

Slow heartbeat & heart block

Section 1 of 6: The basics

Understand slow heart rhythms and heart block, explore pacemaker options, and plan your next steps.

What should I do now?

Call 911

Call 911 for fainting, chest pressure, severe trouble breathing, or severe dizziness that makes you feel you may pass out. Do not drive yourself.

Contact your care team

Contact your care team for new dizziness, unusual fatigue, near-fainting, or a drop in activity. Report device-site concerns promptly after implantation.

Keep your care plan

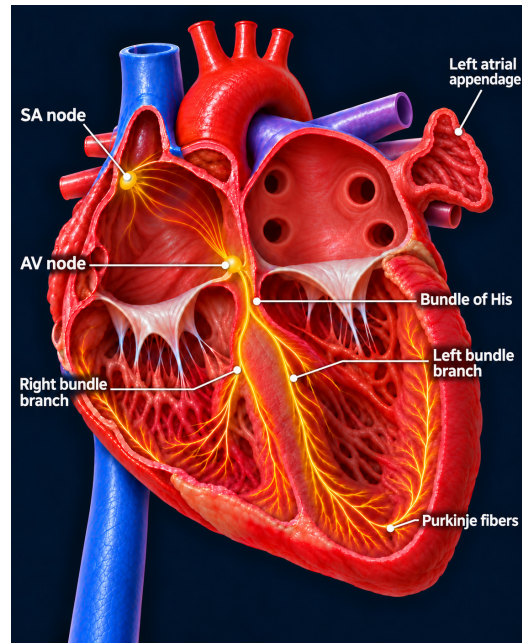
Keep your treatment and follow-up plan. Bring questions, readings, and your medication list.

SECTION 1

What is a slow heartbeat or heart block?

Bradycardia means a slow heart rate. In adults, a resting pulse below 60 beats per minute is commonly called bradycardia. However, a slow rate can be normal during sleep or in physically fit people. The number alone does not tell us whether something is wrong.

How does the heart normally beat?



Follow one normal heartbeat

SA node → Atria → AV node → Ventricles

- The SA node starts the signal. The heart's natural pacemaker in the right upper chamber begins each normal sinus beat.
- The signal spreads through both atria. The upper chambers contract, moving blood into the ventricles.
- The AV node briefly delays the signal. This pause gives the ventricles time to finish filling.
- The signal activates the ventricles. It travels through the bundle of His, right and left bundle branches, and Purkinje fibers. The lower chambers contract, pumping blood to the lungs and body.

