

LEARN CPR

you can do it!

Have a question about CPR?
[Ask The Doctor](#)
Click Here!

A big thank you to Albert Hsiao for creating an outstanding translation of this site in Chinese!



Learn CPR is a free public service supported by the [University of Washington School of Medicine](#). We hope to provide you with all the information you need to learn the basics of [cardiopulmonary resuscitation-CPR](#).

Please select from the links below for more information about CPR.

CPR INFO
Illustrated guides detailing CPR

[CPR FOR ADULTS](#) - CPR in three simple steps
[CPR FOR CHILDREN](#) - CPR in six steps for small children
[CPR FOR INFANTS](#) - CPR for infants in six simple steps
[CPR POCKET GUIDE](#) - CPR instructions you can print and take with you

FUN & FACTS
Games, links and our FAQ

[FAQ](#) - Have a question about CPR? Check here first
[CPR FACTS](#) - Facts and general information about CPR
[CPR LINKS](#) - Links to other great CPR resources
[CPR VIDEO](#) - Video demonstration of CPR
[CPR QUIZ](#) - Think you're an expert? Take our quiz and test yourself
[CPR HISTORY](#) - Interested in learning about the history of CPR?

CHOKING INFO
First aid for choking victims

[CONSCIOUS ADULTS AND CHILDREN](#) - First aid for a choking conscious adult and child
[CONSCIOUS INFANTS](#) - First aid for a choking infant

This web site is to be used as a free guide and an informational resource, but it cannot replace real CPR or first aid training. Please try to attend a CPR training course in your community and help save a life.

*The information in this web site is based, in part, on guidelines contained in American Heart Association, Guidelines 2000 for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Supplement to [Circulation](#).

Last updated:
undefined

Questions or Comments?

Email [Mickey Eisenberg M.D.](mailto:Mickey Eisenberg M.D. at learncpr@u.washington.edu) at learncpr@u.washington.edu

LEARN CPR

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ASK THE DOCTOR

The following are questions about CPR sent in from visitors just like yourself.
If you have a question that is not listed here, please feel free to

Ask The Doctor Here

learncpr@u.washington.edu

- **During the CPR, what is the percentage of heart efficiency as a pump?**
- **I heard that no matter if a person is unconscious that you should perform CPR. Is this true? When should you not perform CPR?**
- **What is the ratio of 2-person CPR?**
- **How do I perform CPR on a person who has a trachea? Do I have to cover their mouth or just breath directly into the stoma?**
- **When you are giving mouth to mouth are you actually breathing oxygen into the victim's lungs or are you trying to stimulate breathing by breathing carbon dioxide into their lungs?**
- **When performing CPR, how do I know if its working?**
- **If a person has had bypass surgery, and a situation occurs that they require CPR, are there any special considerations that need to be made?**
- **What if the victim has a pulse, but is not breathing?**
- **Is it easier to break an overweight persons ribs or a skinner persons ribs when performing cpr?**
- **Can I kill someone if I do CPR incorrectly?**
- **What if I crack a rib when I do CPR?**
- **Will CPR always save a life?**
- **What is the recovery position?**
- **What should you do for a person who has been accidentally shocked by electricity?**
- **I want to know what the current teachings are on helping a choking victim. I have heard conflicting information on back blows for an adult. Is it still recommended, or discouraged?**
- **What if the victim vomits?**
- **If someone has an asthma attack and collapses, what should a person do? Will CPR help?**
- **What are some of the causes of CPR being used for in infants and children?**
- **In regards to administering the Heimlich Maneuver to a victim while they are lying down. Should the head be facing up, as when administering CPR (in order to**

clear the airway), or to the side?

