

HIGHLIGHTS:

Sudden cardiac arrest, most often caused by an abnormal heart rhythm called ventricular fibrillation, kills more than 95 per cent of its victims (more than a quarter million Americans each year) before they get the treatment they need – an electric shock to the heart. While heart-shocking devices were once only found in hospitals and ambulances, public versions of these machines called Automatic External Defibrillators (AEDs) are becoming more visible in fitness centers, airports, office buildings and even in homes. If you're considering buying an AED for your home or want to be prepared to help a stricken co-worker or stranger in a public venue, proper training in CPR and the use of these devices might help you save a life.

SUDDEN CARDIAC ARREST: ARE YOU PREPARED TO HELP SAVE A LIFE?

LOS ANGELES (Nov. 2, 2005) – A high school football player collapses and dies on the field during a scrimmage. An ultra-marathoner's medal-winning career comes to an abrupt end while participating in a "10K run." Sudden cardiac arrest often occurs in active people who are unaware they have heart disease. Have you ever wondered if you'd be prepared in an emergency to help someone – a stranger or maybe even a loved one – should the need arise?

Sudden cardiac arrest, most often caused by an abnormal heart rhythm called ventricular fibrillation, kills more than 95 per cent of its victims (more than a quarter million Americans each year) before they get the treatment they need – an electric shock to the heart. While heart-shocking devices were once only found in hospitals and ambulances, public versions of these machines called Automatic External Defibrillators (AEDs) are becoming more visible in fitness centers, airports, office buildings and even in homes. If you are considering buying an AED for your home or want to be prepared to help a stricken co-worker or stranger in a public venue, proper training in CPR and the use of these devices might help you save a life.

The American Heart Association (AHA) reports that when immediate CPR is provided and the first shock is delivered with an AED within three minutes after the collapse, reported survival rates from ventricular fibrillation cardiac arrest are as high as 74 per cent. As a rule of thumb, for each minute that passes without CPR and defibrillation, the chance of survival decreases seven to 10 percent. In rural areas, as well as in some cities, it may be impossible for emergency responders to arrive within the first few minutes, so having an AED on-hand – and someone trained to operate it and render CPR – can make a lifesaving difference.

"AEDs should definitely be available on all playing fields, and at gyms, stadiums, and sporting events," says Prediman K. Shah, M.D., director of the Division of Cardiology and director of the Atherosclerosis Research Center at Cedars-Sinai Medical Center. "And, considering that three in four cardiac arrests happen at home, some people should consider having at-home defibrillators much like they have fire extinguishers."

Those who might benefit from having a home defibrillator include anyone who has survived a sudden cardiac arrest but does not have an implantable device capable of shocking the heart (an implantable cardioverter/defibrillator or ICD). "Other heart disease patients who might find a home AED a good investment would be those with severe heart failure, angina or other severe forms of heart disease. If your loved one has one of these conditions, owning a home AED and being trained to use it properly, might give you considerable peace of mind and potentially help you save a life," Shah says.

A heart attack (also known as a myocardial infarction), he explains, is caused by abrupt blockage in one of the heart's major blood vessels, shutting off blood flow and oxygen to the heart muscle. Without oxygen the heart muscle starts to die, producing pain and other symptoms. However it is important to note that sudden cardiac arrest is often a complication of a heart attack.

Sudden cardiac arrest, often occurs without warning and may be the first sign of cardiovascular disease. "While a person who has a sudden cardiac arrest may seem outwardly healthy, most victims have heart disease or other problems they may not be aware of."

What happens is that the heart's electrical signals that control its pumping suddenly become rapid and chaotic. The lower chambers of the heart (the ventricles) begin to quiver instead of contract and are no longer able to pump blood from the heart to the rest of the body. CPR cannot restore the heart's rhythm, therefore, without an emergency shock, death can occur within minutes. Sudden cardiac arrest is responsible for 50 per cent of all heart disease deaths.

An AED is a portable, computerized device that can check a person's heart rhythm and advise a rescuer when a shock is needed. Many come with voice prompts, lights and text messages to help guide the rescuer in the appropriate steps to take. While there are many different brands, they all have the same basic steps for operation. Most AEDs cost around \$2,000 or less, are not covered by insurance and need a physician's prescription to purchase.

The AHA strongly advocates the use of AEDs by emergency medical service first-responders and ambulances and also supports their use in targeted public areas such as sports arenas, offices, shopping malls and doctor's offices. It recommends formal training in how to use the devices so the operator will not only know how to recognize the signs of a sudden cardiac arrest but also when to activate the EMS system, how to do CPR and be able to operate the device successfully in an emergency.

While the Food and Drug Administration gave clearance in 2002 for an AED designed for home use, the American Heart Association has not yet made a formal recommendation about home defibrillators, saying that it needs more data on the overall effectiveness of their use. An \$18 million trial, sponsored in part by the National Institutes of Health, began in 2002 that was designed to evaluate the benefits and risks of home use. The study results are expected in 2007.

A study conducted in three Chicago airports between June 1, 1999 and May 31, 2001 showed that public access defibrillation programs can increase survival rates by as much as 67 per cent in those who received bystander CPR and treatment with an AED within five minutes.

Shah encourages anyone who wants to learn more about the use of AEDs to seek training. "The AHA has a four-hour course, "Heartsaver AED", that integrates CPR and AED training. I highly recommend it to anyone who wants to be prepared to help in the event of a sudden cardiac arrest." A list of training centers is available by calling 1-877-AHA-4CPR.

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