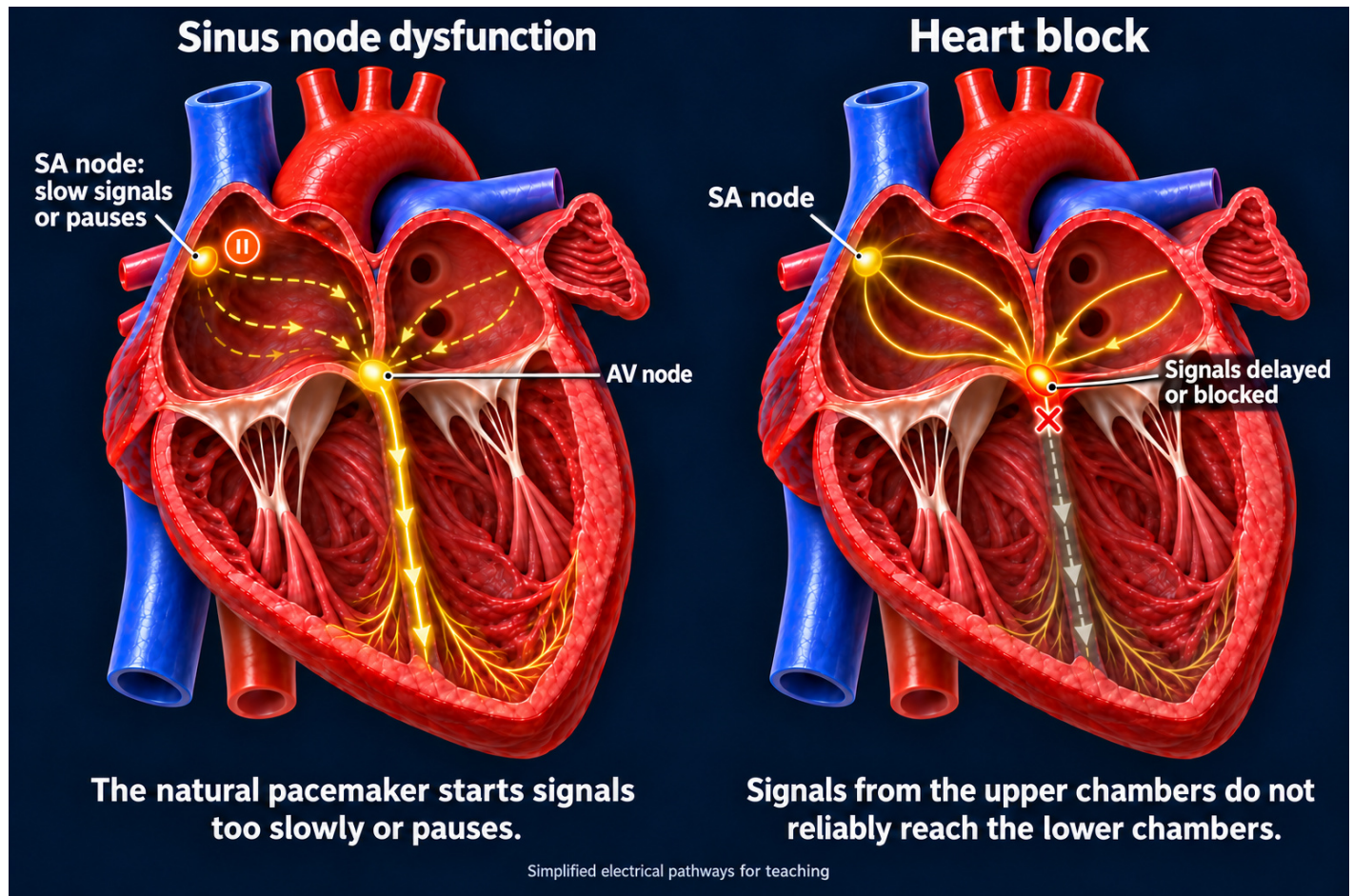
The atria contract first; the ventricles follow. This organized sequence produces a coordinated heartbeat.

Normal conduction begins at the SA node, passes through the AV node and bundle of His, and travels down the right and left bundle branches to the Purkinje fibers. The left atrial appendage is also labeled for orientation.

Two different electrical problems

Sinus node dysfunction: The problem begins with the natural pacemaker. It may start signals too slowly, pause, or fail to increase the heart rate enough during activity. This is sometimes called sick sinus syndrome.

Heart block: The sinus node may start signals normally, but those signals are delayed or blocked on their way to the ventricles. The problem can occur at the AV node or farther down the electrical wiring.



Left: a problem starting the electrical signal. Right: a problem carrying that signal to the lower chambers. These are simplified examples; the exact location and degree of the problem can vary.

Heart block is an electrical problem. It does not mean that an artery is blocked.

What are the different degrees of heart block?

- First-degree: Every atrial signal reaches the ventricles, but the trip takes longer than usual. This is a delay rather than a completely blocked beat.
- Second-degree: Some atrial signals do not reach the ventricles. There are different patterns, including Mobitz I and Mobitz II, with different implications.
- Third-degree, or complete heart block: No atrial signals reach the ventricles. The lower chambers may depend on a slower backup rhythm, which can be unreliable. This requires prompt medical evaluation.

Does every slow heartbeat need a pacemaker?

No. Your clinician considers the rhythm, your symptoms, and whether there is a reversible cause. Certain serious forms of heart block may need a pacemaker even when symptoms are absent.

The key idea: Sinus node dysfunction is a problem with starting the signal. Heart block is a problem with getting the signal to the lower chambers.

