



First Aid for Severe Trauma

_____ Handbook _____



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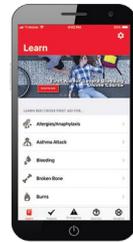
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First Aid for Severe Trauma



Handbook



This Handbook is part of the American National Red Cross' *First Aid for Severe Trauma*[™] program. The emergency care procedures outlined in the program materials reflect the standard of knowledge and accepted emergency practices in the United States at the time this handbook was published. It is the reader's responsibility to stay informed of changes in emergency care procedures.

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Science and Technical Content

The American Red Cross Scientific Advisory Council (www.redcross.org/science), a volunteer committee of nationally recognized health care, aquatics, preparedness and educational professionals, helps establish and assure the scientific basis for Red Cross programs, products and public guidance. Council members' contributions help ensure that the Red Cross is using the latest science, addressing current needs and is preparing for future changes.

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This program is dedicated to the thousands of employees and volunteers of the American Red Cross who contribute their time and talent to supporting and teaching lifesaving skills worldwide and to the thousands of course participants who have decided to be prepared to take action when an emergency strikes.

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CHAPTER 1

You Can Save a Life

Traumatic injuries are the leading cause of death for people between the ages of 1 and 44 years. Many people who die from a traumatic injury die from blood loss. Knowing how to provide first aid care for a person with **life-threatening bleeding** can save a life. But acting quickly is important. Severe bleeding can lead to death in a matter of minutes, even before an ambulance arrives.

“**Uncontrolled bleeding is the number one cause of preventable death from trauma.**”

Preparing for Bleeding Emergencies

Injuries that cause life-threatening bleeding can happen anywhere at any time. They may be the result of an accident, a natural disaster or violence. By participating in this First Aid for Severe Trauma (FAST) training, you have taken an important first step in preparing yourself to respond to an emergency involving life-threatening bleeding. You will learn the concepts and skills you need to recognize life-threatening bleeding and respond appropriately until professional responders arrive and take over. Once you have learned these concepts and skills, review them regularly so that if you ever have to use them, you will be prepared and have the confidence to take action (Figure 1-1).

Make sure you have access to information and items that will make it easier to respond in an emergency.

- Know who to call in an emergency. Most communities in the United States call 9-1-1 for help in emergencies. But in some areas of the United States and in many workplaces, you may need to dial a designated emergency number instead. If you live or work in an area where 9-1-1 is *not* the number you should call in an emergency, make sure you know what the designated emergency number is.



Figure 1-1. When a person has life-threatening bleeding, first aid care provided before professional responders arrive can save the person's life.

- Know the location of the **bleeding control kit** (Figure 1-2, Box 1-1), first aid kit and AED in your school, workplace, home and other places where you spend a lot of time.
- Download the American Red Cross First Aid app to your mobile phone so that you always have a first aid reference at your fingertips.

In an emergency that involves life-threatening bleeding, people in the area need to help until professional responders arrive. A person with life-threatening bleeding can die from their injuries before professional responders arrive if the bleeding is not controlled.

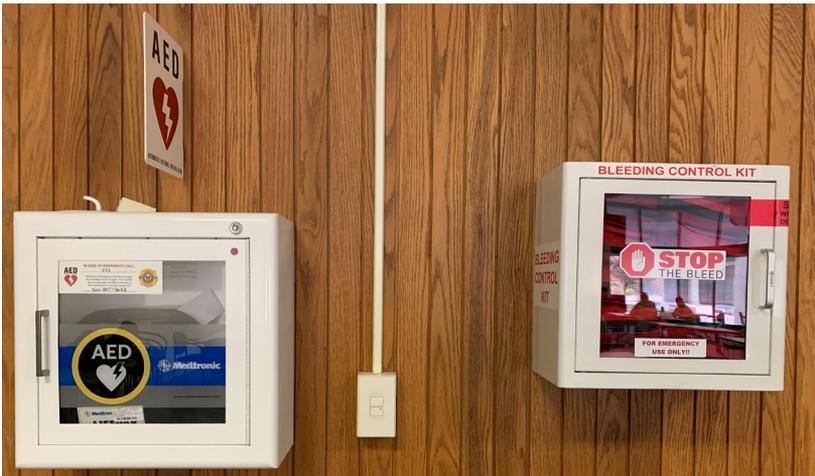


Figure 1-2. Bleeding control kits, first aid kits or both can often be found near AEDs in public places. *Courtesy of Uniformed Services University.*

Box 1-1. What's in an American Red Cross Bleeding Control Kit?

- Instruction card
- Windlass rod tourniquet
- Elasticized wrap
- Gauze roll
- Gauze pads (4 x 4)
- Scissors (trauma shears)
- Hemostatic dressing
- Latex-free disposable gloves



Recognizing That a Bleeding Emergency Exists

Life-threatening bleeding will not stop on its own and the person is at risk for losing a large amount of blood in a short time. Being able to recognize when bleeding is life-threatening is important because some methods of controlling bleeding, such as tourniquets, should only be used when the bleeding is life-threatening. Not all bleeding is life-threatening. Non-life-threatening bleeding will usually stop if you apply direct pressure.

To tell if bleeding is life-threatening, look at the amount of blood and how the blood moves (Figure 1-3). **Volume** is the amount of blood. Bleeding is life-threatening when there is a large amount of blood lost (equal to about half of what a soda can contains). In a small child or an infant, bleeding may be life-threatening when the amount of blood lost is even less. **Flow** is the movement of blood. Blood that is flowing continuously or spurting is a sign of life-threatening bleeding.

“When there is life-threatening bleeding, immediate action is needed to save the person’s life.”

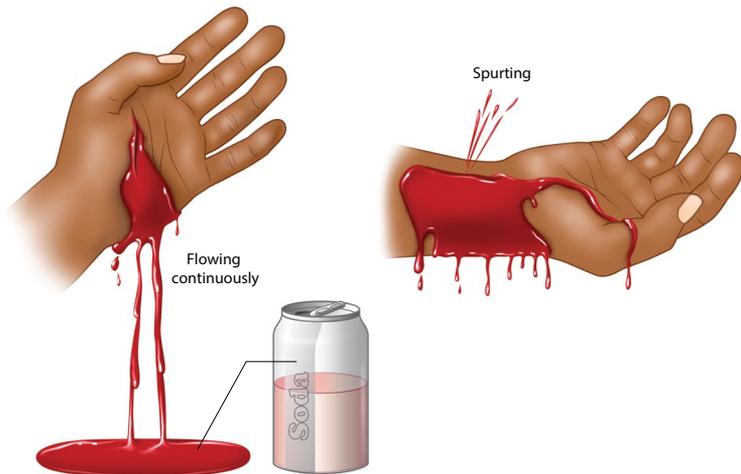


Figure 1-3. To recognize life-threatening bleeding, look at the amount of blood (volume) and how the blood moves (flow). When the amount of blood lost could fill a soda can about halfway, the bleeding is life-threatening. Blood that flows continuously or spurts from the wound is a sign of life-threatening bleeding.

Emergency Action Steps

In any emergency, there are three simple steps you can take to guide your actions. If you ever feel nervous or confused, remember these three emergency action steps to get you back on track:

1. **CHECK** the scene and the person.
2. **CALL** 9-1-1 and get equipment.
3. **CARE** for the person.

