

[Home](#) > [Navigating Cancer Care](#) > [Diagnosing Cancer](#) > [Tests and Procedures](#) > EKG and Echocardiogram

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<http://www.cancer.net/navigating-cancer-care/diagnosing-cancer/tests-and-procedures/ekg-and-echocardiogram>

EKG and Echocardiogram [1]

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An electrocardiogram (EKG or ECG) and/or an echocardiogram (an echo) help identify problems with the heart muscle, valves, or rhythm. Some people may need one of these tests before chemotherapy to find a pre-existing heart condition. Some patients also need another type of test called a [multigated acquisition \(MUGA\) scan](#) [3].

In addition, some patients may need these tests during and after cancer treatment to identify chemotherapy-related heart damage. Doctors also use an EKG or echo as follow-up care to identify potential long-term heart side effects. These long-term side effects, or late effects, may occur months or years after cancer treatment. Cancer survivors who may need a follow-up EKG and/or echo include:

- People who have had radiation therapy to the chest, spine, or upper abdomen.
- People who have had bone marrow/stem cell transplants or certain types of chemotherapy.

Learn more about [late effects of childhood cancer](#) [4].

Chemotherapy's effect on the heart

Some types of [chemotherapy](#) [5], such as anthracyclines, may damage the heart during cancer treatment. Examples include daunorubicin (Cerubidine, Rubidomycin), doxorubicin (Adriamycin), and epirubicin (Ellence). Other drugs used to treat cancer, such as trastuzumab (Herceptin), can

also cause heart problems. Sometimes, heart damage from these drugs can cause congestive heart failure (CHF). CHF occurs when the heart does not pump enough blood to the rest of the body. People with CHF may experience swollen hands and feet, shortness of breath, dizziness, and an irregular heartbeat. Most often, however, the heart damage is mild and only seen on [MUGA scans](#) [3].

How an EKG works

This is a painless, noninvasive test that checks your heart's function. It records the electrical activity of different areas of the heart as wavy lines on a piece of paper.

You may need an EKG to check for a variety of issues:

- Irregular heartbeat
- Damage to heart muscle and tissue
- Changes in the thickness of the muscle in the heart chamber walls
- Chemical or electrolyte imbalances in the body

How an echocardiogram works

This is an [ultrasound](#) [6] of your heart. It uses high-frequency sound waves to take a picture of internal organs. A wand-like device called a transducer sends out sound waves. Then, the sound waves "echo" back. Like an EKG, the test is painless and noninvasive.

You may need an echo before, during, or after cancer treatment to check for:

- Blood clots in the heart's vessels
- Previous heart attacks or other heart conditions
- Tumors
- Infections

- Problems with heart valves
- How well the heart pumps blood

Who does my EKG and/or echo?

These tests are usually performed in a doctor's office or at a hospital. Nurses or medical technicians typically perform an EKG. And sonographers, who are specially trained to operate ultrasound machines, typically perform an echo. The doctor then interprets the test results.

Getting ready for an EKG or echo

Before having an EKG or echo, tell your doctor or nurse about all the medications you are taking. Also ask whether you should take them on the day of the test because some may affect the results.

In addition, check your insurance plan to find out what it covers and whether you will have any out-of-pocket costs.

Otherwise, no preparation is necessary before an EKG or a basic echo. Rarely, your doctor may recommend a transesophageal echocardiogram (TEE). In this echo, the ultrasound device is placed at the end of a thin, flexible tube. This tube is inserted through the mouth and down into the esophagus. You will be asked to not eat or drink anything for several hours before a TEE.

During the procedure

When having an EKG or echo, you will need to remove your clothing from the waist up.

During an EKG, a nurse or medical technician will place stickers called leads or electrodes on your chest. Then, wires will be connected to them. These leads collect the information about your heart's electrical activity. The activity is normal when the heart has 60 to 100 beats per minute and shows a normal rhythm and wave pattern.

The test typically takes about 5 to 10 minutes. During that time, you will be asked to stay still. You may also need to hold your breath or lie flat on your back. This will help get a better reading from the machine.

An echo usually takes only a few minutes. During the test, you will lie on your side on a table and remain still. The ultrasound technician will apply a small amount of gel to your chest. Then, the technician will move the wand-like transducer around your chest to create images of your heart.

After the procedure

You can expect to return to your normal activities, including driving, immediately after your EKG or echo.

Questions to ask your doctor

Before having an EKG or echo, consider asking your doctor the following questions:

- Why are you recommending this procedure?
- Do I need to do anything to prepare?
- Who will perform the procedure?
- What will the procedure show?
- What will happen if I don't have this procedure?
- When will I find out the results?
- Who will explain the results to me?
- If my results are abnormal, what is the next step?

More Information

[Tests and Procedures](#) [7]

[Long-Term Side Effects of Cancer Treatment](#) [8]

Additional Resources

National Heart, Lung, and Blood Institute: [What is an Electrocardiogram?](#) [9]

MedlinePlus: [Echocardiogram](#) [10]

Links

- [1] <http://www.cancer.net/navigating-cancer-care/diagnosing-cancer/tests-and-procedures/ekg-and-echocardiogram>
- [2] <http://www.cancer.net/about-us>
- [3] <http://www.cancer.net/node/24599>
- [4] <http://www.cancer.net/node/24571>
- [5] <http://www.cancer.net/node/24723>
- [6] <http://www.cancer.net/node/24714>
- [7] <http://www.cancer.net/node/24959>
- [8] <http://www.cancer.net/node/25396>
- [9] <http://www.nhlbi.nih.gov/health/health-topics/topics/ekg/>
- [10] <https://www.nlm.nih.gov/medlineplus/ency/article/003869.htm>