Slow heartbeat & heart block

Section 2 of 6: Symptoms

Understand slow heart rhythms and heart block, explore pacemaker options, and plan your next steps.

SECTION 2

What symptoms can a slow heartbeat or heart block cause?

When the heart beats too slowly, it may not deliver enough blood to meet your body's needs. Symptoms can occur continuously or come and go.

What might I notice?

- Fatigue or weakness: Feeling unusually tired during everyday activities.
- Reduced exercise tolerance: Becoming exhausted more easily when walking or climbing stairs.
- Dizziness or lightheadedness.
- Feeling faint or passing out: Sometimes caused by a very slow rate or a pause.
- Shortness of breath.
- Difficulty concentrating or confusion.
- Chest discomfort.

Symptoms can also have other causes. Recording your heart rhythm helps determine whether a slow heartbeat is responsible.

Can I have no symptoms?

Yes. Some slow heart rates are normal, and mild conduction delays may cause no symptoms. However, certain serious forms of heart block still need treatment even when you feel well.

When should I seek help?

Contact your care team for new dizziness, unexplained fatigue, or a decline in your usual activity level.

Call 911 for fainting, chest pain or pressure, severe shortness of breath, or severe dizziness that makes you feel you may pass out. Do not drive yourself.

Slow heartbeat & heart block

Section 3 of 6: Diagnosis

Understand slow heart rhythms and heart block, explore pacemaker options, and plan your next steps.

SECTION 3

How are a slow heartbeat and heart block diagnosed?

An EKG or heart rhythm recording shows how your heart's electrical signals are working. Your clinician uses this information to identify the problem and determine whether it explains your symptoms.

An EKG: checking the electrical signals

An electrocardiogram - also called an ECG or EKG - uses small electrodes placed on your chest and limbs.

It shows how often electrical signals begin and whether they reach the lower chambers normally. This helps distinguish sinus node dysfunction from heart block.



An EKG records your heart's electrical activity through electrodes placed on your skin. The test is painless.

A heart monitor: catching problems that come and go

A short office EKG may miss an intermittent slow rhythm or pause. A Holter or patch monitor records your rhythm during daily activities.

While wearing it, record when you feel dizzy, weak, short of breath, or faint. Your care team can compare those times with the recording.

If symptoms are infrequent, longer monitoring may be needed. Selected patients may benefit from a small monitor placed under the skin, called an implantable loop recorder.



A Holter monitor records your heart rhythm during daily activities, helping your care team find slow rhythms or pauses that come and go.

Looking for contributing causes

Your clinician reviews your medications and may order blood tests for problems such as low thyroid function or an electrolyte imbalance. Sleep apnea may also be considered, especially when slow rates occur during sleep.

Do not stop prescribed medicines on your own.

Other tests, when needed

- Echocardiogram: Checks the heart's structure and pumping function.
- Exercise test: Shows whether your heart rate increases appropriately with activity.

Not everyone needs every test.

What if my watch shows a low pulse?

A low-rate alert can be useful to share with your clinician, but the pulse number alone cannot identify heart block or determine whether you need a pacemaker.

The key idea: We want to know which electrical problem is present, when it occurs, and how it relates to your symptoms.

Slow heartbeat & heart block

Section 4 of 6: Treatment options

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SECTION 4

How are a slow heartbeat and heart block treated?

Treatment depends on which electrical problem is present, whether it causes symptoms, and whether the cause can be corrected. Not everyone with a slow pulse needs a pacemaker.

1. Observation: when treatment is not needed

A slow heart rate can be normal during sleep or in physically active people. Some mild electrical delays can also be safely monitored.

Your clinician may recommend follow-up and rhythm monitoring rather than immediate treatment.

2. Treating a reversible cause

Sometimes the heart rate improves when an underlying problem is addressed. Treatment may include:

- Adjusting medications that slow the heart rate.
- Treating an underactive thyroid.
- Correcting an electrolyte imbalance.
- Treating sleep apnea.

Do not stop or change prescribed medications on your own. Your care team will determine which changes are appropriate.