CHECK

First, check the scene for safety and assess the situation. Before rushing to help, stop and look around (Figure 1-4). Ask yourself:

- **Is the scene safe to enter?** Check for hazards that could put you or others in the area in danger, such as traffic, an unstable building, downed electrical wires, spilled chemicals, flooding or the presence of a person who is actively trying to harm others. When you are checking the scene, do a **360-degree check** of the entire area. Look up, down and all around. Use your senses to recognize safety hazards. What do you see, hear and smell? If there are hazards, stay at a safe distance and call 9-1-1 immediately. Once professional responders have made the scene safe, you can offer to help as appropriate.



Figure 1-4. Before rushing to help, check the scene.

- **How many people are involved?** Look for people who have been injured. You will probably notice a person who is moving or making noise or who has obvious injuries right away, but there may be a person who is silent and not moving or a person hidden by debris or wreckage that you do not notice at first. It is also easy to overlook a small child or an infant. In an emergency with more than one injured person, you may need to decide who needs help first.
- **Are there signs of life-threatening conditions?** Before you even enter the scene, look for signs that will give you an idea of how serious the person's condition is (Figure 1-5). Do you see life-threatening bleeding? Does the person seem to be unconscious?
- **Is anyone else available to help?** Others at the scene can assist by calling 9-1-1, getting needed items (such as a bleeding control kit), providing care when there is more than one injured person, or meeting professional responders and leading them to the site of the emergency (Figure 1-6).



Figure 1-5. When you are checking the scene, look for people with obvious life-threatening conditions, such as severe bleeding. These people will need help as soon as you determine the scene is safe to enter.



Figure 1-6. When you are checking the scene, note other people who may be able to help.

As part of checking the scene, obtain the person's **consent** (permission) to help (Box 1-2).

Box 1-2. Obtaining Consent

In an emergency, always get the person's consent (permission) to help before you touch the person. Obtain consent during the **CHECK** step, after you check the scene for safety and before you check the person.

Obtaining consent is simple. Tell the person who you are, the type and level of training that you have (such as training in first aid for severe trauma) and what you plan to do. Then help the person, unless the person says they do not want your help. If the person says they do not want your help, do not touch the person, but do call 9-1-1 and stay with the person until help arrives.

In some situations, consent is implied. This means that the law assumes the person would give consent if they were able to. You have **implied consent** when:

- The person is unresponsive or mentally altered (for example, the person is confused or disoriented).
- The person is a minor (a person younger than 18 years in most states) and the person's parent or guardian is not present.

CALL

Next, direct someone to call 9-1-1 and grab equipment that will help you provide care (such as a bleeding control kit, first aid kit and AED). Calling 9-1-1 will send professional responders on their way as fast as possible (Figure 1-7). Box 1-3 lists reasons to call 9-1-1.

“You should always call 9-1-1 for life-threatening bleeding.”

If you are alone with an injured person with life-threatening bleeding and there is no one you can ask to call 9-1-1 or get equipment, you must take steps to control the bleeding first. You can call 9-1-1 using the speaker mode on a mobile phone so that your hands are free to provide care (Figure 1-8). Or, if you are alone and you don't have a mobile phone, control the bleeding with whatever you have available and then call 9-1-1.

You will learn more about calling 9-1-1 in Chapter 3.



Figure 1-7. Calling 9-1-1 gets professional help on the way quickly.



Figure 1-8. If you are alone with a person with life-threatening bleeding and you have a mobile phone, call 9-1-1 using the speaker mode so your hands are free to give care.

Box 1-3. When to Call 9-1-1

Call (or instruct someone to call) 9-1-1 for any of the following emergency situations and conditions.

Emergency Situations

- An injured or ill person who needs medical attention and cannot be moved
- Fire or explosion
- Downed electrical wires
- Swiftly moving or rapidly rising flood waters
- Drowning
- Poisonous gas
- Spilled chemicals
- Serious motor vehicle collision
- Violent situations



Emergency Conditions

- Life-threatening bleeding
- Unresponsiveness or a change in level of consciousness (such as drowsiness or confusion)
- Breathing problems (trouble breathing or no breathing)
- Chest pain, discomfort or pressure lasting more than a few minutes or that spreads to the shoulder, arm, neck, jaw, stomach or back
- Persistent stomach pain or pressure
- Vomiting blood or passing blood
- Severe (critical) burns
- Suspected poison exposure or drug overdose
- Seizures
- Signs or symptoms of stroke (drooping of the face on one side; sudden weakness on one side of the body; sudden slurred speech or difficulty speaking; or a sudden, severe headache)
- Suspected or obvious injuries to the head, neck, spine or pelvis
- Suspected or obvious broken bone

CARE

Finally, care for the person. When there is life-threatening bleeding, you must take immediate action to stop the flow of blood (Figure 1-9). You will learn how to care for a person with life-threatening bleeding in Chapter 4.

Before giving care, take steps to lower the risk for infection, for both yourself (Box 1-4) and the injured person. If time permits, wash your hands before you give care and use latex-free disposable gloves. When more than one person needs care, remove your gloves and replace them with a clean pair before helping the next person. When a person has life-threatening bleeding, it is important to act quickly to stop the flow of blood. If you have gloves, use them, but do not wait until you have gloves to take action!



Figure 1-9. When there is life-threatening bleeding, you must take immediate action to stop the flow of blood.

Box 1-4. Lowering Your Risk for Infection

Although you may be concerned about touching another person's blood, it is extremely unlikely that you will catch a disease this way, especially if your skin is healthy and intact (without cuts or scrapes) and you avoid touching your eyes, nose and mouth. You can reduce your risk even more by using gloves and washing your hands as soon as possible after you give care.



- If you have them, use latex-free disposable gloves.
 - Gloves are usually included in bleeding control kits and first aid kits. You can also carry a keychain kit that contains gloves with you so that you always have a pair of gloves readily available.
 - When a person has life-threatening bleeding, do not wait until gloves are available to begin providing care.
- When you are finished giving care, wash your hands with soap and warm running water, even if you wore gloves. Wash for a minimum of 20 seconds and make sure to cover all surfaces of both your hands: your wrists, the palms and backs of your hands, in between your fingers and underneath your fingernails. If soap and water are not available, use an alcohol-based hand sanitizer instead, and then wash your hands with soap and water as soon as possible.

When caring for a person with life-threatening bleeding, using gloves is best. However, often no gloves are available, and when bleeding is life-threatening, you must act quickly to control the bleeding. If you do not have gloves, wash your hands as soon as possible after giving care, and avoid touching your eyes, nose and mouth. Your risk of getting a serious disease from being exposed to another person's blood while giving first aid care is very low (Source: CDC, https://www.cdc.gov/hai/pdfs/bbp/exp_to_blood.pdf). Still, if you are exposed to another person's blood while giving care, you should contact your healthcare provider.

