



HEARTSTART DEFIBRILLATORS

Training Toolkit

HeartStart OnSite Defibrillator PRODUCT TRAINING



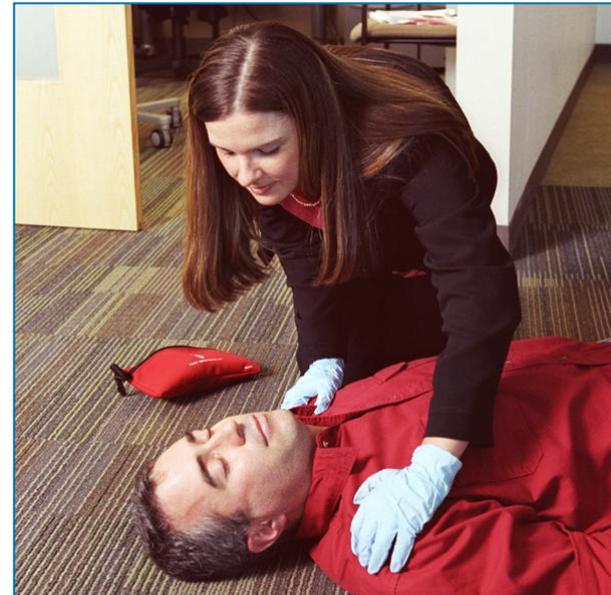
HeartStart OnSite Defibrillator

RESPONDING TO
SUDDEN CARDIAC
ARREST



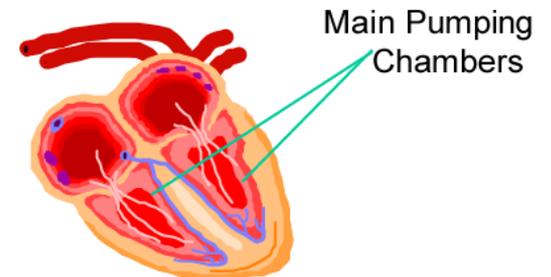
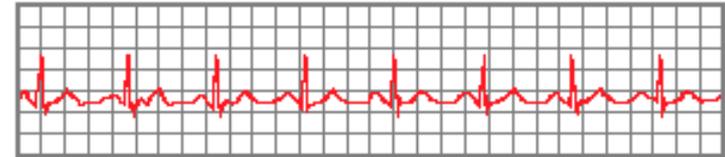
Sudden Cardiac Arrest (SCA)

- Abrupt loss of heart pump function
- Death certain without rapid treatment



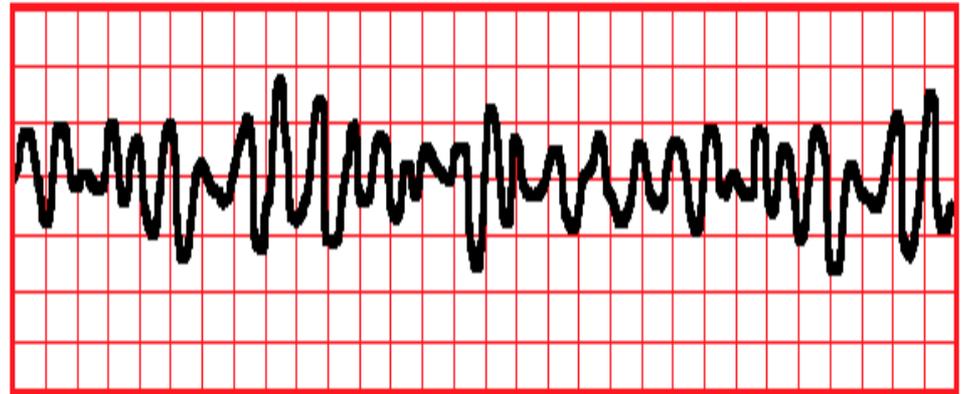
The Heart Pump: a series of events...

- An electrical event ...
- stimulates a mechanical event ...
- which results in a rhythmic and coordinated pumping action of the heart muscle



SCA and Ventricular Fibrillation: Heart in Chaos

- Abnormal; irregular, very fast heart rhythm
- Heart can't pump blood effectively
- Victim:
 - Unresponsive
 - Not breathing normally
 - No signs of circulation
- *Only* definitive treatment: *Defibrillation*



Defibrillation



- Electric shock to the heart
- Stops uncoordinated activity
- Allows coordinated heart rhythm and pumping action to resume
- *Only* effective treatment for ventricular fibrillation



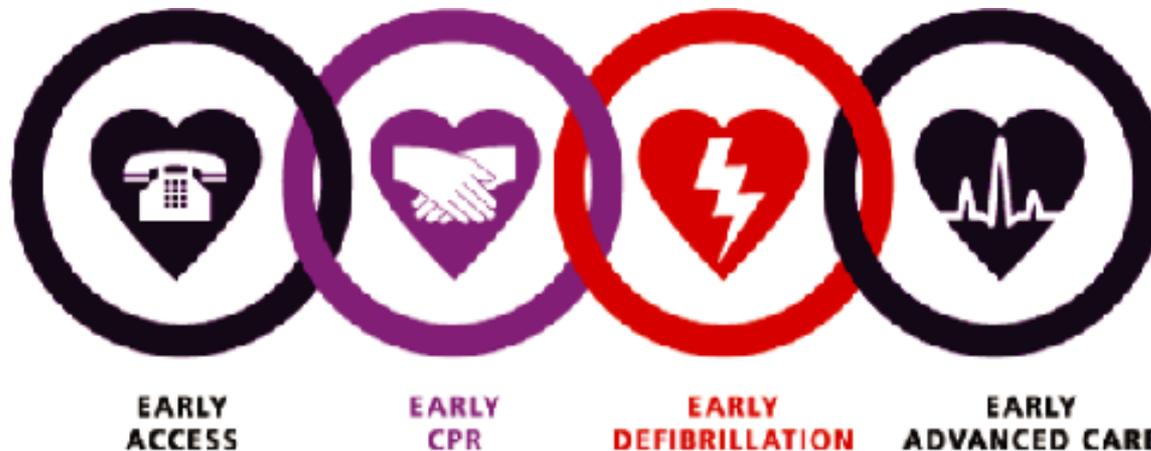
HeartStart OnSite Defibrillator

- HeartStart OnSite is designed to be:
 - Fast to learn and easy to use
 - On standby, alert and ready
 - Places the power to save a life in the hands of those first on the scene
- HeartStart OnSite automatically:
 - Prompts the user
 - Interprets heart rhythm
 - Advises “Shock” *only* if needed



“Chain of Survival”

- Rapid, coordinated response improves outcome



CPR Training

- HeartStart OnSite Defibrillator users should have training in adult cardiopulmonary resuscitation (CPR) and infant/child CPR if utilizing Infant/Child SMART Pads.
- CPR is a vital component of defibrillator use and should be learned through manikin practice.