3. A pacemaker: supporting the heart's electrical system

When the electrical problem cannot be corrected, a pacemaker may be needed. This small implanted device sends electrical impulses to help the heart beat when its own signals are too slow or unreliable.

The goal is to maintain an adequate heart rate, reduce symptoms caused by slow rhythms, and protect against dangerous pauses or blocked signals.

For sinus node dysfunction: A pacemaker may help when a slow rate, pauses, or an inadequate rise in heart rate during activity causes symptoms. The decision depends on how your symptoms relate to the recorded rhythm - not simply one low pulse reading.

For heart block: Certain serious forms, including Mobitz II, high-grade block, and complete heart block, generally require a pacemaker when there is no reversible cause. Treatment may be needed even if you feel well.

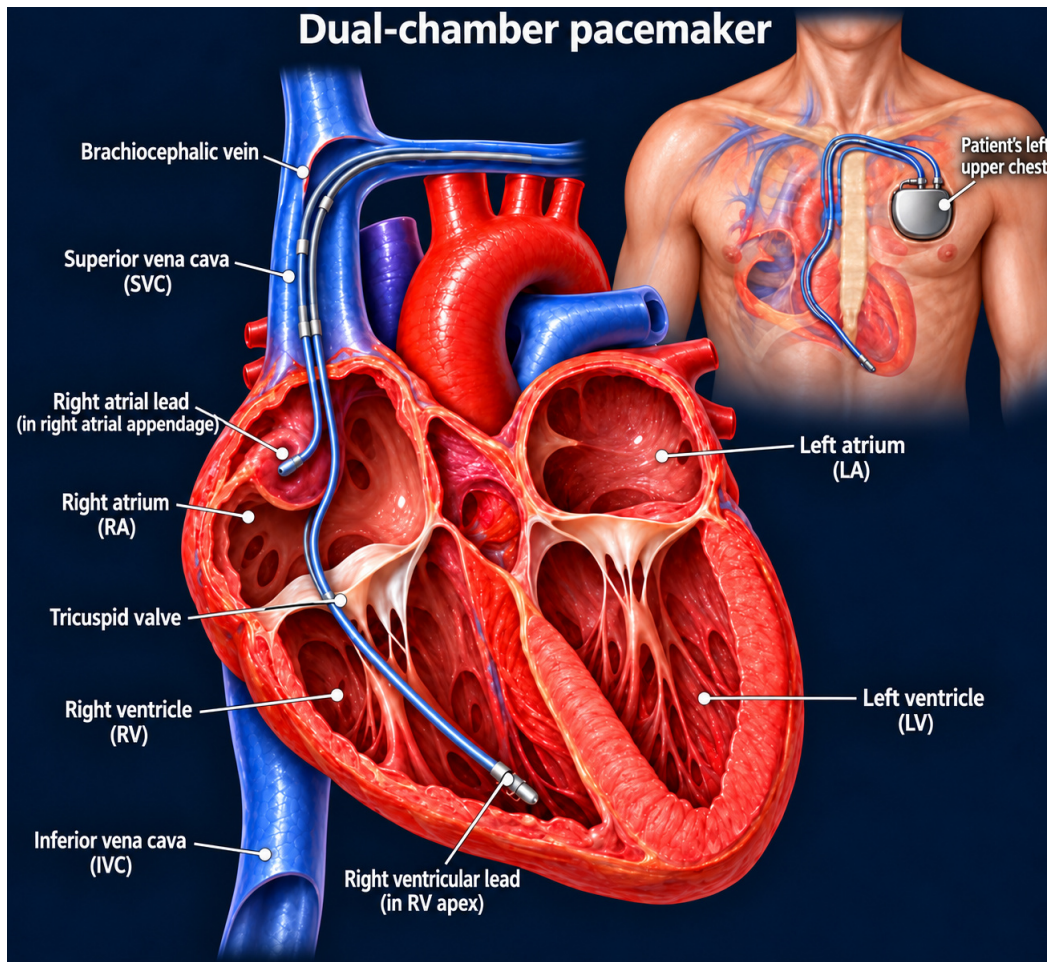
Which type of pacemaker will I receive?

