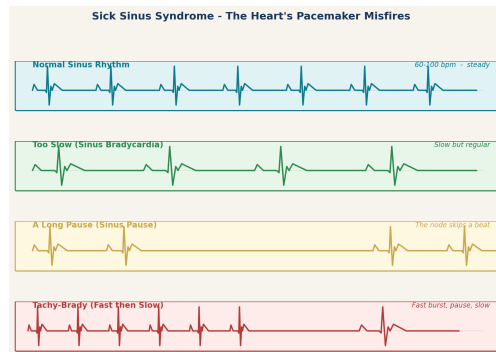


Understanding Sick Sinus Syndrome

When the heart's natural pacemaker stops working reliably

Deep inside the heart sits a tiny patch of cells called the sinus node. It sets your heartbeat. In sick sinus syndrome it fires too slowly, pauses, or swings between too-slow and too-fast. This guide explains why that happens and what can be done about it.



Online: <https://go.riasalimd.com/ssss-guide>

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1 of 22 | Page



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Names & Terms You Will Hear

Term	Meaning
Sick Sinus Syndrome (SSS)	The heart's natural pacemaker, the sinus node, no longer keeps a steady beat. It may fire too slowly, pause, or swing between slow and fast.
Sinus Node Dysfunction (SND)	The medical name your cardiologist may use. It means the same thing as sick sinus syndrome - the sinus node is not working the way it should.
Sinus Bradycardia	A slow heartbeat (under 60 beats per minute) that starts in the sinus node. Normal in fit people; a problem when it causes tiredness, dizziness, or fainting.
Sinus Pause / Sinus Arrest	The sinus node skips a beat or stops briefly. A short pause may go unnoticed; a long pause can cause a blackout.
Tachy-Brady Syndrome	A pattern where a fast rhythm (usually atrial fibrillation) and a very slow rhythm take turns. The heart often 'pauses' as the fast rhythm stops.
Chronotropic Incompetence	The heart rate does not speed up the way it should during activity. People feel winded or worn out with mild exertion.
Sinus Node	A small patch of special cells in the top-right chamber of the heart (the right atrium). It is the heart's built-in pacemaker, setting the pace of every beat.

Fainting from a slow or pausing heartbeat is a medical emergency.

If you or someone near you faints unexpectedly - especially with no warning - **call 911 right away**. A long pause in the heart's rhythm can cut blood flow to the brain. Do not drive to the ER. Call 911.



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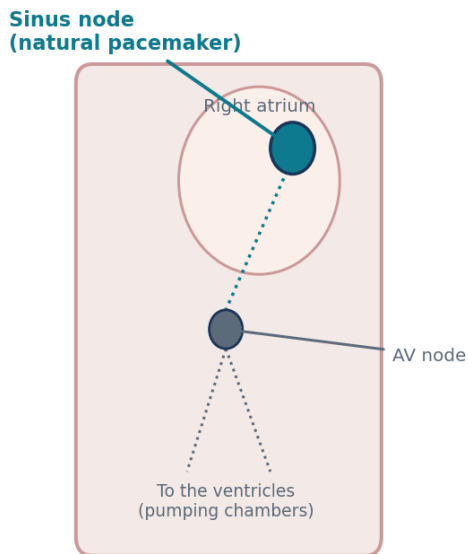


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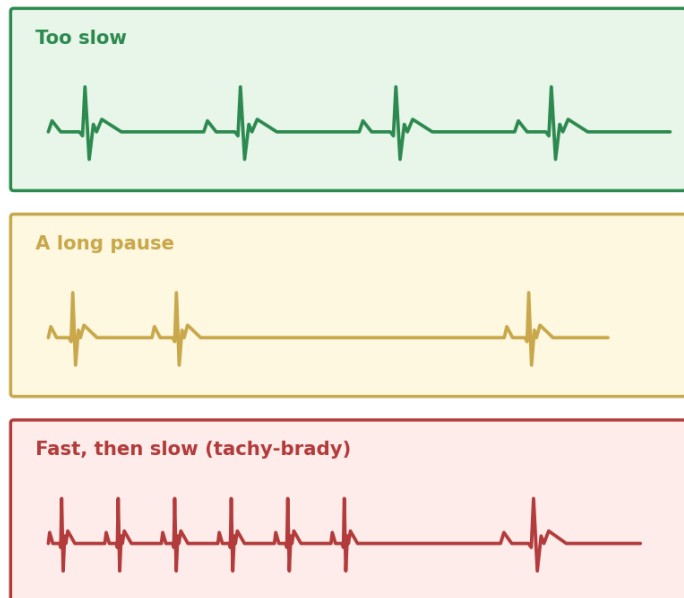
What Is Sick Sinus Syndrome?