Role of CPR

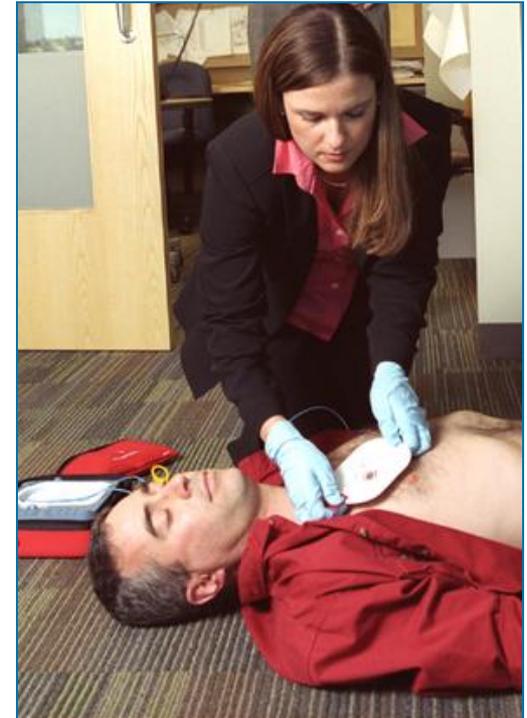


- Integral component of defibrillator use
- CPR circulates oxygen ...
 - Prolongs heart's electrical activity
 - Minimizes brain damage
- ... but defibrillation is the *definitive* treatment



Role of the Defibrillator Provider

- Recognize emergency and activate EMS response (Dial 911)
- Verify the victim is unresponsive and not breathing normally
- Get the HeartStart OnSite Defibrillator
- Pull the green handle and follow voice instructions
- Provide CPR as needed



