

# Frequently Asked Questions – Defibrillation

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## ***What is Sudden Cardiac Arrest?***

Sudden cardiac arrest simply means that the heart unexpectedly & abruptly quits beating. This is usually caused by an abnormal heart rhythm called ventricular fibrillation (VF).

## ***Is Sudden Cardiac Arrest the same as a heart attack?***

No. A heart attack is a condition in which the blood supply to the heart muscle is suddenly blocked, resulting in the death of the heart muscle. Heart attack victims usually (but not always) experience chest pain and usually remain conscious. Heart attacks are serious and sometimes will lead to sudden cardiac arrest. However, sudden cardiac arrest may occur independently from a heart attack and without warning signs. Sudden cardiac arrest results in death if not treated immediately.

## ***Who is at risk for Sudden Cardiac Arrest?***

While the average age of sudden cardiac arrest victims is about 65, sudden cardiac arrest is unpredictable and can strike anyone, anywhere, anytime.

## ***What is ventricular fibrillation?***

Ventricular fibrillation (VF) is an abnormal heart rhythm often seen in sudden cardiac arrest. This rhythm is caused by an abnormal and very fast electrical activity in the heart. VF is chaotic and unorganized; the heart just quivers and cannot effectively pump blood. VF will be short lived and deteriorate to asystole (a flat line) if not treated promptly.

## ***How is ventricular fibrillation treated?***

The only effective treatment for VF is an electrical shock called defibrillation. Defibrillation is an electrical current applied to the chest. The electrical current passes through the heart with the goal of stopping the VF and giving an opportunity for the heart's normal electrical system to take control. This current helps the heart reorganize the electrical activity so it can pump blood again. An automated external defibrillator (AED) can defibrillate the heart.

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

An AED is a device that analyzes and looks for shockable heart rhythms, advises the rescuer of the need for defibrillation and delivers the defibrillation shock if needed.

## ***Will I hurt the Victim by using an AED?***

When used on persons who are unresponsive, not breathing, and have no detectable pulse, the AED is extremely safe. The AED makes shock delivery decisions based upon the victim's heart rhythm, and will not allow a shock to be delivered if not needed. The machine will not let you shock a non-shockable rhythm. If the victim meets the criteria; unresponsive, not breathing, no pulse they are essentially "dead".

## ***What if I mistakenly use an AED on someone who fainted but still has a pulse, which I couldn't feel?***

The AED is designed not to advise a shock for a victim with a non-shockable rhythm. It would be very difficult to harm a victim even in such circumstances.

***What if someone is afraid they may be having a heart attack – but is still conscious? Should an AED be used and electrode pads attached as a preventative measure?***

No. An AED should only be used and electrode pads attached to a person who is completely unresponsive, who does not respond at all when shaken and asked in a very loud voice, “Are you okay?”

***What if I forget the steps for using an AED?***

The steps for shocking a victim in cardiac arrest are simple and straightforward. The AED Plus™ provides visual and audio prompts required for the entire resuscitation process. The most difficult part is recognizing the need for defibrillation.

***Should I perform CPR first or apply electrode pads from the AED?***

Do CPR only until the AED arrives. Apply the electrode pads to the victim’s bare chest and follow the voice prompts and messages of the AED. It will tell you when to resume CPR.

***If defibrillation is so important, why should I do CPR?***

CPR provides some circulation of oxygen rich blood to the victim’s heart and brain. This circulation delays both brain death and the death of heart muscle. CPR also makes the heart more likely to respond to defibrillation.

***Can I be sued using the defibrillator?***

To date there has never been a case where someone was held liable for using an AED, but as you know, anyone can be sued. Likewise, most states have passed “Good Samaritan” legislation protecting the lay rescuer from lawsuits.

***Can I accidentally shock another rescuer or myself?***

AEDs are extremely safe when used properly. The electric shock is programmed to go from one electrode pad to another through the victim’s chest. Basic precautions, such as verbally warning others to stand clear and visually checking the area before and during the shock, will virtually ensure the safety of rescuers.