The type of pacemaker is determined by many factors, including your electrical problem, which chambers need support, your heart's pumping strength, your anatomy, and your overall health. Your physician will explain the options and recommend the pacemaker best suited to you.

These are three examples. They are not the only pacing options.

Standard transvenous dual-chamber pacemaker

The battery and electronics, called the pulse generator, sit under the skin in the left upper chest. Two thin wires, called leads, travel through a vein into the heart: one in the right atrium and one in the right ventricle. They help coordinate the upper and lower chambers.

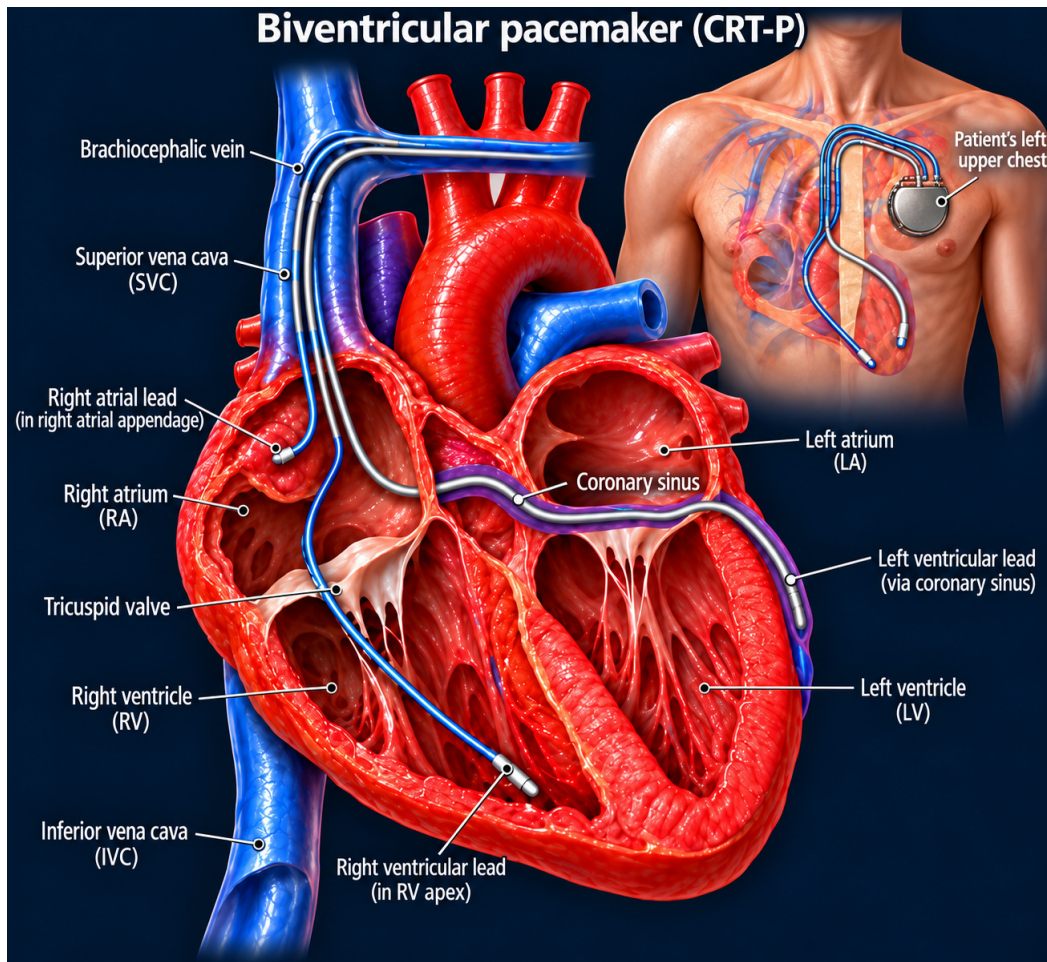


Two leads support the right upper and lower chambers. The chest inset shows the generator below the patient's left collarbone.