- Your heart runs on tiny electrical signals. Each beat begins in the sinus node - a small group of cells in the top-right chamber. It is your built-in pacemaker.
- In sick sinus syndrome, the sinus node no longer keeps a steady beat. Doctors also call this sinus node dysfunction (SND). It is the same condition.
- **TOO SLOW:** the node fires slowly, so the heart rate drops below 60 beats per minute. If it is too slow to supply the brain, you feel tired, foggy, or dizzy.
- **A PAUSE:** the node skips a beat or stops for a moment. A short pause may pass unnoticed. A long pause can cause near-fainting or a blackout.
- **TACHY-BRADY** (fast-then-slow): a fast rhythm - usually atrial fibrillation - takes over, then suddenly stops. The slow node is caught off guard and pauses before it restarts.
- The trouble often **COMES AND GOES**. You may feel fine in the office, then have a spell at home. That is why a single ECG can look normal even when something is wrong.
- Most people with sick sinus syndrome are older adults. The node's cells slowly turn to scar tissue with age. But heart disease, some medicines, and heart surgery can cause it too.

Where the signal starts



When the node misfires



Left: the sinus node sits in the top-right chamber of the heart and sets the pace of every beat. Right: the three ways it misfires in sick sinus syndrome - too slow, a long pause, and tachy-brady (a fast burst, a pause, then slow).



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The Patterns of Sick Sinus Syndrome - What You Feel and What Helps

Pattern	What Happens	What You May Feel	What Helps
Too slow (sinus bradycardia)	The node fires below 60 beats per minute	Tiredness, low energy, feeling winded	Review medicines; pacemaker if symptoms persist
A pause (sinus pause)	The node skips a beat or stops briefly	Dizziness, near-fainting, or a blackout	Pacemaker for long or symptom-causing pauses
Fast, then slow (tachy-brady)	A fast rhythm (a-fib) stops, then a long pause	Fluttering, then dizziness or fainting	Pacemaker plus careful rhythm control; often a blood thinner



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Too Slow - Sinus Bradycardia

- The sinus node fires too slowly, so the heart rate drops below 60 beats per minute. A slow rate by itself is not always a problem.
- In sick sinus syndrome the slow rate causes symptoms: tiredness, low energy, feeling foggy, or getting winded with little effort.
- The heart rate may also fail to speed up during activity (called chronotropic incompetence). You feel worn out climbing stairs or walking uphill.
- First step: review your medicines. Beta-blockers and similar drugs are a common, fixable cause of a slow rate.
- If symptoms remain after medicines are adjusted, a pacemaker keeps the rate from dropping too low. Most people feel their energy return.



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A Long Pause - Sinus Pause

- The sinus node skips a beat or stops for a moment, leaving a flat gap on the ECG before the next beat starts.
- A short pause may pass unnoticed. A longer pause cuts blood flow to the brain and can cause dizziness, near-fainting, or a sudden blackout.
- Pauses often come and go, so they are easy to miss on a single ECG. A wearable monitor that records over days or weeks is often needed to catch one.
- A pause that lasts long enough or that causes symptoms is a clear reason for a pacemaker, which steps in before the gap becomes dangerous.
- If you black out or nearly black out, tell your cardiologist the same day - a long pause can be serious.



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Fast, Then Slow - Tachy-Brady Syndrome

- A fast rhythm - usually atrial fibrillation - takes over for a while, then suddenly stops. The slow sinus node is caught off guard and pauses before it restarts.
- You may feel a fluttering or racing heart, then become dizzy or faint as the fast rhythm ends and the long pause begins.
- This is the trickiest pattern to treat. Drugs that slow the fast rhythm also make the slow pauses worse - so a pacemaker is often placed first so those drugs can be used safely.
- Because atrial fibrillation can throw a clot, tachy-brady carries a stroke risk. A blood thinner is often needed - and the pacemaker alone does not prevent clots.
- Ask your cardiologist about your personal stroke risk and whether a blood thinner is right for you.