Deciding to Act in an Emergency

In an emergency that involves life-threatening bleeding, your decision to act could make the difference between life and death for the person who needs help. There may be a crowd of people at the scene of the emergency, but it is possible that no one is helping. If no one is giving care or directing the actions of others, you can take the lead. If someone else is already giving care, confirm that 9-1-1 has been called and that the person giving care knows how to apply direct pressure and a tourniquet, if applicable. If the person giving care has not been trained in these skills, you should take over care. Otherwise, ask how you can help.

You might worry that you will make a mistake or cause the person more harm, or that you won't be able to handle the sight of blood or a traumatic injury. These are normal concerns, but know that by completing the First Aid for Severe Trauma training, you have the knowledge and skills you need to respond appropriately in an emergency that involves life-threatening bleeding. If you are ever unsure about what to do, call 9-1-1 and follow the emergency dispatcher's instructions. It is also important to know that laws are in place to help protect people who take action in an emergency (Box 1-5).



*FAST*Takes

- When there is life-threatening bleeding, first aid care provided by members of the community may make the difference between life and death for the injured person.
- To decide if bleeding is life-threatening, look at the amount of blood (volume) and the way the blood is moving (flow). If the amount of blood lost could fill a soda can halfway, or if the blood is flowing continuously or spurting, then the bleeding is life-threatening.
- In any emergency, remember the three action steps: **CHECK–CALL–CARE**. Check the scene for safety, then check the person for life-threatening conditions. Call 9-1-1 and get equipment. Then give care.
- When there is life-threatening bleeding, you must take action to control the bleeding as quickly as possible.

Box 1-5. Good Samaritan Laws

Good Samaritan laws were developed to encourage people to help others in emergency situations. They assume that a person who steps in to help in an emergency will:

- Do their best to save a life or prevent further injury.
- Use common sense.
- Provide care with a reasonable amount of skill.
- Provide only care that they have been trained to give.



Good Samaritan laws usually protect a person who acts the way a “reasonable and prudent” person would act if that person were in the same situation. For example, a reasonable and prudent person would:

- Move a person only if the person’s life is in danger.
- Obtain consent from the person (or from the person’s parent or guardian if the person is a minor) before giving care.
- Check the person for life-threatening conditions before giving care.
- Call (or tell someone to call) 9-1-1.
- Continue to give care until more highly trained responders take over.

For more information about your state’s Good Samaritan laws, contact a lawyer.



CHAPTER 2

Safety in Emergency Situations

In any emergency situation, your own safety is a primary concern. In this chapter, we'll review how to ensure your own safety, as well as the safety of others who are present, when responding to an emergency situation.

Keeping Yourself Safe in an Emergency

Before helping in an emergency, take a moment to check for potential safety hazards (Figure 2-1). If you become injured or ill while trying to help, you will be unable to help others, and you will have increased the number of people in need of help. In Chapter 1, you learned about checking the scene for safety. Before going to help an injured person, scan the entire area for safety hazards. Look up, down and all around. Think of this as doing a 360-degree check. Remember that your senses of smell and hearing may also alert you to potential dangers (Box 2-1). If you decide that the scene is safe, stay and help, but remain alert and aware of your surroundings at all times. A scene may become unsafe at any time. If you decide that the scene is not safe, stay a safe distance away and call 9-1-1.



Figure 2-1. Don't put yourself in danger while trying to help others. Take a moment to check for safety hazards before deciding on your next steps. *iStock.com/photovs*

Box 2-1. Signs of Safety Hazards

Unusual Sight

- Broken glass
- Flames, sparks or smoke
- Downed wires
- Collapsed structures
- Leaking or spilled fluids

Unusual Sounds

- Ringing alarms
- Glass breaking
- Loud or muffled popping or banging
- Hissing or crackling



Unusual Smells

- A foul odor
- An unrecognizable odor
- A chemical odor
- An acrid or "burning" smell
- The smell of gas or propane

Helping Others to Safety

In general, you should not move an injured person. Unnecessary movement can cause additional injury and pain and might complicate the person's recovery. However, under the following three conditions it may be appropriate to move an injured person:

- You must move the person to protect them from immediate danger (such as fire, flooding or poisonous gas). Only attempt this if you can reach the person and remove them from the area without putting yourself in danger.
- You must move the person to provide care for another person who is more seriously injured.
- You must move the person to give proper care.

If you must move a person in an emergency situation, do so as quickly and carefully as possible. (Figure 2-2).

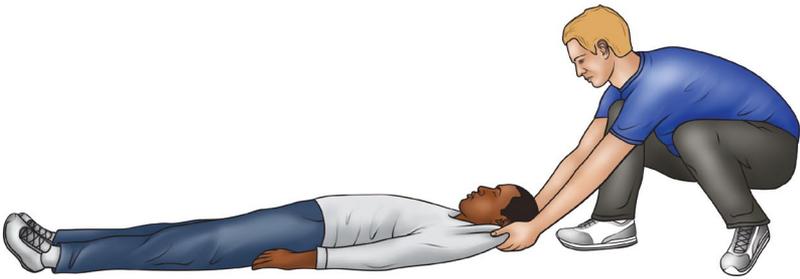


Figure 2-2. The “clothes drag” technique can be used if you have to move a person to safety. Grab the person’s shirt behind the neck, gathering enough material so that you have a firm grip. Cradle the person’s head with the shirt and your hands, and pull the person to safety.

Violent Situations

In a violent situation, such as an active shooter situation, always follow the instructions given by police or medical personnel who have arrived on the scene. If you are not sure what to do, think **RUN-HIDE-FIGHT**.

RUN

Your first option, if you have a clear escape route, is to run. Run away from the sounds of gunfire or other danger. Leave your belongings behind. Help move others to safety if possible, but do not try to move injured people. After you are safe, call 9-1-1.

HIDE

If you cannot run, hide. Choose a hiding place with few windows, if possible. Cover any windows to make it more difficult for the attacker to see you. Block the entry to your hiding place and lock the door. Silence all electronic devices and stay quiet.

FIGHT

If your life is in immediate danger and you have no other options, fight. Have a plan for disabling the attacker. If possible, work as a team with others. Use heavy items that are available to you (such as a fire extinguisher or chair) to strike the attacker in sensitive areas, such as the head, neck, groin or knees.



***FAST**Takes*

- In an emergency situation, your first priority is your own safety. Before rushing to help, do a 360-degree check for safety hazards. Look up, down and all around. Pay attention to any sounds or smells that could be signs of danger. If you decide the situation is unsafe, stay a safe distance away and call 9-1-1.
- Try to avoid moving an injured person. If you must move a person, do so as safely as possible. You don't want to injure yourself or cause further injury to the person.
- In a violent situation, think **RUN-HIDE-FIGHT**. Remember to always follow the instructions of any professional responders who have arrived on the scene.



CHAPTER 3

Communicating in Emergency Situations

In an emergency situation, every second counts. Communicating effectively with other people at the scene and with the emergency dispatcher prevents misunderstandings that can cause delays in care. In this chapter, we'll review the basics of communicating in an emergency situation.

“**In an emergency situation, communicating effectively can be lifesaving.**”

Communication Basics

Communication, or the process of giving and receiving information, involves a sender and a receiver. The people communicating with each other switch roles, sending and receiving messages back and forth.

