

## Sudden Cardiac Arrest Frequently Asked Questions (FAQs)

**Incidence:** Approximately 1,000 people die every day in the United States because they suffered a cardiac arrest outside of the hospital.

### What is cardiac arrest?

Simply stated, cardiac arrest is when the heart is no longer pumping blood through the body. The victim is unconscious, not breathing and has no pulse. If not immediately treated the victim will most probably die.

### What are the signs of cardiac arrest?

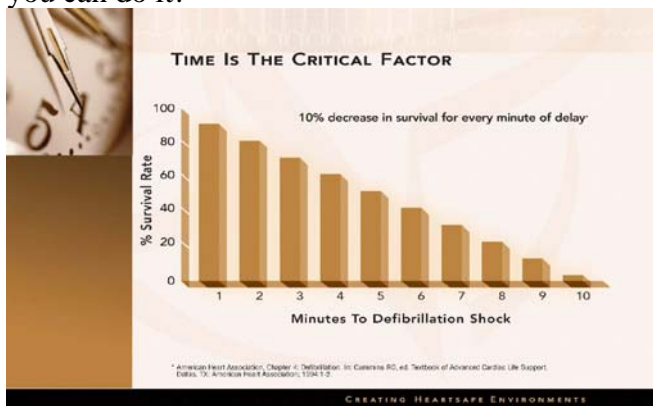
The signs of cardiac arrest are sudden loss of responsiveness, so that the victim will not respond to gentle shaking. The victim will not be breathing normally, although they may seem to be gasping. Cardiac arrest victims may have some movement such as seizure type activity, but the movement will not be purposeful. The victim will not have a pulse.

### What are the causes of sudden cardiac arrest?

The most common underlying reason for patients to sustain sudden cardiac arrest is coronary heart disease. Most cardiac arrests that lead to sudden death occur when the electrical impulses in the diseased heart become rapid (ventricular tachycardia) or chaotic (ventricular fibrillation) or both. This irregular heart rhythm (arrhythmia) causes the heart to suddenly stop beating. Some cardiac arrests are due to extreme slowing of the heart. This is called bradycardia. Other factors besides heart disease and heart attack can cause cardiac arrest. They include respiratory arrest, electrocution, drowning, choking and trauma. Cardiac arrest can also occur without any known cause. Sudden cardiac arrest can strike victims at ANY age!

### Is cardiac arrest and a heart attack the same thing?

Cardiac arrest and heart attack are **NOT** the same thing. A heart attack can cause a cardiac arrest, but there are other causes. What you need to remember is, regardless of what the cause of cardiac arrest, good skills and rapid treatment are the keys to survival. *For every minute that passes after a victim suffers a cardiac arrest their chances of survival decrease by about 10%. At 10 minutes after collapse they have a minimal chance of surviving. So, do whatever you can do as fast as you can do it!*



***Can cardiac arrest be reversed?***

Brain death and permanent death start to occur in just 4 to 6 minutes after someone experiences cardiac arrest. Cardiac arrest can be reversed if it is treated within a few minutes with an electric shock to the heart to restore a normal heartbeat. This process is called defibrillation.

***How many people survive cardiac arrest?***

No statistics are available for the exact number of cardiac arrests that occur each year. It is estimated that more than 95 percent of cardiac arrest victims die before reaching the hospital. In cities where defibrillation is provided within 5 to 7 minutes, the survival rate from sudden cardiac arrest is as high as 49 percent.

If bystander CPR was initiated more consistently, if AEDs were more widely available, and if every community could achieve a 20 percent cardiac arrest survival rate, an estimated 50,000 more lives could be saved each year. Death from sudden cardiac arrest is not inevitable. If more people react quickly by calling 9-1-1 and performing CPR, more lives can be saved.

