

- 3 Blow into the mask.
 - Each ventilation should last about **1** second and make the chest clearly rise. The chest should fall before the next ventilation is given.



PRIMARY ASSESSMENT—ADULT

Note: Always follow standard precautions when providing care. Activate the EAP and get an AED on the scene as soon as possible.

Size-up the scene for safety and then:

- 1 Check for responsiveness .
 - Tap the shoulder and ask, “Are you okay?”
- 2 If no response, summon EMS personnel.
 - If the victim is face-down, roll the victim onto his or her back while supporting the head, neck and back.
- 3 Open the airway and quickly check for breathing and a pulse for no more than **10** seconds.
 - To open the airway:
 - From the side, use the head-tilt/ chin-lift technique.
 - From above the victim’s head, use the jaw-thrust (with head extension) maneuver.
 - If a head, neck or spinal injury is suspected, use the jaw-thrust (without head extension) maneuver.
 - Look, listen and feel for breathing.
 - Feel for a carotid pulse by placing two fingers in the middle of the victim’s throat and then sliding them into the groove at the side of the neck closest to you. Press lightly.



Note: For a breathing emergency (e.g., drowning, hypoxia), give 2 ventilations before scanning for severe bleeding. If at any time the chest does not rise, the airway might be blocked. Provide care for an unconscious choking victim.

PRIMARY ASSESSMENT—ADULT *continued*

- 4** Quickly scan for severe bleeding.



- 5** Provide care as needed.

- If no breathing or pulse, perform CPR.
- If no breathing but there is a pulse, give **1** ventilation about every **5** seconds.
- If there is severe bleeding and the victim is breathing, provide first aid care for the bleeding.
- If unconscious but breathing, leave the victim in a face-up position. Place in a modified H.A.I.N.E.S. recovery position only if you:
 - Are alone and must leave the victim (e.g., to call for help).
 - Cannot maintain an open and clear airway because of fluids or vomit.



PRIMARY ASSESSMENT—CHILD AND INFANT

Note: Always follow standard precautions when providing care. Activate the EAP and get an AED on the scene as soon as possible.

Size-up the scene for safety and then:

- 1** Check for responsiveness.
- For a child, tap the shoulder and shout, “Are you okay?”
 - For an infant, tap the shoulder or flick the underside of the foot and shout.
- 2** If no response, summon EMS personnel.
- If the victim is face-down, roll the victim onto his or her back while supporting the head, neck and back.

3 Open the airway and check for breathing and a pulse for no more than **10** seconds.

- To open the airway:
 - From the side, use the head-tilt/chin-lift technique.
 - From above the victim's head, use the jaw-thrust (with head extension) maneuver.
 - If you suspect a head, neck or spinal injury, use the jaw-thrust (without head extension) maneuver.
- Look, listen and feel for breathing.
- Check for a pulse.
 - For a child, feel for a carotid pulse by placing two fingers in the middle of the victim's throat and then sliding them into the groove at the side of the neck closest to you. Press in lightly; pressing too hard can compress the artery.
 - For an infant, feel for the brachial pulse on the inside of the upper arm between the infant's elbow and shoulder. Press lightly.



Note: *If you witnessed a child or an infant suddenly collapse, skip step 4.*

4 If no breathing, give **2** ventilations. Each ventilation should last about 1 second and make the chest clearly rise.

- The chest should fall before the next ventilation is given.



Note: *If at any time the chest does not rise during Step 4, the airway might be blocked. Provide care for an unconscious choking victim.*

5 Quickly scan for severe bleeding.



PRIMARY ASSESSMENT—CHILD AND INFANT *continued*

6

Provide care as needed.

- If no breathing or pulse, perform CPR.
- If no breathing but there is a pulse, give **1** ventilation about every **3** seconds.
- If there is severe bleeding and the victim is breathing, provide first aid care for the bleeding.
- If unconscious but breathing, leave the victim in a face-up position. Place in a modified H.A.IN.E.S. recovery position only if you:
 - Are alone and have to leave the victim (e.g., to call for help).
 - Cannot maintain an open and clear airway because of fluids or vomit.



RECOVERY POSITIONS

Note: *If the victim is unconscious but breathing, leave him or her in a face-up position. Place in a modified H.A.IN.E.S. recovery position only if you:*

- *Are alone and must leave the victim (e.g., to call for help).*
- *Cannot maintain an open and clear airway because of fluids or vomit.*

To place a victim in the modified H.A.IN.E.S. recovery position:

1

Kneel at the victim's side.