- What if the victim is wearing dentures?
- Can I get AIDS from doing CPR?
- Can I get sued if I perform CPR?
- Does the Good Samaritan law protect me?
- What are agonal respirations?
- In cardiopulmonary arrest occurring outside of a hospital what are statistics regarding successful uncomplicated recovery? Also in this situation how many patients are successfully resuscitated but are then in a vegetative state?
- Can CPR be performed on dogs?
- What if I'm not sure whether I feel a pulse in the neck of the victim?
- If a person moves when I do CPR should I stop?
- When should I stop CPR?
- What chance does the person (on whom I perform CPR) have of surviving?
- What should I do if I'm alone and I do not know CPR?
- If a pregnant woman chokes should I do the Heimlich Maneuver or can it harm the baby?
- What is the reason calling 911 occurs after 1 minute of CPR for infants and children whereas for adults, the call is made immediately?
- If successful CPR is dependent on a defibrillator arriving, are there any portable defibrillators available?
- In a trekking guidebook I own it states that if there has been a trauma fall and the victim has no pulse, then CPR is futile, is this true?
- Is it true that if a victim "regains" a pulse after doing CPR he/she has probably had a pulse all along?

During the CPR, what is the percentage of heart efficiency as a pump?

The best estimate of the heart efficiency during CPR is 10-30% of normal.

I heard that no matter if a person is unconscious that you should perform CPR. Is this true? When should you not perform CPR?

It is true that sometimes a person may be unconscious and their heart is still beating and they may still be breathing. Such a situation, for example, may occur in someone who has just had a grand mal seizure. If you tried to do CPR on such a person he or she would probably groan and even try to push you away. This would be your clue that they did not need CPR. CPR is intended only for someone whose heart and breathing has stopped. If the victim moves or pushes you away, you should stop CPR.

What is the ratio of 2-person CPR?

The ratio of chest compressions to mouth-to-mouth is the same for 2 person CPR as for 1 person CPR, namely 15:2.

How do I perform CPR on a person who has a trachea? Do I have to cover their mouth or just breath directly into the stoma?

There are two types of stomas, one which communicates to the nose and mouth and one which doesn't. Since you won't know which type you are dealing with, it is best to pinch the victim's nose closed, keep the victim's mouth closed and breathe directly into the stoma opening.

When you are giving mouth to mouth are you actually breathing oxygen into the victim's lungs or are you trying to stimulate breathing by breathing carbon dioxide into their lungs?

You are breathing oxygen into the lungs. Your exhaled breath contains 16% oxygen which is close to the 20% contained in the air you breathe in.

When performing CPR, how do I know if its working?

The only way to tell is to see if the chest rises with ventilation and if the chest compression results in a pulse. Someone has to feel the femoral artery while the other compresses the chest in order to see if the chest compression results in a pulse. If you are unsure whether you are doing CPR correctly during an emergency situation don't stop. Its better to perform CPR imperfectly than not at all.

If a person has had bypass surgery, and a situation occurs that they require CPR, are there any special considerations that need to be made?

No, CPR should be done in the regular fashion.

What if the victim has a pulse, but is not breathing?

Then continue with mouth to mouth respiration and continue to check the pulse every minute or so.

Is it easier to break an overweight persons ribs or a skinner persons ribs when performing cpr?

The weight of the victim has little to do with the chances of breaking a rib, instead the age of the victim seems to determine the fragility of the bones.

Can I kill someone if I do CPR incorrectly?

No. Remember the person in cardiac arrest is already clinically dead. CPR can only help. Even if it's not done "letter perfect" it will probably provide some benefit to the victim.

What if I crack a rib when I do CPR?

Frequently ribs are broken with the pressure CPR places on the sternum. Some studies quote up to 30% of cardiac arrest victims have broken ribs as a result of CPR. This happens more frequently the older the victim since the cartilage is less compliant and the bones more easily crackable. But remember, it's better to have a cracked rib than be dead.

Will CPR always save a life?

No, in fact, most instances of CPR for cardiac arrest are unsuccessful.

What is the recovery position?

Assuming the person has a pulse and is breathing, the recovery position means placing the person on his or her side. This allows for the person not to choke on saliva and helps keep the airway open.

What should you do for a person who has been accidentally shocked by electricity?