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Why It Matters

- When the heart beats too slowly or pauses, the brain may not get enough blood. This causes dizziness, near-fainting, and fainting - and a fall can cause real injury.
- Fainting from a cardiac pause can happen with no warning. It is one of the strongest reasons to get checked and to act quickly.
- Tiredness and 'brain fog' are easy to blame on aging. In sick sinus syndrome they may be the slow heart rate instead - and they often improve a lot with treatment.
- Tachy-brady syndrome adds a stroke risk. The fast rhythm is usually atrial fibrillation, which can throw a clot. A blood thinner may be needed even after a pacemaker is placed.
- Some causes are reversible. The right answer may be to stop or change a medicine - not to place a device. Finding the true cause changes the plan.
- When a pacemaker is the answer, it works well. Most people feel much better within days - the energy and steadiness they thought they had lost often come right back.



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Risk Factors

Some patients are more likely to develop this condition. Knowing your risk helps your care team take extra precautions.

Risk Factor	Why It Increases Risk
Older age	The sinus node's cells slowly turn to scar tissue over the years. This is the most common reason sick sinus syndrome develops. Most patients are over 65.
Heart disease	Coronary artery disease, a prior heart attack, heart failure, or high blood pressure can damage or stiffen the heart and the sinus node.
Heart-slowng medicines	Beta-blockers, diltiazem, verapamil, digoxin, and some rhythm drugs (amiodarone, sotalol) slow the node. They can unmask or worsen a slow rhythm.
After heart surgery	Surgery near the top of the heart - including valve repair and some procedures for atrial fibrillation - can injure the sinus node and cause a slow rhythm.
Atrial fibrillation	A-fib and sick sinus syndrome often travel together. The same scarring that slows the node also sets up the fast rhythm of tachy-brady syndrome.
Thyroid and other body-wide problems	An underactive thyroid, high potassium, low oxygen, or sleep apnea can slow the heart. These are often treatable, which can fix the slow rate.
Infiltrative or inflammatory disease	Conditions like amyloidosis, sarcoidosis, or Lyme carditis can settle in the heart and interrupt the sinus node's signal.



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Treatment Options

- FIRST, review the medicine list. If a heart-slowng drug is the cause, your cardiologist may lower the dose or switch it. The slow rate may improve on its own.
- FIX what can be fixed: treat an underactive thyroid, correct potassium, treat sleep apnea. If a reversible cause is found, a pacemaker may not be needed.
- A PACEMAKER is the main treatment when the slow rhythm is causing symptoms and no reversible cause is found. This is a Class I recommendation in the 2018 ACC/AHA/HRS guideline. Most people feel much better within days.
- The pacemaker is a small device placed under the skin near the collarbone. Our full guide explains the implant, recovery, and follow-up: go.riasalimd.com/pacer-icd-guide
- FOR THE FAST PART of tachy-brady, your cardiologist controls the rhythm carefully. Because rate-slowng drugs also worsen the pauses, a pacemaker is often placed first so those drugs can be used safely.
- A BLOOD THINNER may be added when atrial fibrillation is part of the picture, to lower the risk of a stroke. This is decided with your cardiologist using your personal risk.
- DIAGNOSIS often takes a wearable monitor. A single ECG is a 10-second snapshot and can miss a come-and-go rhythm. A Holter, patch, or loop recorder records over time.
- Our monitoring guides explain each option: Holter and event monitors at go.riasalimd.com/holter-guide, and the implanted loop recorder at go.riasalimd.com/loop-recorder-guide.



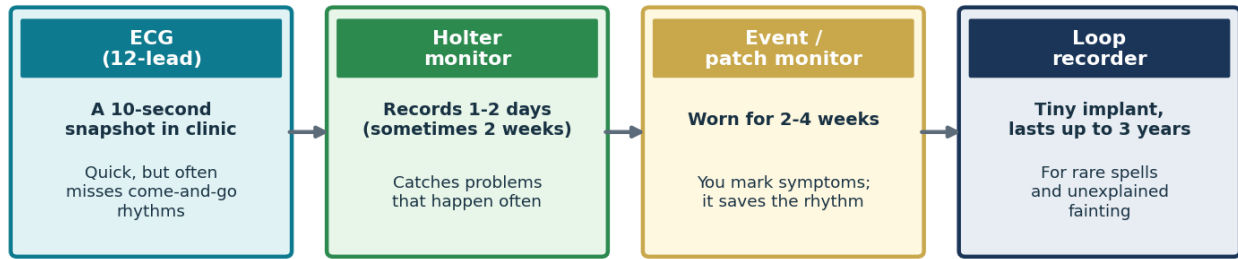
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How We Catch a Rhythm That Comes and Goes



Because the rhythm comes and goes, one ECG often misses it. Each step records for longer - from a 10-second ECG, to a Holter, to a 2-4 week patch, to an implanted loop recorder that watches for up to three years.