HeartStart OnSite Defibrillator

OPERATION

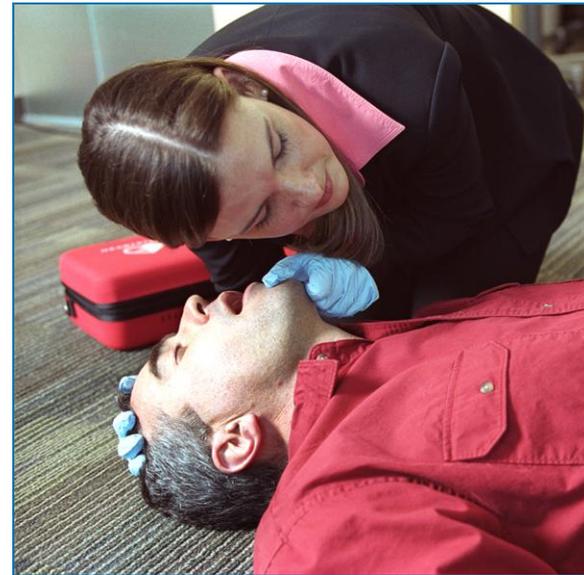


Verify SCA

- Assess the victim



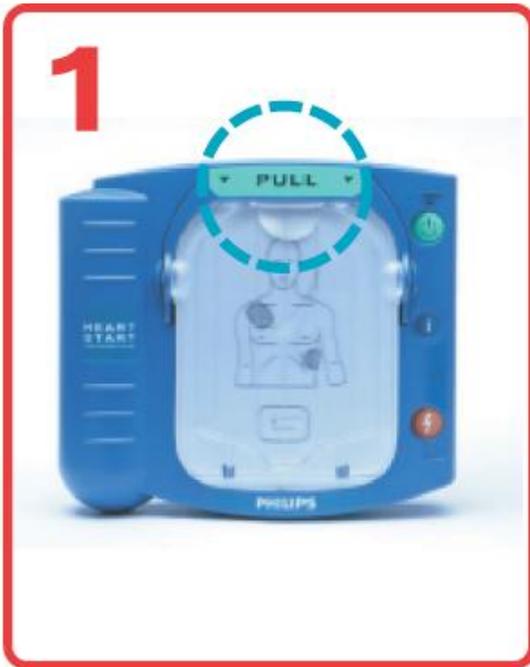
unresponsive



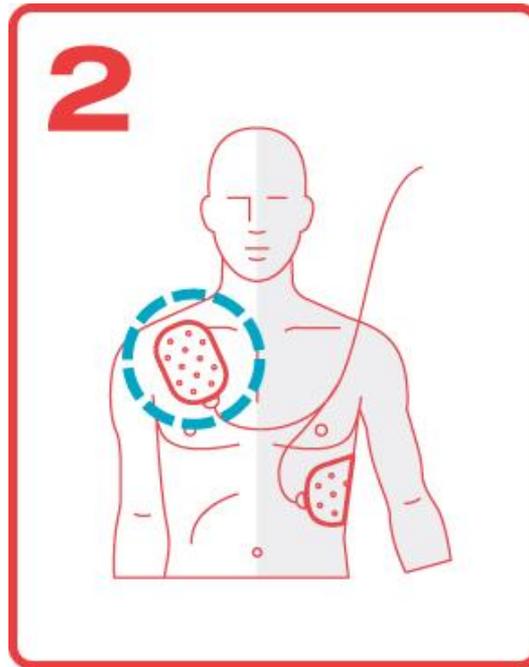
not breathing normally



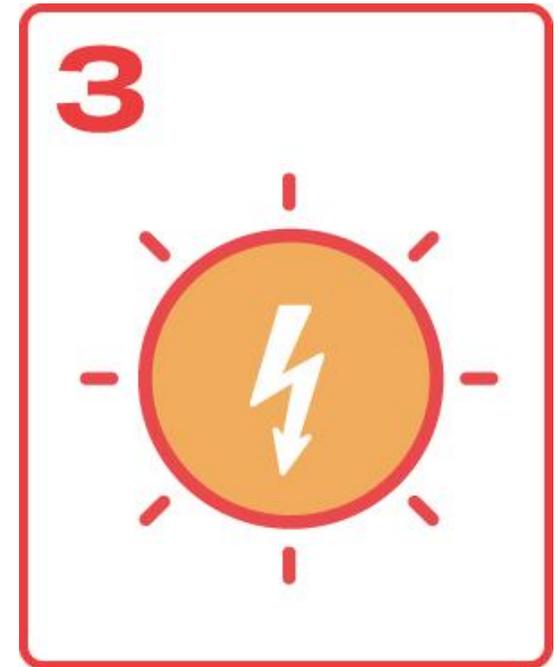
Using the HeartStart OnSite



PULL
green handle



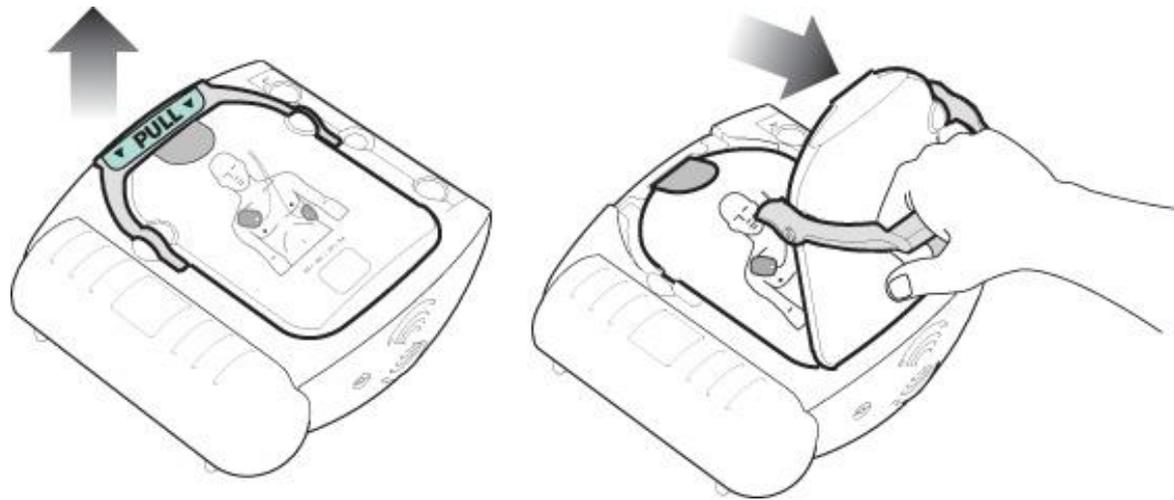
PLACE
pads on chest



PRESS
shock button



Pull the Green Handle

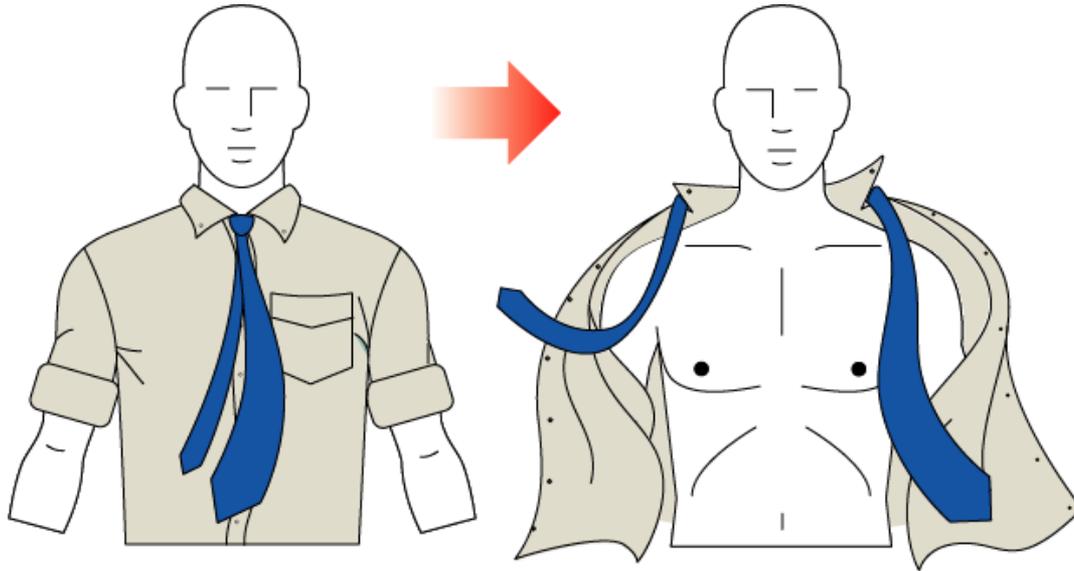


- Pull to activate the defibrillator
- Voice instructions begin
- Using handle is preferred;
On/Off button can also be used

