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Cardiac event monitors

A cardiac event monitor is a device that you control to record the electrical activity of your heart. Cardiac event monitors range in size, with the largest being about the size of a deck of cards. The device records your heart rate and rhythm.

Cardiac event monitors are used when you need long-term monitoring of symptoms that occur less than daily.

How the Test is Performed

Each type of monitor is slightly different, but most have sensors (called electrodes) to record the electrical activity of your heart, similar to an electrocardiogram (ECG). In some models, these attach to the skin on your chest using sticky patches. The sensors need good contact with your skin. Poor contact can cause poor results.

You should keep your skin free from oils, creams, and sweat (as much as possible). The technician who places the monitor will perform the following to get a good ECG recording:

- Men will have the area on their chest shaved where the electrode patches will be placed.
- The area of skin where the electrodes will be attached will be cleaned with alcohol before the sensors are attached.

You can carry or wear a cardiac event monitor up to 30 days. You carry the device in your hand, wear it on your wrist, or keep it in your pocket. Event monitors can be worn for weeks or until symptoms occur.

There are several types of cardiac event monitors.

- **Loop memory monitor.** The electrodes remain attached to your chest, and the monitor constantly records, but does not save, your ECG. When you feel symptoms, you press a button to activate the device. The device will then save the ECG from shortly before, during, and for a time after your symptoms begin. Some event monitors start on their own if they detect abnormal heart rhythms.
- **Symptom event monitor.** This device records your ECG only when symptoms occur, not before they occur. You carry this device in a pocket or wear it on your wrist. When you feel symptoms, you turn on the device and place the electrodes on your chest to record the ECG.
- **Patch recorders.** This monitor does not use wires or electrodes. It continuously monitors ECG activity for 14 days using an adhesive patch that sticks to the chest.
- **Implanted loop recorders.** This is a small monitor that is implanted under the skin on the chest. It can be left in place to monitor heart rhythms for 3 or more years.

While wearing the device:

- You should continue your normal activities while wearing the monitor. You may be asked to exercise or adjust your activity level during the test.
- Keep a diary of what activities you do while wearing the monitor, how you feel, and any symptoms you have. This will help your health care provider match symptoms with your monitor findings.
- The monitoring station staff will tell you how to transfer data over the telephone, if applicable.
- Your provider will look at the data and see if there have been any abnormal heart rhythms.
- The monitoring company or the provider who ordered the monitor may contact you if a concerning rhythm is discovered.

While wearing the device, you may be asked to avoid certain things that can disrupt the signal between the sensors and the monitor. These may include:

- Cell phones
- Electric blankets
- Electric toothbrushes
- High-voltage areas
- Magnets
- Metal detectors

Ask the technician who attaches the device for a list of things to avoid.

How to Prepare for the Test

Tell your provider if you are allergic to any tape or other adhesives.

How the Test will Feel

For devices just placed on the skin, this is a painless test. However, the adhesive of the electrode patches may irritate your skin. This goes away on its own once you remove the patches. For devices implanted under the skin, you may be given a small amount of local anesthetic to numb the area during the incision. You may have some pain when the device is implanted.

You must keep the monitor close to your body.

Why the Test is Performed

Most often, in people with frequent symptoms, a test called Holter monitoring, which lasts 1 to 2 days, will be performed before using a cardiac event monitor. The event monitor is ordered only if no diagnosis is reached. The event monitor is also used for people who have symptoms that occur less often, such as weekly to monthly.

Cardiac event monitoring may be used:

- To assess someone with palpitations. Palpitations are feelings that your heart is pounding or racing or beating irregularly. They can be felt in your chest, throat, or neck.
- To identify the reason for a fainting or near fainting episode.
- To check the heartbeats in people with risk factors for arrhythmias.
- To monitor your heart after a heart attack or when starting or stopping a heart medicine.

- To check if a pacemaker or an implantable cardioverter-defibrillator is working properly.
- To look for the cause of a stroke when the cause cannot be easily found with other tests.

Normal Results

Normal variations in heart rate occur with activities. A normal result is no significant changes in heart rhythms or pattern.

What Abnormal Results Mean

Abnormal results may include various arrhythmias. Changes may mean that the heart is not getting enough oxygen.

It may be used to diagnose or further evaluate:

- Atrial fibrillation or flutter
- Multifocal atrial tachycardia
- Paroxysmal supraventricular tachycardia
- Ventricular tachycardia
- Slow heart rate (bradycardia)
- Heart block
- Premature atrial complexes
- Premature ventricular complexes

Risks

Skin irritation is the most common complication. There is a small risk of infection from the implantable devices. If infection occurs or is suspected, the device is removed.

Alternative Names

Ambulatory electrocardiography; Electrocardiography (ECG) - ambulatory; Continuous electrocardiograms (EKGs); Holter monitors; Transtelephonic event monitors

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