Standard transvenous biventricular pacemaker

Also called cardiac resynchronization therapy, or CRT-P, this example has three leads: one in the right atrium, one in the right ventricle, and a third that travels through the coronary sinus into a vein on the outside of the left ventricle.

It helps the lower chambers pump together and is used for selected patients who need this additional support.

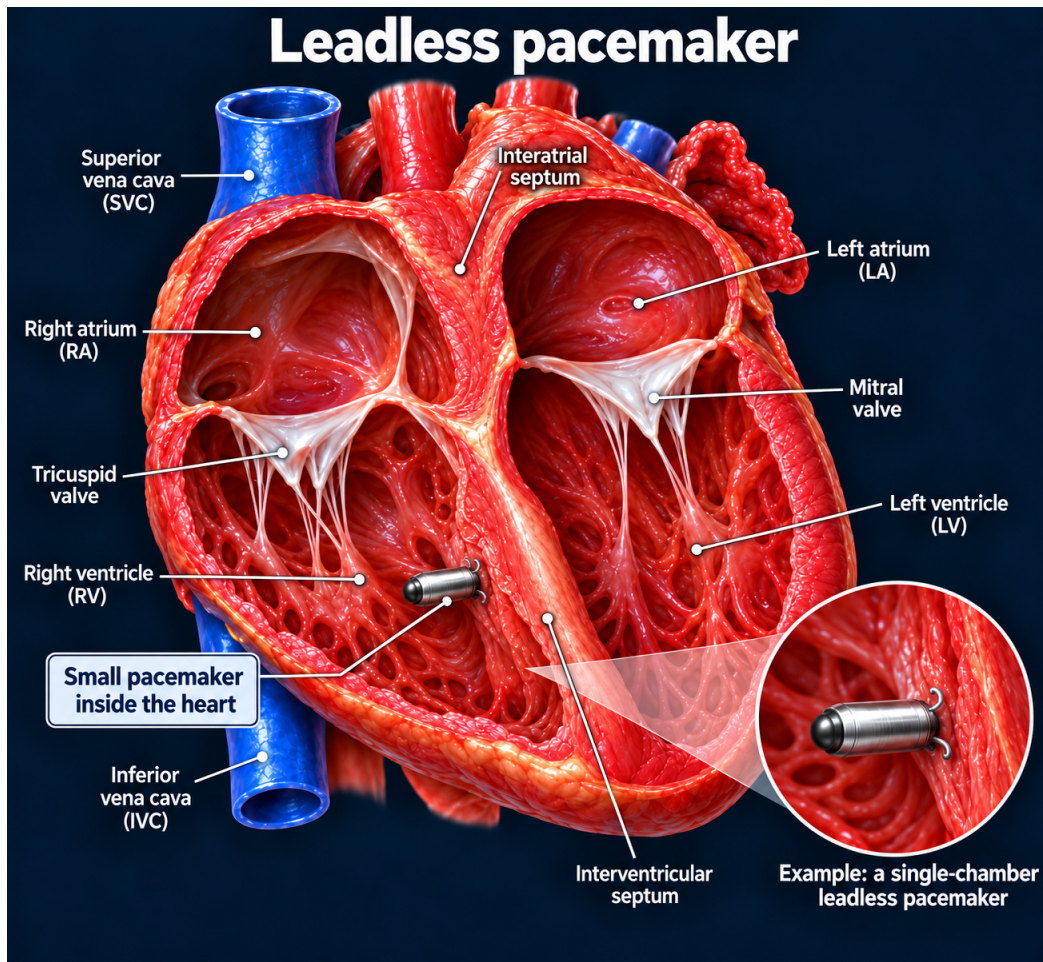


Three leads support the right atrium, right ventricle, and left ventricle. The silver lead reaches the left ventricle through the coronary sinus and a vein on its outer surface.

Leadless pacemaker

A small pacemaker is placed directly inside the heart, without a chest generator or the long wires used by a transvenous system. The picture shows one example placed in the right ventricle. Other leadless systems can support both the right atrium and right ventricle.

