

Catholic Mutual...CARES

AUTOMATED EXTERNAL DEFIBRILLATION (AED)

AED's are portable, life-saving devices designed to treat people who are experiencing sudden cardiac arrest. AED's are able to analyze a person's heart rate and determine if an electric shock is needed.

Purpose of AED: An AED is a temporary lifesaving device that is intended for use prior to the arrival of Emergency Medical Services (EMS).

When to Use an AED: AED's should be used when a person is experiencing sudden cardiac arrest (SCA). But how do you know when a person is experiencing sudden cardiac arrest? Sudden cardiac arrest symptoms are immediate and drastic and can include:

- No breathing or gasping noises paired with abnormal breathing
- Unresponsive
- Unconscious
- No pulse

When NOT to Use an AED:

- The AED is faulty or has expired parts
- The victim is wet or lying in water
- The victim has a medication patch or pacemaker

Tips For Proper Use and Maintenance of AED's

- Buy an AED approved by the U.S. Food and Drug Administration. Check the FDA's website for a list of approved devices.
- Register your AED with the manufacturer. Registering your AED with the manufacturer ensures that you will receive safety alerts and recall notices. Also, check the manufacturers website periodically to keep current on information about your device.
- Learn what you need to know. Consider enrolling in a course through the American Red Cross to learn how to use an AED and perform CPR. This will enable you to assist in rescuing someone that suffers sudden cardiac arrest.
- Practice using the AED. Most AED's have a test mode and allow you to practice what you would do if you need to use the AED.
- Store your AED in a highly visible easily accessible location.
- Ensure that the AED is maintained properly. The batteries will need to be replaced before expiration and the electrodes replaced per manufacturer instructions.

How to Use an AED

Per the American Red Cross, the following AED steps should be used when caring for a non-breathing child aged 8 or older, who weighs more than 55 pounds, or an adult.

- After checking the scene and ensuring that the person needs help, you should ask a bystander to call 911 for help.
- As soon as an AED is available, turn it on and follow the voice prompts.
- Remove the victims shirt and attach pads as directed.
 - Remove all clothing covering the chest. If necessary, wipe the chest dry
 - Shave any excessive chest hair and remove any jewelry.
 - Place one pad on the upper right side of chest. Place the other pad on the lower left side of the chest, a few inches below the left armpit.
- Plug the pad connector cable into the AED, if necessary.
- Prepare to let the AED analyze the victims heart rhythm.
 - Make sure no one is touching the victim.
 - Say, "CLEAR!" in a loud, commanding voice.
- Deliver a shock, if the AED determines one is needed.
- After the AED delivers the shock, or if no shock is advised, immediately start CPR., beginning with chest compressions. Leave the pad connectors in place as an additional shock may be needed.
- CPR should continue till EMS arrives.
- Ensure that the person in charge of the AED is aware that the AED was used so that supplies can be replaced.

Special Considerations

Pediatric Victims: While it is rare that children experience cardiac arrest, it is a possibility. Child victims may require a reduced electrical shock if they are under 8 years old or weigh less than 55 pounds. To cater to pediatric victims, some external defibrillators have a special pediatric setting – other AED's have pediatric electrode pads.

If pediatric pads aren't available or your device doesn't have a child setting, you can use standard adult pads. However, the placement of the pads is different for pediatric victims. One pad should be placed in the center of the chest, the other in the center of the back.

For an infant under 12 months, a manual defibrillator is more appropriate than an automated defibrillator – especially if no pediatric pads are available. However, it is better to use a portable defibrillator (with pediatric or adult pads) than to do nothing at all.

Sweaty or Water-Submerged Victims: When treating a victim of sudden cardiac arrest who is wet or moist, remove them from the water (if they are immersed) and take them to a dry place. Dry off their chest as much as possible and apply the electrode pads. There is no need to completely dry the victim from head to toe, focus on completely drying the chest area. If the victim is in a puddle or a wet area of the floor but their chest is dry, move the victim away from the water and use the defibrillator as normal.

Victims with a Hairy Chest: Because hair on the victim's chest can lift the electrode pad up and off the victim's chest, it is important to shave the area where the pads will be placed. Most AED/first aid kits should include a razor. If a razor isn't available, you can use one set of the electrode pads to strip the hair away. Place one of the pads on the chest and quickly rip off the pad to remove some of the hair. Then, apply a new set of pads to proceed with shock as indicated.

Transdermal Medication Patch: Because medication patches can present a burn hazard when using an AED, it is important to remove the medication patch and wipe any sticky residue off the victim's skin. It is a good idea to wear gloves when removing the patch so that the medication is not absorbed through your skin.

Pacemakers or Implantable Defibrillators: If an electrode pad is placed directly over a pacemaker or defibrillator, the device may block the delivery of the shock. Instead, place the electrode pad a few inches lower or try an anterior-posterior (front and back) pad placement instead. One way to identify a sudden cardiac arrest victim with an implanted pacemaker or defibrillator is they may have a scar on either side of their upper chest or abdomen with a hard lump the size of deck of playing cards or smaller. Most often this will be near the heart, on the left side of the chest – in which case it will not interfere with the standard placement of the electrode pads. Because the victim has suffered a sudden cardiac arrest, it is most likely the device has stopped working.

The FDA and AED's

There are now FDA- approved AED's available and it is recommended that FDA AED's are used in all locations. The FDA recommends:

- Contact the manufacturer of your AED and inquire if your AED is FDA-approved.
- Be aware that if your AED is not FDA-approved, compatible necessary AED accessories may no longer be available to support your AED after February 2, 2022.
- Given the importance of AED's in emergency situations, the FDA recommends you continue to keep your AED available for use until you receive an FDA-approved AED.
- Report problems with AED's to the FDA by submitting a voluntary report online at MedWatch <https://www.fda.gov/safety/medwatch-fda-safety-information-and-adverse-event-reporting-program>

Resources:

<https://www.fda.gov/medical-devices/cardiovascular-devices/automated-external-defibrillators-aeds>

<https://www.mayoclinic.org/diseases-conditions/heart-arrhythmia/in-depth/automated-external-defibrillators/art-20043909>

<https://www.redcross.org/take-a-class/aed/using-an-aed/aed-steps>