

# Automated External Defibrillators

## What is an automated external defibrillator?

An automated external defibrillator (AED) is a device that is placed on a person's chest and gives an electric shock to the heart. Non-medical people can use AEDs to revive a person who has had a cardiac arrest.

## Do AEDs replace CPR?

No, CPR is still needed, starting with checking whether the person is unconscious, breathless, or pulseless. When a person goes into cardiac arrest, CPR helps keep blood flowing to the brain. AEDs can be used as part of CPR. The electric shock of an AED greatly improves the chances of restarting the heart. The American Red Cross includes AED training in many CPR training classes.

AEDs can recognize different heart rhythms and decide whether a shock is needed, so that users don't have to. Defibrillation done as quickly as possible can be lifesaving.

## How does an AED work?

The AED treats only a heart in ventricular fibrillation (VF). In VF, the electrical signals that cause the heart to beat become uncoordinated. The heart twitches ineffectively and can't pump blood. The person's heart appears to have stopped beating. The AED momentarily stuns the heart and stops all activity. This gives the heart a chance to resume beating effectively.

Small sticky patches or suction cups are placed on the person's chest. The AED checks the person's heart rhythm, judges whether a shock is needed, and then gives the right level of shock.

AEDs are less successful when the victim has been in cardiac arrest for more than a few minutes, especially if no CPR was provided.

## Why are AEDs important?

When cardiac arrest occurs, lack of blood flow to the brain and other body tissues results in death. The only treatment is to restore the normal rhythm of the heart before severe brain damage is done. AEDs can restore a normal heart rhythm in victims of sudden cardiac arrest.

## **Who can use an AED?**

Anyone trained in cardiopulmonary resuscitation (CPR) can be trained to use an AED. AEDs are designed to be used by people without medical backgrounds. This includes police, firefighters, flight attendants, security guards, and lay rescuers. AEDs are available in many public places and on some airplanes. Look for the universal AED symbol.

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