A person with electric shock (assuming the shock doesn't severely damage the body) often dies from the heart going into ventricular fibrillation. Such a person needs CPR and it should be performed in the regular fashion. If CPR begins quickly and if a defibrillator arrives quickly this person has an excellent chance of survival.

I want to know what the current teachings are on helping a choking victim. I have heard conflicting information on back blows for an adult. Is it still recommended, or discouraged?

The first action to take is the Heimlich maneuver. This should be done in adults instead of back blows since back blows may lodge the foreign body further down the windpipe. Back blows are the first thing to do only in infants who are conscious. In doing the back blows the infant should be in a face down position, ie the head is lower than the body.

What if the victim vomits?

Vomit is obviously unpleasant. If it happens (and it may in one out of 20 cardiac arrests) merely turn the head to the side and wipe out the vomit as best you can with your finger.

If someone has an asthma attack and collapses, what should a person do? Will CPR

help?

If someone collapses from an asthma attack, it is because he or she is not getting enough oxygen. This is because all the lung's small airways have narrowed and are not allowing enough air to reach the air sacs. Mouth to mouth respiration may help a little. The real need is to get this person to an emergency department so that the patient can receive medications and emergency endotracheal intubation (a tube in the main airway).

What are some of the causes of CPR being used for in infants and children?

Usually CPR in infants and children is performed for respiratory arrest such as severe asthma. Ventricular fibrillation is rare in children but very common in older adults.

In regards to administering the Heimlich Maneuver to a victim while they are lying down. Should the head be facing up, as when administering CPR (in order to clear the airway), or to the side?

The victims head should be facing up with the victim on his/her back. Since the airway is blocked you shouldn't spend much time positioning the head. The Heimlich maneuver is the most important thing to do and should unblock the airway

What if the victim is wearing dentures?

Keep them in place if possible as they will allow for a better seal of your mouth on his/hers.

Can I get AIDS from doing CPR?

No. There has never been a documented case of AIDS transmitted by CPR.

Can I get sued if I perform CPR?

You theoretically could but there has never been a successful suit brought against someone performing CPR.

Does the Good Samaritan law protect me?

Yes, if you give assistance, including CPR, for a medical emergency Good Samaritan laws cover you.

What are agonal respirations?

When the heart stops beating in cardiac arrest the breathing center in the brain is still alive for a couple of minutes and will cause the victim to take a few abnormal breaths. These abnormal breaths associated in dying are called agonal respirations. They may appear like snoring, gasping, or snorting and will disappear in a couple of minutes. Don't let abnormal breathing stop you from starting CPR.

In cardiopulmonary arrest occurring outside of a hospital what are statistics regarding successful uncomplicated recovery? Also in this situation how many patients are successfully resuscitated but are then in a vegetative state?

The statistics vary from locale to locale. In New York City or Chicago the survival rate (discharge alive from the hospital) is 2 or 3%. In Seattle the survival rate is 20% overall and 35% for ventricular fibrillation. Less than 5% of those discharged have severe neurologic damage. Over 60% return to their prior level of mental status. Persistent vegetative states (PVS)s are very unusual.

Can CPR be performed on dogs?

CPR can be performed on dogs. To give respiration you will need to keep the dogs mouth and lips closed and breathe through the nose. Cover the dogs nose completely with your mouth to prevent air from leaking out. You should see the chest rise if you are doing it properly. To give chest compressions you might need to press side to side instead of straight down on the chest. This is especially true for funnel chested dogs. The rates of respiration to chest compression are the same as for humans. In general, most instances of CPR for dogs will involve accidents of smoke inhalation or drowning. Respirations may indeed prove life saving especially if the dog has a heart beat. Once the dog's heart stops beating it is unlikely that CPR will be of benefit. By the way, the name ginky in my address is for my 13 year-old golden retriever.

What if I'm not sure whether I feel a pulse in the neck of the victim?

Go on to the next step of CPR and give chest compressions.

If a person moves when I do CPR should I stop?