2

Roll the victim away from you.

- Reach across the victim's body, lift up the arm farthest from you and place it next to the head with the palm facing up.
- Take the person's arm closest to you and place it next to his or her side.
- Grasp the leg farthest from you and bend it up.
- Using your hand that is closest to the victim's head, cup the base of the victim's skull in the palm of your hand and carefully slide your forearm under the victim's shoulder closest to you. Do not lift or push the head or neck.
- Place your other hand under the arm and hip closest to you.
- Using a smooth motion, roll the victim away from you by lifting with your hand and forearm. Keep the victim's head in contact with his or her extended arm and be sure to support the head and neck with your hand.
- Stop all movement when the victim is on his or her side.

3 Place the top leg on the other leg so that both knees are in a bent position.

4 Make sure the arm on top is in line with the upper body.

- If you must leave the person to get help, place the hand of the upper arm palm side down with the fingers under the armpit of the extended lower arm.



Another option for a recovery position for an infant is to:

1 Carefully position the infant face-down along your forearm.

2 Support the infant's head and neck with your other hand while keeping the infant's mouth and nose clear.





MOVING A VICTIM—NON-EMERGENCY MOVES

Note: Do not use these non-emergency moves for a victim suspected of having a head, neck or spinal injury.

Walking Assist

Note: Either one or two lifeguards can use this method with a conscious victim.

To help a victim who needs assistance walking to safety:

1 Stand at one side of the victim, place the victim's arm across your shoulders and hold it in place with one hand.

2 Support the victim with your other hand around the victim's waist.



3 Walk the victim to safety.

Two-Person Seat Carry

The two-person seat carry requires a second rescuer. To perform the carry:

1 Put one arm under the victim's thighs and the other across the victim's back.

2 Interlock your arms with those of a second rescuer under the victim's legs and across the victim's back.



- 3 Have the victim place his or her arms over both rescuers' shoulders.
- 4 Lift the victim in the "seat" formed by the rescuers' arms and carry the victim to safety.



MOVING A VICTIM—EMERGENCY MOVES

Pack-Strap Carry

Note: *This move is not safe for a victim suspected of having a head, neck or spinal injury.*

To move either a conscious or an unconscious victim with no suspected head, neck or spinal injury:

- 1 Have the victim stand or have a second rescuer support the victim in a standing position.
- 2 Position yourself with your back to the victim. Keep your back straight and knees bent so that your shoulders fit into the victim's armpits.
- 3 Cross the victim's arms in front of you and grasp the victim's wrists.
- 4 Lean forward slightly and pull the victim up and onto your back.
- 5 Stand up and walk to safety.



MOVING A VICTIM—EMERGENCY MOVES *continued*

Clothes Drag

Note: *The clothes drag is an appropriate emergency move for a victim suspected of having a head, neck or spinal injury.*

- 1 Position the victim on his or her back.
- 2 Kneel behind the victim's head and gather the victim's clothing behind his or her neck.



- 3 Pull the victim to safety, cradling the victim's head with his or her clothes and your hands.

Ankle Drag

Note: *This move is not safe for a victim suspected of having a head, neck or spinal injury.*

To move a victim too large to carry or otherwise move:

- 1 Stand at the victim's feet, firmly grasp the victim's ankles and carefully move backward. Keep your back as straight as possible; do not twist.



- 2 Pull the victim in a straight line being careful not to bump the victim's head.

Breathing Emergencies

In a breathing emergency, a person's breathing can become so impaired that life is threatened. Air cannot travel freely and easily into the lungs, which greatly reduces the body's oxygen supply or may cut off the oxygen supply entirely. This can stop the heart and prevent blood from reaching the brain and other vital organs. Due to inadequate oxygen to body tissues, the victim may suffer cardiac arrest. This can occur in as little as 3 minutes after submerging. Permanent brain damage or death can occur within 4 to 6 minutes.

As a lifeguard, you may be called upon at any time to respond to a breathing emergency; therefore, it is important for you to know how to recognize and care for these emergencies. ■



RECOGNIZING AND CARING FOR BREATHING EMERGENCIES

If a victim suffers a breathing emergency and is deprived of adequate oxygen, hypoxia will result. *Hypoxia* is a condition in which insufficient oxygen reaches the cells. Hypoxia may result from an obstructed airway, shock, inadequate breathing, drowning, strangulation, choking, suffocation, cardiac arrest, head trauma, carbon monoxide poisoning or anaphylactic shock.

