
MEDICAL FACULTY ASSOCIATES

THE GEORGE WASHINGTON UNIVERSITY

AED Frequently Asked Question's

What is sudden cardiac arrest (SCA)?

Most victims of sudden cardiac arrest have an abnormal heart rhythm known as ventricular fibrillation. The heart does not beat in a normal and coordinated manner and the blood does not circulate to the heart and brain. When this occurs, the pulse will stop. After the pulse stops, the breathing will cease as well.

What is the current treatment for SCA?

A series of four critical steps, called the Cardiac Chain of Survival, (JAMA, 1992) have been identified for the optimal treatment of SCA: Early access to care (i.e., calling 911 or another emergency number); Early cardiopulmonary resuscitation (CPR); Early defibrillation; and Early institution of advanced cardiac life support. A break in any of the four links in the chain can compromise the victim's chance for survival; however, early defibrillation is recognized as the most critical step in restoring cardiac rhythm and resuscitating a victim of SCA.

What is an Automated External Defibrillator?

An Automated External Defibrillator (AED) is a device that can assess a person's heart rhythm, determine if it abnormal, and if necessary, administer an electric shock to restore it back to a normal rhythm. The computer algorithm in an AED is designed to assess the patient's heart rhythm. The AED differentiates normal from abnormal heart rhythms and advises a shock only if needed. Visual and/or audible prompts guide the user through the exact procedure.

How does an AED work?

A microprocessor inside the defibrillator analyzes the victim's heart rhythm through adhesive electrode pads. The computer advises the operator of the AED whether a shock is needed and will be administered. When the operator responds to the prompt to give a shock, an electric current is delivered through the victim's chest wall. This electric current essentially resets the abnormal heart rhythm back into a normal sinus rhythm.

Why are AEDs important?

An Automated External Defibrillator provides electricity, which is the only mechanism that can restore a normal heart rhythm in victims of sudden cardiac arrest. Some causes of sudden cardiac arrest include a heart attack, heart failure, a dilated heart, a congenital defect, and electrocution. According to the American College of Emergency Physicians, when a person suffers a sudden cardiac arrest, the chance of survival decreases by 7 percent to 10 percent for each minute that passes without defibrillation. Experts estimate that 100,000 lives could be saved each year if AEDs were widely used.

Who can use an AED?

AEDs are designed to be used by laypersons (people without medical backgrounds) in any type of community and workplace environment. They are very simple devices to use. Studies show that even a 6th grader can use one. AEDs are most effective when standards and protocols are in place for appropriate training, equipment maintenance and ongoing quality-of-care monitoring. Anyone trained by the GWLIFESAVERS to administer cardiopulmonary resuscitation (CPR) is also trained to use an AED.

If treatment for SCA exists, why are survival rates low?

Survival rates may be low due to time. Only one out of every twenty SCA victims survives though many of these lives could be saved through early defibrillation. Studies performed in casinos showed that making AEDs available to victims of SCA within 3 minutes of collapse greatly improves the odds of survival. The average response time for an ambulance in most urban areas is 8 minutes. By the time help arrives, the victim's chances of survival are slim.

Is oxygen needed during the use of an AED?

When using an AED, oxygen is not needed. After the victim is revived, EMS can apply oxygen when they arrive to the scene. How often should an AED be monitored? Maintenance and monitoring of an AED depends on type of AED you own. Each manufacturer and product has different specifications. Your AED should be examined at regular intervals to make sure it is working properly. This primarily consists of looking at the AED box and making sure the GREEN ready light is on. Other monitoring considerations include making sure batteries and pads do not expire.

When a person's heart stops beating, why should an AED be used?

Electricity, from a defibrillator is the ONLY way to return the heart to a normal rhythm. AEDs allow lay persons to provide that lifesaving electricity to a victim of sudden cardiac arrest as soon as is possible. For every minute a victim must wait for help, their chance of survival decreases nearly 10%. The average response time for EMS is around 8 minutes. By that time, the arrest victim's chances for survival have dropped significantly.

Will an AED always resuscitate someone in cardiac arrest?

No, an AED can only resuscitate those people who have suffered cardiac arrest and have one of the two abnormal rhythms called ventricular fibrillation and ventricular tachycardia . Some AEDs can also shock people in supraventricular tachycardia. AEDs cannot help people who have other abnormal rhythms. Those rhythms typically have poor prognosis, and even in the hospital, there is little that doctors can do to help.

Do AEDs replace the use of CPR?

No, CPR should be performed along with the use of an AED. CPR is a technique that helps the body get air and circulation to the vital organs until an AED can shock the heart back into a normal rhythm so the body can support these functions itself. CPR and activation of an emergency response are the only help a bystander can provide for a victim that has one of the abnormal rhythms that do not respond to electrical shock, like asystole.

What's the difference between an AED and the defibrillators used in hospitals?

AEDs are similar to defibrillators used in hospitals in that they provide electricity to restart the heart. The AED does an automatic analysis of the rhythm and advises the user what to do. In the hospital, the doctor interprets the rhythm on a monitor on the defibrillator and makes a decision as to whether to shock or not and with how much energy to shock with. The AED takes all the medical decision making away, and allows a lay person bystander the opportunity to help a victim of sudden cardiac arrest.

Are there liability issues associated with the use of AEDs?

Nothing can stop a plaintiff from filing suit against a business or person, whether it be filed against a business who has an AED or whether it be filed against a business who does not have an AED. However, for those businesses and persons who choose to have an AED available for the protection of employees, visitors or patrons, there are laws enacted to protect those with AEDs, which greatly improve a business or persons chances in obtaining the dismissal of claims. These laws were enacted to provide incentives for purchasing these life-saving products. For example, the Cardiac Arrest Survival Act (CASA), a federal law enacted in 1996, provides limited immunity from lawsuits to AED owners and users if the owner has (1) notified local emergency systems of their AED location; (2) provided periodic testing for the device; and, (3) provided AED training for some but not all - expected users. This immunity attaches even if the AED is used by someone who does not have training. All 50 states have now enacted legislation or regulation tracking this federal law and these state laws also provide immunity to uncompensated lay person rescuers who use an AED in good faith. In contrast, in multiple suits filed across the country against organizations for failing to have established AED programs, these laws are not available. If you have any further questions about these laws we can refer you to counsel who has already researched these laws.