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When Is a Pacemaker Needed?

- USUALLY needed: a slow rhythm or pauses from sick sinus syndrome that cause symptoms (dizziness, fainting, severe tiredness) once reversible causes are ruled out. This is a Class I recommendation (2018 ACC/AHA/HRS guideline).
- OFTEN needed in tachy-brady: a pacemaker is placed so that drugs controlling the fast rhythm can be used without causing dangerous pauses.
- MAY NOT be needed: a slow rate with no symptoms, or a slow rate caused by a medicine that can be safely lowered or stopped.
- The pacemaker is a small device placed under the skin near the collarbone in a short procedure. A leadless type (no chest leads) suits some patients.
- Our full pacemaker guide explains the implant, recovery, MRI safety, and follow-up: go.riasalimd.com/pacer-icd-guide

Companion guides:

Bradycardia & Heart Block: go.riasalimd.com/bradycardia-guide

Pacemakers & ICDs: go.riasalimd.com/pacer-icd-guide

AV Block: go.riasalimd.com/av-block-guide

Holter & Event Monitors: go.riasalimd.com/holter-guide

Implantable Loop Recorder: go.riasalimd.com/loop-recorder-guide



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Comfort Measures at Home (No Medication Needed)

These simple steps support healing and ease symptoms. Use them alongside any medication your doctor prescribes.

- Keep a simple symptom diary - note the date, time, and what you felt (dizzy, faint, fluttering). This helps match your symptoms to the rhythm your monitor records.
- Stand up slowly from sitting or lying down, especially if you feel lightheaded - this lowers your chance of a fall during a slow spell.
- Stay well hydrated. Being low on fluids can make a slow heart rate feel worse.
- Bring a complete, up-to-date medicine list (including over-the-counter and supplements) to every visit. Many cases trace back to a heart-slowing drug.
- If you have a pacemaker, carry your device ID card and consider a medical alert bracelet - useful before any surgery, MRI, or airport screening.
- Check your own pulse and write down the number when you feel unwell; bring the log to your follow-up so your cardiologist can see the pattern.



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Risks, Benefits, and Alternatives

Every choice has trade-offs. Use this table to start the shared decision conversation.

Option	Risks	Benefits	Alternatives
Permanent pacemaker	Procedure risk about 1-2%: bruising or bleeding, infection (under 1% in the first year), a lead shifting in the first weeks (1-3%), rarely a small lung nick.	Stops symptoms from the slow rhythm and the pauses. Most people feel much better within days. It also lets rhythm-control drugs be used safely in tachy-brady.	Watchful waiting if a reversible cause is found and there are no dangerous pauses. A leadless pacemaker (no chest leads) suits some patients.
Review and adjust medicines	Stopping or lowering a drug may let a fast rhythm speed back up or raise blood pressure. Changes are made carefully and with follow-up.	No procedure needed if it works. A drug-caused slow rhythm often improves within days of lowering or switching the medicine.	Pacemaker if the slow rhythm stays after the medicine is changed. A lower dose instead of a full stop sometimes does the job.
Blood thinner (for the a-fib of tachy-brady)	All blood thinners raise the risk of bleeding. The right choice depends on your personal stroke and bleeding risk.	Lowers the risk of a stroke when atrial fibrillation is part of the picture. A major, preventable danger of tachy-brady syndrome.	No blood thinner if your stroke risk is low. Your cardiologist uses a risk score to decide with you.
Watchful waiting and monitoring	Risk of missing a dangerous pause or a fainting spell while you wait. Needs a clear plan and close follow-up.	Avoids a device when symptoms are mild and no risky pauses are seen. Good for slow rates without symptoms.	A longer-term monitor (patch or loop recorder) to catch the rhythm. A pacemaker if symptoms or dangerous pauses appear.