In an emergency situation, it is often necessary to communicate with others. The person leading the response may ask another person at the scene to perform a task, such as getting the bleeding control kit or calling 9-1-1. The emergency dispatcher may provide instructions about what to do next or how to provide care. In situations like these, when the purpose of the communication is to make a request or give instructions, using a technique called **closed-loop communication** helps to ensure clear communication and prevent misunderstandings.

In closed-loop communication, the **sender** starts by sending a clear **message**. After receiving the sender's message, the **receiver** delivers their own message, called **feedback**. The sender then confirms the receiver's understanding or provides clarification as needed to "close the loop" (Figure 3-1). Providing feedback is very important because it lets the sender know that their message was received and understood.

To be a good communicator, you must be able to express yourself clearly in a way the other person can easily understand. You must also be able to receive information from the other person, which requires good listening skills. Strategies for effective communication include the following.

- **Make sure your message is clear.** Speak clearly in a calm tone of voice. Speak loudly enough to be heard. Use short sentences.
- **Use body language.** Use actions to make your communication stronger (such as making eye contact with the person you are speaking to or pointing to a person to make it clear that you are addressing them).
- **Be a good listener.** Focus on what the person is saying to you. If anything is unclear or you don't understand, tell the person.
- **Get and provide feedback.** When you are the sender, wait for feedback from the receiver. If the receiver does not provide feedback, get it before continuing. When you are the receiver, confirm that you have received the sender's message by repeating, in your own words, what the sender said.

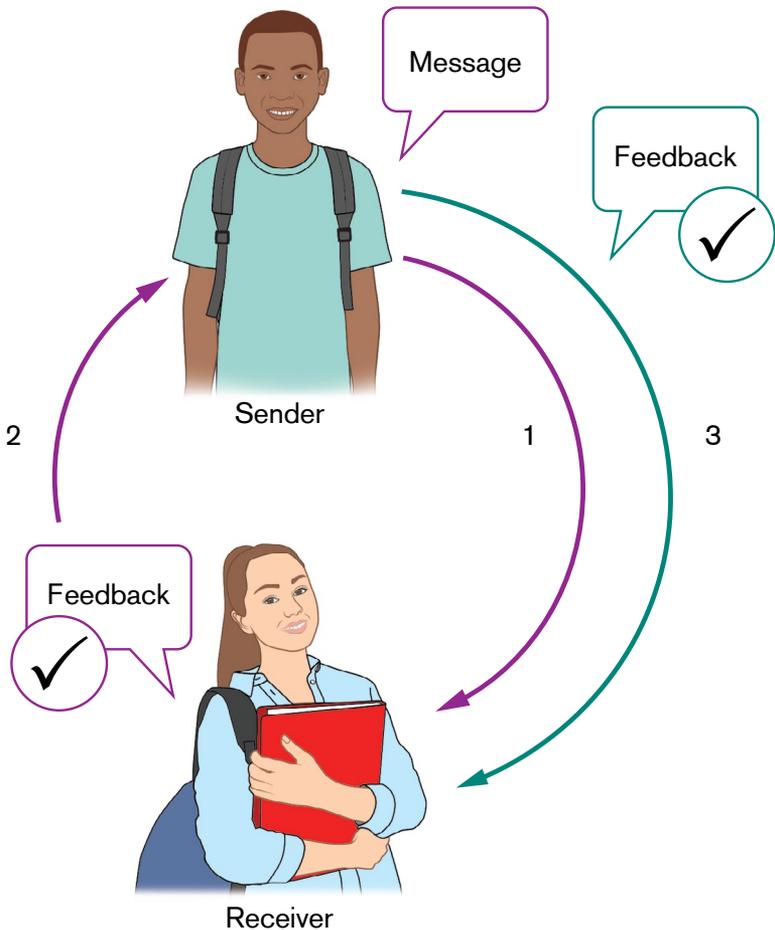


Figure 3-1. The sender starts by sending a clear message. The receiver provides feedback. The sender then provides their own feedback by confirming the receiver’s understanding or providing clarification as needed to “close the loop.”

Communicating with Others at the Scene

At the scene of an emergency, there may be multiple injured people, multiple responders and many things happening at once. Clear, closed-loop communication can help to limit confusion and save time by preventing misunderstandings (Figure 3-2).

When you are asking someone to do something for you at the scene of an emergency, clearly identify the person you want to complete the task. If you know the person's name, use it. If you do not know the person's name, identify the person in some other way. For example, you could say, "You, in the blue shirt, go get the bleeding control kit. It's on the wall by the main office." In addition to using words, use gestures. Make eye contact and point to the person to make it very clear who you are speaking to (Figure 3-3). Then look and listen for feedback from the person to ensure that your request was heard, understood and will be acted on. After the person provides feedback, confirm their understanding or provide clarification as needed.



Figure 3-2. During an emergency, many things may be happening at once. Good communication helps to minimize confusion and promotes efficiency.



Figure 3-3. At the scene of an emergency, avoid making general requests. Make it clear who you are speaking to and what you want the person to do.

When someone asks you to do something for them at the scene of an emergency, provide feedback by repeating what the person asked you to do in your own words (Figure 3-4). For example, if someone asks you to get the bleeding control kit, you could say, “I’m leaving to get the bleeding control kit from the wall by the main office.” This lets the person know that you heard their request correctly, that you understood their request, and that you are going to act on their request. If you are unsure of what the person is telling you or asking you to do, ask the person to repeat themselves or explain further. For example, you could say, “What did you want me to get?” This way, the person can clarify as needed. When you finish a task, let the person know. For example, when you return with the bleeding control kit, tell the person, “Here is the bleeding control kit you asked for.” Then look and listen for feedback from the person to ensure that they got your message.



Figure 3-4. Providing feedback is important because it lets the sender know their message was received.

Communicating with the Emergency Dispatcher

When calling 9-1-1, try to stay calm. Dispatchers are highly trained and will direct the conversation (Figure 3-5). Listen carefully to the dispatcher, answer the dispatcher's questions to the best of your ability and stay on the phone until the dispatcher ends the call. Many dispatchers are trained to give first aid instructions over the phone, which can be helpful if the person giving care needs to be reminded of the proper care steps or is unsure of what to do. If you are not the person giving care and you are calling from a mobile phone, the dispatcher may ask you to put the phone on speaker mode and bring it to the injured person's side. Follow any instructions that the dispatcher may give you.