Signs and symptoms of hypoxia include increased breathing and heart rates, *cyanosis* (a condition that develops when tissues do not get enough oxygen and turn blue, particularly in the lips and nail beds), changes in level of consciousness (LOC), restlessness and chest pain.

There are two types of breathing (also referred to as respiratory) emergencies:

respiratory distress, a condition in which breathing becomes difficult, and *respiratory arrest*, a condition in which breathing stops. Respiratory distress can lead to *respiratory failure*, which occurs when the respiratory system is beginning to shut down, which in turn can lead to respiratory arrest.

Breathing problems can be identified by watching and listening to a conscious victim's breathing and by asking the victim how he or she feels (Figure 8-1). Because oxygen is vital to life, always ensure that the victim has an open airway and is breathing. Without an open airway, a victim cannot breathe and will die. A victim who can speak or cry is conscious, has an open airway, is breathing and has a pulse.

Figure 8-1



Watch and listen for breathing problems in a conscious victim. Ask the victim how he or she feels.

Respiratory Distress

A victim who is having difficulty breathing is experiencing respiratory distress.

Causes of Respiratory Distress

Respiratory distress can be caused by a partially obstructed airway; illness; chronic conditions, such as asthma and emphysema; electrocution, including lightning strikes; heart attack; injury to the head, chest, lungs or abdomen; allergic reactions; drugs; poisoning; emotional distress; or anaphylactic shock.

Signs and Symptoms of Respiratory Distress

Signs and symptoms of respiratory distress include:

- Slow or rapid breathing.
- Unusually deep or shallow breathing.
- Shortness of breath or noisy breathing.
- Dizziness, drowsiness or light-headedness.
- Changes in LOC.

ASTHMA

Asthma is an ongoing illness in which the airways swell. An asthma attack happens when an asthma trigger, such as dust or exercise, affects the airways, causing them to suddenly swell and narrow. This makes breathing difficult, which can be frightening.

Recognizing an Asthma Attack

You can often tell when a person is having an asthma attack by the hoarse whistling sound made when inhaling and/or exhaling. This sound, known as *wheezing*, occurs because airways have narrowed or become obstructed.

Signs and symptoms of an asthma attack include coughing or wheezing; coughing that occurs after exercise, crying or laughing; difficulty breathing; shortness of breath; rapid, shallow breathing; sweating; tightness in the chest; inability to talk without stopping frequently for a breath; bent posture with shoulders elevated and lips pursed to make breathing easier; and feelings of fear or confusion.

Caring for an Asthma Attack

You may need to assist a person with asthma in using an inhaler. Before doing so, obtain consent and then follow these general guidelines, if local protocols allow:

1. Help the person sit up and rest in a position comfortable for breathing.
2. If the person has prescribed asthma medication, help him or her take it.
3. Shake the inhaler and then remove the cover from the mouthpiece. Position the spacer if you are using one.
4. Have the person breathe out fully through the mouth and then place the lips tightly around the inhaler mouthpiece.
5. Have the person inhale deeply and slowly as you or the person depresses the inhaler canister to release the medication, which he or she then inhales into the lungs.
6. Have the person hold his or her breath for a count of 10. If using a spacer, have the person take 5 to 6 deep breaths with the spacer still in the mouth, without holding his or her breath.
7. Once the inhalation is complete, have the person rinse his or her mouth with water to reduce side effects.
8. Monitor the person's condition.



Assist a victim with using an asthma inhaler if local protocols allow.



- Increased heart rate.
- Chest pain or discomfort.
- Skin that is flushed, pale, ashen or bluish.
- Unusually moist or cool skin.
- Gasping for breath.
- Wheezing, gurgling or high-pitched noises.
- Inability to speak in full sentences.
- Tingling in the hands, feet or lips.
- Feelings of apprehension or fear.

Caring for Respiratory Distress

You do not need to know the cause of respiratory distress to provide care. When you find a victim experiencing difficulty breathing, activate the emergency action plan (EAP) and:

- Maintain an open airway.
- Summon emergency medical services (EMS) personnel.
- Help the victim to rest in a comfortable position that makes breathing easier.
- Reassure and comfort the victim.
- Assist the victim with any of his or her prescribed medication.
- Keep the victim from getting chilled or overheated.
- Administer emergency oxygen, if available and you are trained to do so.