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Common Misconceptions

Myth	Reality
A slow heartbeat always means something is wrong.	Not always. Fit, healthy people - especially athletes - often have slow resting rates and feel fine. Sick sinus syndrome is about a slow or pausing rhythm that causes symptoms, not the number alone.
My ECG was normal, so my heart rhythm must be fine.	A standard ECG is only a 10-second snapshot. Sick sinus syndrome often comes and goes, so the ECG can look perfectly normal between spells. That is why a longer monitor is often needed.
Feeling tired and foggy is just part of getting older.	Sometimes the cause is a slow heart that is not supplying the brain and body. Many patients are surprised how much better they feel once the rhythm is treated.
A pacemaker is a drastic, last-resort step.	Putting in a pacemaker is a short, common, well-practiced procedure. For a slow, symptom-causing rhythm it is usually the simplest and most effective fix - not a last resort.
If I have a pacemaker, I will not need any other treatment.	If atrial fibrillation is part of your tachy-brady pattern, you may still need a blood thinner to prevent a stroke. The pacemaker fixes the slow rate, not the clot risk.
I cannot live a normal life with sick sinus syndrome.	Most people do very well. With the right monitoring, medicine review, and a pacemaker when needed, patients return to their usual activities.



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Possible Complications

Knowing what can go wrong helps you spot problems early. Most complications are uncommon, especially with treatment.

Where / What	What Can Happen
Fainting and falls	A slow rhythm or a long pause can cut blood flow to the brain and cause a blackout. Falls during a faint can lead to head injury or fractures.
Stroke (in tachy-brady syndrome)	The fast rhythm of tachy-brady is usually atrial fibrillation, which can form a clot that travels to the brain. This is why a blood thinner is often considered.
Worsening tiredness and breathlessness	A heart that is too slow cannot pump enough blood. Over time this brings on fatigue, shortness of breath, and trouble with everyday activity.
Confusion in older adults	A slow rhythm can show up as new confusion or memory trouble in older people - easy to miss because it is blamed on age.
Trouble with daily medicines	Drugs that control a fast heart or blood pressure can dangerously worsen the slow rhythm. This can limit treatment until a pacemaker makes those drugs safe.
Pacemaker-related issues	Pacemakers are very safe, but a small number of patients have a lead shift, infection, or out-of-sync pacing that needs a device check or adjustment.



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Points to Know

If you remember nothing else, remember these key points.

- Sick sinus syndrome means the heart's natural pacemaker - the sinus node - no longer keeps a steady beat. It may go too slow, pause, or swing fast-then-slow.
- The trouble often comes and goes, so a single ECG can look normal. A Holter, patch, or loop recorder is often needed to catch it.
- Symptoms include tiredness, dizziness, near-fainting or fainting, breathlessness, fluttering, and - in older adults - new confusion.
- Always review your medicine list. A heart-slowng drug is a common and reversible cause.
- A pacemaker is the main treatment when the slow rhythm causes symptoms and no reversible cause is found. Most people feel much better within days.
- In tachy-brady syndrome, ask your cardiologist whether you need a blood thinner to lower your stroke risk - the pacemaker alone does not prevent clots.
- Tell your doctor the same day if you faint or nearly black out - a cardiac pause can be dangerous and needs prompt evaluation.



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When to Call Us - and When to Call 911

If you are not sure, call. We would rather hear from you twice than miss a real problem.

- CALL 911 - You faint, lose consciousness, or someone cannot wake you normally. A long cardiac pause can be life-threatening.
- CALL 911 - Chest pain, severe shortness of breath, or no pulse. Do not drive yourself to the ER.
- CALL 911 - Sudden weakness or numbness on one side, trouble speaking, or a drooping face - signs of a stroke, a special risk in tachy-brady syndrome.
- CALL US TODAY - A near-fainting spell (almost blacking out), repeated dizziness, or a pulse you can feel is very slow or skipping.
- CALL US TODAY - New or sudden extreme tiredness, or new confusion in an older adult.
- CALL US THIS WEEK - You feel more winded than usual with light activity, or your heart rate does not seem to rise when you exert yourself.
- CALL US BEFORE - Any planned surgery or MRI if you have a pacemaker - the team needs to manage the device.
- CALL US BEFORE - Starting or stopping any heart or blood-pressure medicine on your own; many of these change your heart rate.

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Trusted Resources

The links below are the trusted resources Dr. Ali used to write this guide and that he recommends you visit for more information. Each is a clickable link in the digital version and a Short.io tracked URL on the printed version.

