, when it is consumed at a faster rate than the body's metabolism can handle (about one 12-ounce can of beer per hour), alcohol accumulates in the bloodstream and is distributed throughout the body. The higher the concentration of alcohol, the greater disturbance it has on body cells. Severe disruption of function can occur and can cause death. The effects of alcohol on various organs will be discussed in more detail in the following sections on the reverse.

## ALCOHOL TOLERANCE

Regular drinking increases a person's tolerance for alcohol. More is needed to feel the same effects – the single drink which once produced a feeling of relaxation is soon increased to two, and so on. The slide from drinking for pleasure to dependence is gradual, but inexorable.

The body tries to adapt to chronic alcohol use – the liver attempts to metabolize the alcohol more quickly, the cells work harder to get rid of it, and the drinker's behavior adapts to disguise impaired abilities. But after a while, the body can no longer maintain equilibrium, and many organs become dysfunctional and permanently damaged.

## IN CONCLUSION

Alcohol is not an antidote for snake bite. It does not prevent colds. It is of no value in treating frostbite. It does not relieve fatigue or shock. It does not enhance sexual performance – it may release inhibitions, but it impairs follow-through. As a drug, its sedative value is offset by the toxic effect it has on the brain, heart, liver and gastrointestinal tract. Medically speaking, there is no possible benefit which can be derived from the internal use of alcohol. Abstinence is the best policy.

## RESOURCES

There are many resources available relating to the abuse of alcohol and how to prevent its harmful effects. Others also include assistance in recovery. Some are:

NIAAA – National Institute on Alcohol Abuse and Alcoholism - [www.niaaa.nih.gov](http://www.niaaa.nih.gov)

SAMHSA Fetal Alcohol Spectrum Disorders (FASD) - [www.fascenter.samhsa.gov](http://www.fascenter.samhsa.gov)

Alcoholics Anonymous (AA) – [www.aa.org](http://www.aa.org)

National Drug and Alcohol Treatment Referral Routing Service (SAMHSA)  
[www.niaaa.nih.gov](http://www.niaaa.nih.gov) - 800-662-HELP (4357)

TeenZine - Teenage Drug & Alcohol Abuse Information – [www.teenzine.org](http://www.teenzine.org)

National Institute on Drug Abuse (NIDA)  
[www.drugabuse.gov](http://www.drugabuse.gov)

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Alcohol

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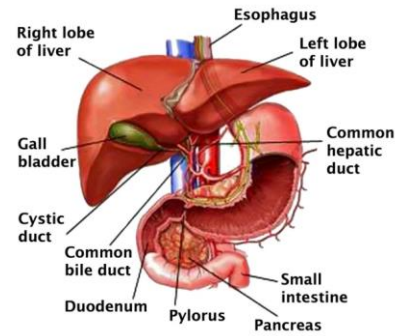
1730 Chicago Ave – Evanston IL 60201-4585  
[orders@signal-press.org](mailto:orders@signal-press.org) – (800) 755-1321

# EFFECTS OF ALCOHOL . . .

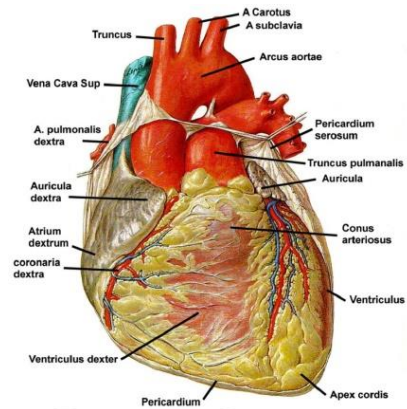
## ► ON THE LIVER

Because the liver must perform the work of metabolizing alcohol, it bears the brunt of its effects. Even in the moderate drinker, after some years of continuous low-grade dysfunction, the damaged liver cells are gradually replaced by scar tissue. Irreversible scarring and destruction of the liver is known as cirrhosis of the liver.

As the liver becomes damaged, its ability to metabolize alcohol is reduced. The liver begins to accumulate fats, and if there is further malfunction. The risk of other diseases such as hepatitis is substantially increased.



## ► ON THE HEART



There have been reports that one drink a day slightly decreases the risk of heart disease because alcohol affects the way cholesterol is carried in the blood. However, there is a great deal of evidence to show that even a small amount of alcohol can be quite harmful to the heart.