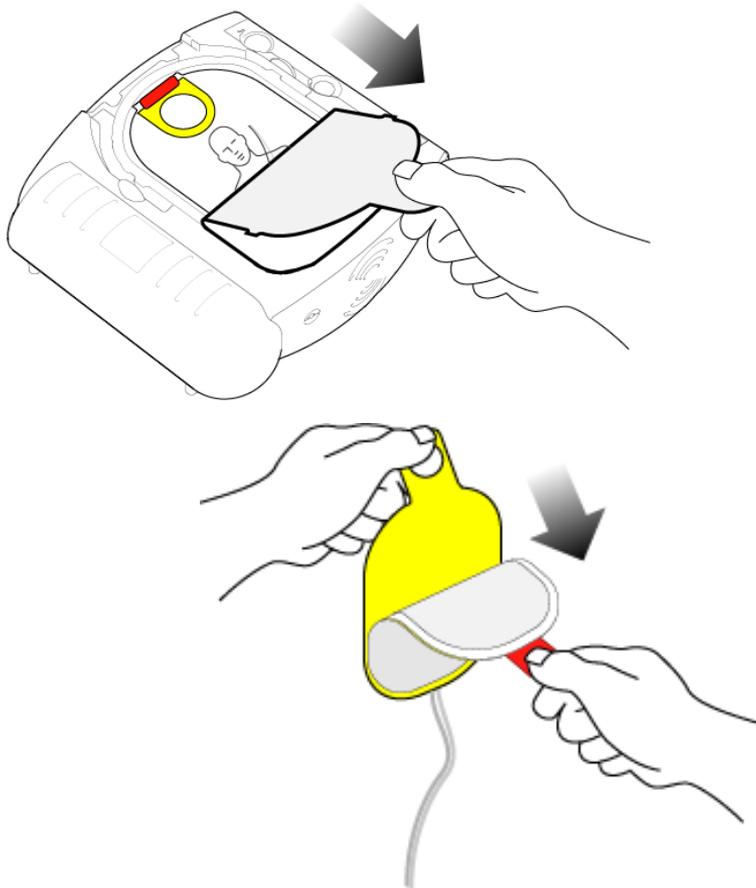


Place Pads

- Remove clothing from chest
- Dry the chest if wet; clip hair if excessive



Place Pads

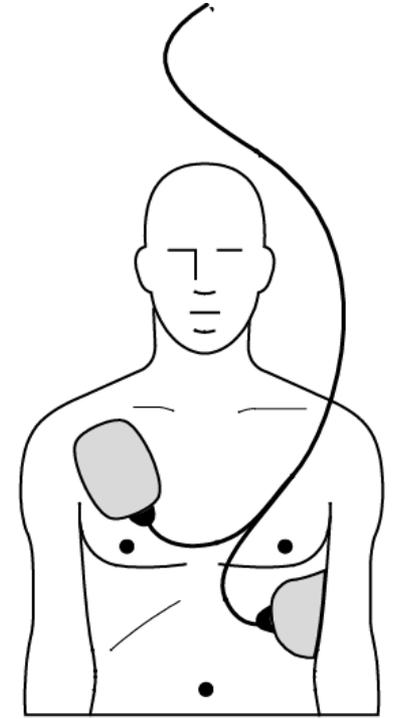
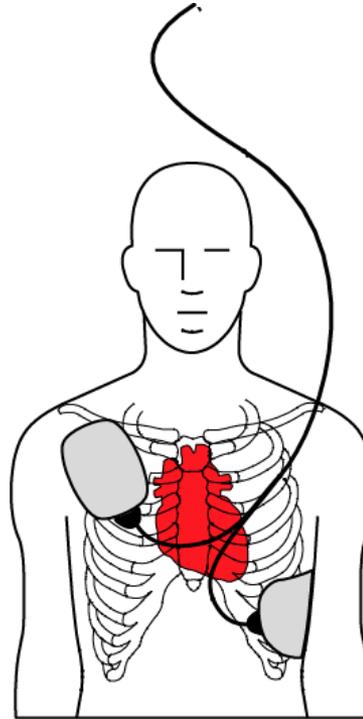


- Peel foil to reveal pads
- Lift out pads
- Peel one pad from yellow liner, and place as shown on icon
- Repeat with second pad
- Press pads firmly on chest



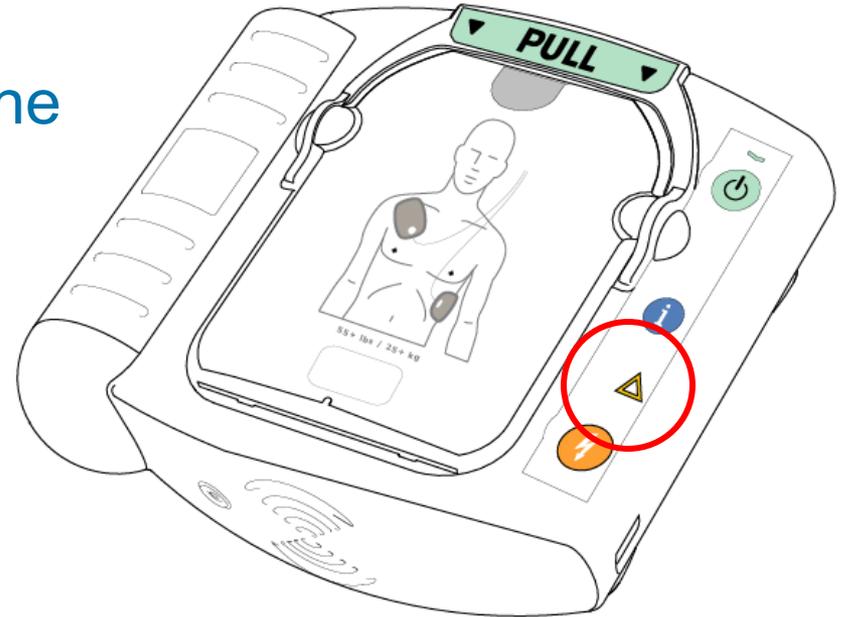
Pads Location

- Pad on victim's right
 - Below collar bone
 - Right of sternum
- Pad on victim's left
 - On rib cage
 - Below breast
 - Wrapped towards back



Rhythm Analysis

- Triangular Caution light  will flash during analysis
- Don't touch the victim while the defibrillator is analyzing the heart rhythm
- Caution light goes solid if a shock is advised
- Outcome of analysis
 - Shock advised
 - No shock advised



Press the Shock Button

- The defibrillator will advise a shock only if needed
- Visually and verbally clear the victim before pressing the shock button
- Press the flashing orange button when instructed to deliver a shock



No Shock Advised

- If no shock is needed, the defibrillator will tell you it is safe to touch the patient
- The triangular Caution light will turn off
- The OnSite will tell you to check the patient and perform CPR if needed



CPR Voice Coaching

- Press the flashing blue i-button to activate CPR coaching
- Provides instruction in basic CPR, including rate and depth of compressions
- Gives instructions for adult or pediatric CPR based on pads cartridge used



HeartStart OnSite Defibrillator

PEDIATRIC DEFIBRILLATION



Infant/Child SMART Pads Cartridge

- Infants and young children
 - Less than 55 lbs.
 - Less than 8 years old
- “Infant/Child” Pads announced verbally
- Pads placed differently: on the middle of the chest and back
- Use icons on pads for correct placement
- Single use, disposable



Indications for Use

Same as adult:

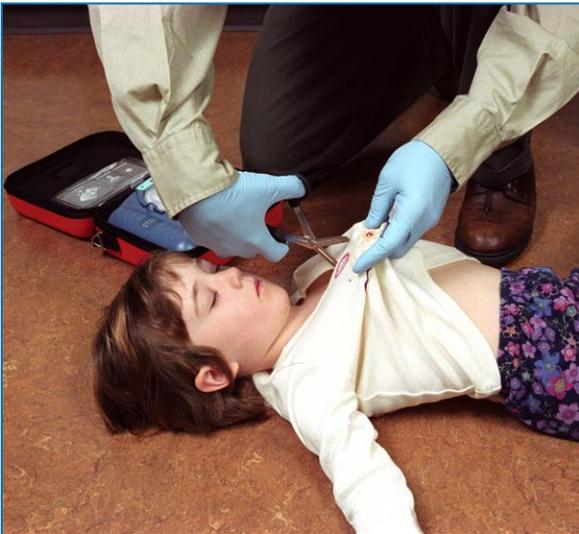
unresponsive



not breathing normally



Prepare Chest



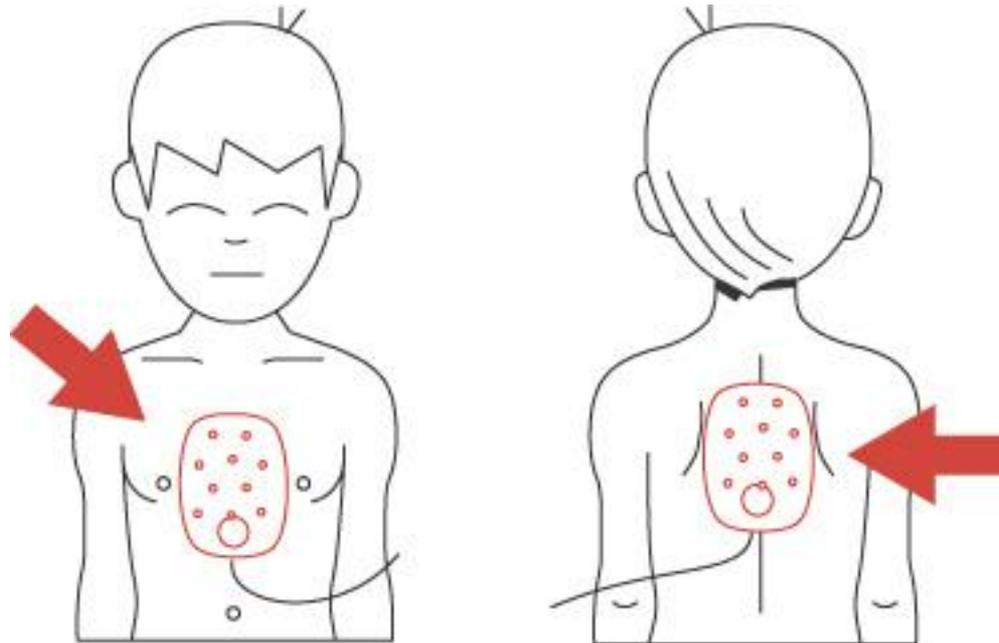
- Remove all clothing from patient's chest and back



- Clean/dry skin as necessary



Recommended Pad Placement: Anterior-Posterior (front-back)

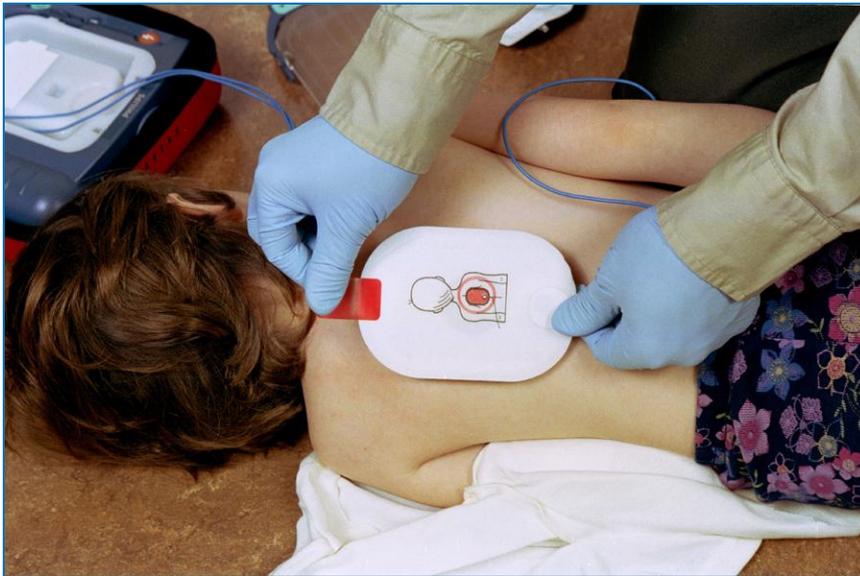


Recommended Pad Placement: Anterior (front)

- Place first pad over sternum between nipples



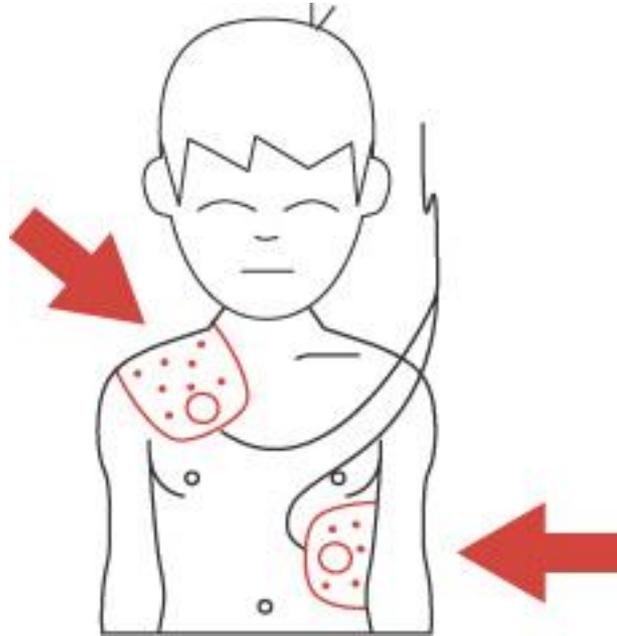
Recommended Pad Placement: Posterior (back)



- Place second pad between shoulder blades on back



Alternative Pad Placement: Anterior-Anterior (front-front)