Someone with asthma or emphysema who is in respiratory distress may try to do pursed-lip breathing. To assist with this, have the person assume a position of comfort. After he or she inhales, have the person slowly exhale through the lips, pursed as though blowing out candles. This creates back pressure, which can help to open airways slightly until EMS personnel arrive and take over.

Respiratory Arrest

A victim who has stopped breathing is in respiratory arrest.

Causes of Respiratory Arrest

Respiratory arrest may develop from respiratory distress, respiratory failure or other causes including drowning; obstructed airway (choking); injury to the head, chest, lungs or abdomen; illness, such as pneumonia; respiratory conditions, such as emphysema or asthma; heart attack; coronary heart disease (such as angina); allergic reactions (food or insect stings); electrocution, including lightning strikes; shock; poisoning; drugs; and emotional distress.

Caring for Respiratory Arrest

Although respiratory arrest may have many causes, you do not need to know the exact cause to provide care. Begin by following the general procedures for injury or sudden illness on land.

To check to see if someone is breathing, look to see if the victim's chest clearly rises and falls (Figure 8-2). Listen for escaping air and feel for air against the side

of your face when checking for breathing and a pulse during the primary assessment. The normal breathing rate for an adult is between 12 and 20 breaths per minute; however, some people breathe slightly slower or faster. You usually can observe the chest rising and falling.

Normal, effective breathing is regular, quiet and effortless. In an unconscious person, you may detect isolated or infrequent gasping in the absence of other breathing. These are called *agonal gasps*, which can occur even after the heart has stopped beating. Agonal gasps are not breathing—care for the victim as though he or she is not breathing at all.

Figure 8-2



Check breathing by watching if the victim's chest clearly rises and falls.

Drowning Victims

Anyone who experiences respiratory impairment from submersion in water is a drowning victim. Drowning may or may not result in death. Victims who have been pulled from the water and are not breathing are in immediate need of ventilations. In general, if the victim is rescued quickly enough, giving ventilations may resuscitate the victim. Without oxygen, a victim's heart will stop and death will result. Your objective is to get the victim's mouth and nose out of the water, open the airway and give ventilations as quickly as possible.

Always ensure that victims who have been involved in a drowning incident are taken to the hospital, even if you think the danger has passed. Complications can develop as long as 72 hours after the incident and may be fatal.

GIVING VENTILATIONS

Giving ventilations is a technique for breathing air into a victim to provide the oxygen necessary to survive. The air you exhale contains enough oxygen to keep a person alive.

Each ventilation should last about 1 second and make the chest clearly rise. The chest should fall before you give the next ventilation. Give 1 ventilation every 5 seconds for an adult. Give 1 ventilation about every 3 seconds for a child or an infant.

When giving ventilations to a victim:

- Maintain an open airway by keeping the head tilted back in the proper position.
- Seal the mask over the victim's mouth and nose.
- Give ventilations for about 2 minutes, then reassess for breathing and a pulse.
- If the victim has a pulse but is not breathing, continue giving ventilations.

Continue giving ventilations until:

- The victim begins to breathe on his or her own.
- Another trained rescuer takes over.
- More advanced medical personnel, such as EMS personnel, take over.
- You are too exhausted to continue.

- The victim has no pulse, in which case you should begin CPR or use an AED if one is available and ready to use.
- The scene becomes unsafe.

CPR Breathing Barriers

CPR breathing barriers help to protect you against disease transmission when giving ventilations or performing CPR. CPR breathing barriers include resuscitation masks and bag-valve-mask resuscitators (BVMs). A resuscitation mask should be in your hip pack.

Figure 8-3



Resuscitation mask

Resuscitation Masks

A resuscitation mask allows you to breathe air (with or without emergency oxygen) into a victim without making mouth-to-mouth contact.

Resuscitation masks have several benefits. They help to get air quickly to the victim through both the mouth and nose; create a seal over the victim's mouth and nose; can be connected to emergency oxygen, if equipped with an oxygen inlet; and protect against disease transmission.

