What Are Defibrillator Pads

Defibrillator AED pads are an essential part of an automated external defibrillator to treat a sudden cardiac arrest emergency. These electrode pads are placed on the bare chest of a victim of Sudden Cardiac Arrest (SCA). Once the defibrillator pads are placed at the specified location, an automated external defibrillator will monitor the heart rhythm of the patient and diagnose whether a defibrillator shock is required or not. Defibrillator pads are essential to create a connection between the SCA victim's body and the AED.

Why are AEDs used?

AEDs are used to treat the victim of Sudden Cardiac Arrest (SCA) which is a leading cause of death in the US and throughout the world. Sudden cardiac arrest is the result of irregular heart rhythms (arrhythmias) that can cause the heart to suddenly stop beating. According to the American Heart Association, every year roughly 326,000 people in the US suffer from sudden cardiac arrest and almost 90% of them die. SCA is most often caused by coronary artery disease.

How Do Automated External Defibrillator Pads Work?

Defibrillator pads work by allowing the AED machine to detect abnormal heart rhythms and providing a pathway for electrical current to pass between the pads and the patient. In layman's terms, AEDs are life-savers. They work by sending a slight electric shock to re-align the heart rhythm to normal allowing it to pump blood efficiently again.

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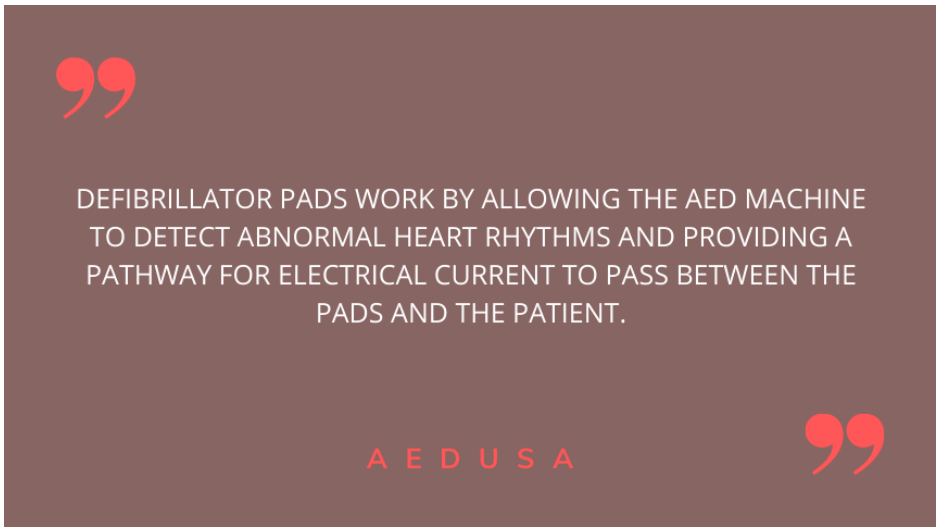

Automated external defibrillators come with accessories that must be maintained and do expire over time. These are often referred to as the AED disposables and are made up of electrode pads and the AED battery. Just like other parts of an external defibrillator, AED pads also have great importance.

Usage of AED pads:

Here's how AED pads are helpful in the defibrillation process:

- A responder first turns on the AED. AEDs should be turned on in Standby mode which is with the battery installed and the device is on. The voice prompts from the device will guide the user through the life-saving steps if engaged.
- The device prompts the user to apply the adhesive electrode pads on the bare chest of the patient. These adhesive electrode pads are known as AED electrode pads.
- Defibrillation pads work as a bridge between the device and the victim's body. AED pads monitor the rhythm of the patient and send the information to the device. The AED then evaluates whether an electrical shock is required or not.
- After the analyzing process, the AED will either recommend a shock, or in some cases, the device will recognize that the victim does not have a shockable rhythm.

Difference between adult and pediatric pads:

AED electrode pads play an extremely important role in delivering defibrillation to an SCA victim. AED pads increase the survival rate of sudden cardiac arrest (SCA) patients. The AED pads are placed at a specific position on the patient's chest, then an electrical shock is delivered through the pads.

There are two types of adhesive electrode pads: adult defibrillation pads and pediatric defibrillation pads. The adult defibrillation pads are meant for patients above eight years of age and who weigh more than 55 pounds while pediatric pads are designed for patients below eight years of age or who weigh less than 55 pounds.

The pads come in two different sizes: large and small. The pediatric electrode pads are small in size while the adult defibrillation pads are typically larger.

The main difference between the adult defibrillation pads and pediatric electrode pads is that pediatric electrode pads have a lower energy level. This is because pediatric patients are more sensitive to electrical shocks.


