

# ALCOHOL ADDICTION

The intoxicating ingredient found in beer, wine and liquor is ethyl alcohol. It is a central nervous system depressant, absorbed rapidly from the stomach and small intestines into the bloodstream. Alcohol affects the brain within 10 minutes after consumption and affects all body organs. The way alcohol affects the brain and body depends on the amount consumed.

A drink is equal to 12 ounces of beer, 5 ounces of wine, or 1.5 ounces of liquor. Moderate consumption is considered 1 drink a day for women and two drinks a day for men. Binge drinking occurs after 4 drinks for a woman and 5 drinks for a man within 2 hours. This correlates to a blood alcohol level of .08g/dl. The Substance Abuse and Mental Health Services Administration (SAMHSA), defines heavy drinking as 5 or more drinks on each of 5 or more days in the past 30 days.

With alcohol abuse, a person is able to set limits on their drinking, but their use is dangerous and self-destructive. Some signs of abuse are:

- Neglecting responsibilities resulting in poor performance at work or school
- Failure to follow through with commitments
- Problems with relationships because of alcohol
- Using alcohol to deal with stressful situations or emotions
- Increased and inappropriate expression of emotions
- Using alcohol in dangerous situations such as driving
- Legal or financial consequences as a result of drinking

Alcohol Use Disorder (alcohol abuse + dependence) occurs when a person loses control over their use of alcohol and is likely to have withdrawal symptoms if they cut down on consumption or do not drink. Signs of alcohol use disorder are:

- Increased tolerance to alcohol's effects
- Feelings of anxiety, depression, and irritability when alcohol is not consumed
- Craving alcohol
- Sweating, headache, nausea and vomiting and insomnia when alcohol wears off
- A desire to stop, but efforts are unsuccessful

The cause of alcohol addiction is complex. Alcohol activates the reward system in the brain through the neurotransmitter dopamine and a compulsive need for that release evolves. Risk factors for developing alcohol addiction include:

- Genetic influences
- Environmental factors
- Mental health problems such as low self-esteem, depression, anxiety, or schizophrenia
- Peer pressure

Multiple questionnaires are available to screen a person's risk of alcohol use disorder. Primary care physicians often use the CAGE questionnaire as a screening tool; it consists of four questions. When two or more questions are positive, alcohol abuse is considered

- "Have you ever felt the need to cut down on drinking?"
- "Have you ever felt annoyed by criticism of drinking?"
- "Have you ever felt guilty about drinking?"
- "Have you ever taken a drink first thing in the morning as an eye opener?"

Examples of the many adverse physical effects of chronic alcohol use are:

- **Brain:** Alcohol increases the release of dopamine in the reward center in the brain. It also depresses brain function through its action on other neurotransmitters. Alcohol causes inflammation in the brain and impairs brain development. The developing brain of a fetus or teen is particularly at risk for long lasting damage. It impedes the ability to process information, make decisions, control emotions, make memories and move with coordination. Alcohol also interferes with the brain's regulation of body temperature, blood pressure and heart rate.
- **Heart:** Chronic drinking causes the heart to enlarge, making it a less efficient pump, increases blood pressure and causes irregular heart rhythms.
- **Liver:** Moderate alcohol consumption can increase the risk of liver disease. Chronic use causes inflammation leading to hepatitis, cirrhosis and cancer. Toxins released into the blood stream are an additional cause of brain inflammation and personality change.
- **Pancreas:** Pancreatic inflammation, pancreatitis, causes severe pain and can lead to pancreatic cancer. Pancreatitis causes nausea, vomiting, diarrhea, fever, and sweating. Malabsorption of nutrients from the intestines and blood sugar problems can also result from chronic pancreatitis.
- **Lungs:** Chronic alcohol use impairs lung function and can lead to Acute Respiratory Distress Syndrome.

Over time, the brain compensates for the depressant effects of alcohol by producing stimulating chemicals. The stimulant effects of these chemicals result in most of the symptoms of alcohol withdrawal.

These symptoms usually appear within 10 hours after alcohol has stopped:

- Flu-like symptoms, sweating, clammy skin
- Tremors, anxiety, irritability, depression, insomnia, nightmares, fatigue
- Rapid heart rate, increased blood pressure, rapid breathing, dilated pupils
- Craving for alcohol
- Visual, auditory or tactile hallucinations may occur 12-24 hours after alcohol has stopped.
- Delirium tremens may appear suddenly or develop over 24-48 hours. DT is a serious and potentially life threatening condition requiring hospitalization. DT is characterized by:
  - Extreme increase in heart rate, blood pressure and respiratory rate
  - Profuse sweating, fever
  - Severe anxiety with a sense of “impending doom”
  - Perceptual disturbance with visions of insects or rats
  - Hallucinations are complete without any recognition of the real world
  - Tremors
  - Seizures