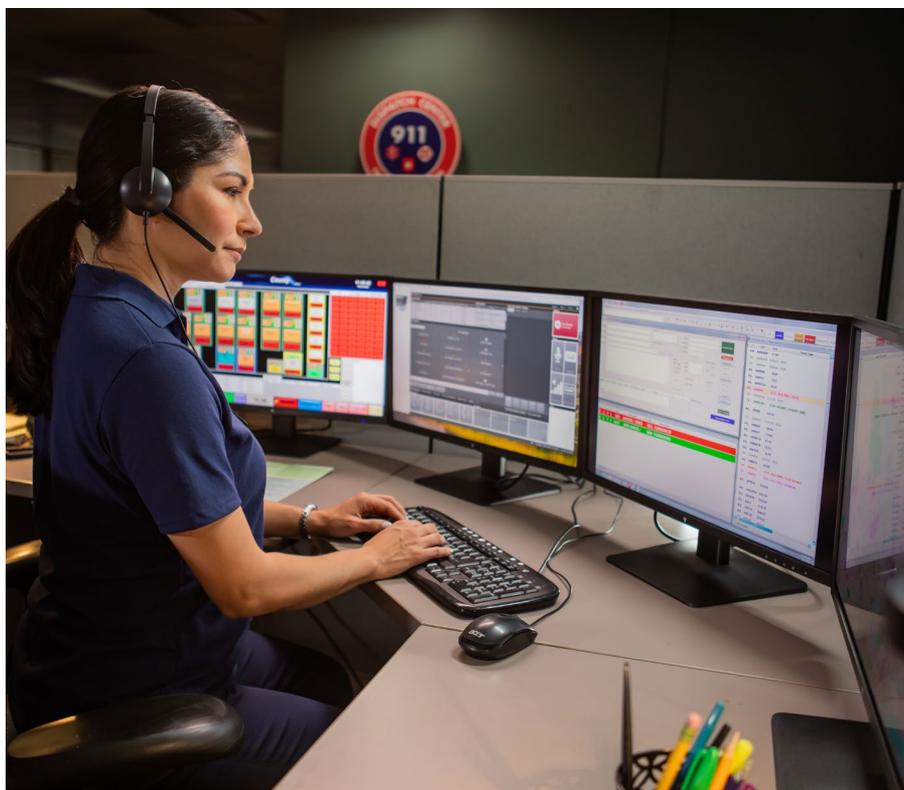


Figure 3-5. The emergency dispatcher will direct the call. Answer the dispatcher's questions to the best of your ability and follow any instructions the dispatcher may give you. Do not end the phone call until the dispatcher tells you it is OK to hang up.

Be ready to give the dispatcher essential information that will allow the dispatcher to get the right people to the scene to help quickly. Be prepared to tell the dispatcher:

- The location of the emergency (the address, or nearby intersections or landmarks if you do not know the address). Give details such as where the nearest entrance is located, what floor you are on, or what room or part of the building you are in (Figure 3-6). Let the dispatcher know if there are any special considerations related to gaining access to the building or property. For example, are there gates or doors that need to be unlocked? Are there animals that could present a hazard to responders?
- The type of emergency (for example, whether police, fire or medical assistance is needed).
- The telephone number of the phone you are calling from.
- A description of what happened.
- The number of injured or ill people.
- What help, if any, has been given so far, and by whom.
- Whether the person giving care needs instructions for providing first aid.



Figure 3-6. When calling 9-1-1, be prepared to answer the dispatcher's questions, including the location of the emergency.



FASTTakes

- In an emergency, use closed-loop communication skills to limit confusion and ensure that the injured person receives help quickly.
- When calling 9-1-1, be prepared to provide information that will help the dispatcher get the right people to the scene quickly. Answer the dispatcher's questions to the best of your ability and follow any instructions the dispatcher may give you. Stay on the phone until the dispatcher tells you it is OK to hang up.
- Dispatchers are often trained to give first aid instructions over the phone.



CHAPTER 4

Caring for a Person with Life-Threatening Bleeding

When a person has life-threatening bleeding, you must control the bleeding as quickly as possible to save the person's life. In this chapter, you'll learn how to provide first aid care for a person with life-threatening bleeding.

Pressure stops bleeding.

Using Pressure to Stop Bleeding

Firm, continuous pressure is the key to controlling bleeding (Box 4-1). Depending on the situation and the location of the wound, you may use direct pressure, a **tourniquet** (a device placed around an arm or leg to apply pressure to the blood vessels and stop blood flow to a wound), or both to control life-threatening bleeding (Figure 4-1).

Box 4-1. How Does Pressure Control Bleeding?

When you apply pressure to control life-threatening bleeding, you are squeezing the blood vessels so that they collapse, which will slow or stop the bleeding. With direct pressure, you collapse the vessels at the site of the wound, and with a tourniquet, you collapse the vessels that lead to the wound.

Because the vessels can be located deep in the body, it takes a lot of pressure to stop life-threatening bleeding. To get an idea of how much pressure is needed, think about having your blood pressure taken. To measure your blood pressure, the healthcare provider puts a cuff around your arm and pumps it up. As the cuff fills with air, it puts pressure on your arm, stopping the normal flow of blood. If you have ever had your blood pressure taken, you know that the amount of pressure the inflated cuff applies to your arm can be uncomfortable. It's a lot of pressure! When you are using pressure to control life-threatening bleeding in an emergency situation, you need to apply at least as much pressure as a blood pressure cuff, if not more. That's why you need to push as hard as you can when you are applying direct pressure, and why you need to tighten the tourniquet as much as you can when you are using a tourniquet.



Stop Life-Threatening Bleeding

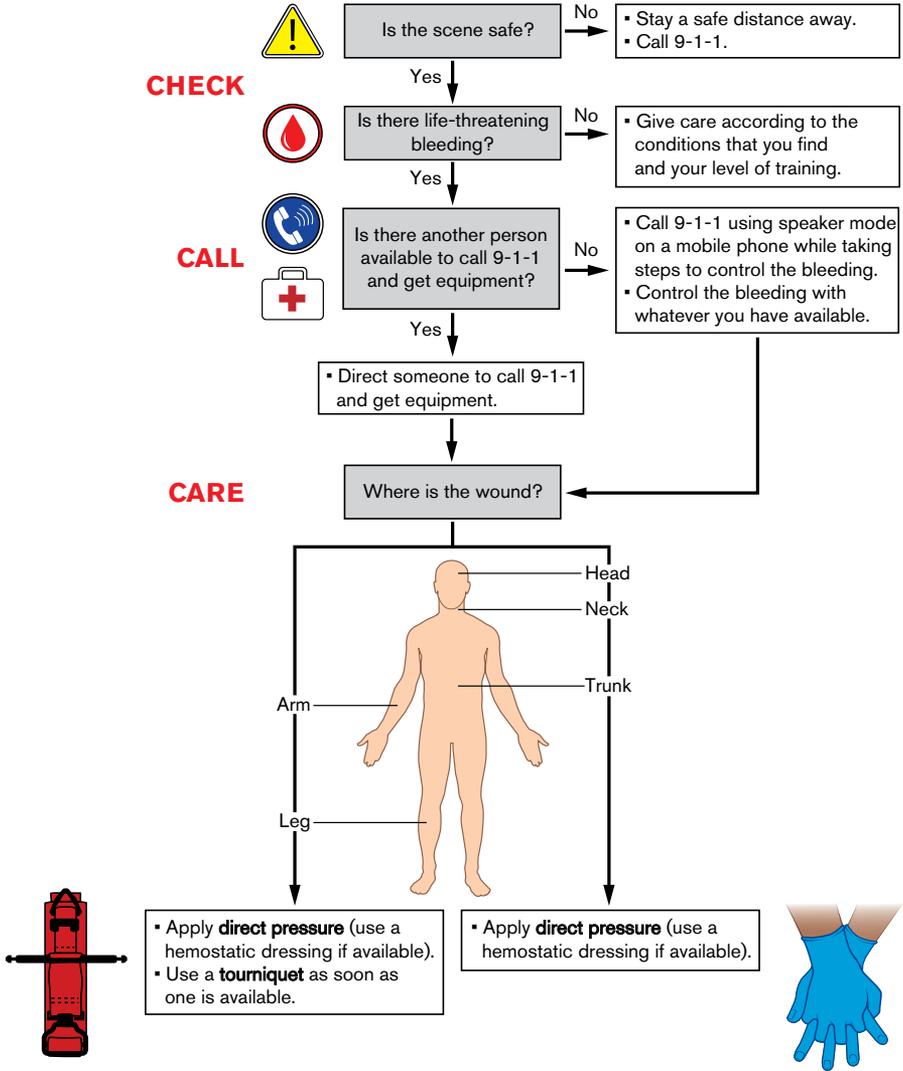


Figure 4-1. The approach you use to stop life-threatening bleeding depends on the situation and the location of the wound.

