Cardiopulmonary Resuscitation (CPR)

What is it?

> A lifesaving technique that's useful in many emergencies, such as a heart attack or near drowning, in which someone's breathing or heartbeat has stopped. The American Heart Association recommends starting CPR with hard and fast chest compressions. This hands-only CPR recommendation applies to both untrained bystanders and first responders.

Plan of Action:

If you're afraid to do CPR or unsure how to perform CPR correctly, know that it's always better to try than to do nothing at all. The difference between doing something and doing nothing could be someone's life.

Here's advice from the American Heart Association:

- **Untrained.** If you're not trained in CPR or worried about giving rescue breaths, then provide hands-only CPR. That means uninterrupted chest compressions of 100 to 120 a minute until paramedics arrive (described in more detail below). You don't need to try rescue breathing.

- **Trained and ready to go.** If you're well-trained and confident in your ability, check to see if there is a pulse and breathing. If

there is no pulse or breathing within 10 seconds, begin chest compressions. Start CPR with 30 chest compressions before giving two rescue breaths.

- **Trained but rusty.** If you've previously received CPR training but you're not confident in your abilities, then just do chest compressions at a rate of 100 to 120 a minute (details described below).

The above advice applies to situations in which adults, children and infants need CPR, but not newborns (infants up to 4 weeks old).

CPR can keep oxygen-rich blood flowing to the brain and other organs until emergency medical treatment can restore a typical heart rhythm. When the heart stops, the body no longer gets oxygen-rich blood. The lack of oxygen-rich blood can cause brain damage in only a few minutes.

If you are untrained and have immediate access to a phone, call 911 or your local emergency number before beginning CPR. The dispatcher can instruct you in the proper procedures until help arrives. To learn CPR properly, take an accredited first-aid training course, including CPR and how to use an automated external defibrillator (AED).

Before you begin, check:

- Is the environment safe for the person?
- Is the person conscious or unconscious?
- If the person appears unconscious, tap or shake his or her shoulder and ask loudly, "Are you OK?"

- If the person doesn't respond and you're with another person who can help, have one person call 911 or the local emergency number and get the AED, if one is available. Have the other person begin CPR.

- If you are alone and have immediate access to a telephone, call 911 or your local emergency number before beginning CPR. Get the AED if one is available.

- As soon as an AED is available, deliver one shock if instructed by the device, then begin CPR.

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The American Heart Association uses the letters C-A-B to help people remember the order to perform the steps of CPR.

- **C:** compressions

- **A:** airway

- **B:** breathing

Chest compressions

Open the airway

Rescue Breathing

Compressions: Restore blood flow

Compressions means you'll use your hands to push down hard and fast in a specific way on the person's chest. Compressions are the most important step in CPR. Follow these steps for performing CPR compressions:

1. Put the person on his or her back on a firm surface.
2. Kneel next to the person's neck and shoulders.
3. Place the lower palm (heel) of your hand over the center of the person's chest, between the nipples.
4. Place your other hand on top of the first hand. Keep your elbows straight and position your shoulders directly above your hands.
5. Push straight down on (compress) the chest at least 2 inches (5 centimeters) but no more than 2.4 inches (6 centimeters). Use your entire body weight (not just your arms) when doing compressions.
6. Push hard at a rate of 100 to 120 compressions a minute. The American Heart Association suggests performing compressions to the beat of the song "Stayin' Alive." Allow the chest to spring back (recoil) after each push.
7. If you haven't been trained in CPR, continue chest compressions until there are signs of movement or until emergency medical personnel take over. If you have been trained in CPR, go on to opening the airway and rescue breathing.

Airway: Open the airway

If you're trained in CPR and you've performed 30 chest compressions, open the person's airway using the head-tilt, chin-lift maneuver. Put your palm on the person's forehead and gently tilt the head back. Then with the other hand, gently lift the chin forward to open the airway.

Breathing: Breathe for the person

Rescue breathing can be mouth-to-mouth breathing or mouth-to-nose breathing if the mouth is seriously injured or can't be opened. Current recommendations suggest performing rescue breathing using a bag-mask device with a high-efficiency particulate air (HEPA) filter.

1. After opening the airway (using the head-tilt, chin-lift maneuver), pinch the nostrils shut for mouth-to-mouth breathing and cover the person's mouth with yours, making a seal.
2. Prepare to give two rescue breaths. Give the first rescue breath — lasting one second — and watch to see if the chest rises.
3. If the chest rises, give a second breath.
4. If the chest doesn't rise, repeat the head-tilt, chin-lift maneuver and then give a second breath. Thirty chest compressions followed by two rescue breaths is considered one cycle.

Be careful not to provide too many breaths or to breathe with too much force.

5. Resume chest compressions to restore blood flow.
6. As soon as an automated external defibrillator (AED) is available, apply it and follow the prompts. Give one shock, then resume chest compressions for two more minutes before giving a second shock. If you're not trained to use an AED, a 911 operator or another emergency medical operator may be able to give you instructions. If an AED isn't available, go to step 5 below.
7. Continue CPR until there are signs of movement or emergency medical personnel take over.

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