URL of this page: https://medlineplus.gov/suddencardiacarrest.html

Sudden Cardiac Arrest

Also called: SCA, Sudden cardiac death

What is sudden cardiac arrest (SCA)?

Sudden cardiac arrest (SCA) is a condition in which the heart suddenly stops beating. When that happens, blood stops flowing to the brain and other vital organs. If it is not treated, SCA usually causes death within minutes. But quick treatment with a defibrillator may be lifesaving.

How is sudden cardiac arrest (SCA) different from a heart attack?

A heart attack [https://medlineplus.gov/heartattack.html] is different from an SCA. A heart attack happens when blood flow to the heart is blocked. During a heart attack, the heart usually doesn't suddenly stop beating. With an SCA, the heart stops beating.

Sometimes an SCA can happen after or during recovery from a heart attack.

What causes sudden cardiac arrest (SCA)?

Your heart has an electrical system that controls the rate and rhythm of your heartbeat. An SCA can happen when the heart's electrical system is not working right and causes irregular heartbeats. Irregular heartbeats are called arrhythmias [https://medlineplus.gov/arrhythmia.html] . There are different types. They may cause the heart to beat too fast, too slow, or with an irregular rhythm. Some can cause the heart to stop pumping blood to the body; this is the type that causes SCA.

Certain diseases and conditions can cause the electrical problems that lead to SCA. They include:

- **Ventricular fibrillation**, a type of arrhythmia where the ventricles (the heart's lower chambers) don't beat normally. Instead, they beat very fast and very irregularly. They can't pump blood to the body. This causes most SCAs.
- Coronary artery disease (CAD) [https://medlineplus.gov/coronaryarterydisease.html] , also called ischemic heart disease. CAD happens when the arteries of the heart cannot deliver enough oxygen-rich blood to the heart. It is often caused by the buildup of plaque [https://medlineplus.gov/atherosclerosis.html] , a waxy substance, inside the lining of larger coronary arteries. The plaque blocks some or all of the blood flow to the heart.
- Some types of **physical stress** can cause your heart's electrical system to fail, such as
  - Intense physical activity in which your body releases the hormone adrenaline. This hormone can trigger SCA in people who have heart problems.
  - Very low blood levels of potassium [https://medlineplus.gov/potassium.html] or magnesium. These minerals play an important role in your heart's electrical system.
  - Major blood loss
  - Severe lack of oxygen
- Certain inherited disorders [https://medlineplus.gov/congenitalheartdefects.html] which can cause arrhythmias or problems with the structure of your heart
- **Structural changes in the heart**, such as an enlarged heart due to high blood pressure [https://medlineplus.gov/highbloodpressure.html] or advanced heart disease. Heart infections can also cause changes to the structure of the heart.

Who is at risk for sudden cardiac arrest (SCA)?

You are at higher risk for SCA if you:

- Have coronary artery disease (CAD). Most people with SCA have CAD. But CAD usually doesn't cause symptoms, so they may not know that they have it.
- Are older; your risk increases with age
- Are a man; it is more common in men than women
- Are Black or African American, especially if you have other conditions such as diabetes [https://medlineplus.gov/diabetes.html] , high blood pressure, heart failure [https://medlineplus.gov/heartfailure.html] , or chronic kidney disease [https://medlineplus.gov/chronickidneydisease.html]
- Have a personal history of heartbeats that aren't regular (arrhythmia)
- Have a personal or family history of SCA or inherited disorders that can cause arrhythmia
- Have a problem with drug [https://medlineplus.gov/druguseandaddiction.html] or alcohol use [https://medlineplus.gov/alcoholusedisorderaud.html]
- Have had a heart attack
- Have heart failure

What are the symptoms of sudden cardiac arrest (SCA)?

Usually, the first sign of SCA is loss of consciousness (fainting [https://medlineplus.gov/fainting.html]). This happens when the heart stops beating.

Some people may have a racing heartbeat or feel dizzy or light-headed just before they faint. And sometimes people have chest pain [https://medlineplus.gov/chestpain.html] , shortness of breath [https://medlineplus.gov/breathingproblems.html] , nausea, or vomiting [https://medlineplus.gov/nauseaandvomiting.html] in the hour before they have an SCA.

How is sudden cardiac arrest (SCA) diagnosed?

SCA happens without warning and requires emergency treatment. Health care providers rarely diagnose SCA with medical tests as it's happening. Instead, it is usually diagnosed after it happens. Providers do this by ruling out other causes of a person's sudden collapse.

If you are at high risk for SCA, your provider may refer you to a cardiologist, a doctor who specializes in heart diseases. The cardiologist may ask you to get various heart health tests [https://medlineplus.gov/hearthealthtests.html] to see how well you heart is working. He or she will work with you to decide whether you need treatment to prevent SCA.

What are the treatments for sudden cardiac arrest (SCA)?