Applying Direct Pressure

Applying steady pressure directly over a wound is one way to stop bleeding. If you have ever held a piece of gauze, tissue or cloth over a small cut or minor wound and applied pressure until the bleeding stopped, then you have used direct pressure to stop bleeding. The idea is the same when you are using **direct pressure** to stop life-threatening bleeding—you just may have to apply more pressure and hold it for a longer period of time.

When bleeding is life-threatening and the wound is on the head, neck or trunk, you should use direct pressure to stop the bleeding (Figure 4-2A). You should also use direct pressure to stop life-threatening bleeding from an arm or a leg until a tourniquet can be applied, or if no tourniquet is available (Figure 4-2B). When you are using direct pressure to control life-threatening bleeding, remember two key things:

- Press as hard as you can, directly on the wound.
- Hold the pressure until the bleeding stops. This may take at least 5 minutes and could take much longer.



Figure 4-2. (A) Use direct pressure when there is life-threatening bleeding from a wound on the head, neck or trunk. (B) You should also use direct pressure until you can apply a tourniquet (or if no tourniquet is available) when there is life-threatening bleeding from a wound on an arm or a leg.

To apply direct pressure, put on gloves if you have them. Then place a dressing on the wound. A **dressing** is a pad that absorbs blood and promotes clotting. Bleeding control kits and first aid kits often contain a special type of dressing called a hemostatic dressing (Figure 4-3). A **hemostatic dressing** contains a substance that helps stop bleeding faster (“hemo” = blood; “static” = stop). When the bleeding is life-threatening, use a hemostatic dressing if you have one. Otherwise, use gauze. If you don’t have gauze, you can use another piece of material (such as a clean T-shirt) as a dressing. If there is no material available to use as a dressing, just apply direct pressure without a dressing.

The dressing is most effective when there is good contact between the dressing and the bleeding surfaces of the wound, so press the dressing against the bleeding surfaces of the wound as you place it on the wound. Then put one hand on top of the other on top of the wound. Position your shoulders over your hands and lock your elbows. Then push down as hard as you can to apply pressure directly over the wound until the bleeding stops (Figure 4-4). If you need your hands, use your knee to keep applying direct pressure. Keep in mind that a hard, flat surface underneath the part of the body where you are applying pressure makes applying direct pressure more effective.



Figure 4-3. Hemostatic dressings are treated with a substance that helps stop bleeding faster.

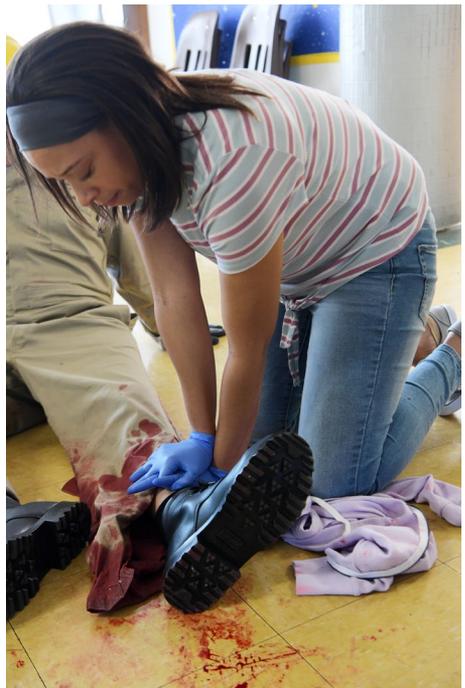


Figure 4-4. When applying direct pressure, position your shoulders directly over your hands and lock your elbows. Use both hands and push down as hard as you can. If possible, position the injured body part on a flat, hard surface so that when you apply pressure, you are pressing against something.

You need to use a lot of pressure for the bleeding to stop. The amount of pressure that you must apply is likely to be uncomfortable for the person. Tell the person to expect pain, and explain that you have to press hard to control the bleeding. Do not release the pressure. Keep applying pressure until the bleeding stops, a tourniquet is applied (for life-threatening bleeding from an arm or a leg), someone else takes over for you, you are too exhausted to continue or the situation becomes unsafe.

See Skill Sheet 4-1 at the end of this chapter for step-by-step instructions for applying direct pressure.

Using a Tourniquet

Only use a tourniquet for life-threatening bleeding from an arm or a leg (Figure 4-5). Never use a tourniquet for non-life-threatening bleeding or for bleeding from a wound on the head, neck or trunk.

Use a tourniquet as soon as you recognize life-threatening bleeding from an arm or a leg and a tourniquet is available. Continue to apply direct pressure until the tourniquet is in place and the bleeding has stopped (Figure 4-6). Applying a tourniquet can be painful for the person, so warn the person ahead of time and explain that you need to tighten the tourniquet as much as possible in order to stop the bleeding.



Figure 4-5. Only use a tourniquet for life-threatening bleeding from an arm or a leg.



Figure 4-6. Continue to apply direct pressure until the tourniquet is on and the bleeding has stopped.

Once you have applied a tourniquet, do not loosen or remove it. Only a trained medical professional should loosen or remove a tourniquet. If you have tightened the tourniquet as much as you can but the bleeding still has not stopped, you can apply a second tourniquet above the first, closer to the heart (Figure 4-7).



Figure 4-7. If necessary, apply a second tourniquet above the first.

Windlass rod tourniquets

One common type of tourniquet is called a windlass rod tourniquet (Figure 4-8). To use a windlass rod tourniquet, place the tourniquet around the arm or leg at least 2 to 3 inches above the wound, between the wound and the heart. Do not place the tourniquet directly on top of the wound or a joint. Attach the buckle or pass the end of the strap through the buckle. Then, think **PULL-TWIST-CLIP** (Figure 4-9).