Alcohol has a direct effect on heart muscle cells. It can progressively destroy the heart muscle so the heart cannot pump efficiently. Alcohol also starves the heart by decreasing blood flow in the coronary arteries.

Alcohol has an influence on the risk factors for coronary heart disease. Drinkers have an increased rate of hypertension. Fat levels in the blood can be elevated by alcohol. And, alcohol contains a great many calories which can cause obesity and increase chances of heart disease.

Because of its sedative effects, alcohol depresses angina heart pains. If a person exercises after drinking and does not feel this pain, a heart attack may result.

## ► ON THE BRAIN

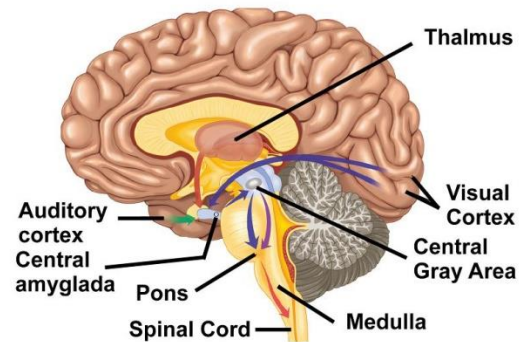
The organ most sensitive to alcohol is the brain. Alcohol affects the entire body, but its effects on the functions of the brain are the most noticeable – and to the person who is drinking, the most important. People drink alcohol because of the way it makes them feel, ignoring the damaging effects on the brain itself.

The brain reacts to alcohol in stages. The first portion of the brain to be affected is the cerebrum – the outermost layer, which is responsible for controlling the senses, speech, understanding and judgment.

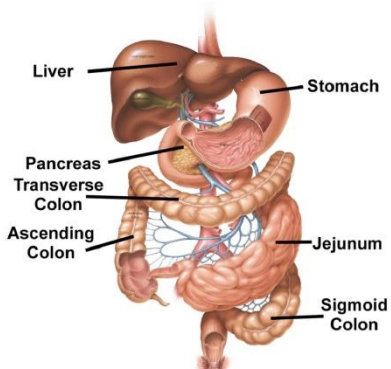
Alcohol depresses first the parts of the brain that normally inhibit or control actions and emotions. It appears as if alcohol – although it is a depressant – is acting as a stimulant because, as these higher centers of the brain are “knocked out,” the drinker feels liberated from moral and legal restrictions. The loss of these restraints can cause exhilaration and loss of inhibitions.

The alcohol continues to depress brain functions, resulting in slurred speech, unsteady walk, blurry vision, and loss of coordination. Drinkers often feel that their manual skills have been improved because their judgment has been impaired, while in reality their reaction times are slowed and their muscle coordination is less efficient.

Next, the drinker experiences various exaggerations of emotions that can range from violence and aggressiveness to tearfulness and withdrawal. If a person continues to drink, the body protects itself from further damage by falling asleep or “passing out.” Alcohol destroys brain cells which, unlike the blood cells it also destroys, are irreplaceable. Alcohol impairs the memory as well as learning ability.



## ► ON THE DIGESTIVE AND REPRODUCTIVE SYSTEMS



Alcohol has absolutely no nutritive value other than empty calories. Because alcohol supplies these calories, it can be fattening. Alcohol is absorbed so quickly that its energy is available quickly and burned first, so that fuel that normally would be expended is stored as fat.

The gastrointestinal system is irritated and damaged by alcohol. Thus it is less able to absorb nutrients which can lead to malnutrition.

When a pregnant woman drinks alcohol, it is distributed throughout her body and that of her unborn child. Alcohol interferes with the flow of oxygen to the fetus which can result in smaller birth weight, birth defects and even miscarriages.

Drinking alcohol while pregnant can cause Fetal Alcohol Spectrum Disorders (FASD). This includes a range of disabilities involving facial deformities, limb and cardiovascular defects and impaired intellectual and motor development. FASD, retarded growth, and behavioral difficulties can occur with as little as a single drink per day. The evidence is overwhelmingly conclusive that the only safe policy is complete abstention from alcohol during pregnancy. It has been shown that alcohol is harmful to the human system. The only wise response is to totally avoid its use.