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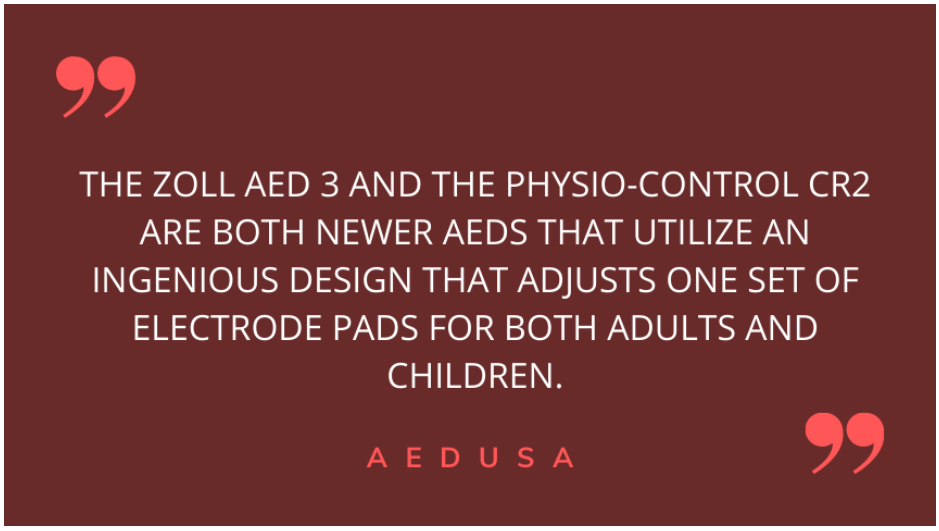
The lower energy level is also because pediatric patients have smaller chests as compared to adult patients. The lower energy level will help prevent any damage to the heart muscle.

So, it is important that the AED pads that are being used are specifically meant for the patient's age and weight.

New Technology

The Zoll AED 3 and the Physio-Control CR2 are both newer AEDs that utilize an ingenious design that adjusts one set of electrode pads for both adults and children.



This makes it easier to manage fewer AED disposables. For businesses that want to be prepared for both adult and child sudden cardiac arrest, this is a very efficient way of managing just one set of pads.

Expired AED pads:

If you already own one or many AEDs, you should note that AED pads as well as batteries do expire and are considered AED disposables. Currently, with modern AEDs the pads last from 2 to 5 years before replacement pads are required. Each brand and manufacturer has their own specified amount of time the pads will be good for.

AED management falls on the person or organization that owns the AED. Each state has its own AED laws which make managing a large number of AEDs overwhelming. Our AEDMD management software is our free cloud-based AED management portal. We manage all your expiration dates and record each AED readiness check so you are ready and safe if ever audited.

AED Defibrillator Electrode Pads

- Philips, Physio-Control, Defibtech, Heartsine, Zoll, and Cardiac Science are the 6 main FDA-approved manufacturers of AEDs in the US. Each has its own electrode pads for each model they manufacture.
- All electrode pads expire due to a limited life of the sticky gel manufactured on each set of pads to allow them to stick to the skin of the SCA victim and stay in place.
- **Expiration Date**: This is the date the electrode pads expire and must be replaced.
- **Standby Life**: Amount of time the pads last installed in the AED and in standby ready for service mode before they expire.

AED Brand/Model	Electrode Pads Life (Years)	Electrode Pads Price	Electrode Pads Cost per Year of Lifespan
HeartSine PAD 350P	4	$179.00	$44.75
HeartSine PAD 360P	4	$179.00	$44.75
HeartSine PAD 450P	4	$179.00	$44.75
Zoll Plus w/ Stat Padz II	1.75	$61.00	$34.86
Zoll Plus wth CPR D Pads	5	$169.00	$33.80
Defibtech Lifeline	2	$58.00	$29.00
Defibtech VIEW	2	$63.00	$31.50
Philips Onsite	2	$69.00	$34.50
Philips FRx	2	$58.00	$29.00
Physio Control Lifepak CR2	4	$145.00	$36.25
Cardiac Science G5	2	$68.00	$34.00
Cardiac Science G5 - Adult Pads w/ CPR Feedback	2	$225.00	$112.50
Cardiac Science G3	2	$51.00	$25.50
Physio Control Lifepak CR Plus	2	$107.00	$53.50
ZOLL AED 3	5	$158.00	$31.60

CPR Feedback Electrode Pads

There are 4 modern AED models equipped with a sensor pad that allows the speed and depth of the CPR compressions to be monitored so the AED can coach the CPR with more accuracy. In addition, the Physio-Control CR2 AED along with the HeartSine 350P, 360P, and 450P all provide an algorithmically calculated CPR assist without the requirement of any pad or puck to monitor pressure.