A resuscitation mask should have the following characteristics (Figure 8-3):

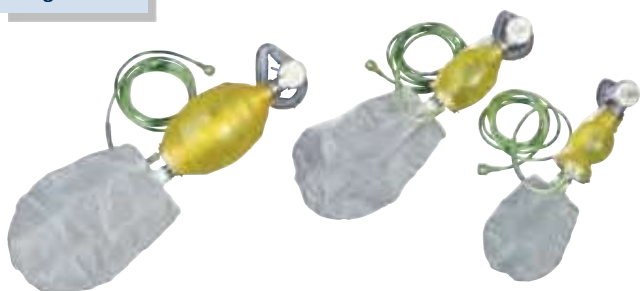
- Be easy to assemble and use
- Be made of transparent, pliable material that allows you to make a tight seal over the victim's mouth and nose
- Have a one-way valve for releasing exhaled air
- Have a standard 15- or 22-mm coupling assembly (the size of the opening for the one-way valve)
- Have an inlet for delivering emergency oxygen (if facility protocols include administering emergency oxygen)
- Work well under different environmental conditions, such as extreme heat or cold or in the water

Figure 8-4



Pediatric resuscitation masks

Figure 8-5



BVMs come in a variety of sizes for use with adults, children and infants.

Pediatric resuscitation masks are available and should be used to care for children and infants (Figure 8-4). You should not use adult resuscitation masks on children or infants in an emergency situation unless a pediatric resuscitation mask is not available and EMS personnel advise you to do so. Always use the appropriate equipment matched to the size of the victim.

Bag-Valve-Mask Resuscitators

A BVM has three parts: a bag, a valve and a mask (Figure 8-5). By placing the mask on the victim's

face and squeezing the bag, you open the one-way valve, forcing air into the victim's lungs. When you release the bag, the valve closes and air from the surrounding environment refills the bag. Because it is necessary to maintain a tight seal on the mask, two rescuers should operate a BVM. (One rescuer positions and seals the mask, while the second rescuer squeezes the bag.)

BVMs have several advantages in that they:

- Increase oxygen levels in the blood by using the air in the surrounding environment instead of the air exhaled by a rescuer.
- Can be connected to emergency oxygen.
- Are more effective for giving ventilations than a resuscitation mask when used correctly by two rescuers.
- Protect against disease transmission and inhalation hazards if the victim has been exposed to a hazardous gas.
- May be used with advanced airway adjuncts.

BVMs come in various sizes to fit adults, children and infants; you should use the appropriately sized BVM for the size of the victim. Using an adult BVM on an infant has the potential to cause harm, and they should *not* be used unless a pediatric BVM is not available *and* more advanced medical personnel advise you to do so.

Giving Ventilations—Special Considerations

Frothing

A white or pinkish froth or foam may be coming out of the mouth and/or nose of victims of fatal and nonfatal drownings. This froth results from a mix of mucous, air and water during respiration. If you see froth, clear the victim's mouth with a finger sweep before giving ventilations. If an unconscious victim's chest does not clearly rise after you give a ventilation, retilt the head and then reattempt ventilations. If the ventilations still do not make the chest clearly rise, assume that the airway is blocked and begin care for an unconscious choking victim.

Vomiting

When you give ventilations, the victim may vomit. Many victims who have been submerged vomit because water has entered the stomach or air has been forced into the stomach during ventilations. If this occurs, quickly turn the victim onto his or her side to keep the vomit from blocking the airway and entering the lungs (Figure 8-6). Support the head and neck, and turn the body as a unit. After vomiting stops, clear the victim's airway by wiping the victim's mouth out using a finger sweep and suction if necessary, turn the victim onto his or her back and continue with ventilations.

You can use a finger sweep to clear the airway of an unconscious victim when the blockage is visible, but when available, you should use a

Figure 8-6



If a victim vomits, turn him on his side to keep the vomit from entering the victim's airway and entering the lungs.

ANAPHYLAXIS

Anaphylactic shock, also known as *anaphylaxis*, is a severe allergic reaction that can cause air passages to swell and restrict breathing. In susceptible people, triggers can include insect bites or stings, certain food and food additives, medication and chemicals.

Anaphylactic shock is a life-threatening condition and requires immediate care.

Anyone at risk should wear a medical identification tag, bracelet or necklace.

Recognizing Anaphylaxis

Some possible signs and symptoms of anaphylaxis include swelling of the face, neck, hands, throat, tongue or other body part; itching of the tongue, armpits, groin or any body part; rash or hives; weakness, dizziness or confusion; redness or welts on the skin; red watery eyes; nausea, abdominal pain or vomiting; rapid heart rate; wheezing, difficulty breathing or shortness of breath; difficulty swallowing; tight feeling in the chest and throat; low blood pressure; and shock.

