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# Electrocardiogram

An electrocardiogram (ECG) is a test that records the electrical activity of the heart.

## How the Test is Performed

You will be asked to lie down. A technician will clean several areas on your arms, legs, and chest, and then will attach small patches called electrodes to those areas. It may be necessary to shave or clip some hair so the patches stick to the skin. The number of patches used may vary.

The patches are connected by wires to a machine that turns the heart's electrical signals into wavy lines, which are often printed on paper. The health care provider reviews the test results.

You will need to remain still during the procedure. The technician may also ask you to hold your breath for a few seconds as the test is being done.

It is important to be relaxed and warm during an ECG recording because any movement, including shivering, can alter the results.

Sometimes this test is done while you are exercising or under light stress to look for changes in the heart. This type of ECG is often called a stress test.

## How to Prepare for the Test

Make sure your provider knows about all the medicines you are taking. Some medicines can interfere with test results.

Do not exercise or drink cold water immediately before an ECG because these actions may cause false results.

## How the Test will Feel

An ECG is painless. No electricity is sent through the body. The electrodes may feel cold when first applied. In rare cases, some people may develop a rash or irritation where the patches were placed.

## Why the Test is Performed

An ECG is used to measure:

- Any damage to your heart

- How fast your heart is beating and whether it is beating normally
- The effects of medicines or devices used to control your heart (such as a pacemaker)
- The size and position of your heart chambers

An ECG is often the first test done to determine whether a person has heart disease. Your provider may order this test if:

- You have chest pain or palpitations
- You are scheduled for surgery
- You have had heart problems in the past
- You have a strong history of heart disease in the family

## Normal Results

Normal test results most often include:

- Heart rate: 60 to 100 beats per minute
- Heart rhythm: Consistent and even

## What Abnormal Results Mean

Abnormal ECG results may be a sign of:

- Damage or changes to the heart muscle
- Changes in the amount of the electrolytes (such as potassium and calcium) in the blood
- Congenital heart defect
- Enlargement of the heart
- Fluid or swelling in the sac around the heart
- Inflammation of the heart (myocarditis)
- Past or current heart attack
- Poor blood supply to the heart arteries
- Abnormal heart rhythms (arrhythmias)

Some heart problems that can lead to changes on an ECG test include:

- Atrial fibrillation/flutter
- Heart attack
- Heart failure
- Multifocal atrial tachycardia
- Paroxysmal supraventricular tachycardia
- Sick sinus syndrome
- Wolff-Parkinson-White syndrome

## Risks

There are no risks.

## Considerations

The accuracy of the ECG depends on the condition being tested. A heart problem may not always show up on the ECG. Some heart conditions never produce any specific ECG changes.

## Alternative Names

ECG; EKG

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