AED CPR Feedback Pads	AED Model	CPR Feedback	Hardware Puck/Pad
Heartsine Samaritan Adult Pad-Pak	HeartSine	YES	No
Physio-Control LIFEPAK CR2 Adult & Child QUIK-STEP 4-Year Electrodes	Physio-Control CR2	YES	No
Cardiac Science G5 AED Electrode Adult Pads w/ CPR Feedback	Cardiac Science G5	YES	Yes
Zoll AED Plus CPR-D Padz	Zoll Plus	YES	Yes
ZOLL® CPR Uni-Padz III	Zoll AED 3	YES	Yes
ZOLL AED CPR-D-Padz	Zoll AED Pro	YES	Yes

How to apply AED pads?

The basic feature/benefit of most AEDs is that they can be utilized by untrained bystanders. Even if the responder has no AED training, they can still increase the chances of survival with a victim of sudden cardiac arrest by following the instructions provided by a modern AED.

CPR does not stop the heart, but it does help to keep oxygenated blood flowing through the body. However, early defibrillation is required to restore a normal heart rhythm. Thus, early defibrillation for SCA victims is a critical step in surviving or increasing the chances of survival. Every minute that passes without restoring a normal heart rhythm to a victim of SCA, the chance of survival decreases by 10%. In addition, if defibrillation is applied within the first 3 minutes from collapse, the chances of survival increase substantially.

As the ratio of deaths due to sudden cardiac arrest increases, AEDs are placed at various public places to provide instant defibrillation. To use these defibrillators at the time of need, you must be well aware of AED accessories and how you apply pad electrodes. Here's a basic breakdown of applying AED pads!

For individuals older than eight years:

- Peel off the back packaging of one pair of pads.
- Place one pad on the right side of the victim's chest right under the collarbone.
- The specified placement of the other pad is at the lower left side of the victim's chest.
- The next crucial step is to connect the pair of electrodes (pads) with AED. Some electrodes (pads) come pre-connected with the AED.

Electrode pads packaging has instructional pictures showing the correct placement area. Apply the pads only to the bare chest and skin of the SCA victim. If the placement area seems wet, dry it before placing the pads. Use a razor if the placement area is hairy, and then apply the pads to the compatible area.

For infants and children younger than eight years:

The low energy of defibrillation is compatible with children. Some AEDs include accessories like pediatric electrodes (pads). The following method is recommended in the case of children younger than eight years or individuals weighing less than 55 pounds:

- You should use pediatric pads or if your AED allows for switching between adult and pediatric mode, engage the pediatric setting.
- In case pediatric electrodes are not available, use adult electrodes.
- Never cut the adult AED electrodes.
- Avoid the overlapping between pairs of electrodes.
- Use a front and back placement strategy on children suffering sudden cardiac arrest unless your AED outlines a different pad placement.

Defibtech LLC Lifeline AED Pads:

Defibtech LLC Lifeline AED Pads DDP-100 and the Defibtech VIEW Electrode Pads DDP-2001 are both for adults and have a 2-year life and each pair of lifeline AED pads has the expiration date printed on its package.

Zoll AED Plus Pads:

The Zoll AED plus and Zoll AED Pro defibrillator are compatible with Zoll stat-pads II or the Zoll AED Plus CPR-D Padz. The CPR-D Padz has a 5-year life and the stat-pads II have an 18-month life. Only the CPR-D Padz provides CPR feedback to the responder.

Philips Heartstart AEDs:

The Philips Onsite AEDs require an Adult Smart Pad Cartridge which has a 2-year life. While the Philips FRx utilizes one set of SMART Pad II and a pediatric key that tells the device that it is on a pediatric patient.

Physio-Control AED pads:

Physio-Control LIFEPAK CR Plus Replacement Express Charge Pak is for the CR Plus and the Express AED and has a combined battery and set of electrode pads with a 2-year life.

Cardiac Science AED Electrodes:

Cardiac Science G5 and G3 both have their own set of electrode pads that have a 2-year life. The G5 also has Cardiac Science Powerheart G5 Adult Intellisense (ICPR) Defibrillation Electrode Pads which offer CPR feedback for more accurate CPR coaching.

Sudden cardiac arrest (SCA) is one of the leading causes of death in North America. Automated external defibrillators can save lives by giving a shock to restore normal heart rhythm when someone has an SCA emergency. Defibrillator pads are one important part of these devices, but they do not work alone – they need electricity from a battery or power pack for the device to be effective. If you want to learn more about this life-saving technology, contact us today!

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