SCA is an emergency. A person having SCA needs to be treated with a defibrillator right away. A defibrillator is a device sends an electric shock to the heart. The electric shock can restore a normal rhythm to a heart that's stopped beating. To work well, it needs to be done within minutes of the SCA.

Most police officers, emergency medical technicians, and other first responders are trained and equipped to use a defibrillator. Call 9-1-1 right away if someone has signs or symptoms of SCA. The sooner you call for help, the sooner lifesaving treatment can begin.

What should I do if I think that someone has had an SCA?

Many public places such as schools, businesses, and airports have automated external defibrillators (AEDs). AEDs are special defibrillators that untrained people can use if they think that someone has had SCA. AEDS are programmed to give an electric shock if they detect a dangerous arrhythmia. This prevents giving a shock to someone who may have fainted but isn't having SCA.

If you see someone who you think has had SCA, you should give cardiopulmonary resuscitation (CPR) [https://medlineplus.gov/cpr.html] until defibrillation can be done.

People who are at risk for SCA may want to consider having an AED at home. Ask your cardiologist to help you decide whether having an AED in your home might help you.

What are the treatments after surviving sudden cardiac arrest (SCA)?

If you survive SCA, you'll likely be admitted to a hospital for ongoing care and treatment. In the hospital, your medical team will closely watch your heart. They may give you medicines to try to reduce the risk of another SCA.

They will also try to find out what caused your SCA. If you're diagnosed with coronary artery disease, you may have an angioplasty [https://medlineplus.gov/angioplasty.html] or coronary artery bypass surgery [https://medlineplus.gov/coronaryarterybypasssurgery.html] . These procedures help restore blood flow through narrowed or blocked coronary arteries.

Often, people who have had SCA get a device called an implantable cardioverter defibrillator (ICD) [https://medlineplus.gov/pacemakersandimplantabledefibrillators.html] . This small device is surgically placed under the skin in your chest or abdomen. An ICD uses electric pulses or shocks to help control dangerous arrhythmias.

Can sudden cardiac arrest (SCA) be prevented?

You may be able to lower your risk of SCA by following a heart-healthy lifestyle [https://medlineplus.gov/howtopreventheartdisease.html] . If you have coronary artery disease or another heart disease, treating that disease can also lower your risk of SCA. If you have had an SCA, getting an implantable cardioverter defibrillator (ICD) can lower your chance of having another SCA.

NIH: National Heart, Lung, and Blood Institute

Start Here

- About Cardiac Arrest [https://www.heart.org/en/health-topics/cardiac-arrest/about-cardiac-arrest] (American Heart Association)
  Also in Spanish [https://www.heart.org/es/health-topics/cardiac-arrest/about-cardiac-arrest]
- Sudden Cardiac Arrest [https://www.texasheart.org/heart-health/heart-information-center/topics/sudden-cardiac-arrest/] (Texas Heart Institute)
  Also in Spanish [https://www.texasheart.org/heart-health/heart-information-center/topics/paro-cardiaco-subito/]
- What Is Cardiac Arrest? [https://www.nhlbi.nih.gov/health/cardiac-arrest] NIH (National Heart, Lung, and Blood Institute)
  Also in Spanish [https://www.nhlbi.nih.gov/es/salud/paro-cardiaco]

Symptoms

- Heart Attack, Stroke and Cardiac Arrest Symptoms [https://www.heart.org/en/about-us/heart-attack-and-stroke-symptoms] (American Heart Association)

Prevention and Risk Factors

- Causes of Cardiac Arrest [https://www.heart.org/en/health-topics/cardiac-arrest/causes-of-cardiac-arrest] (American Heart Association)
  Also in Spanish [https://www.heart.org/es/health-topics/cardiac-arrest/causes-of-cardiac-arrest]
- Heart Treatments [https://www.nhlbi.nih.gov/health/heart-treatments-procedures] NIH (National Heart, Lung, and Blood Institute)
  Also in Spanish [https://www.nhlbi.nih.gov/es/salud/tratamientos-cardiacos-procedimientos]

Treatments and Therapies

- Automated External Defibrillators: Do You Need an AED? [https://www.mayoclinic.org/diseases-conditions/heart-arrhythmia/in-depth/automated-external-defibrillators/ART-20043909?p=1] (Mayo Foundation for Medical Education and Research)
  Also in Spanish [https://www.mayoclinic.org/es/diseases-conditions/heart-arrhythmia/in-depth/automated-external-defibrillators/art-20043909?p=1]
- CPR: MedlinePlus Health Topic [https://medlineplus.gov/cpr.html] NIH (National Library of Medicine)
  Also in Spanish [https://medlineplus.gov/spanish/cpr.html]
- What Are Defibrillators? [https://www.nhlbi.nih.gov/health/defibrillators] NIH (National Heart, Lung, and Blood Institute)
  Also in Spanish [https://www.nhlbi.nih.gov/es/salud/desfibriladores]

