How Your Healthcare Team Diagnoses Atrial Fibrillation

by JEFFREY REDEKOPP

What Is an AFib ECG?

Atrial fibrillation (AF) is an irregular disturbance in your heart's normal rhythm. AF is the most common form of abnormal heart rhythm and can lead to heart failure, blood clots, stroke, and other heart-related issues. Usually, an AFib ECG is used to help diagnose the condition.

AF currently affects over 6 million people worldwide and is often very treatable for people who have the condition.

AF happens because of an interruption in the heart's electrical conduction mechanism. The electrical signals that tell the heart's upper chambers, called the atria, to contract become disorganized.

The chaotic pattern of signals that the atria receive happens so rapidly that the two chambers quiver instead of pushing out their full supply of blood. Fibrillation is the medical term for the quivering motion that the atria produce.

Common Atrial Fibrillation Symptoms

Many people who have AF say that they can tell when it's happening because they feel a fluttering sensation in their chest. AF symptoms often vary from person-to-person and can depend on the type of AF that you have.

Some of the most common symptoms people with AF report are:

- Pressure, pain, or a pounding sensation in your chest
- Confusion
- Dizziness
- Fatigue
- Feeling like you will faint
- Tightness in the throat
- Shortness of breath
- Sweating
- Weakness

AF symptoms can vary between individuals and often depend on age, gender, and genetics. Some people don't realize that they have AF because they experience no symptoms.

I have had AF since 2011. My symptoms are quite strong and include tightness in my throat, pounding in my chest, dizziness, fatigue, weakness, and shortness of breath.

Diagnosing Atrial Fibrillation

The standard way to diagnose AF is for your physician to review your medical history, discuss the signs and symptoms you're having, and perform a physical examination. They will also order an electrocardiogram (ECG) tracing.

The ECG tracing is the most precise method to identify any heart arrhythmia.

Because there are several different heart arrhythmia types, your physician needs to get an accurate picture of your heart's electrical activity to determine what is happening.

An ECG is a painless, noninvasive monitoring procedure that will help your medical team get a reading on your heart rhythm and rate in real-time.

The ECG has small electrical wires called sensors attached to several different areas of your upper body. There are three different possible types of ECG that your physician can use, which are:

- A 12 lead ECG gets its name from the 12 separate electrical sensors placed on your chest and arms to take a reading. You will receive a 12 lead ECG if you come to the emergency room with symptoms.
- A Holter monitor is an ECG device that you can keep in your shirt pocket or wear it with a belt or shoulder strap. The apparatus is usually worn for at least 24 hours, records your heart's electrical activity while you wear it, and allows your physician to see what's going on with your heart rhythm.
- An event recorder is another type of portable ECG device that an individual wears for anywhere from two weeks up to a few months. If you experience symptoms while wearing the monitor, you push a button, and the device takes an ECG reading that gives your physician a chance to see what's happening as your symptoms occur.

An ECG can only detect what is happening with your heart rhythm in real-time, so if you have an AF episode when the ECG device is not attached, it cannot go back and record that historical information.

Accuracy of the ECG Reading

There are varying factors that can affect the quality and accuracy of ECG reading.
Some of those factors are:

- ECG sensor placement
- Your heart's positioning inside your chest
- Obesity
- How much you are moving when the device takes a reading
- Certain medications
- If you have smoked or exercised before the reading
- If you have an imbalance of electrolytes in your body like too much or not enough calcium, magnesium, or potassium is in your bloodstream
- The level of training and experience of the physician interpreting the ECG reading

The two most common reasons for ECG errors are sensor placement and misinterpretation of the ECG reading.

Sensor placement is challenging if a person is excessively overweight or has a great deal of body hair. The sensors are also difficult to attach if the technician does not do an excellent job preparing the person's skin.

The experience level of the technician applying the sensors is essential. If that person does not have the proper anatomical knowledge, the sensors can end up in the wrong area.

Each of these three scenarios will impair the ECG device's ability to detect your heart rhythm accurately.

Misinterpretation by a member of your healthcare team can still occur even when the ECG reading is accurate. A study in the British Medical Journal's August 2007 issue demonstrated that general medicine physicians

interpreted 80% of AF cases correctly, and nurses interpreted 77% correctly.

Misinterpretation of your ECG can lead to your physician misdiagnosing your problem. However, if you don't have an ECG performed, it can lead to your physician missing the fact that you have AF.

Your cardiologist will have the most training and experience in reading ECGs within your healthcare team and will provide the most accurate interpretation. If you are suspicious that you have AF, you can request an ECG and ask for a referral to a cardiologist for follow-up care.