Sudden Cardiac Arrest Information Sheet

Why am I getting this information sheet?

You are receiving this information sheet about Sudden Cardiac Arrest (SCA) because of California state law AB 379 (effective January 1, 2020) which amended Section 124235 of Article 2.5 (commencing with Section 124235) of Chapter 4 of Part 2 of Division 106 of, the Health and Safety Code, relating to youth athletics by requiring youth sports organizations to provide a "sudden cardiac arrest information sheet" to organization participants and requires that information to include at a minimum the following:

- Cardiac conditions and their potential consequences;
- The signs and symptoms of SCA;
- Best practices for removal of an athlete from an athletic activity after fainting or a suspected cardiac condition is observed;
- Steps for returning an athlete to an athletic activity after the athlete faints or experiences a cardiac condition; and
- What to do in the event of a cardiac emergency: including calling 911, performing hands-only cardiopulmonary resuscitation (CPR), and using an automated external defibrillator (AED) if it is available. An athlete who may have a concussion during a practice or game shall be removed from the activity for the remainder of the day.

Sudden Cardiac Arrest

SCA happens when the heart suddenly stops beating. It happens without warning. Someone may seem fine one minute and collapse the next.

Sudden cardiac arrest is a medical emergency. You should dial 911 and start CPR right away if you suspect SCA in someone.

Without quick action to revive the heart, a person can die in minutes. But delivering an electric shock to restore a normal heartbeat as soon as possible and giving CPR can be lifesaving.

If another person is available, ask him or her to look for an automated external defibrillator (AED). An AED is a portable device that can detect a harmful change in the heart's rhythm (arrhythmia) and give an electric shock, called defibrillation. AEDs are available in many locations including shopping centers, sports venues, airports, community centers and office buildings.

Giving CPR and using an AED within the first few minutes of SCA can greatly improve the chances of survival. (Scroll down for more information about how to help.)

SCA: What it is and isn't

Sudden cardiac arrest should not be confused with a heart attack.

During a heart attack… Blood supply to the heart muscle is reduced or blocked, but the heart keeps beating; however, there may be damage to the heart muscle. Usually, the person knows something is happening, and can talk about his or her symptoms.

During sudden cardiac arrest...The electrical system of the heart goes wrong (think of the way the lights flash before the power goes out), and the heart stops pumping blood. Usually, the person is unconscious, and a pulse may not be found.

In some cases, a heart attack might trigger the electrical issues that cause sudden cardiac arrest. But these events don't need to happen at the same time.

Sudden cardiac arrest can happen in people without heart disease. About 80% of cases are due to existing coronary artery disease. However, in most cases SCA is the first sign of a heart problem. That is, those affected were unaware of their heart disease until they had sudden cardiac arrest.

Sudden Cardiac Arrest by the Numbers

- Sudden Cardiac Arrest claims one life every 90 seconds.
- The likelihood of surviving is related to the speed of efforts to revive the heart. But half of sudden cardiac arrest victims won't have someone nearby to help.
- More than 420,000 Americans have an out-of-hospital sudden cardiac arrest each year. About 10,200 are children; many appear otherwise healthy, and some are even athletes
- Only about 10% of people survive. The odds of surviving are much higher if someone witnesses the event, calls 911 at once, starts CPR and uses a device to shock and restart the heart.

What makes SCA more likely? Who is at risk?

Why sudden cardiac arrest happens is not clearly understood. It is most often caused by a dangerous heart rhythm called ventricular fibrillation.

SCA can happen to anyone at any age. But the risk is greater among certain people. For example, it is more likely if you've had an SCA. And it's more likely if a parent, child or sibling has had one. Men and African Americans also are at greater risk.

Still, certain diseases or conditions can cause the heart's electrical system to misfire and lead to SCA. These include:

- Coronary heart disease
- Structural changes in the heart, for example, a thickened heart muscle/enlarged heart
- Heart failure with reduced pumping function, often referred to as a low ejection fraction (ejection fraction less than 35%)
- Heart attack — 75% of people who suffer sudden cardiac arrest were found to have had a heart attack, many of which went undiagnosed; survivors of heart attack are 4 to 6 times more likely to have SCA than the general population
- Physical stress such as trauma, blood loss, dehydration/electrolyte imbalance or (in rare cases) very intense physical activity
- Heart problems you are born with make you more prone to heart rhythm problems.

Potential Causes

- Having a dangerous heart rhythm causing the heart to "short circuit" and stop beating.
- Being born with a heart defect.

- Other issues such as heart attack, poor heart function, physical stress; some drugs, drug overdose or toxins can also lead to heart rhythm problems.

Some studies have linked SCA to low levels of potassium or magnesium in the body.

