



# Unit 5

## Assessing a Casualty and Performing CPR

### Learning Outcomes

**By the end of this unit the learner will be able to:**

- ✓ Determine if and when a casualty requires CPR in an emergency situation
- ✓ Understand the basic process of performing CPR on a casualty
- ✓ Know the important differences between CPR for adults and children

## Unit 5

### Assessing a Casualty & Performing CPR

#### Examining a Sick or Injured Person

You already know from the previous chapters that you must take responsibility for making assessments in order to ensure the best possible outcome for anyone who is injured or becomes ill unexpectedly. Inform those on the scene that you are a trained first responder and take control of the situation. However, as mentioned in Chapter 2, resist the urge to deal with any casualty until you've assessed the overall situation.

#### Taking Care of the Injured or Sick

There are three points to consider:

- First, figure out what's wrong with the victim.
- Second, treat conditions in order of severity, with life-threatening conditions being treated first.
- Finally, make plans for the next step in a casualty's care.

You'll have to decide what kind of assistance a casualty requires. You may need to call for emergency assistance after ensuring that everyone involved is safe and, if necessary, organizing the necessary assistance. Look back at unit 2 as you read this unit and remember the following:

- Maintain your composure.
- Be aware of the dangers
- Build and maintain the casualty's trust
- Obtain the necessary assistance.
- Keep in mind your own requirements.

Allow the casualty to seek medical advice or go home with you if you believe it is necessary. Other witnesses to the incident may be able to assist you. While you attend to a casualty, have one of them dial 999 for emergency assistance. They may also be able to care for less seriously injured victims or retrieve first-aid supplies.

#### Methods of Assessment

The primary survey, when assessing a casualty, is to identify and treat any life-threatening conditions or injuries. Before moving on to the next stage, deal with each life-threatening condition as it arises, working in the following order: airway, breathing, and circulation. You may or may not be able to proceed to the next stage of the assessment depending on your

findings. You can continue the assessment and conduct a secondary survey if the life-threatening injuries have been successfully managed, or if there are none.

## The Primary Survey

This is a quick assessment of a casualty to determine and treat conditions that pose a life-threatening threat. This survey will be completed quickly if a casualty is conscious, suffering from minor injuries, and talking to you. This assessment will take longer if a casualty is more seriously injured (for example, unconscious). Follow the ABC principle (Airway, Breathing, and Circulation):

- **Airway** Is the airway open and clear? If the victim is unable to speak, the airway is not open and clear. A blocked airway prevents breathing, resulting in hypoxia and, eventually, death. If the casualty is speaking to you, the airway is open and clear.
- **Breathing** Is the person who has been injured breathing normally? If the victim is not breathing normally, dial 999 for assistance and begin chest compressions with rescue breaths (cardiopulmonary resuscitation/CPR). You are unlikely to advance to the next stage if this occurs. If the victim is having trouble breathing, check for and treat any breathing problems, such as asthma, before moving on to the next stage: circulation.
- **Circulation** Is the casualty bleeding profusely? If he is bleeding, it must be treated right away because it can lead to shock, which is a life-threatening condition. For immediate assistance, dial 999. Continue to the secondary survey if there is no bleeding.