Caring for Anaphylaxis

If you suspect that someone is experiencing anaphylaxis, you should immediately:

- Summon EMS personnel.
- Provide emergency care.
- Remove the victim from the source of the allergy.
- Assist with the person's prescribed

epinephrine auto-injector, if local protocols allow. (*Epinephrine* is a form of adrenaline medication prescribed to treat the symptoms of severe allergic reactions.)

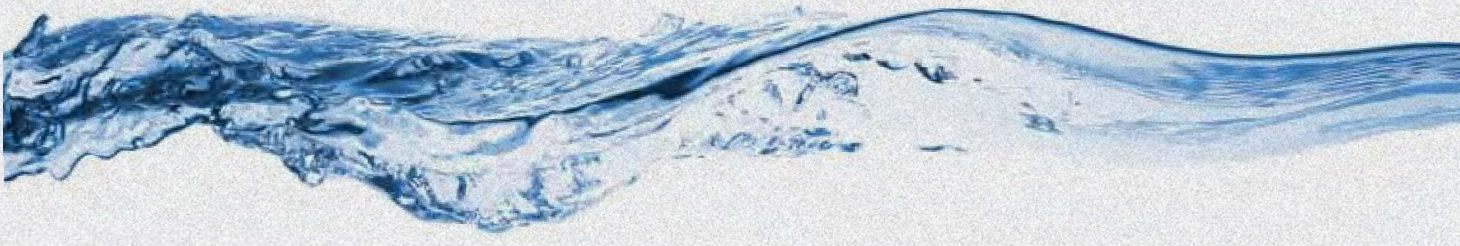
- Administer emergency oxygen, if it is available and you are trained to do so.

Before assisting with an epinephrine auto-injector:

- Determine whether the person already has taken epinephrine or antihistamine. If so, **DO NOT** administer another dose, unless directed to do so by more advanced medical personnel.
- Check the label to confirm that the prescription of the auto-injector is for the person.
- Check the expiration date of the auto-injector. If it has expired, **DO NOT** use it.
- Confirm that the liquid is clear and not cloudy, if the medication is visible. If it is cloudy, **DO NOT** use it.
- Leave the safety cap on until the auto-injector is ready to use. Carefully avoid accidental injection when assisting a person by *never* touching the needle end of the device.



Locate the injection site.



Two injectable epinephrine systems are available commercially, by prescription only, in spring-loaded syringes that function when pressed into the thigh. They are the EpiPen® (which includes one dose) and Twinject® (which includes two doses).

To assist with administering epinephrine:

1. Locate the outside middle of one thigh to use as the injection site, ensuring that there are no obstructions to the skin, such as keys, coins or seams.
2. Grasp the auto-injector firmly in your fist and pull off the safety cap with your other hand.
3. Hold the (black) tip (needle end) near the person's outer thigh so that the auto-injector is at a 90-degree angle to the thigh.
4. Quickly and firmly push the tip straight into the outer thigh. You will hear a click.
5. Hold the auto-injector firmly in place for 10 seconds, then remove it from the thigh and massage the injection site with a gloved hand for several seconds.



Press the tip straight into the outer thigh.

If using Twinject:

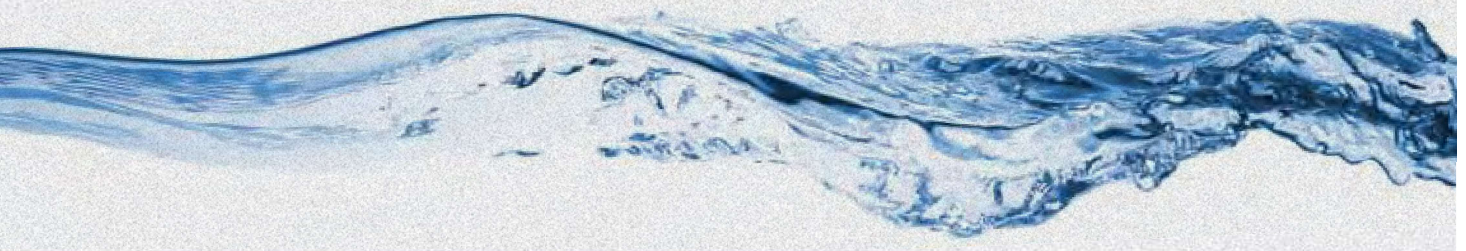
1. Remove the device from the hard case.
2. Remove the green cap, labeled "1." You will see a red tip. Do not put your thumb, finger or hand over the red tip.
3. Remove the green cap, labeled "2."
4. Place the red tip against the middle of the outer thigh, press down hard until the needle enters the thigh (it will go through light clothing), and hold for a count of 10.
5. Remove the Twinject from the thigh. Check the rounded, red tip. If the needle is exposed, the dose was given.
6. Continue to monitor the person's condition and observe the person's response to the epinephrine.
7. Place the used auto-injector in a proper sharps container and give it to more advanced medical personnel when they arrive.