Signs and Symptoms

Sudden cardiac arrest tends to happen without warning. Usually, the first sign is someone fainting, collapsing or seeming to be lifeless. You may not be able to feel a pulse. **It's critical to call 911 right away.**

Recent studies of SCA survivors find that, in some cases, people remember that something didn't feel quite right beforehand. They recalled:

- Dizziness
- Unexplained shortness of breath
- Chest pains
- Seizures (usually in the arms and legs)
- Feeling sick to the stomach or vomiting an hour before the event

Another study shows that half of patients ages 35 to 65 had warning signs — mainly chest pain and shortness of breath in the 24 hours before the SCA. Some had warning signs for weeks.

Treatment: Shocking the Heart

The only effective treatment for SCA is to restore the heart's normal rhythm by using an AED to deliver a shock to the heart. **For every minute that passes without treatment, a person's chance of surviving drops by 7% to 10%.**

People who happen to be in the area during the event play a critical role in saving lives. Their action can mean the difference between life and death.

What to Do?

- Call 911 or have someone else call if other people are available.
- Start CPR at once while waiting for emergency help to arrive.
- Ask another person to find the nearest AED. AEDs are portable devices found in EMS vehicles and public places. They give simple instructions and are programmed to identify an electrical problem and shock the heart.

"An AED is used in addition to other emergency care measures. Calling 911 for assistance and administering CPR are critical interventions for people with SCA in the field. The lack of an AED should not lead bystanders to delay treatment. Prompt administration of effective CPR significantly improves the chances of survival."—**Leon Ptaszek**, MD, PhD, FACC, Cardiac Arrhythmia Service, Massachusetts General Hospital.

People who survive an SCA need advanced emergency and cardiac care. Doctors will use basic cardiac testing to identify the cause of SCA, and adjust treatment. For some patients, an implantable cardioverter defibrillator (ICD) placed under the skin may be needed. ICDs can detect an abnormal rhythm and send low shocks to the heart to restore a normal heartbeat.

Preventing Sudden Cardiac Arrest

Because most cases of SCA occur in people who have had a heart attack, or who have hearts with lowered ability to pump blood (called a low ejection fraction) or heart failure, health care providers can

take steps to prevent a repeat event. It is critical that people who survive sudden cardiac arrest follow their treatment plan.

Otherwise, the best approach is to live a healthy lifestyle by:

- Eating a diet low in saturated and trans fats, and high in soluble fiber and fruits and vegetables
- Exercising regularly
- Getting to a healthy weight and keeping it
- Managing stress
- Quitting smoking

What Else Can You Do?

Know how to respond if someone is in sudden cardiac arrest. Survival rates could double or triple if more people take action and know what to do, according to the Sudden Cardiac Arrest Foundation.

- Know the warning signs of an SCA.
- Act fast. Chance of survival goes down for every minute treatment is delayed. Don't waste time debating whether it's SCA.
- Take a CPR class or brush up on your skills if you've taken one.
- Learn how to use an AED and where they can be found.

Keep in mind:

- AEDs are not in all places. Do not delay CPR or calling 911 if an AED is not available.
- AEDs at home don't seem to affect survival. This could be because many who have an SCA at home are alone.

Talking With Your Care Team

Some common questions people have about sudden cardiac arrest:

- What causes sudden cardiac arrest?
- Why is using a device to deliver an electric shock to the heart as soon as possible important?
- Are there early signs to watch for?
- Who can operate an AED?
- My ejection fraction (a measure of how well the heart is working) is low. How worried do I need to be of sudden cardiac arrest?
- What is the chance of having a sudden cardiac arrest if a family member had one?
- Once you've had sudden cardiac arrest, what is needed to prevent another one?

Return-to-Play (RTP)

All cardiac symptoms should be completely gone before returning to competition. A RTP progression involves a gradual, step-wise increase in physical effort, sports-specific activities and the risk for contact. If symptoms occur with activity, the progression should be stopped. If there are no symptoms the next day, exercise can be restarted at the previous stage.

RTP after a cardiac event should occur only with medical clearance from a medical doctor trained in the evaluation and management of cardiac arrest and cardiac arrest related situations, and a step-wise progression program monitored by an athletic trainer, coach, or other identified administrator.

Helpful Resources

To learn more about sudden cardiac arrest, visit CardioSmart. You can also find out more from:

American Heart Association
www.heart.org

VIDEO: Hands-Only CPR

Heart Rhythm Society
www.hrsonline.org

National Heart Lung and Blood Institute
www.nhlbi.nih.gov

How to Use an AED

Sudden Cardiac Arrest Foundation
www.sca-aware.org

More about CPR
CPR Basics