

# Teacher Resource Sheet

## Alcohol's Effects on the Body

### Brain/Central Nervous System

Alcohol is a depressant that also acts as an anesthetic in the central nervous system. Although it is a depressant, alcohol has a unique action that initially creates a feeling of mild and pleasant stimulation. Alcohol affects the thinking, judgment, and reasoning abilities first. More alcohol intake means that breathing and reflexes will also be impaired. Heavy social drinking may cause brain atrophy. Over time, the brain and nervous system become less sensitive to alcohol's effects.

### Liver

Almost all the alcohol consumed is metabolized in the liver at the rate of  $\frac{1}{2}$  ounce of pure alcohol per hour. Since each typical drink of beer, wine, wine cooler or distilled spirit contains about  $\frac{1}{2}$  ounce of pure alcohol, it takes about two hours for the body to fully recover from one typical alcoholic drink. Prolonged heavy drinking can cause fat to accumulate in the liver, which will eventually become nonfunctional scar tissue, or cirrhosis, the sixth leading cause of adult deaths in the United States.

### Lungs

Some alcohol is exhaled through the breathing process, which is why alcohol can be smelled on the breath of a person who has been drinking. Extremely high alcohol levels result in unconsciousness, coma, and even death through the suppression of the brain's breathing center, the cerebellum.

### Stomach

Some of the alcohol consumed is absorbed quickly from the stomach into the blood stream. The amount of food in the stomach helps determine the effect alcohol has on a person. Alcohol stimulates the stomach to secrete more stomach acid. Prolonged heavy drinking is related to ulcers and even cancer of the stomach, mouth, tongue, and esophagus.

### Kidneys

Alcohol is a diuretic, so it increases the production of urine from the kidneys. Drinking alcohol on a hot day greatly increases the risk of dehydration.

### Small Intestine

Almost all alcohol consumed is absorbed from the small intestines into the bloodstream.

### Cardiovascular System/Circulatory System

Alcohol is a vasodilator, which means it opens up blood vessels, especially those near the surface of the skin. This gives drinkers a feeling of warmth, even though their body temperature may actually go down. This phenomenon is often observed at football games played in very cold weather. Some fans will drink so much alcohol they will take their jackets off to "cool off." Unfortunately, they often find themselves in bed days later with upper respiratory infections.

**Reproductive System:** Alcohol decreases production of the male sex hormone testosterone. Women who drink during pregnancy risk giving birth to an infant with Fetal Alcohol Spectrum Disorder, a disorder that causes heart malformation, joint problems, growth deficiencies, and mental challenges.

### Some of the factors that can influence HOW alcohol affects the individual include:

- Quantity—the amount of alcohol consumed
- Time—how quickly/slowly the alcohol is consumed
- Body weight
- Age (young people and the elderly are the most sensitive)
- The presence of other drugs in the system (prescription medication, illegal drugs, etc.)
- The presence or non-presence of food in the stomach
- Previous drinking experience (If one develops a tolerance, it takes more and more of the drug to get the desired effect.)