

Medically Reviewed

Effects of Alcohol on the Cardiovascular System

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Alcohol can have serious negative effects on the cardiovascular system, including hypertension, arrhythmias, cardiomyopathy, coronary artery disease, heart attack, and stroke. Read on to explore how alcohol affects the cardiovascular system.

What you will learn:

Hypertension (aka high blood pressure).

AFib and other arrhythmias.

Alcoholic cardiomyopathy.

Coronary artery disease, heart attack, and stroke.

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How Does Alcohol Affect the Cardiovascular System?

The cardiovascular system is involved with a number of physiological functions and plays a vital role in sustaining life and maintaining overall health. It comprises the heart and blood vessels, the latter of which include arteries, veins, and capillaries.¹

Also known as the circulatory system, the cardiovascular system ensures the transport of oxygen and nutrients to vital organs and tissues, as well as the shuttling of metabolic wastes to the liver and kidneys for removal from the body. While the heart propels oxygen-rich blood, the vessels help to regulate blood pressure and provide pathways for this blood to travel throughout the body.²

A significant body of research suggests that alcohol use can have complicated and potentially detrimental effects on the heart and the body's blood vessels.³ In fact, studies indicate that heavy alcohol intake is associated with increased risks of cardiovascular

conditions such as hypertension, arrhythmia, cardiomyopathy, and strokes—many of which can lead to further health complications.^{3,4}

The effects of [alcohol](#) on the cardiovascular system are dose-dependent, as the more chronic and heavy the alcohol consumption, the greater the risk of cardiovascular disease.³ So while long-term heavy drinking is associated with cardiovascular diseases, even acute episodes of [binge drinking](#) can also be harmful, as binge drinking is linked to transient arterial hypertension, myocardial inflammation, decreased cardiac contractility, and a variety of arrhythmias.^{3,5}

Alcohol's Impact on Hypertension

Hypertension (aka high blood pressure) is a serious medical condition characterized by persistent elevations in blood pressure. The pressure that's measured when the heart contracts to pump blood is systolic blood pressure, which is the top number in a blood-pressure reading. Meanwhile, the bottom number is the diastolic pressure, which is the amount of pressure in the blood vessels when the heart relaxes.

Though guidelines have changed over the years, many healthcare organizations in the U.S. recognize stage 1 hypertension as blood pressure that's consistently greater than 130/80, with stage 2 hypertension beginning at pressures above 140/90.⁶

Drinking Level Definitions

The [National Institute on Alcohol Abuse and Alcoholism](#) characterizes various drinking levels as follows:⁷

Binge Drinking

The NIAAA defines binge drinking as the consumption of large amounts of alcohol over 2 hours or fewer resulting in a blood alcohol concentration (BAC) of 0.08% (or 0.08 grams per deciliter of alcohol) or higher.

- Men: 5 or more drinks within 2 hours or fewer.
- Women: 4 or more drinks within 2 hours or fewer.

Heavy Drinking

- Men: 4 or more drinks on any given day or more than 14 drinks per week.
- Women: 3 or more drinks on any given day or more than 7 drinks per week.

Moderate Drinking

- Men: 2 drinks or fewer per day.

- Women: 1 drink or fewer per day.

Research has shown that regular alcohol consumption is linked to hypertension in a dose-dependent manner.^{3,4} While low to moderate alcohol consumption in healthy adults appears to have no acute or substantial impact on blood pressure, chronic alcohol use can lead to hypertension.^{4,8,9}

Additionally, binge drinking is associated with increases of 4 to 7 points for systolic pressure and 4 to 6 points for diastolic pressure. To provide some context for this data, population studies suggest that a blood pressure increase of just 2 points (2 mmHg) may be associated with an increased mortality from stroke by 10 percent and from coronary artery disease by 7 percent.⁸

Chronic hypertension can lead to progressive damage to the cardiovascular system over time, which increases the risk of developing several potentially life-threatening conditions.¹⁰ According to the [American Heart Association](#), health threats related to unmanaged high blood pressure include:¹⁰

- Heart attack.
- Stroke.
- Heart failure.
- Kidney disease/failure.
- Vision loss.
- Sexual dysfunction.
- Angina (i.e., chest pain).
- Peripheral artery disease (PAD).

Have Questions About Addiction Treatment?

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AFib and Alcohol Consumption

Atrial fibrillation, also known as AFib, is an arrhythmia characterized by irregular and/or rapid heart rhythm originating in the upper chambers of the heart known as the atria. When AFib occurs, the heart's upper and lower chambers don't work together properly. As a

result, the lower chambers may not fill completely or pump enough blood to the body. While AFib causes no symptoms in some people, others may experience fatigue, lightheadedness, dizziness, shortness of breath, and/or chest pain, or they may feel as if their heart is skipping a beat, fluttering, pounding, and/or beating too hard or fast.¹¹

Binge drinking and chronic alcohol consumption are associated with acute arrhythmias such as AFib, even in those who have an otherwise normal heart function.^{3,4,5} In fact, there's a term—namely, holiday heart syndrome—to describe acute disturbances in heart rhythm after heavy alcohol consumption over a long weekend.⁴

Additionally, some people may experience arrhythmias such as AFib during [alcohol withdrawal](#) as the body adjusts to the absence of the substance.¹² Thus, it's important to seek professional help to [detox from alcohol](#) and to monitor for heart safety during alcohol withdrawal.

When undetected or left untreated, AFib can lead to serious health complications such as blood clots, cognitive impairment/dementia, heart failure, stroke, and cardiac arrest.¹³ Some evidence suggests that heavy drinking increases the risk of sudden cardiac death, and fatal arrhythmias such as AFib are the most likely cause.¹⁴