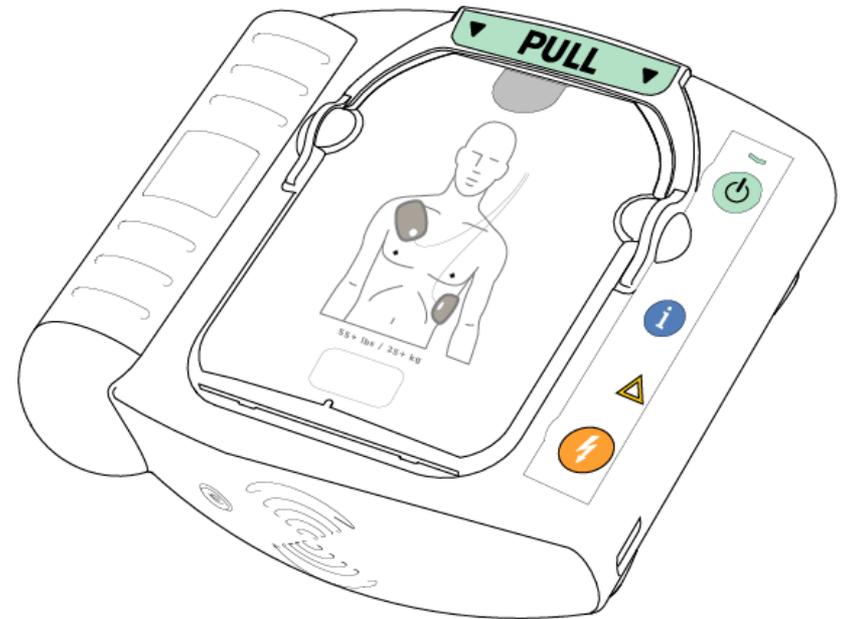


- For larger children
- Right pad may wrap over patient's shoulder
- Pads *must not* touch



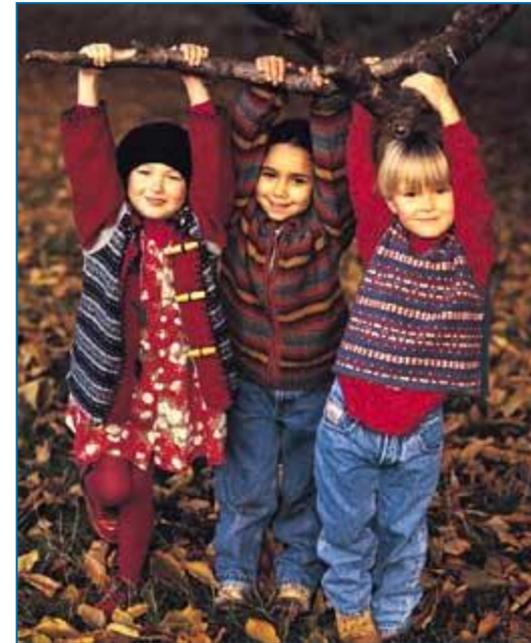
Rhythm Analysis

- As soon as the pads are in place, the OnSite begins to analyze the patient's heart rhythm
- Use of Infant/Child Pads does not change its basic operation, but the OnSite recognizes the Infant/Child pads and will provide pediatric CPR coaching if requested



IMPORTANT

- Sometimes it is difficult to determine a child's exact age or weight.
- If a child appears to be older than 8 years or larger than 55 pounds, use Adult SMART Pads.
- *Do not delay treatment to determine the child's exact age or weight.*



Essential Training

Philips Medical Systems recommends that all persons trained to use the OnSite Defibrillator on pediatric patients also be trained to provide pediatric CPR and other basic life support.



Swapping Pads Cartridges

- Pad cartridges are easily changed or replaced
- OnSite will deliver CPR coaching appropriate to pads cartridge installed
- Slide the latch at the top of the defibrillator to release the pads cartridge
- Insert new pads cartridge, bottom end first, and press down until it clicks into place



HeartStart OnSite Defibrillator

TROUBLESHOOTING



Troubleshooting

- During use, OnSite will give voice instructions
 - Pads contact: OnSite will tell you to press the pads firmly to the skin, or to make sure the pads have been removed from the liner, or that pads should not be touching the patient's clothing
 - Battery power low: OnSite will tell you to replace battery
 - Rhythm analysis difficulty: OnSite will tell you to stop all motion



Troubleshooting

- When not in use, OnSite will chirp, green Ready light will be off, and blue i-button will flash to alert you to any problem
 - Press flashing blue i-button for voice instructions



HeartStart OnSite Defibrillator

OTHER CONSIDERATIONS



Other Considerations

- Implanted pacemakers or defibrillators
- Wet surfaces
- Metal surfaces
- Medication patches
- Children
- Trauma and hypothermia



HeartStart OnSite Defibrillator

DATA COLLECTION AND MANAGEMENT



Event Data

- HeartStart OnSite records all event decisions and 15 minutes of victim's heart rhythm
- Data can be transferred via infrared port for review using HeartStart Event Review 3.0 data management software
- EMS may push the blue i-button for event review at the scene



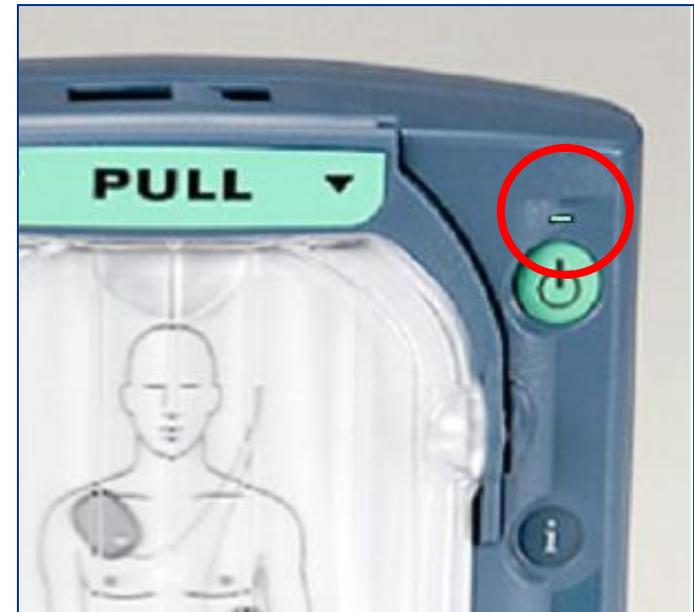
HeartStart OnSite Defibrillator

MAINTENANCE



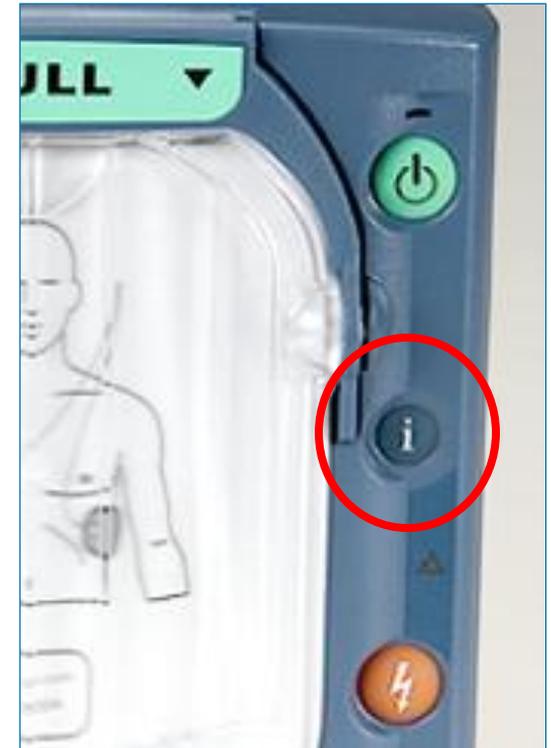
Green Ready Light

- Blinking green Ready light means latest self-test passed and unit is ready for use
- Solid green Ready light means device is in use
- Green Ready light off, with or without chirping and flashing blue i-button means unit needs attention