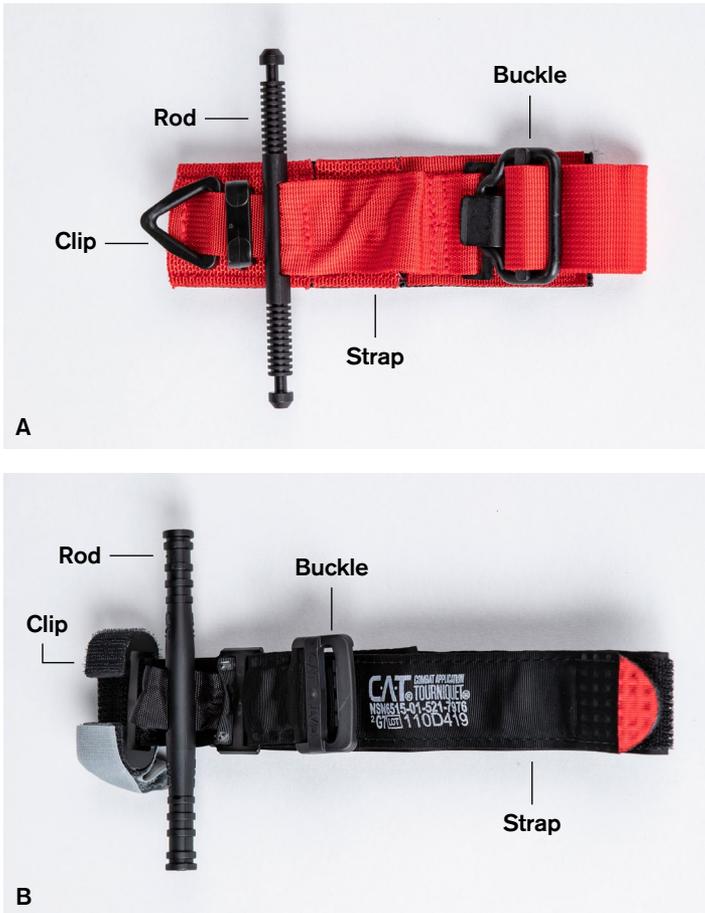


Figure 4-8. Windlass rod tourniquets have four main parts: a strap, a buckle, a rod and a clip. Examples of windlass rod tourniquets include (A) a SOF Tactical Wide windlass rod tourniquet and (B) a CAT windlass rod tourniquet.

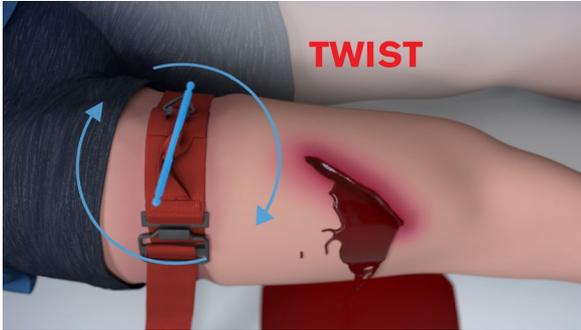
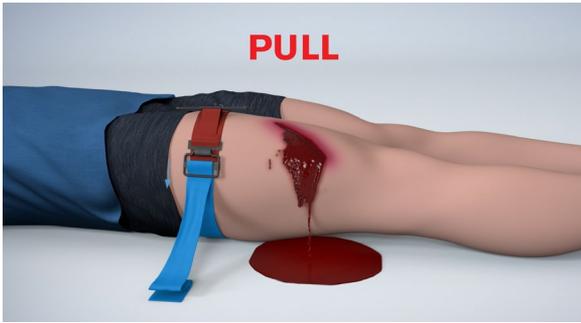


Figure 4-9. To secure a windlass rod tourniquet, think **PULL-TWIST-CLIP**.

- **PULL** the free end of the strap until the tourniquet is as tight as possible around the arm or leg. If the strap has a hook-and-loop fastener, securely fasten the strap back onto itself after you have pulled the tourniquet as tight as possible around the arm or leg.
- **TWIST** the rod. This is likely to be uncomfortable for the person, but keep twisting until the bleeding stops or until you cannot twist the rod anymore, even if the person complains of pain.
- **CLIP** the rod in place to prevent the rod from untwisting and to keep the tourniquet tight.

See Skill Sheet 4-2 at the end of this chapter for step-by-step instructions for using a windlass rod tourniquet.

Ratcheting tourniquets

Position a ratcheting tourniquet the same way you would position a windlass rod tourniquet, and pull the strap to tighten the tourniquet around the arm or leg. To finish tightening a ratcheting tourniquet, lift up on the buckle to operate the ratchet and tighten the tourniquet (Figure 4-10). You will hear a clicking sound as you lift up on the buckle. Keep lifting up on the buckle until the bleeding stops or until you cannot lift the buckle anymore. Ratcheting tourniquets are self-securing.

See Skill Sheet 4-3 at the end of this chapter for step-by-step instructions for using a ratcheting tourniquet.

Other types of tourniquets

Follow the manufacturer's instructions for applying the tourniquet that you have. Although tourniquets may have slightly different designs, all are used in generally the same way:

1. Position the tourniquet snugly around the arm or leg at least 2 to 3 inches above the wound, between the wound and the heart.
2. Tighten the tourniquet until the bleeding stops.
3. Secure the tourniquet so that it stays tight.



Figure 4-10. A ratcheting tourniquet has a ratchet instead of a rod.

After the Bleeding Stops

After you have stopped the bleeding, make sure the person is in a **position of comfort**. This is a position that allows the person to breathe most easily and remain comfortable and minimizes the person's risk for a blocked airway.

A person who is awake and alert will often get into a position of comfort on their own. For example, many people who feel short of breath find that leaning forward with their hands on their knees makes it easier to breathe. After stopping the bleeding, let an injured person who is awake and alert position themselves (Figure 4-11). Do not force the person to lie down.

If the person is unresponsive but breathing or responsive but not fully awake, put the person into a **recovery position** onto their side after you have stopped the bleeding (Box 4-2). The recovery position helps to keep the person's airway open. You should also use the recovery position if the person begins to vomit. If you think the person might have a head, neck, spinal or pelvic injury, leave the person in the position that you found them in.



Figure 4-11. After you have stopped the bleeding, let a person who is awake and alert position themselves the way they are most comfortable. Do not force the person to lie down.

Box 4-2. Recovery Position

To place a person in the recovery position:

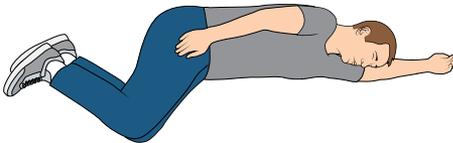
- Extend the person's arm that is closest to you above the person's head.



- Roll the person toward you onto their side, so that the person's head rests on their extended arm.



- Bend both of the person's knees to stabilize the person's body.



After placing the person in the recovery position, check to make sure any tourniquets that have been applied are still in place and tight and that the bleeding has not restarted. Remember the person may have bleeding from more than one wound.

After you have provided care for a person with life-threatening bleeding, maintain the person's body temperature. You may need to cover the person with extra clothing or a blanket to prevent the loss of body heat (Figure 4-12).



Figure 4-12. After you have stopped life-threatening bleeding, cover the person if needed to help keep them warm.



FASTTakes

- Firm, continuous pressure stops bleeding. You can apply pressure using your hands, a tourniquet, or both.
- When using direct pressure to control life-threatening bleeding, press as hard as you can, directly on the wound, until the bleeding stops. This may take at least 5 minutes but could take much longer.
- When using a windlass rod tourniquet to control life-threatening bleeding, position the tourniquet at least 2 to 3 inches above the wound on the side closest to the heart and think **PULL-TWIST-CLIP**. Keep twisting the rod until the bleeding stops or until you cannot twist the rod anymore.
- Only use a tourniquet for life-threatening bleeding from an arm or a leg.
- After controlling the bleeding, ensure that the person is in a position of comfort, and cover the person as needed to help keep them warm.