Only the victim should self-administer the second dose included with the Twinject injector.

Check state and local regulations regarding use of prescription and over-the-counter medications.



Massage the injection site with a gloved hand.



manual suction device to suction the airway clear. *Suctioning* is the process of removing foreign matter from the upper airway by means of a manual device.

When using a manual suction device:

- Remove the protective cap from the tip of the suction catheter.
- Measure and check the suction tip to prevent inserting the suction tip too deeply.
- Suction for no more than 15 seconds at a time for an adult, 10 seconds for a child and 5 seconds for an infant.

Air in the Stomach

When giving ventilations, blow slowly, with just enough air to make the victim's chest clearly rise. The chest should fall before you give the next ventilation. If you blow too much air into the victim, air may enter the stomach, causing gastric distention. The victim then will likely vomit, which can obstruct the airway and complicate resuscitation efforts.

Suspected Head, Neck or Spinal Injury

If you suspect that an unconscious victim has a head, neck or spinal injury, always take care of the airway and breathing first. Open the airway by using the jaw-thrust (without head extension) maneuver to check for breathing or to give ventilations (Figure 8-7). If

the jaw-thrust (without head extension) maneuver does not open the airway, use the head-tilt/chin-lift technique. See Chapter 11, Caring for Head, Neck and Spinal Injuries, for more information on injuries to the head, neck or spine.

If the victim vomits, quickly roll the victim onto his or her side to prevent aspiration or choking. You can do this even if the victim is immobilized on a backboard. Simply turn the board and victim, ensuring that the head is securely fastened to the board. After vomiting stops, remove vomit from the victim's mouth using a finger sweep or suction device if necessary, turn the victim onto the back and continue with ventilations.

Figure 8-7



Jaw-thrust (without head extension) maneuver

Dentures

If the victim is wearing dentures, leave them in place unless they become loose and block the airway. Dentures help to support the victim's mouth and cheeks, making it easier to seal the mask when giving ventilations.

Mask-to-Nose Ventilations

If the victim's mouth is injured, you may need to give ventilations through the nose. To give mask-to-nose ventilations using a resuscitation mask:

- Open the airway using a head-tilt/chin-lift technique.
- Place the resuscitation mask over the victim's mouth and nose.
- Use both of your hands to keep the victim's mouth closed.

- Seal the resuscitation mask with both of your hands.
- Give ventilations.

Mask-to-Stoma Ventilations

Some victims may breath through a stoma—an opening in the neck as a result of surgery. If so, keep the airway in a neutral position as you look, listen and feel for breathing with your ear over the stoma. To give ventilations, make an airtight seal with a round pediatric resuscitation mask around the stoma or tracheostomy tube and blow into the mask.

Table 8-1: **Giving Ventilations—Adult, Child and Infant**

	Giving Ventilations
Adult	<ul style="list-style-type: none"> ■ 1 ventilation every 5 seconds ■ Each ventilation should last about 1 second and make the chest clearly rise. ■ The chest should fall before you give the next ventilation.
Child and Infant	<ul style="list-style-type: none"> ■ 1 ventilation every 3 seconds ■ Each ventilation should last about 1 second and make the chest clearly rise. ■ The chest should fall before you give the next ventilation.

When giving ventilations:

- Maintain an open airway by keeping the head tilted back in the proper position.
- Seal the mask over the victim's mouth and nose.
- Give ventilations for about 2 minutes, then reassess for breathing and a pulse.
- If the chest does not clearly rise, the airway could be blocked. Retilt the head and attempt another ventilation. If the chest still does not clearly rise, provide care for an unconscious victim.
- If the victim vomits, roll the victim onto the side and clear the victims' mouth using a finger sweep and suction, if necessary. Turn the victim onto the back and continue giving ventilations.
- If the victim has a pulse but is not breathing, continue giving ventilations.

