How Can Technology Help You With Your Atrial Fibrillation?

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How AFib Technology Can Help

Over the last several years there has been an emergence of wearable devices and other at-home technology aimed at monitoring people's health. This includes the development of smart watches and activity sensors such as Fitbit, the Apple Watch Series 4, and the KardiaMobile.

With over 5 million Americans diagnosed with atrial fibrillation, it's no surprise many companies have started to offer at-home monitoring for atrial fibrillation. These devices provide a unique opportunity for patients to monitor their AFib together with their doctor from the comfort of your own home.

So What Are These Products and How Can They Be Helpful for Someone with Atrial Fibrillation?

All these products can be purchased for at home use and they do not require a prescription. When you purchase your own AFib technology device it's yours to keep along with all of the data recorded. The biggest difference between a Kardia device or the Apple Watch series 4, and a simple heart rate tracker, such as on a FitBit, is that it actually records an ECG. This is very similar to the ECG you receive from your doctor's office, just a simplified single lead version.

These devices then use the ECG snapshot to identify if someone is in atrial fibrillation. Within a few seconds, the device can then send you an automated response to let you know if your rhythm is normal or if you're in atrial fibrillation. If you chose you can then send a copy of the results to your doctor's office for further review.

One of the best features of these products is that they are yours to keep after purchase. Atrial fibrillation is a chronic condition that requires long-term management. When it comes to a 24-hour or 30-day external heart monitor as prescribed by your doctor's office, doctor's only know what is happening in your heart while you are wearing the monitor. If you have symptoms the next day or the next week after the monitoring period is over, then your doctor cannot be certain what is causing your symptoms.

The KardiaMobile and KardiaBand

In the KardiaMobile, you get an accessory that is about 3 inches long. This is small enough to carry in your pocket or even attach to the back of your smartphone. On this accessory, there is a place to put your fingers if you feel symptoms. The accessory then transmits to the Kardia App on your smartphone to give you the results of your ECG, which usually takes about 30 seconds.

The KardiaBand works the same as the KardiaMobile, but instead it is a watchband that goes on an Apple Watch. On the KardiaBand the ECG sensors are on the band itself and it transmits the ECG snapshot directly to the Apple watch.

See my popular review of the KardiaMobile and KardiaBand here.

Apple Watch Series 4

Apple made a big splash in September 2018 when they announced that the latest generation of the Apple Watch would be able to detect atrial fibrillation through a single lead ECG. Soon after the watch came out, there were big splashy news articles describing "Apple Watch saves man and helps detect life-threatening arrhythmias."

The Apple Watch Series 4 has a sensor underneath the watch which is used for not only checking your heart rate but also the irregularity and for potentially detecting atrial fibrillation. Also, with the crown on the watch, if you put your finger on the crown the watch can record a single lead ECG which can detect atrial fibrillation over a period of a 30-second analysis.

What I do find interesting about the Apple Watch is the alert system that is on the watch. It has spontaneous alerts, which is something new that can alert someone if they're potentially having episodes of atrial fibrillation, and these are alerts that you can set up on your watch for either low heart rates, high heart rates or even irregular heart rates. So the watch itself isn't constantly looking for atrial fibrillation, but if it does sense an irregular heartbeat it can alert you and encourage you to do a proper ECG on the watch.

For those of you who have older generations of Apple Watch, only the Apple Watch Series 4 is able to do a single lead ECG on the actual watch as well as to detect atrial fibrillation. However, the KardiaBand described above can be used with older generations of the Apple Watch.

Tips for Getting Optimal ECG Tracings

Have you ever had an ECG done at your doctor's office and they tell you to be very still or even hold your breath while the test is being performed? This is because even very small subtle movements can interfere with the quality of the ECG.

There are several pointers available on both the Kardia website and the Apple Watch website to aid in getting an optimal ECG recording. First, it's very important when you're doing an ECG tracing to rest your arms.

If you're holding your arm in the air, your arm is actually moving very slightly and it can actually cause inconclusive readings and artifact on the tracing. So rest it on a table or a desk, which then makes your arm nice and still when you're getting an ECG analysis.

Also, when wearing a watch make sure the contact is snug and there is no water affecting the contact between the sensor and your skin.

What Do I Recommend to My Patients?

Overall I feel that both the Kardia products and the Apple Watch Series 4 are good products to aid in the management of atrial fibrillation.

Both of these devices report an over 90 percent sensitivity to detect atrial fibrillation. I don't expect either of them to be perfect; sometimes it could miss a diagnosis or give an inconclusive result. Fortunately, this is where your doctor's office comes in. Any doctor's office should be able to verify an ECG tracing if the automated algorithm on the device does not give conclusive results.

I overall feel these are both great products, which represent a new way to monitor atrial fibrillation at home. I expect that the accuracy of these devices will also continue to improve over time.

The reason why I typically recommend one product over another is simply due to cost. The KardiaMobile and KardiaBand both cost $99. If your only goal is only to monitor atrial fibrillation at home then the Kardia products can be an excellent option.

The Apple Watch Series 4 is more expensive, starting at $399. However, the Apple Watch Series 4 has multiple

other features including messaging and other apps. So if you are looking for an all-around smartwatch with ECG features then the Apple Watch Series 4 is an excellent option.