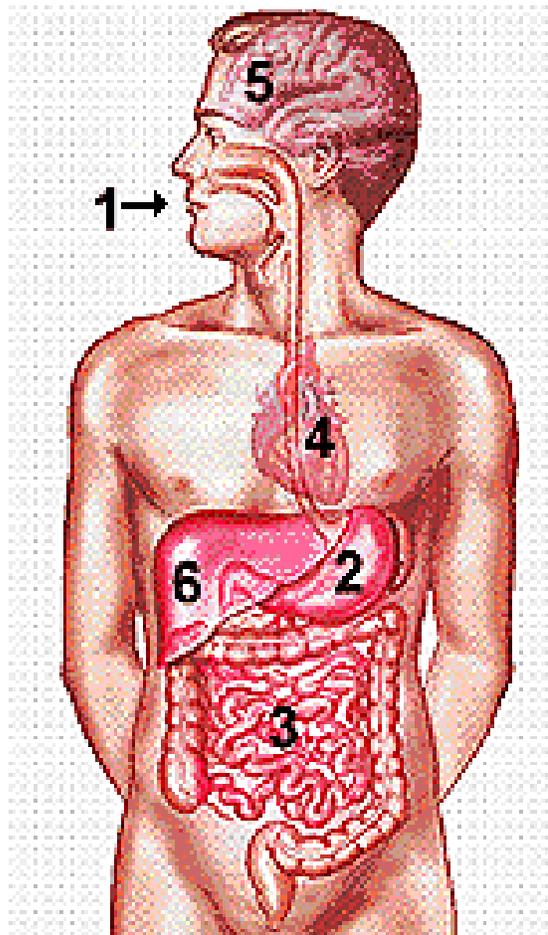


# How Alcohol Affects the Body



All drugs have their effects by entering the blood stream and affecting various parts of the body. Our body responds in a predictable way to alcohol that provides us clues about our alcohol consumption; let's follow the path of alcohol . . .

1. Alcohol enters the body through the mouth. Ever feel a burning sensation in your throat after ingesting alcohol? Alcohol is a poison and an irritant to our body. Alcohol irritates the lining of our esophagus causing a burning sensation. As alcohol continues throughout our body, it continues to irritate the lining of our internal organs.
2. Next, alcohol travels to the stomach. Have you ever drunk alcohol on an empty stomach? That unpleasant feeling is alcohol irritating the lining of your stomach. This decreases if alcohol is consumed at the same time as food. When the stomach digests food, the pyloric valve closes keeping food in the stomach by blocking the path to the intestines. Thus, if alcohol is consumed with food, it slows down the rate of absorption so your BAC rises steadily instead of rapidly. Alcohol has "empty calories" which means there are no nutrients, minerals or vitamins making one feel full from alcohol and possibly gain weight with no nutritional value.
3. Once alcohol passes through the stomach, it goes straight into the intestines where it is fully absorbed into the bloodstream. This can take 10-30 minutes after consumption.
4. Immediately, the alcohol in your blood is pumped throughout the entire body by your heart. It takes approx. one minute for blood to circulate the entire body. At this point, alcohol produces effects on all of your organs, including your brain, as it circulates. This is also how BAC is determined.

There are many factors that affect BAC such as how quickly alcohol is consumed, how much alcohol is consumed, and gender. Females will always have a higher BAC than a male of the same size because females have a higher body fat/water ratio, hormones, and less of an enzyme to metabolize alcohol in the stomach.

5. Once alcohol reaches the brain, the psychological effects of alcohol appear. Alcohol is a depressant meaning it slows down the Central Nervous System. For the brain this means alcohol slows down its functioning. Moderate BAC (.02-.08) results in slight euphoria, relaxation, lowered inhibitions, and feeling of well-being. Higher BAC (.08+) results in reduced judgment and self-control, compromised reasoning, disorientation, speech disturbance, and motor impairment. At high doses (.25+) coma or death can occur.

6. Alcohol leaves the body through metabolism by the liver. The liver can only process alcohol at a CONSTANT rate of approx. one drink per hour. Also, the liver can only do one function at a time. If there is more than one drink of alcohol in the system the liver may not be able to perform its other functions. Moreover, the alcohol that is not yet metabolized waits in the blood irritating the other organs until the liver can process it.

Most people use the psychological effects of alcohol (the effects of alcohol on the brain) to tell them when they have had too much to drink. However, alcohol impairs one's judgment and perceptions. The body can provide solid clues about when one has had too much to drink. What parts of your body can you pay attention to help you determine when you have had too much to drink? Vomiting is one of the most obvious signs. This is when your body has been "poisoned" by too much alcohol. However, only the alcohol in one's stomach gets out. Alcohol that is in the blood will continue to affect your body, brain, and BAC.

# How Alcohol Affects the Body Long-Term

## Fatty Liver and Liver Disease

With moderate drinking, the liver can process alcohol fairly safely. However, heavy drinking overtaxes the liver resulting in serious consequences. A liver clogged with fat causes liver cells to become less efficient at performing its necessary tasks, resulting in impairment of a person's nutritional health. Fatty liver is the first stage of liver deterioration in heavy drinkers, and interferes with the distribution of oxygen and nutrients to the liver's cells. If the condition persists long enough, the liver cells will die, forming fibrous scar tissue (the second stage of liver deterioration or fibrosis). Some liver cells can regenerate with good nutrition and abstinence. However, in the last stage of deterioration, or cirrhosis, the damage to the liver cells is the least reversible.

## Alcohol and Malnutrition

For moderate drinkers, alcohol does not suppress food intake and may actually increase appetite. Chronic alcohol consumption appears to have the opposite effect. Alcohol causes euphoria, which depresses appetite, so that heavy drinkers tend to eat poorly and become malnourished.

Alcohol is very rich in energy, packing 7 calories per gram. But like pure sugar or fat, the calories are void of nutrients. The more calories an individual consumes in alcohol, the less likely it is that they will eat enough food to obtain adequate nutrients. To make matters worse, chronic alcohol abuse not only displaces calories from needed nutrients, but also interferes with the body's metabolism of nutrients, leading to damage of the liver, digestive system, and nearly every bodily organ.

## Health Effects of Alcohol Consumption

<b>Arthritis</b>	Increases risk of gouty arthritis
<b>Cancer</b>	Increases the risk of cancer in the liver, pancreas, rectum, breast, mouth, pharynx, larynx and esophagus
<b>Fetal Alcohol Syndrome</b>	Causes physical and behavioral abnormalities in the fetus
<b>Heart Disease</b>	Raises blood pressure, blood lipids and the risk of stroke and heart disease in heavy drinkers. Heart disease is generally lower in light to moderate drinkers.
<b>Hyperglycemia</b>	Raises blood glucose
<b>Hypoglycemia</b>	Lowers blood glucose, especially for people with diabetes
<b>Kidney Disease</b>	Enlarges the kidneys, alters hormone functions, and increases the risk of kidney failure
<b>Liver Disease</b>	Causes fatty liver, alcoholic hepatitis and cirrhosis
<b>Malnutrition</b>	Increases the risk of protein-energy malnutrition, low intakes of protein, calcium, iron, vitamin A, vitamin C, thiamine, vitamin B6 and riboflavin. Impairs absorption of calcium, phosphorus, vitamin D and zinc.
<b>Nervous Disorders</b>	Causes neuropathy and dementia; impairs balance and memory
<b>Obesity</b>	Increases energy intake, but not a primary cause of obesity
<b>Psychological disturbances</b>	Causes depression, anxiety and insomnia