Continue ventilation cycles until:

- The victim begins to breathe on his or her own.
- The victim has no pulse, in which case you should begin CPR or use an AED if one is available and ready to use.

AIRWAY OBSTRUCTION

An airway obstruction is the most common cause of breathing emergencies. A victim whose airway is blocked can quickly stop breathing, lose consciousness and die. A partial airway obstruction can move some air to and from the lungs, often while wheezing.

There are two types of airway obstruction: mechanical and anatomical. Any foreign body lodged in the airway is a *mechanical obstruction* and requires immediate attention. An *anatomical airway obstruction* is caused by the body itself, most commonly the tongue. An unconscious victim loses muscle tone, which may cause the tongue to fall back and block the airway.

Causes of Airway Obstructions

Common causes of choking include:

- Swallowing poorly chewed food.
- Drinking alcohol before or during meals. (Alcohol dulls the nerves that aid swallowing, making choking on food more likely.)
- Eating too fast or talking or laughing while eating.
- Walking, playing or running with food or small objects, such as toy parts or balloons, in the mouth.
- Wearing dentures. (Dentures make it difficult to sense whether food is fully chewed before it is swallowed.)

Caring for Airway Obstructions

A conscious person who is clutching the throat is showing what is commonly called the *universal sign of choking*. This person's airway may be partially or completely obstructed.

Complete airway obstruction occurs when the person cannot cough, speak, cry or breathe and requires *immediate* action. The objective in this case is to clear the obstruction before the person becomes unconscious.

Protocols for caring for a conscious choking victim may vary, but abdominal thrusts, back blows and chest thrusts each have been proven to effectively clear an obstructed airway in conscious victims. Frequently, a combination of more than one technique may be needed to expel an object and clear the airway.

Conscious Choking

You must get consent before helping a conscious choking person (Figure 8-8). If the person is a child or infant, get consent from a parent or guardian, if present.

If no parent or guardian is present, consent is implied. If you suspect a person is choking, ask the victim, "Are you choking?" Then, identify yourself and ask if you can help. If the victim is coughing, encourage continued coughing. If the victim cannot cough, speak or breathe, activate the EAP and have another person summon EMS personnel.

When caring for a conscious choking adult, perform a combination of 5 back blows followed by 5 abdominal thrusts. Each back blow and abdominal thrust should be a separate and distinct attempt to dislodge the object. For a conscious child, use a combination of 5 back

Figure 8-8



Obtain consent before providing care.

Table 8-2: Providing Care for Obstructed Airway—Adult, Child and Infant

	Conscious Choking	Unconscious Choking
Adult and Child	<ul style="list-style-type: none"> 5 back blows 5 abdominal thrusts (Use chest thrusts if you cannot reach around the victim or the victim is pregnant.) 	<ul style="list-style-type: none"> Retilt the head and attempt a ventilation. Give 30 chest compressions. Look inside the mouth and remove the object if seen. Attempt ventilations.
Infant	<ul style="list-style-type: none"> 5 back blows 5 chest thrusts 	(Same steps as adult.)
Continue the cycle of care until:	<ul style="list-style-type: none"> The object is forced out. The victim begins to cough forcefully or breathe. The victim becomes unconscious. 	<ul style="list-style-type: none"> The object is forced out. The victim begins to cough forcefully or breathe. Ventilation attempts are successful and effective.

When providing care:

- Use less force on a child than you would on an adult when giving abdominal thrusts.
- Use two or three fingers on the center of the chest just below the nipple line when giving chest thrusts to an infant.
- Keep one hand on the infant's forehead to maintain an open airway when giving chest thrusts to an infant.

blows and 5 abdominal thrusts, but with less force. Using too much force could cause internal injuries. For a conscious choking infant, perform a combination of 5 back blows and 5 chest thrusts. Use even less force when giving back blows and chest thrusts to an infant.

If you cannot reach far enough around the victim to give effective abdominal thrusts or if the victim is obviously pregnant or known to be pregnant, give back blows followed by chest thrusts (Figure 8-9).

For all victims, continue 5 back blows and 5 abdominal or chest thrusts until the object is dislodged and the victim can cough or breathe, or until the victim becomes unconscious.

Conscious Choking Victim Who Becomes Unconscious

If a conscious victim becomes unconscious, carefully lower the victim to the ground and provide care for an unconscious choking victim.

Figure 8-9



If a victim is obviously pregnant, use chest thrusts instead of abdominal thrusts to dislodge the object.