## The Recovery Position

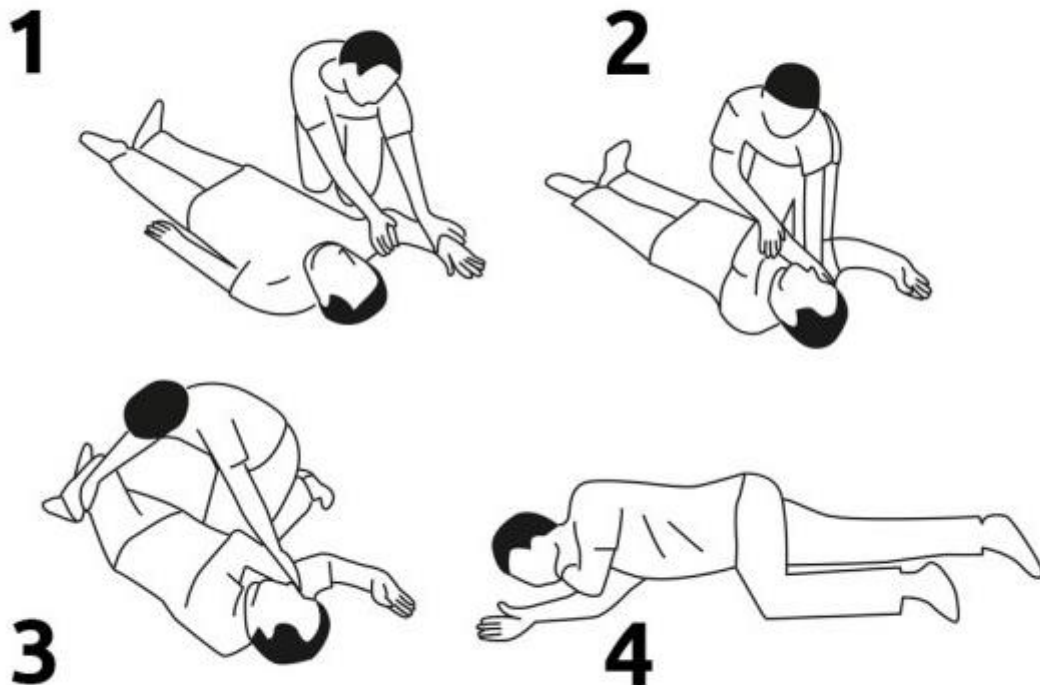
If you're providing first aid to someone who is unconscious but breathing normally, placing them in the recovery position will keep their airway open and reduce their risk of choking on fluids, such as if they vomit.

If a spinal injury is suspected or if a person has any life-threatening conditions, they should not be moved into the recovery position.

To get someone into the recovery position, do the following:

- Kneel next to the person.
- With their elbow bent and their hand at the level of their head, move the arm closest to you into a right angled position in relation to their body.
- Gently take their other hand in yours (palm to palm). Raise your hand across the person's body and place the back of it against their opposite cheek (for example, the back of their right hand should be touching their left cheek). Continue to roll them while keeping your hand in theirs to guide and support their head.
- Reach down with your free hand to the person's knee who is furthest away from you. Raise this knee to the point where the leg is bent and the foot is flat on the floor.

- Pull the person's bent knee towards you, causing them to roll onto their side and face you. To keep the person balanced on their side, you should leave the leg you just pulled over bent.
- Gently lift the person's chin and tilt their head back slightly to open their airway. Check the person's airway for any obstructions, such as food in their mouth that could cause the airway to become blocked. If it is safe to do so, remove any obstructions.
- If the person is in the recovery position, don't leave them alone. You'll need to keep an eye on their breathing until medical assistance arrives.



### Spinal injury:

If you suspect a person's spine has been injured, they should only be moved by emergency personnel unless they are in danger of choking or further injury.

If there is evidence that the person has suffered trauma to the head or back and is or has been unconscious, you should suspect a spinal injury.

If a person's spine has been injured, one or more of the following signs and symptoms may appear:

- Neck or back pain that is severe
- Spasticity (the muscles spasm and feel tight and stiff)

- Feelings of weakness, numbness, or paralysis
- Loss of limb, bladder, and bowel control
- Breathing problems

If you're treating someone with a suspected spinal injury, kneel at the top of their head (facing their feet) and place your hands on either side of their face to open their airway. The person's jaw is then gently lifted by gently pushing the jaw bone upwards and forwards with your fingers. Make sure they don't move their head or neck while you're doing this.

You will need assistance to roll the person if you absolutely must move them (for example, because they are vomiting, choking, or are in danger of further injury).