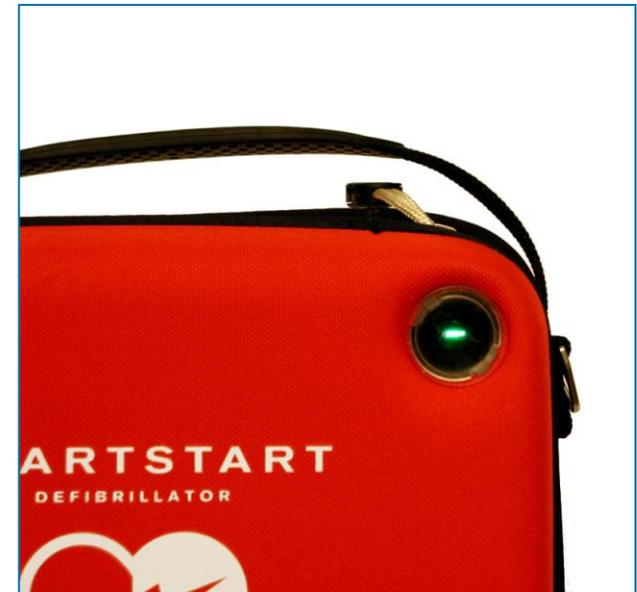
Blue Information Button

- Provides information about defibrillator's status
 - Confirms device ready for use
 - If not ready, gives troubleshooting information
- Gives troubleshooting information
- Provides CPR instructions
- Provides event information after an incident



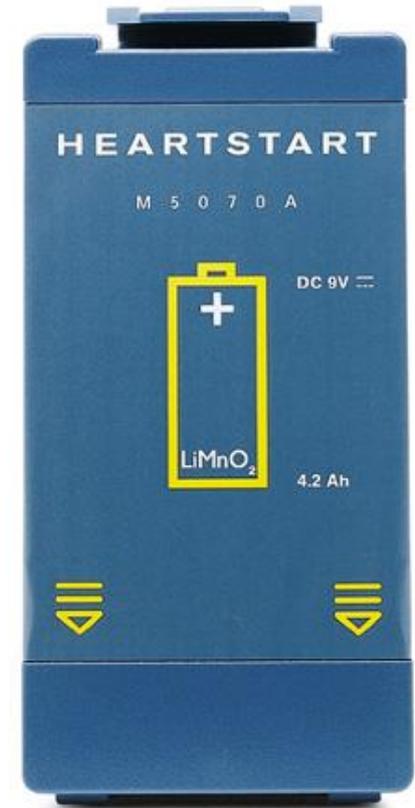
Comprehensive Self-Tests

- Regular self-tests
 - Tests done daily, monthly, weekly
 - Pads integrity test
- Battery insertion self-test
 - Done by inserting a battery
- Verbal update on current status
 - Done by pressing blue i-button



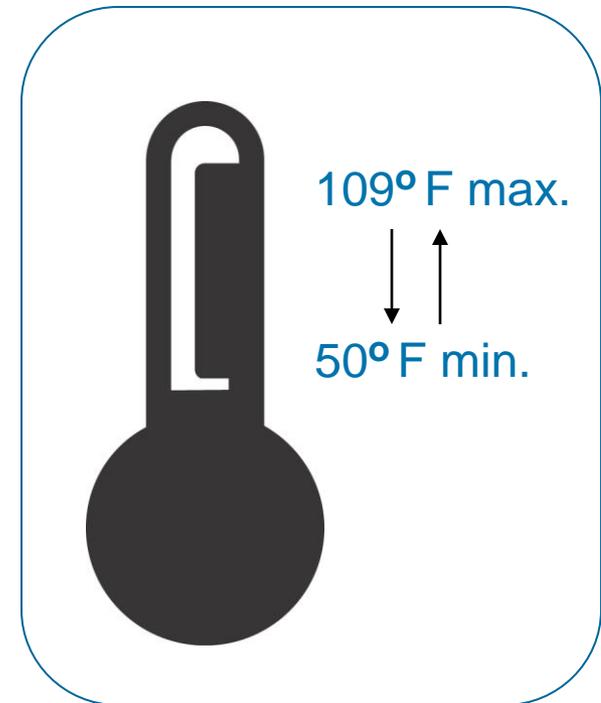
Battery

- Long Life
 - Four-year typical battery life installed
 - 90 shocks or 3 hours of operating time
 - 9 shocks and 15 minutes of operating at first low-battery indication
 - Five-year shelf life before installation
- Safe and easy to use
 - Just one simple motion to insert into device
 - Lithium manganese dioxide chemistry
 - Same chemistry as FR2+



Basic Care

- Storage Temperature
 - 50° to 109° F (10° to 43° C)
 - Do not keep the HeartStart in the trunk of a car for long periods if you live in a very hot or cold climate
- Cleaning
 - Soft cloth
 - Approved cleaning agents
 - See *Instructions for Use*