Leadless pacing is an option for selected patients. Your physician will determine whether it provides the type of support you need.



Example: a small leadless pacemaker inside the right ventricle. Leadless device designs and capabilities vary.

What is the main goal?

We want your heart to beat reliably enough to support your daily activities and keep you safe. Your cardiologist or electrophysiologist will explain whether monitoring, treating an underlying cause, or implanting a pacemaker is the best next step for you.

Slow heartbeat & heart block

Section 5 of 6: Living with your condition

Understand slow heart rhythms and heart block, explore pacemaker options, and plan your next steps.

SECTION 5

Living with a slow heartbeat or heart block

Many people can remain active and enjoy their usual activities with the right treatment and follow-up. Your care plan depends on your electrical problem and whether you need a pacemaker.

If you do not need a pacemaker

Keep your follow-up appointments and report new dizziness, unusual fatigue, reduced exercise tolerance, or near-fainting.

Some electrical problems can change over time. Your clinician may repeat an EKG or heart monitor to reassess your rhythm.

If you have a pacemaker

A pacemaker supports your heart's electrical system. It does not repair the underlying conduction problem, so ongoing care remains important.

After implantation, follow your team's instructions for wound care, lifting, arm movement, and returning to exercise. Recovery instructions differ between chest-based and leadless devices.

Once you have healed and your clinician has cleared you, many everyday activities can resume.

Keep your device checks

Device checks assess the battery, pacing function, and leads when present. Your team can also adjust settings to better support your needs.

If remote monitoring is prescribed, complete enrollment and keep your monitor or app connected as instructed. Remote monitoring does not replace emergency care.

Carry your pacemaker identification card and tell healthcare professionals about your device before procedures or imaging tests.

Pay attention to symptoms

Contact your care team if symptoms return or your usual activity becomes more difficult.

Call 911 for fainting, chest pain or pressure, severe shortness of breath, or severe dizziness that makes you feel you may pass out. Do not drive yourself.

The key idea: Treatment and regular follow-up help you live safely and confidently with your heart's electrical condition.

Slow heartbeat & heart block

Section 6 of 6: Your next steps

Understand slow heart rhythms and heart block, explore pacemaker options, and plan your next steps.

SECTION 6

Your next visit and questions to ask

Understanding your diagnosis helps you take an active role in your care. Your cardiologist or electrophysiologist can explain what your rhythm recordings show and what happens next.

What should I bring?

- An updated medication list, including supplements.
- A record of symptoms: what you felt, when it happened, and what you were doing.
- Any available watch recordings or pulse alerts.
- Your pacemaker identification card, if you have a device.
- Your questions - and a family member or friend, if helpful.

Questions about my diagnosis

- Do I have sinus node dysfunction, heart block, or both?
- If I have heart block, which type is it?
- Does my recorded rhythm explain my symptoms?
- Could medications or another treatable condition be contributing?
- Is monitoring enough, or do I need treatment now?

If a pacemaker is recommended

- Why do I need a pacemaker?
- Which type is best for me, and why?
- What benefits and risks should I understand?
- What should I expect on the procedure day?
- What restrictions will I have during recovery?

The decision considers your electrical problem, heart function, overall health, and personal goals. Your physician will explain the recommendation and answer your questions.

Before you leave, know your follow-up plan

Make sure you understand when to return, whether additional monitoring is needed, and whom to contact if symptoms change.

If you have a pacemaker, ask when your next device check is due and how to use remote monitoring.

Preparing for a device implant

The key idea: You should leave knowing your diagnosis, your treatment plan, and your next step.

Sources & further reading

NHLBI: How the heart beats

MedlinePlus: Cardiac conduction system

AHA: Slow heart rate

ACC/AHA/HRS: Bradycardia and heart block

AHA: Holter monitoring

NIH: How pacemakers work

Research: Dual-chamber leadless pacing

AHA: Living with your pacemaker

NIH: Living with a pacemaker

Updated October 2026. Educational information; your own care plan may differ. Heart illustrations are simplified for teaching.