### **Performing CPR**

CPR works by keeping a person's blood flowing until medical assistance arrives. Even if you don't have any first aid training, you can save a life by following the CPR steps.

CPR can double or even triple a person's chances of survival if it is started immediately after their heart stops beating.

### **CPR steps**

When an adult is not breathing or only gasping occasionally, or when they don't respond to questions or taps on the shoulder, perform CPR.

Use CPR on children and infants who are not breathing normally or responding.

After making sure the area is safe, follow these basic CPR steps:

1. Dial 999 or have someone else dial it for you.
2. Turn the person over and open their airway.
3. Check for breathing. Start CPR if they are not breathing.
4. Perform 30 chest compressions.
5. Perform two rescue breaths.
6. Repeat until an ambulance or automated external defibrillator (AED) arrives.

Continue reading for more information on how to perform CPR on adults, children, and infants.

## Step-by-step CPR

The preparation stage and the CPR stage are the two main stages of CPR.

### Steps in the preparation process

Use the following preparation steps before performing CPR on an adult:

#### Step 1: Dial 999.

First, look around for things that could endanger you, such as traffic, fire, or falling masonry. After that, examine the individual. Do they require assistance? "Are you OK?" tap them on the shoulder.

Before performing CPR, call 999 or ask a bystander to call 999 if they are not responding.



1 Call 999 or ask someone else to



2 Lay the person on their back and open their airways



3 If they are not breathing, start CPR



4 30 chest compressions



5 Two rescue breaths



6 Repeat until an ambulance or AED arrives

**Step 2: Lie the person down on their back and clear their airway.**

Kneel beside the person's chest and carefully place them on their back. Raise their chin and tilt their head back slightly.

Check for any obstructions in their mouth, such as food or vomit. If there is a loose obstruction, remove it. Attempting to grasp it if it is not loose may push it further into the airway.

**Step 3: Look for signs of breathing.**

Listen for no more than 10 seconds with your ear next to the person's mouth. Start CPR if you don't hear breathing or only hear occasional gasps.

Do not perform CPR on someone who is unconscious but still breathing. Instead, if they do not seem to have a spinal injury, place them in the recovery position. Maintain a close eye on their breathing and administer CPR if they stop breathing.

**CPR steps**

To perform CPR, follow these steps:

**Step 4: Chest compressions for 30 seconds.**

Clasp your hands together with one hand on top of the other. Push hard and fast in the center of the chest, slightly below the nipples, with the heel of your hands and straight elbows.

Push at least 2 inches deep. At least 100 times per minute, compress their chest. Between compressions, allow the chest to fully rise.

