

# An Overview of Ventricular Arrhythmia

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## Introduction

A ventricular arrhythmia is a type of irregular cardiac rhythm that only affects your heart's lower chambers. The ability of the heart to pump blood throughout the body is driven by the lower chambers. While some of these rhythm issues are minor and rarely create symptoms, others can have major — and even fatal — consequences for your health [1].

## About the study

### How do these types of arrhythmias affect my heart's function?

Your heart has four chambers and functions as a pump. The top chambers are the left and right atriums (both of which can be referred to as "atria"). The left and right ventricles are the lowest chambers.

The right ventricle transports blood from your heart to your lungs, where it is oxygenated and carbon dioxide removed before returning to your heart. The left ventricle is the final chamber through which blood passes before being pumped out to the rest of your body.

Because the ventricles are so important to the heart's capacity to pump blood, any disruption in their normal rhythm can be devastating [2]. These are some of them:

**Shock caused by the heart:** This occurs when your heart is unable to pump enough blood to keep your body supplied with oxygen.

**Cardiac arrest occurs suddenly:** This occurs when your heart suddenly and unexpectedly stops beating.

### Types of ventricular arrhythmia

Preventricular contractions, ventricular tachycardia, and ventricular fibrillation are the three basic kinds of ventricular arrhythmias.

**Preventricular contractions:** These extra heartbeats, also known as PVCs, feel like extra heartbeats and are usually innocuous. When you have a disorder that has affected the geometry of your heart or when PVCs occur frequently or for extended periods of time, there are some exceptions.

**Ventricular tachycardia:** Ventricular Tachycardia (VT) occurs when the heart's lower chambers beat too quickly. This can arise as a result of a problem with the heart's electrical circuitry. In some situations, VT can progress to ventricular fibrillation, a potentially fatal condition [3].

Different forms of VT can be distinguished by the following characteristics:

**Sustained VT vs. Non-sustained VT:** Sustained VT occurs when VT

lasts longer than 30 seconds or occurs when VT lasts less than 30 seconds but generates cardiogenic shock.

**Structure:** The way electricity passes through the heart is one way to distinguish between different forms of VT. Electrocardiography, a diagnostic tool, can be used to see this. The electrical activity of your heart is shown as a wave-like pattern using sensors placed to the skin of your chest.

The waves that represent your heart activity are ordered and follow a pattern called "sinus rhythm" under normal circumstances. When your heart doesn't follow that pattern, healthcare specialists will examine the pattern's shape for clues to help them figure out what's wrong.

Clinicians look for the following changes:

Irregular heartbeats occur when electricity does not pass through your heart in the way it should. Clinicians can better identify what is causing the problem by examining how the pattern differs from a typical pattern.

**Shifts in pattern:** A pattern that shifts from beat to beat can indicate major heart disease or other issues.

**Various patterns:** The electrodes should all see the same overall wave pattern in most cases. When several electrodes display different patterns, however, it suggests a major problem with the heart's electrical circuitry.

## Ventricular fibrillation

Ventricular fibrillation, or "v-fib," occurs when the heart's bottom chambers quiver or twitch instead of expanding and contracting. Blood isn't pushed through the ventricles because they don't fully expand and contract. Your heart stops, putting you into sudden cardiac arrest, and the lack of blood flow to your brain causes you to pass out in seconds. This condition is fatal if blood flow is not restored within a few minutes [4].

## Conclusion

### Symptoms of ventricular arrhythmia

Ventricular arrhythmia symptoms vary depending on the kind of arrhythmia. Some people have no signs or symptoms (especially non-sustained and benign arrhythmias).

Ventricular tachycardia usually has the following symptoms:

- Chest pain (angina).
- Dizziness, feeling lightheaded or fainting.
- Shortness of breath or trouble breathing.
- Heart palpitations.

The most common symptom of ventricular fibrillation is collapsing or passing out. There aren't always any warning indications before something bad happens. If symptoms do occur, they usually develop just minutes before someone dies out. Typical signs and symptoms include [5]:

- Chest pain (angina)
- Dizziness, feeling lightheaded and fainting
- Nausea
- Heart palpitations or an irregular or racing pulse

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- Shortness of breath or trouble breathing
- Cause a ventricular arrhythmia

The following are some of the causes of ventricular tachycardia:

- Cardiomyopathy
- Cardiovascular disease (CVD) is a condition that affect (especially when it changes the shape of your heart)
- Heart abnormalities that are present at birth are known as congenital heart conditions
- Deficiencies in electrolytes
- A heart attack has occurred
- Heart failure is a serious condition
- Inflammation of the heart
- Surgery on the heart is performed

- Diseases of the heart valves
- Oxygen deficiency

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