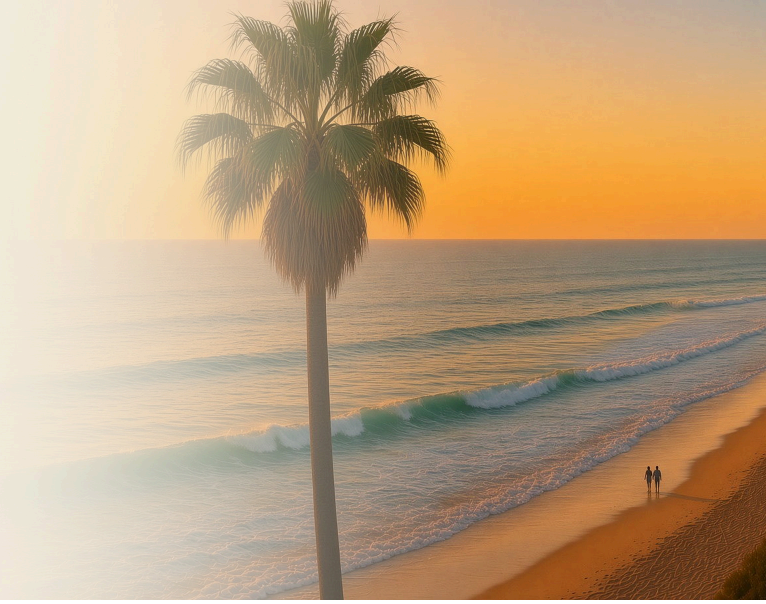
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Ventricular Tachycardia (VT)

A fast rhythm that starts in the heart's lower chambers. What causes it, how it's treated and when to call 911.

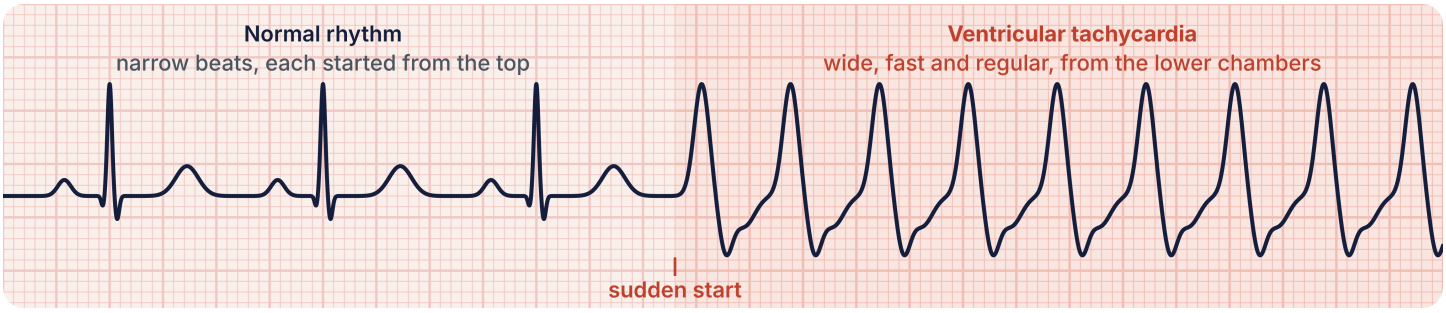
150–250
beats a minute in most VT, driven from the lower chambers

30 sec
the usual cutoff. Shorter runs that stop on their own are nonsustained VT

31%
fewer deaths with an ICD in MADIT-II (prior heart attack, EF 30% or less)

WHAT'S HAPPENING

The lower chambers take over



Normally the signal for each heartbeat starts in a small node up top and travels through special wiring to both lower chambers (the ventricles) at almost the same instant. In VT, the signal fires from inside the ventricles, three or more beats in a row faster than 100 a minute. At that speed the ventricles can't fill properly and squeeze out of step, so less blood gets pumped. That can cause lightheadedness, palpitations, chest pressure, fainting or, in the worst cases, sudden cardiac arrest.

WHY IT HAPPENS

The heart underneath shapes the outlook

Scar in the heart muscle
A heart attack or a cardiomyopathy can leave scar mixed with living muscle, and signals loop through it. This is the most common VT in adults and carries the most risk.

A structurally normal heart
Called idiopathic VT, it often starts below the pulmonary valve or in the left bundle branch. The outlook is usually excellent, and ablation cures it most of the time.

Inherited or reversible causes
Inherited conditions such as long QT or Brugada syndrome run in families. Low potassium or magnesium, some drugs and a blocked artery can trigger VT that usually stops once fixed.

The workup looks at your heart's structure. An echocardiogram measures the ejection fraction (EF), how strongly the heart pumps, and a cardiac MRI can map scar. A stress test, coronary CT or angiogram checks for a blocked artery that could be opened.

Know your heart

Most people with treated VT do not die from it. The single most predictive factor is the underlying heart, so your plan is built around a clear picture of yours.

GETTING HELP

When to call, and how VT is treated

CALL 911 OR GO TO THE ER

Fast heartbeat that won't stop	A fast, pounding heartbeat that won't stop, with fainting, near-fainting, chest pain or trouble breathing.
ICD shocks	More than one shock, or one shock with ongoing chest pain, trouble breathing or faintness.
Blackout or chest pain	Prolonged loss of consciousness, or chest pain with shortness of breath or sweating.
Someone collapses	Call 911, start CPR and use an AED if one is nearby.

CALL YOUR CARDIOLOGIST PROMPTLY

if you have VT or a defibrillator

One ICD shock	A single shock and you feel well afterward. Call your cardiologist or device clinic the same day.
Fainting or lightheadedness	Episodes that are new or different from before.
Palpitations	Palpitations that last longer than usual or that you can't stop.
Other new symptoms	New shortness of breath at rest, leg swelling worse than usual, chest pain or pressure, or new symptoms after starting any medication.

LONG-TERM TREATMENT

ICD after an event	An implantable cardioverter-defibrillator sits under the skin near the collarbone with a wire into the heart. It watches every beat, and if it detects sustained VT or ventricular fibrillation, it paces or shocks the heart back to normal rhythm. It's recommended after surviving a cardiac arrest from VT or VF without a fully reversible cause, or sustained VT that caused fainting or a collapse in blood pressure.
ICD before any event	Most people with an EF of 35% or less and heart failure symptoms (NYHA class II or III) qualify, after at least 90 days of optimized medicines and any needed opening of blocked arteries.
Medicines	Beta blockers are the foundation for most people with structural heart disease. Amiodarone is the most effective rhythm drug but can affect the lungs, thyroid, liver, eyes and skin over time, so labs are checked regularly. Sotalol needs QT monitoring at the start, usually in a brief hospital stay.
Catheter ablation	Detailed mapping finds the circuit that sustains VT, which is then burned or frozen. In a normal heart, success is above 85%. With scar, ablation is usually paired with medicines and an ICD, and VT comes back more often, sometimes in 30 to 50% over a few years.

LIVING WITH AN ICD

Air travel is fine. Scanners are safe, you can ask for a hand search, and you should carry your device card. After sustained VT or a shock, expect a wait before driving, often three to six months without a repeat episode, and state rules vary. In the MADIT-RIT trial, modern ICD settings cut unneeded shocks by about 79%.

READ THE FULL ARTICLE

damianrasch.com/ventricular-tachycardia

For education only, and not a substitute for advice from your own physician. Sources include the 2017 AHA/ACC/HRS and 2022 ESC ventricular arrhythmia guidelines, the 2019 HRS/EHRA/APHRS/LAHRS expert consensus on VT ablation, and the MADIT-II and MADIT-RIT trials.

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