Atrial Fibrillation vs. Ventricular Fibrillation – What is the Difference?

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AFib vs. VFib

If your doctor told you that you had an abnormal heart rhythm, it could be overwhelming. There are a variety of different types of AFib that you could have, after all – keeping them straight can be confusing. In this article, we will look at AFib vs. VFib, what the differences are and how to tell the symptoms apart.

Atrial fibrillation (AFib) and ventricular fibrillation (VFib) may sound alike, but they are a lot different. For example, it is possible that you could be reading this while having AFib. It is not possible that you would be reading this with VFib – if you had VFib, it is likely it was an emergency situation, and your heart required defibrillation, cardiopulmonary resuscitation (CPR) and medications.

So, what exactly is the difference between AFib vs VFib? Well, first, it is a good idea to have an understanding of what a normal heart rhythm (sinus rhythm) is.

What is Sinus Rhythm?

Sinus rhythm is our normal heart rhythm and is commonly abbreviated as SR or NSR.

The pace is set by the sinoatrial (SA) node, which is located in the right atrium of the heart. Cardiac impulses originate in the SA node and are transmitted from the atria to the ventricles.

When your physician orders an electrocardiogram (an ECG or EKG), they are looking to ensure that your heart is in an NSR.

To state that your heart is in an NSR, both the heart rate and rhythm must be normal. An average heart rate is between 60 to 100 beats per minute. The tracings on the EKG will signify if the heart rhythm is in a sinus rhythm.

Although we will not go into detail about what each of these wave components means, an EKG will measure each of these elements.

They must measure a certain length to be an NSR:

- P wave.
- PR interval.
- PR segment.
- QRS complex.
- QT interval.
- ST segment.

Why is this important? On an EKG, AFib vs. VFib will lack certain components and have grossly elongated

components compared to an NSR.

What is AFib?

Remember how we discussed that the SA node typically controls the electrical impulses of the heart? Well, sometimes the SA node can become off-kilter. When that happens, your heart can go into AFib.

When your heart is in AFib, basically it is not beating in unison. Typically, the atria and ventricles are beating in a perfect rhythm. However, with AFib, your atria begin to beat irregularly. In fact, they are quivering (or fibrillating) instead of beating effectively. Luckily the ventricles are still pumping blood, meaning some blood is still pumping into circulation.

The danger with AFib is that because the atria are quivering, not all of the blood passes through the atria. Some of the blood may pool in the atria, forming blood clots. If a blood clot forms and then passes into circulation, it can cause a stroke. In fact, it is estimated that 15 to 20% of people who have strokes also have AFib – this is why people with AFib are typically prescribed anticoagulants (blood thinners).

Remember how we discussed NSR on an EKG? Well, if we compared NSR and AFib on an EKG, the rhythm is irregular. NSR also has a P wave, and a PR interval, whereas AFib will not. This makes AFib easy to differentiate on an EKG.

What is VFib?

According to the American Heart Association, VFib is “the most serious cardiac rhythm disturbance. The lower chambers quiver and the heart can't pump any blood, causing cardiac arrest.”

Remember how with AFib, the atria quiver? Well, with VFib, the ventricles are fibrillating. However, this is much more dangerous and life-threatening because this causes the heart to beat in an unsynchronized way. When the heart beats are unsynchronized, there is no organized heart rhythm, and little to no blood is pushed through the heart – and this becomes a medical emergency.

If VFib is not responded to immediately, it can be fatal. In fact, depending on the cause of VFib, it is often fatal. For example, if the cause is a drug overdose, all of the CPR in the world will not restart reverse the rhythm if the underlying cause is not addressed.

There is a particular algorithm to treating VFib that trained professionals will utilize and it involves defibrillation and medications, as well as high-quality CPR and attempting to address the underlying cause.

Compared to NSR and AFib on an EKG, VFib will have a highly irregular rate. Like AFib, the P wave will be absent, as will the PR interval. However, VFib will be distinguishable from AFib because it will look like a wavy line on the EKG.