Yes, if a person moves his arms or legs they probably don't need CPR.

When should I stop CPR?

When help arrives to take over, or the victim starts to move.

What chance does the person (on whom I perform CPR) have of surviving?

If you do CPR on a person whose heart has stopped beating there is a 30% chance the person will live if a defibrillator can arrive within several minutes to shock the heart.

What should I do if I'm alone and I do not know CPR?

If you are alone and don't know how to do CPR call 911 and ask the emergency dispatcher to give you instructions over the phone.

If a pregnant women chokes should I do the Heimlich Maneuver or can it harm the

baby?

You should do the chest thrust in a very pregnant woman. This is like the Heimlich except you grab around the middle chest instead of the upper abdomen. [Click here for more info.](#)

What is the reason calling 911 occurs after 1 minute of CPR for infants and children whereas for adults, the call is made immediately?

It is because airway problems are the main cause of cardiac arrest in infants and trying to correct that problem takes precedent over calling 911.

If successful CPR is dependent on a defibrillator arriving, are there any portable defibrillators available?

Portable defibrillators which operate automatically (they are called automatic external defibrillators - AEDs) are available but they are expensive (around \$3000) and require a doctor's prescription. The training is very simple and takes less than an hour. You should talk to your doctor as to whether one of these might be indicated in your situation. Probably in several years the cost will come down to about \$1000 and one day they may be sold over the counter.

In a trekking guidebook I own it states that if there has been a trauma fall and the victim has no pulse, then CPR is futile, is this true?

Doing CPR in the wilderness is futile. I would, however, make an attempt to open the airway and perhaps give several ventilations. You may be dealing with respiratory arrest and a little mouth to mouth could be lifesaving.

Is it true that if a victim "regains" a pulse after doing CPR he/she has probably had a pulse all along?

You are partially correct. The most common cause of cardiac arrest is VF and this cannot be converted with CPR alone. Electricity is required. However there are some instances when the heart is going very slowly and CPR can oxygenate the system enough to get the heart going again. Also there are instances when the person is really in respiratory arrest and the heartbeat is too faint to feel. In this situation CPR may be enough to get the heart beating stronger.

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DEFINE: CPR

Cardiopulmonary Resuscitation (CPR) consists of mouth-to-mouth respiration and chest compression. CPR allows oxygenated blood to circulate to vital organs such as the brain and heart. CPR can keep a person alive until more advanced procedures (such as defibrillation - an electric shock to the chest) can treat the cardiac arrest. CPR started by a bystander doubles the likelihood of survival for victims of cardiac arrest.

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Important Notice:

You may sell or give away this guide as long as you do not alter it's content in any way. It may not be distributed as part of a collection, but must be distributed by itself.

For more useful guides and advice, click these links below.

Note: You must be connected to the internet to access them.

[Health](#)

[Alternate Health](#)

[Cancer Prevention Nutrition](#)

[Physician's Drug-Free Weight Loss](#)

[Reduce Stress](#)

[Weight Loss Explained](#)

[Dept. of Defense Anthrax Guide](#)

[Spiritual Help](#)

If you've found this information useful, pass it along to a friend. I've made it easy for you to do so. Just click this link below to send it to your friend.

[E-mail this Guide To a Friend.](#)

Sincerely,

Haley Abrams.

Mailto: haley@asherhealth.com

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CPR IN THREE SIMPLE STEPS

(Please try to attend a [CPR training course](#))

1. CALL

Check the victim for **unresponsiveness**. If there is no response, Call 911 and return to the victim. In most locations the emergency dispatcher can assist you with CPR instructions.



2. BLOW

Tilt the head back and listen for **breathing**. If not breathing normally, pinch nose and cover the mouth with yours and blow until you see the chest rise. Give 2 breaths. Each breath should take 2 seconds.



3. PUMP

If the victim is still not breathing normally, coughing or moving, begin chest compressions. **Push** down on the chest 1 1/2 to 2 inches 15 times right between the nipples. Pump at the rate of 100/minute, faster than once per second.





