



## **Sudden Cardiac Arrest**

### ***Underestimating the Danger of SCA***

Heart Rhythm Society research shows that the majority of Americans do not know the difference between SCA and a heart attack. This can lead to people overlooking and missing warning signs that may indicate the risk of SCA—pointing out the need to continue the work to raise awareness of this serious public health issue. More than 250,000 deaths occur each year as a result of sudden cardiac arrest (SCA). In fact, SCA claims one life every two minutes, taking more lives each year than breast cancer, lung cancer, or AIDs. Yet, according to a recent survey issued by the Heart Rhythm Society, more than 70 percent of Americans not only underestimate the seriousness of SCA, but also believe SCA is a type of heart attack.

### ***SCA vs. Heart Attack — Electrical vs. Plumbing***

There are two main differences between SCA and a heart attack. SCA occurs when the heart stops working and no blood can be pumped to the rest of the body. The heart's "electrical system" has a malfunction. A heart attack, a condition known as myocardial infarction (MI), is a "plumbing problem". This is where a blockage in a blood vessel interrupts the flow of blood to the heart, causing an area of dead heart muscle.

### ***Population at Risk***

SCA occurs abruptly and without warning, and two-thirds of SCA deaths occur without any prior indications of heart disease. In fact, SCA can happen to people of all ages and health conditions. Some symptoms that may indicate someone is at risk for SCA include:

- A previous heart attack: individuals who have had a heart attack are at great risk of SCA—75 percent of people who die of SCA show signs of a previous heart attack
- A family history of sudden death, heart failure, or massive heart attack
- An abnormal heart rate or rhythm of unknown cause
- An unusually rapid heart rate that comes and goes, even when the person is at rest
- A low ejection fraction (EF): The ejection fraction is a measurement of how much blood is pumped by the ventricles with each heart beat. A healthy heart pumps 55 percent or more of its blood with each beat; less than 35 percent indicates an elevated risk of SCA.

### ***Responding to SCA — Time is Everything***

Time-to-treatment is critical when considering the chance of survival for an SCA victim. Ninety-five (95) percent of those who experience SCA die because they do not receive life-saving defibrillation within four to six minutes; which is the amount of time it takes for brain and permanent death to begin to occur. The recent survey conducted by the Heart Rhythm Society asked people how they would respond if they witnessed an SCA event. Results showed 42 percent would call 911 and wait for emergency personnel to respond, 35 percent would administer cardiopulmonary resuscitation (CPR) or chest compressions, and only 16 percent of respondents would use an Automatic External Defibrillator (AED).

The Heart Rhythm Society advises the following actions in response to a potential SCA emergency:

- Know the signs of SCA in order to react quickly. SCA strikes immediately and without warning. Victims will fall to the ground or collapse and become unresponsive and will not breathe normally, if at all.
- Call 911 as soon as possible
- Start CPR as quickly as possible (note: hands-only CPR is proven to be just as effective)
- Use an AED if one is available on site

### ***Preventing and Treating SCA***

There are a number of things people can do to decrease the likelihood of becoming a victim of sudden cardiac arrest. The Heart Rhythm Society offers the following things as valuable advice. Live a healthy lifestyle—exercising regularly, eating healthy foods, maintaining a healthy weight, and avoiding smoking can help reduce the chances of SCA. Treat and monitor health conditions that can contribute to heart problems. This includes high blood pressure, high cholesterol, and diabetes. Patients should ask their doctor about their ejection fraction and determine if they are at risk for SCA. For some patients, preventing SCA means controlling or stopping the abnormal heart rhythms which could trigger life-threatening arrhythmias. This can be done through proper medication, implantable cardioverter defibrillators (ICDs), and in some cases surgical procedures such as ablation. Patients should know their family history and understand their risk for other cardiovascular related conditions, like heart failure.

In the recent national survey, nearly 60 percent of respondents did not know that implantable cardioverter defibrillators (ICDs) are the most effective treatment to protect those at risk of SCA.

### ***The AED—Automatic External Defibrillators***

An automated external defibrillator, or AED, is a portable electronic device that automatically diagnoses the potentially life threatening cardiac arrhythmias of ventricular fibrillation and ventricular tachycardia and is able to treat them through defibrillation. Defibrillation is the application of electrical therapy which stops the arrhythmia, thus allowing the heart to reestablish an effective rhythm. Unlike regular defibrillators, AEDs require minimal training to use they are designed to be simple to use for the layman. The use of AEDs is taught in many first aid, first responder, and basic life support (BLS) level CPR classes. Automatic models will administer the shock without the user's command. Semi-automatic models will tell the user that a shock is needed, but the user must tell the machine to do so, usually by pressing a button. In most circumstances, the user cannot override a "no shock" advisory by an AED.

AEDs are increasingly available at public locations such as airports, gyms and office buildings, and will only deliver a shock when an irregular heart rhythm is detected. Despite their ease of use, 75 percent of respondents expressed concern about using an AED. Common concerns included not knowing how to use an AED (55 percent); hurting the victim (38 percent); shocking a victim when they do not need a shock (35 percent); and shocking or hurting oneself while treating the victim (23 percent).