Skill Sheet 4-1. Applying Direct Pressure

1. Put on gloves, if you have them.

- If the bleeding is life-threatening, do not wait until you have gloves to provide care.

2. Find the source of the bleeding.

- There may be one wound or more than one wound.
- Care for life-threatening bleeding first.

3. Tell the person to expect pain.

- The amount of pressure you need to apply may be painful for the person, but it is necessary to control the bleeding.

4. Choose a dressing.

- If the bleeding is life-threatening, use a hemostatic dressing if you have one.
- Otherwise, use a gauze pad or other available material (such as a clean T-shirt) as a dressing.

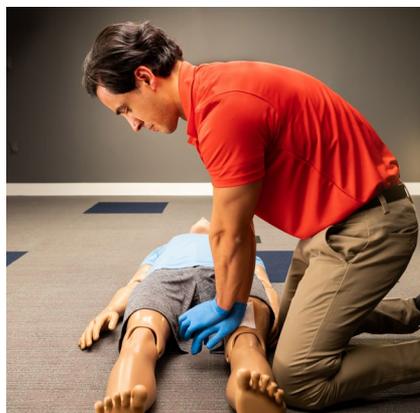
5. Place the dressing on the wound.

- Ensure good contact with the bleeding surfaces of the wound.



6. Apply steady, firm pressure directly over the wound until the bleeding stops.

- Put one hand on top of the dressing and put your other hand on top.
- Position your shoulders over your hands and lock your elbows.
- Push down as hard as you can.
- If you need your hands, use your knee to apply pressure.
- Remember that direct pressure is most effective when the injured body part is on a firm, flat surface.



7. Hold direct pressure until:

- A tourniquet is applied (for life-threatening bleeding from an arm or leg) and the bleeding has stopped.
- Another person relieves you.
- The bleeding stops.
- You are too exhausted to continue.
- The situation becomes unsafe.

Skill Sheet 4-2. Using a Windlass Rod Tourniquet

1. Put on gloves, if you have them.

- If the bleeding is life-threatening, do not wait until you have gloves to provide care.

2. Find the source of the bleeding.

- There may be one wound or more than one wound.
- Use a tourniquet for life-threatening bleeding on an arm or a leg.

3. Tell the person to expect pain.

- Tightening the tourniquet may be painful for the person, but it is necessary to control the bleeding.

4. Position the tourniquet.

- Place the tourniquet at least 2 to 3 inches above the wound, between the wound and the heart.
- Do not place the tourniquet on top of the wound or a joint.



5. Buckle the tourniquet.

- Attach the buckle or pass the end of the strap through the buckle.



6. PULL.

- Pull the free end of the strap until the tourniquet is as tight as possible around the arm or leg.
- If the strap has a hook-and-loop fastener, securely fasten the strap back onto itself after you have pulled the tourniquet as tight as possible around the arm or leg.



7. TWIST.

- Twist the rod until the bleeding stops or until you cannot twist it anymore.



8. CLIP.

- Clip the rod in place to prevent the rod from untwisting and to keep the tourniquet tight.



Skill Sheet 4-3. Using a Ratcheting Tourniquet

1. Put on gloves, if you have them.

- If the bleeding is life-threatening, do not wait until you have gloves to provide care.

2. Find the source of the bleeding.

- There may be one wound or more than one wound.
- Use a tourniquet for life-threatening bleeding on an arm or a leg.

3. Tell the person to expect pain.

- Tightening the tourniquet may be painful for the person, but it is necessary to control the bleeding.

4. Position the tourniquet.

- Place the tourniquet at least 2 to 3 inches above the wound, between the wound and the heart.
- Do not place the tourniquet on top of the wound or a joint.



5. PULL.

- While holding the loop, pull tightly on the strap until the tourniquet is as tight as possible around the arm or leg.



6. LIFT.

- Lift up on the buckle to operate the ratchet and tighten the tourniquet.
- You will hear a clicking sound as you lift up on the buckle.
- Keep lifting up on the buckle until the bleeding stops or until you cannot lift it up anymore.



Glossary

360-degree check: a technique for checking an emergency scene for safety; look up, down and all around for safety hazards

Bleeding control kit: a response kit that contains equipment used to control life-threatening bleeding, such as hemostatic dressings and tourniquets

Closed-loop communication: a communication technique used to ensure clear communication and prevent misunderstandings; the receiver confirms that the message is received and understood

Consent: permission to give care

Direct pressure: a technique used to control bleeding that involves pushing firmly on the wound until the bleeding stops

Dressing: a pad that is placed on or in a wound to absorb blood and other fluids and promote clotting

External bleeding: bleeding that is visible on the outside of the body

Feedback: in closed-loop communication, confirmation by the receiver that the message is received and understood

Flow: a way to recognize life-threatening bleeding; the movement of blood

Good Samaritan laws: laws that protect people against claims of negligence when they give emergency care in good faith without accepting anything in return

Hemostatic dressing: a dressing that contains a substance that speeds clot formation, helping to stop bleeding faster

Implied consent: permission to give care that is not expressly granted by the person but is assumed because circumstances exist that would lead a reasonable person to believe that the person (or the person's parent or guardian) would give consent if they were able to

Internal bleeding: bleeding that occurs inside the body

Life-threatening bleeding: severe bleeding in terms of the amount of blood lost (enough to fill a soda can halfway), the way the blood moves (flowing continuously or spurting), or both; can lead to death in a matter of minutes

Message: in closed-loop communication, the content of the communication

Position of comfort: a position that allows the person to breathe most easily and remain comfortable and minimizes the person's risk for a blocked airway

Receiver: in closed-loop communication, the person for whom the message is intended

Recovery position: a side-lying position that is used to keep a person's airway open and decrease the risk for choking

Sender: in closed-loop communication, the person initiating the communication

Tourniquet: a device placed around an arm or leg to apply pressure to the blood vessels and stop blood flow to a wound

Volume: a way to recognize life-threatening bleeding; the amount of blood present

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We're bringing help and hope to millions thanks to the commitment of people like you.

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American Red Cross
Training Services



American Red Cross
Training Services



American Red Cross Training Services and the Scientific Advisory Council

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We encourage you to visit our Scientific Advisory Resource Center
at redcross.org/science

The scientific content within this Red Cross program is consistent with the most current science and treatment recommendations from the International Liaison Committee on Resuscitation (ILCOR) 2020 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science with Treatment Recommendations; the International Federation of Red Cross and Red Crescent Societies; and the policy statements, evidence reviews and guidelines of the American Academy of Pediatrics (AAP), the American College of Emergency Physicians (ACEP), the American College of Surgeons (ACS), the Committee on Tactical Combat Casualty Care (CoTCCC), the Society of Critical Care Medicine (SCCM) and the American College of Critical Care Medicine (ACCM).

Mission

The American Red Cross prevents and alleviates human suffering in the face of emergencies by mobilizing the power of volunteers and the generosity of donors.