CONTINUE WITH 2 BREATHS AND 15 PUMPS UNTIL HELP ARRIVES

NOTE: This ratio is the same for one-person & two-person CPR. In two-person CPR the person pumping the chest stops while the other gives mouth-to-mouth breathing.

What complications can occur?

What about checking for a pulse?

DO YOU WANT TO TAKE THESE INSTRUCTIONS WITH YOU?

[CLICK HERE FOR A PRINTABLE CPR POCKET GUIDE](#)

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CPR for Children (Ages 1-8)

CPR for children is similar to performing Quick CPR for adults. There are, however, 4 differences.

- 1) If you are alone with the child give one minute of CPR before calling 911
- 2) Use the heel of one hand for chest compressions
- 3) Press the sternum down 1 to 1.5 inches
- 4) Give 1 full breath followed by 5 chest compressions

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CPR for Infants (Age <1)

Shout and Tap

Shout and gently tap the child on the shoulder. If there is no response, position the infant on his or her back



Open The Airway

Open the airway using a head tilt lifting of chin. Do not tilt the head too far back.

Give 2 Breaths

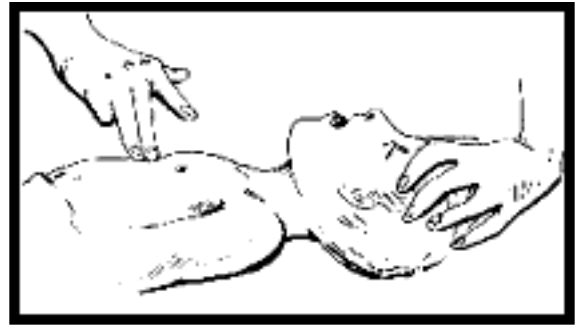
If the baby is NOT breathing give 2 small gentle breaths. Cover the baby's mouth and nose with your mouth. Each breath should be 1.5 to 2 seconds long. You should see the baby's chest rise with each breath.



Give 5 Compressions

Give five gentle chest compressions at the rate of 100 per minute.

Position your 3rd and 4th fingers in the center of the chest half an inch below the nipples. Press down only 1/2 to 1 inches.



Repeat

Repeat with 1 breath and 5 compressions. After one minute of repeated cycles call 911 and continue giving breaths and compressions.

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CALL



CALL 911

BLOW



**TILT HEAD,
LIFT CHIN,
CHECK
BREATHING**



**GIVE TWO
BREATHS**

PUMP



**POSITION
HANDS IN THE
CENTER OF
THE CHEST**



**FIRMLY
PUSH DOWN
TWO INCHES
ON THE CHEST
15 TIMES**

**CONTINUE WITH TWO BREATHS
AND 15 PUMPS UNTIL HELP ARRIVES**

Please print this guide, cut it out, pin it to your wall, Xerox it for a friend or place a copy in your purse or wallet as a reminder of the basic steps of CPR!

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Facts about CPR

Sudden cardiac arrest is the leading cause of death in adults. Most arrests occur in persons with underlying heart disease.

CPR doubles a person's chance of survival from sudden cardiac arrest.

75% of all cardiac arrests happen in people's homes.

The typical victim of cardiac arrest is a man in his early 60's and a woman in her late 60's.

Cardiac arrest occurs twice as frequently in men compared to women.

CPR was invented in 1960

There has never been a case of HIV transmitted by mouth-to-mouth CPR.

In sudden cardiac arrest the heart goes from a normal heartbeat to a quivering rhythm called ventricular fibrillation (VF). This happens in approximately 2/3rds of all cardiac arrests. VF is fatal unless an electric shock, called defibrillation, can be given. CPR does not stop VF but CPR extends the window of time in which defibrillation can be effective.

CPR provides a trickle of oxygenated blood to the brain and heart and keeps these organs alive until defibrillation can shock the heart into a normal rhythm.