HeartStart OnSite Defibrillator

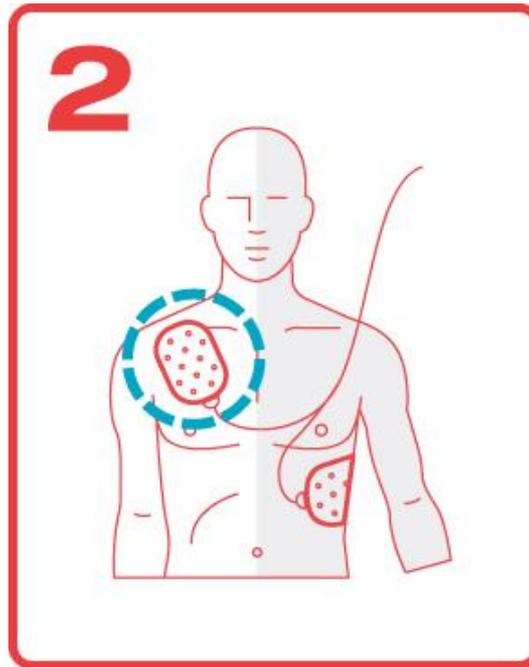
REVIEW



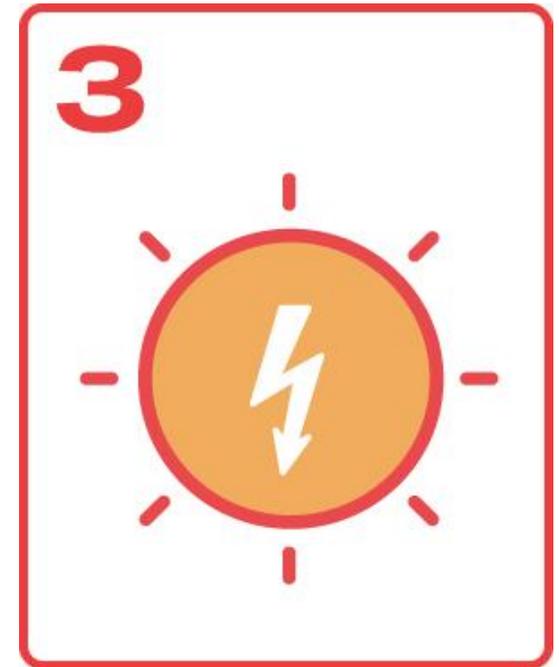
Using the HeartStart OnSite



PULL
green handle

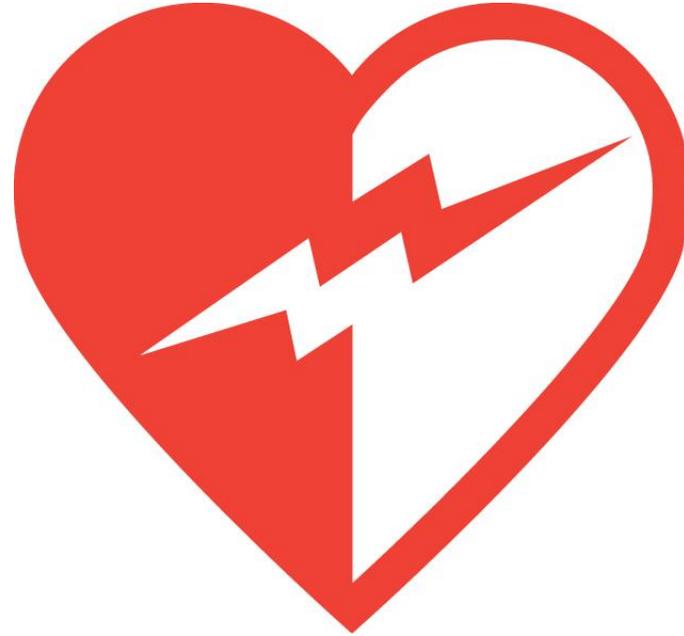


PLACE
pads on chest



PRESS
shock button





POWER TO SAVE A LIFE

Knowledge Review

1. The two signs of sudden cardiac arrest that indicate rescuers should use the OnSite are:
 - A. _____
 - B. _____

2. What precaution is required before putting pads on the patient:
 - A. Remove all clothing covering the chest, wipe off any water or moisture, and clip or shave hair (if excessive).
 - B. Measure the distance from the patient's left collarbone to his or her breastbone.
 - C. None of the above.

3. What should you do when a 'SHOCK NOT ADVISED" message is given?
 - A. Turn the HeartStart OnSite Defibrillator off.
 - B. Assess the patient and perform CPR if necessary.
 - C. Make sure that pads are adhering securely to the patient's chest.

4. What is a Battery Insertion Self-Test?
 - A. A comprehensive self-test that assesses HeartStart OnSite readiness for use.
 - B. A method for recharging the battery.
 - C. A method of determining the "Install Before" date of the battery.

5. Which Status Indicator shows that the HeartStart OnSite is ready to use?
 - A. The flashing blue i-button.
 - B. The blinking green Ready light.
 - C. The flashing orange Shock button.



Knowledge Review (continued)

6. You have delivered the first shock to your patient. How do you initiate analysis to see if a second shock is advised?
 - A. Press the On/Off button.
 - B. You don't do anything; the HeartStart OnSite automatically analyzes the heart rhythm.
 - C. Press the blue i-button.

7. When the green Ready light is not blinking, the HeartStart OnSite is not ready for use. What corrective action should you perform?
 - A. Send the Heart Start OnSite in for service.
 - B. Press the blue i-button.
 - C. Have your biomedical engineer do diagnostic testing.

8. What does a 'SHOCK NOT ADVISED' message mean?
 - A. The heart rhythm is treatable with defibrillation.
 - B. Someone is touching the patient.
 - C. The patient has a pacemaker.
 - D. The heart rhythm is not presently treatable with defibrillation.

9. What should you do if a friend or family member is touching the patient just as a "DELIVER SHOCK NOW" message is given?
 - A. Go ahead and deliver the shock.
 - B. Have someone move the friend or family member away, then press the Shock button.
 - C. Turn the HeartStart OnSite off.



Knowledge Review (Continued)

10. Which of the following are part of the HeartStart OnSite's periodic maintenance?
 - A. Ensuring that all supplies, accessories and spaces are present and in operating condition.
 - B. Checking the HeartStart OnSite's green Ready light.
 - C. Checking the outside of the HeartStart OnSite for cracks or other signs of damage.
 - D. All of the above.



Knowledge Review Answer Key

1. **A.** Unresponsive **B.** Not breathing normally

2. **A.** Remove all clothing covering the chest, wipe off any water or moisture, and clip or shave hair (if excessive)

3. **B.** Assess the patient and perform CPR if necessary.

4. **A.** A Comprehensive self-test that assesses HeartStart OnSite readiness for use.

5. **A.** The blinking green Ready light.

6. **B.** You don't do anything; the HeartStart OnSite automatically analyzes the heart rhythm.

7. **B.** Perform a battery insert self-test.

8. **D.** The heart rhythm is not presently treatable with defibrillation.

9. **B.** Have someone move the friend or family member away, then press the shock button.

10. **D.** All of the above.