Related Issues

- Coronary Artery Anomalies [https://www.texasheart.org/heart-health/heart-information-center/topics/coronary-artery-anomalies/] (Texas Heart Institute)
  Also in Spanish [https://www.texasheart.org/heart-health/heart-information-center/topics/anomalias-de-las-arterias-coronarias/]
- Heart Attack and Sudden Cardiac Arrest Differences [https://www.heart.org/en/health-topics/heart-attack/about-heart-attacks/heart-attack-or-sudden-cardiac-arrest-how-are-they-different] (American Heart Association)
  Also in Spanish [https://www.heart.org/es/health-topics/heart-attack/about-heart-attacks/heart-attack-or-sudden-cardiac-arrest-how-are-they-different]
- How AEDs in Public Places Can Restart Hearts [https://www.fda.gov/consumers/consumer-updates/how-aeds-public-places-can-restart-hearts] (Food and Drug Administration)
  Also in Spanish [https://www.fda.gov/consumers/articulos-para-el-consumidor-en-espanol/como-los-desfibriladores-externos-automaticos-dea-en-lugares-publicos-pueden-reanimar-corazones]
- Ventricular Fibrillation [https://www.mayoclinic.org/diseases-conditions/ventricular-fibrillation/symptoms-causes/syc-20364523?p=1] (Mayo Foundation for Medical Education and Research)
  Also in Spanish [https://www.mayoclinic.org/es/diseases-conditions/ventricular-fibrillation/symptoms-causes/syc-20364523?p=1]

Clinical Trials

- ClinicalTrials.gov: Death, Sudden, Cardiac [https://clinicaltrials.gov/search?cond=%22Death,+Sudden,+Cardiac%22&aggFilters=status:not%20rec] NIH (National Institutes of Health)
- ClinicalTrials.gov: Heart Arrest [https://clinicaltrials.gov/search?cond=%22Heart+Arrest%22&aggFilters=status:not%20rec] NIH (National Institutes of Health)

Journal Articles

References and abstracts from MEDLINE/PubMed (National Library of Medicine)

- Article: Use of the HOPE score to assess survival outcome of hypothermic... [https://www.ncbi.nlm.nih.gov/pubmed/40721803]
- Article: Features, Outcome, and Treatment of Postanoxic Status Epilepticus: Pooled Analysis of... [https://www.ncbi.nlm.nih.gov/pubmed/40720710]
- Article: Performance improvers in cardio-pulmonary resuscitation: a qualitative study. [https://www.ncbi.nlm.nih.gov/pubmed/40660099]
- Sudden Cardiac Arrest -- see more articles [https://pubmed.ncbi.nlm.nih.gov/?term=%22Heart+Arrest%22%5Bmajr%3Anoexp%5D+AND+humans%5Bmh%5D+AND+english%5Bla%5D+AND+%22last+1+Year%22+%5Bedat%5D+NOT+%28letter%5Bpt%5D+OR+case+reports%5Bpt%5D+OR+editorial%5Bpt%5D+OR+comment%5Bpt%5D%29+AND+free+full+text%5Bsb%5D+]

Reference Desk

- How the Heart Works [https://www.nhlbi.nih.gov/health/heart] NIH (National Heart, Lung, and Blood Institute)
  Also in Spanish [https://www.nhlbi.nih.gov/es/salud/corazon]

Find an Expert

- American Heart Association [https://www.heart.org/en/]
- National Heart, Lung, and Blood Institute [https://www.nhlbi.nih.gov/] NIH
- UpBeat.org [https://upbeat.org/] (Heart Rhythm Society)

Children

- Cardiac Arrest (For Parents) [https://kidshealth.org/en/parents/cardiac-arrest.html] (Nemours Foundation)
  Also in Spanish [https://kidshealth.org/es/parents/cardiac-arrest.html]

Teenagers

- Sudden Death in Young People: Heart Problems Often Blamed [https://www.mayoclinic.org/diseases-conditions/sudden-cardiac-arrest/in-depth/sudden-death/ART-20047571?p=1] (Mayo Foundation for Medical Education and Research)
  Also in Spanish [https://www.mayoclinic.org/es/diseases-conditions/sudden-cardiac-arrest/in-depth/sudden-death/art-20047571?p=1]

Patient Handouts

- Cardiac arrest [https://medlineplus.gov/ency/article/007640.htm] (Medical Encyclopedia)
  Also in Spanish [https://medlineplus.gov/spanish/ency/article/007640.htm]

MEDICAL ENCYCLOPEDIA

Cardiac arrest [https://medlineplus.gov/ency/article/007640.htm]

Related Health Topics

Arrhythmia [https://medlineplus.gov/arrhythmia.html]

CPR [https://medlineplus.gov/cpr.html]

Pacemakers and Implantable Defibrillators [https://medlineplus.gov/pacemakersandimplantabledefibrillators.html]

National Institutes of Health

The primary NIH organization for research on *Sudden Cardiac Arrest* is the National Heart, Lung, and Blood Institute [http://www.nhlbi.nih.gov/]

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