If CPR is started within 4 minutes of collapse and defibrillation provided within 10 minutes a person has a 40% chance of survival.

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Links To Related Information

 [Less Stress](#) - Very Cool CPR site. Great information and an online CPR simulator!

 [IAC-CPR](#) - Learn about a potentially beneficial adjunct to CPR.

 [American Red Cross](#) - Find a CPR training course near you.

 [American Heart Association](#) - A wealth of info about early cardiac care.

 [American Safety and Health Institute](#) - A wealth of info about heart disease and strokes.

 [Heart Disease](#) - care and prevention.

 [30 second CPR guide](#)

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Video Demonstration

The CPR Video is available in Video for Windows (.avi) format.

You may choose either of the following versions for download

[2.4MB \(Larger Version, takes longer to download\)](#)

[630KB \(Smaller Version, downloads quickly\)](#)

Thanks to KING 5 TV, (Seattle, Washington) for this video demonstration.

In order to view these videos you must have Windows Media Player installed on your computer.



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10 CPR KNOWLEDGE QUESTIONS

- 1. The proper way to determine unresponsiveness is?**
- 2. The preferred way to check for breathing is:**
- 3. What is the best position for the victim to be in when you are doing CPR?**
- 4. Where do most out of hospital cardiac arrests occur?**
- 5. What is the best way to open to airway prior to giving mouth to mouth ventilations?**
- 6. What should you do if the victim has dentures?**
- 7. After dialing 911 to report a cardiac arrest, what should you do?**
- 8. What is the recovery position?**
- 9. What is the ratio of chest compressions to ventilation in one person adult CPR?**
- 10. What is the ratio of chest compressions to ventilation in child and infant CPR?**

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History Of CPR

Modern CPR developed in the late 1950s and early 1960s. The discoverers of mouth-to-mouth ventilation were Drs. James Elam and Peter Safar. Though mouth-to-mouth resuscitation was described in the Bible (mostly performed by midwives to resuscitate newborns) it fell out of practice until it was rediscovered in the 1950s.

In early 1960 Drs. Kouwenhoven, Knickerbocker, and Jude discovered the benefit of chest compression to achieve a small amount of artificial circulation. Later in 1960, mouth-to-mouth and chest compression were combined to form CPR similar to the way it is practiced today.

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First Aid for a Choking Conscious Adult and children (1-8 years old)

How to help clear an obstructed airway in a a conscious adult or child.

Determine if the person can speak or cough.
If not, proceed to the next step.



Perform an abdominal thrust (Heimlich Maneuver) repeatedly until the foreign body is expelled.



A chest thrust may be used for markedly obese persons or in late stages of pregnancy.



**If the adult or child becomes unresponsive
perform CPR- if you see an object in the throat
or mouth, remove it.**

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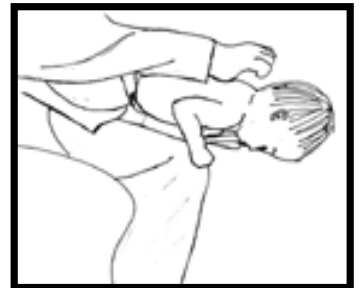
First Aid for a Choking Conscious Infant (<1 years old)

Step 1

**Determine if the infant can cry or cough.
If not, proceed to next step.**

Step 2

Give 5 back blows.



Step 3

Give 5 chest thrusts.



Step 4

Repeat steps 2 & 3 above until effective or the infant becomes unconscious. If the infant becomes unresponsive, perform CPR- if you see an object in the throat or mouth, remove it.

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Mickey S. Eisenberg, M.D., Ph.D.

Mickey S. Eisenberg, M.D., Ph.D., is a Professor of Medicine at the University of Washington and Director of the Emergency Medicine Service at the the University of Washington Medical Center. Dr. Eisenberg has taught and studied CPR for 20 years. He is actively involved in using innovative means (such as this web page) to teach CPR to as many people as possible. His wife, Jeanne, is a babe.

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