***What can be done to increase the survival rate?***

**Early CPR and rapid defibrillation** combined with early advanced care can result in high long-term survival rates for witnessed cardiac arrest. For instance, in June 1999, automated external defibrillators (AEDs) were mounted 1 minute apart in plain view at Chicago's O'Hare and Midway airports. In the first 10 months, 14 cardiac arrests occurred, with 12 of the 14 victims in ventricular fibrillation. Nine of the 14 victims (64 percent) were revived with an AED and had no brain damage.

The American Heart Association has simplified this urgency into the

**CHAIN OF SURVIVAL:**



- Early Access-----CALL 911
- Early CPR-----START CHEST COMPRESSIONS
- Early Defibrillation-----USE AN AED
- Early Advanced Care---PARAMEDICS

In most cases, paramedics just can't respond and arrive at the patient's side quickly enough for the patient's sake. Now that AEDs are available to non-medically trained people, **YOU** can become a vital link in this chain of survival.

To improve survival of patients who do not have defibrillation this early, chest compression by bystanders is critical.

### ***What can I do if I am alone and see someone have sudden cardiac arrest?***

Doctors and researchers at the UA Sarver Heart Center have been active in CPR research for more than 30 years and have earned an international reputation for their findings and recommendations, many of which were incorporated in the American Heart Association's 2000 CPR Guidelines. Large strides have been made to make bystander CPR more efficient and easier to perform. In witnessed sudden cardiac arrest in **ADULTS**, mouth-to-mouth resuscitation is **not necessary**.\* This technique of bystander aid is termed Continuous Chest Compression Resuscitation.

#### **Simply follow these directions:**

Position the victim on his or her back on the floor. Place one hand on top of the other and place the heel of the bottom hand on the center of the victim's chest. Lock your elbows and begin forceful chest compressions at a rate of 100 per minute. If an automated external defibrillator (AED) is available, attach it to the victim and follow the machine's instructions. If no AED is available, perform continuous chest compressions until paramedics arrive. Take turns if you have a partner.

\* In cases involving suspected drowning or drug overdose in adults, follow standard CPR procedure (alternating 15 chest compressions with two mouth to-mouth breaths). In children under the age of 8, alternate five compressions with one breath — two at the top of the heart and two at the bottom.

#### ***What is an AED?***

An Automated External Defibrillator (AED) is a smart machine designed to detect whether a cardiac arrest victim would benefit from a defibrillation shock and to instruct the operator to perform all facets of treating the victim until paramedics arrive. An AED is simple and safe to use.

The heart is much like any other highly efficient machine; it has an electrical system that tells the heart to pump and a mechanical system that responds by pumping. The AED is designed to analyze the heart rhythm and allow a shock delivered to those patients whose electrical system is malfunctioning in a rhythm called ventricular fibrillation. This rhythm is a chaotic quivering of the heart and is the most frequent rhythm in a cardiac arrest. By delivering a shock this chaos is stopped so the heart's natural pacemaker can resume a regular rhythm, once again pumping blood around the body. Successful defibrillation diminishes rapidly over time. If the victim is not in ventricular fibrillation the AED will instruct you to perform CPR. The AED instructs you every step of the way.

#### ***What is the liability?***

Any person who uses an AED to help a cardiac arrest victim is protected against liability under the Good Samaritan Law that exists in every state. In Arizona it is Arizona Revised Statute section 36-2263.

***What is the danger?***

AEDs will not allow a shock unless it detects ventricular fibrillation. You cannot make it shock any other time. You cannot harm the victim in any way. The only possible danger is if: You are “sharing” water with the victim. If the victim is in a puddle of water, move them to a dry area. You don’t want your knees in the victim’s puddle of water! Water conducts electricity. You are “sharing” metal with the victim. Just make sure the patient is not touching any kind of metal. Metal conducts electricity. Make sure no one is touching the patient when a shock is delivered. Always visually confirm this before pushing the shock button. Do not use an AED on anyone under 8 years old.

***What if the victim has a pacemaker?***

There is no harm in using an AED on a person with a pacemaker. Just don’t place the electrode directly over the pacemaker.