- [Cleveland Clinic - Sick Sinus Syndrome](#) - Plain-language overview of sinus node disease, tachy-brady, and pacemaker treatment.
- [Mayo Clinic - Sick Sinus Syndrome](#) - Patient-friendly explanation of the symptoms, causes, diagnosis, and treatment.
- [American Heart Association - Bradycardia \(Slow Heart Rate\)](#) - How a slow heart rate is diagnosed and when a pacemaker is considered.
- [MedlinePlus - Sick Sinus Syndrome](#) - Government health resource on sinus node dysfunction and when pacing is needed.
- [Heart Rhythm Society - Patient Resources](#) - Patient hub on arrhythmias, pacing, and heart-rhythm devices.
- [Bradycardia & Heart Block Guide - go.riasalimd.com/bradycardia-guide](#) - Dr. Ali's companion guide on slow heart rates and blocked signals.
- [Pacemakers & ICDs Guide - go.riasalimd.com/pacer-icd-guide](#) - What a pacemaker is, the implant, recovery, and follow-up - the main treatment for SSS.
- [Holter & Event Monitors Guide - go.riasalimd.com/holter-guide](#) - How wearable monitors catch a rhythm that comes and goes.
- [Implantable Loop Recorder Guide - go.riasalimd.com/loop-recorder-guide](#) - The tiny long-term monitor used for rare spells and unexplained fainting.



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Sources Used to Build This Guide

Every recommendation in this guide is grounded in one or more of the studies, guidelines, or trusted resources below. Short links are tracked so Dr. Ali can see which references patients are reading; nothing personally identifying is captured.

- [Cleveland Clinic — Sick Sinus Syndrome](#) [Patient Education]
Plain-language overview of sinus node disease, tachy-brady syndrome, symptoms, and the pacemaker therapy patients can expect.
- [Mayo Clinic — Sick Sinus Syndrome: Symptoms & Causes](#) [Patient Education]
Patient-facing description of the sinus node firing too slowly, pausing, or alternating fast and slow, and the symptom list used for plain-language framing.
- [Mayo Clinic — Sick Sinus Syndrome: Diagnosis & Treatment](#) [Patient Education]
Source for the diagnostic ladder (ECG, Holter, event monitor, loop recorder) and the medicine-review plus pacemaker treatment framing.
- [American Heart Association — Bradycardia: Slow Heart Rate](#) [Patient Education]
Frames sinus node dysfunction within bradycardia, the fatigue / dizziness / fainting symptoms, and when a pacemaker is considered.
- [MedlinePlus — Sick Sinus Syndrome](#) [Patient Education]
NIH / NLM overview used for safe definitions, symptoms, causes (age-related scarring, drugs, heart disease), and treatment context including pacing.
- [2018 ACC/AHA/HRS Guideline on the Evaluation and Management of Bradycardia and Cardiac Conduction Delay](#) [Guideline]
Authoritative basis for evaluating sinus node dysfunction, symptom-rhythm correlation, ambulatory monitoring, and the Class I pacemaker indication for symptomatic sinus node dysfunction.
- [StatPearls \(NCBI Bookshelf\) — Sinus Node Dysfunction](#) [Reference]
Clinician reference for the mechanisms (age-related fibrosis of the node), the tachy-brady pattern, the role of monitoring to catch intermittent disease, and pacing indications.
- [StatPearls \(NCBI Bookshelf\) — Sick Sinus Syndrome](#) [Reference]
Clinician reference confirming the tachy-brady stroke link (anticoagulation decision in the atrial fibrillation phase) and the need for follow-up device interrogation after pacemaker implant.
- [Heart Rhythm Society — Patient Resources](#) [Patient Education]
HRS patient hub on arrhythmias, pacing, and device information referenced for plain-language patient guidance.



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Reviewer note: Reviewed against Cleveland Clinic, Mayo Clinic, the American Heart Association, MedlinePlus, and the 2018 ACC/AHA/HRS Bradycardia Guideline. Ours adds: a cover that shows the four rhythm patterns side by side; a heart schematic that points to the sinus node itself; a 'how we catch it' monitoring ladder (ECG to Holter to patch to loop recorder) because the rhythm comes and goes; a color-coded pattern-to-symptom-to-treatment table; and plain-language coverage of tachy-brady syndrome, the blood-thinner question, and why a pacemaker is usually the fix.

Disclaimer

This guide is for educational purposes only and does not replace medical advice from your physician. Recommendations may not apply to every patient. Always follow the specific instructions of Dr. Ali and your care team. In an emergency call 911 or go to the nearest emergency department.



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