***What if the victim has a medication patch on or EKG electrodes on the chest where I want to place the electrode pads?***

Never place AED electrode pads directly on top of medication patches, such as nitroglycerin, or EKG patches. Patches should always be removed and the skin wiped dry before placing electrode pads on the skin.

***Do I need to remove the electrode pads before performing CPR?***

No. The electrode pads remain on throughout the resuscitation and until the victim is transferred to advanced care providers such as the paramedics. If the electrode pads are in their correct locations on the victim’s chest, they will not interfere with proper hand placement or compressions.

***Should I use the AED if the victim has a pacemaker or is pregnant?***

Yes, never withhold AED use in a person with sudden cardiac arrest (unresponsive, not breathing, no pulse).

***Can I defibrillate on a wet surface?***

Yes, as long as the usual safety rules are observed. Be sure the victim’s chest is wiped dry. Keep the electrode pads away from a damp or conductive surface.

***Can I defibrillate on or near a metal surface?***

Yes, as long as the usual safety rules are observed. Keep the electrode pads away from contact with the conductive surface. Be sure not to allow anyone to touch the victim when the shock is delivered.

***How much of the victim's clothing should be removed to carry out defibrillation?***

The chest should be exposed to allow placement of the disposable electrode pads. A woman's bra should be removed. Clothes may need to be cut off.

***Why is it so important to be sure that the electrode pads are firmly adhered to a clean, dry chest?***

Successful defibrillation requires electricity to flow from one electrode pad to the other through the chest. If the electrode pads are not firmly adhered and there is sweat or another conductive material between the electrode pads, the electricity will be more likely to flow across the chest rather than through it. This will result in ineffective defibrillation and an increased chance of sparks and fire.

***Is it okay to place the electrode pads directly on a hairy chest?***

Electrode pads must come in direct contact with the skin. If the chest hair is so excessive as to prevent good adhesion of the electrode pad, the hair must be removed quickly.

***What if I have a child victim?***

You should use pediatric electrode pads, which carry a lower charge to the child in sudden cardiac arrest.

***After I have successfully defibrillated the victim and have return of a pulse, do I keep the electrode pads on the victim?***

Yes, even after a victim has been successfully defibrillated, he/she is at risk of developing ventricular fibrillation again. The AED will continually monitor the victim for the return of VF. If VF is suspected, the device will automatically begin to analyze victim after one minute of CPR is complete. The AED should be left on until emergency personnel assume responsibility for the victim. The electrode pads are disposable.

***What if the victim regains a pulse but is not breathing or is breathing slowly?***

You should give rescue breaths at a rate of 1 every 5 seconds or 12 per minute.

***I used an AED on a victim who had a cardiac arrest and the machine always prompted "No Shock Advised". Even with CPR the victim did not survive. Why didn't the AED shock this victim?***

Although VF is the most common rhythm in cardiac arrest, it is not the only one. The AED will only shock VF or VT (ventricular tachycardia), which is a very weak but fast heart rhythm. There are other heart rhythms associated with cardiac arrest that are not treated with defibrillation "shocks". A "no shock advised" message doesn't mean the victim's rhythm is back to normal. This is why a pulse/circulation check must always be done after a "no shock advised" prompt.

***I shocked a woman in cardiac arrest 3 times within minutes after she collapsed. I hear later that she did not survive. Did I do something wrong?***

Unfortunately, because of other underlying medical or heart problems, not all victims of cardiac arrest who are in VF will survive even if defibrillation is done promptly & correctly.

***What if I don't perform all the steps of CPR and defibrillation perfectly?***

A cardiac arrest is a high stress situation. Even experienced health care providers do not do everything perfectly. In a cardiac arrest, performing CPR, even imperfectly, and using a defibrillator can only help the victim.

***What if I'm not certain whether or not I need to use the defibrillator?***

Remember this rule: only use an AED on someone you would do CPR on – unresponsive, not breathing and no pulse.