

Patient information from BMJ

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Endocarditis

If you have endocarditis, the inner lining of your heart is inflamed (swollen). This usually happens because of an infection. Endocarditis can be life-threatening. However, treatment with medications and sometimes surgery can get rid of the infection and help your heart to recover.

What is endocarditis?

Endocarditis means inflammation of the inside of your heart. It is usually caused by an infection from another part of your body. For example, if you have a cut in your mouth that gets infected, the germs can enter your bloodstream and travel to your heart where they cause an infection in the inner lining. This infection can affect your heart valves and cause problems with the flow of blood in your heart and around your body.

The type of germs that cause endocarditis are usually bacteria. It can also sometimes be caused by a fungus, such as *Candida*. This is the type of fungus that usually causes thrush.

Normally, your body's immune system fights off these germs if they enter your bloodstream, before they can cause an infection. But if you have an area of your heart that is damaged or irregular, it may be easier for them to stay in your heart and multiply. For example, you have a higher chance of getting endocarditis if you:

- Have a heart valve that is damaged, or has been replaced with an artificial valve
- Have a heart defect
- Have had a heart transplant.

You are also more likely to get endocarditis if you inject drugs and don't use a clean needle. This can allow large amounts of germs to enter your bloodstream.

Other ways germs can get into your bloodstream include:

- Through your mouth, particularly if your teeth and gums aren't healthy
- From infections elsewhere in your body, such as skin infections
- Through some types of dental and medical procedures. If your doctor thinks you have a high risk of getting endocarditis, he or she may recommend that you take medications that kill bacteria before certain procedures. These medications are called **antibiotics**.

Endocarditis

Endocarditis can affect people of any age, but it is more common in older people.^[1] More men get endocarditis than women.

If you have endocarditis, it's important to get treatment as soon as possible. The condition can cause serious problems, including:

- Damage to your heart valves, leading to heart failure. This means your heart can't pump blood around your body as well as it should
- The spread of the infection to other parts of your body
- Small clots or pieces of the infection breaking off and traveling through your bloodstream. These pieces can get lodged where they shouldn't and block blood flow to a part of your body, such as your lungs, heart, or brain. If blood flow to your brain is blocked, this can cause a stroke.

What are the symptoms?

The most common symptoms of endocarditis include:

- Fever and chills
- Night sweats
- A general feeling of being unwell (malaise)
- Tiredness (fatigue)
- Loss of appetite
- Weight loss
- Joint pain
- Weakness
- Headache
- Shortness of breath.

Less commonly, people get red, painful spots on the pads of their fingers or toes. Or red patches on their palms or soles.

Doctors usually can't be sure whether you have endocarditis based on your symptoms alone. This is because many of the symptoms of endocarditis – such as fever and fatigue – can be caused by other illnesses, too.

Instead, your doctor will consider whether there is a reason for you to be more likely to get endocarditis. For example, if you have an artificial heart valve or have a heart defect. You will also have tests. These will probably include:

- Blood and urine tests, to check for germs that can cause endocarditis. If you do have endocarditis, knowing what type of bacteria or fungus is causing the infection will help doctors decide how to treat you
- An ECG (electrocardiogram), which shows whether your heart is beating normally
- An echocardiogram, which is a type of ultrasound scan that can produce a picture of your heart and how it is working.

What treatments work?

There are a few main treatments for endocarditis.

Medications to kill the germs causing the infection

Endocarditis is usually caused by bacteria. **Antibiotics** are medications that kill bacteria. There are many different types of antibiotics, and you may be treated with more than one. Which antibiotic (or antibiotics) your doctor prescribes will depend on:

- What type of bacteria are causing your infection
- Whether the infection is affecting an artificial heart valve.

If your infection is caused by a fungus, you will be treated with medications called **antifungals**.

Regardless of what treatment you have, you will probably have the medication put directly into your bloodstream so it can work faster. This means you will probably have to go into the hospital and have a thin tube inserted into a vein through a drip (also called an intravenous infusion, or IV for short). The medications might also be given as a shot.

Both antibiotics and antifungals can sometimes cause side effects, such as an upset stomach or a rash. Your doctor will carefully monitor how well these treatments are working and whether they are causing any problems.

Surgery to remove the infected tissue

About half of people with endocarditis need to have surgery.^{[2] [3]} This may be recommended if:

- you develop heart failure
- your infection is not under control despite medical treatment, or you have an infection that is resistant to treatment
- you have an infection which is caused by certain bacteria and have an artificial valve in your heart
- you have other reasons for having a high risk of clots or pieces of infection dislodging and entering your bloodstream.

Surgery is done to remove all the infected tissue and repair the heart. This often involves repairing or replacing any affected heart valves. This will help your heart to recover and work normally again.

All surgeries have risks, including the chance of bleeding and infection. Your healthcare team will discuss these risks with you.

Other treatments

If you are very sick, you will also have other treatments to help your body recover. These treatments may include extra fluids provided through a drip (IV). Some people may also need help with breathing, and treatments to help with other serious problems, such as heart failure.

What will happen?

Many people recover from endocarditis. However, it's important to seek treatment as soon as possible, as endocarditis can sometimes cause serious problems, which can be fatal.

Once you've had endocarditis, you have an increased chance of getting it again. So it's important that you and those close to you know the symptoms, so you can seek treatment right away.

It is also important to discuss with your healthcare team ways to reduce your risk of getting it again. For example, you may be advised on the importance of good oral hygiene and avoiding non-medical procedures like getting piercings or tattoos. You may also be told to let your doctor know if you are having any dental procedures.

If you have any questions or concerns, be sure to discuss these with your doctor.

1. Budea CM, Bratosin F, Bogdan I, et al. Clinical Presentation and Risk Factors of Infective Endocarditis in the Elderly: A Systematic Review. J Pers Med. 2023 Feb 7;13(2):.
2. Otto CM, Nishimura RA, Bonow RO, et al. 2020 ACC/AHA Guideline for the Management of Patients With Valvular Heart Disease: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines. Circulation. 2021 Feb 2;143(5):e72-e227.
3. Bedeir K, Reardon M, Ramlawi B. Infective endocarditis: perioperative management and surgical principles. J Thorac Cardiovasc Surg. 2014 Apr;147(4):1133-41.

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