## Chest compressions



**Adult**



**Child**



**Infant**



press down  
↓ **2 inches**



press down  
↓ **2 inches**



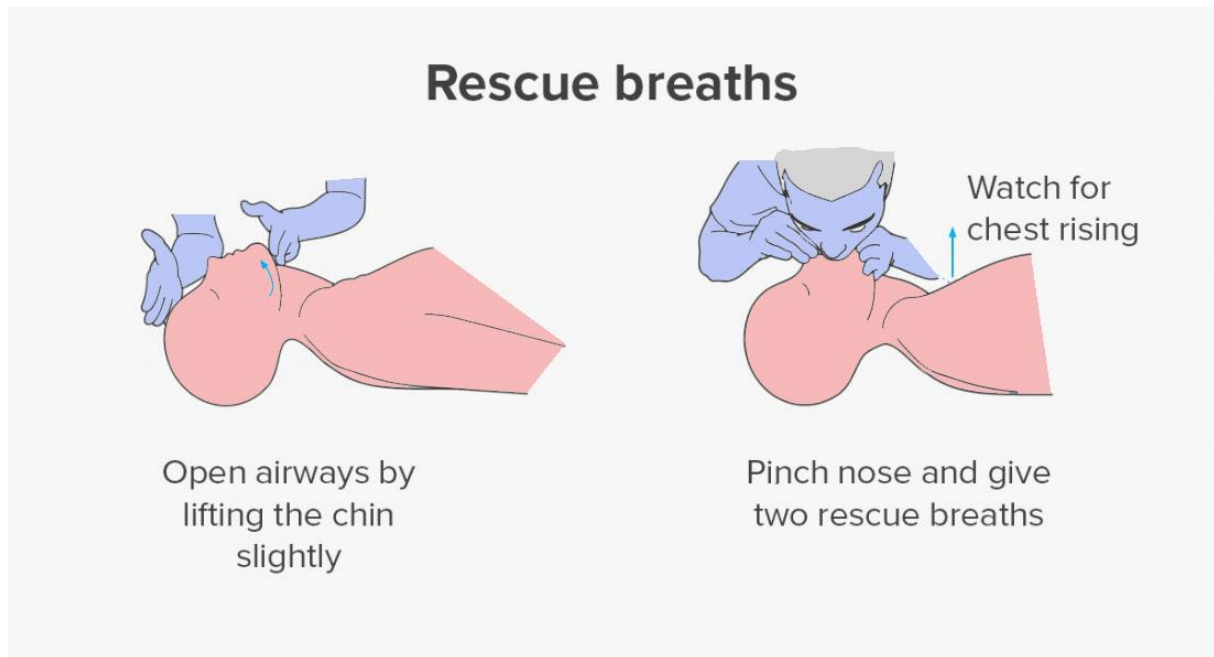
press down  
↓ **1.5 inches**

Perform 30 chest compressions at a rate of 100 per minute, letting the chest rise between each

### **Step 5: Perform two rescue breaths**

Tilt their head back slightly and lift their chin to ensure their mouth is clear. Pinch their nose shut, cover their mouth with yours, and blow to raise their chest.

Retilt their head if their chest does not rise with the first breath. The person may be choking if their chest does not rise with a second breath.



#### Step 6: Repeat

Repeat the 30 chest compressions and two rescue breaths cycle until the person begins to breathe or help arrives. If an AED is brought to the scene, continue CPR until the machine is set up and ready to go.

CPR can ensure that oxygen-rich blood reaches the brain if someone is not breathing. This is critical because without oxygen, a person can suffer permanent brain damage or die in less than eight minutes.

If a person stops breathing in any of the following situations, CPR may be required:

- A heart attack or cardiac arrest
- Choking
- A collision with another vehicle on the road
- Near-drowning
- Suffocation
- Poisoning
- An overdose of drugs or alcohol
- Inhalation of smoke
- Electrocution
- Suspected sudden infant death syndrome

Perform CPR only if the adult is not breathing or if the child or infant is not breathing normally and their blood is not circulating. This is why it's crucial to make sure the person isn't responding to verbal or physical calls for help before beginning CPR.

CPR (cardiopulmonary resuscitation) is a life-saving first-aid procedure. It can increase a person's chances of survival if they have a heart attack or stop breathing as a result of an accident or trauma.

Depending on whether the person is an infant, a child, or an adult, the steps differ. The basic cycle of chest compressions and rescue breaths, however, will not change.

CPR should only be used if an adult has stopped breathing. Before beginning CPR, check to see if the person responds to verbal or physical stimuli.

### AED

A defibrillator (AED) is a small, portable electronic device that delivers an electric shock to the heart in an attempt to disrupt or stop abnormal electrical activity. An abnormal heart rhythm is linked to abnormal electrical activity, and a continuous abnormal rhythm is insufficient to pump blood and deliver oxygen throughout the body.

An AED shock will not be able to revive a heart that has stopped beating; the heart must have a rhythm (even though the rhythm is abnormal). When connected to an unconscious person via leads, the AED will automatically diagnose any cardiac arrhythmia. When you see one of these dangerous rhythms, you can use the AED electrical therapy or a shock (defibrillation) to stop the arrhythmia and allow the heart to return to a normal and effective rhythm. Many first-aid, first-responder, and CPR classes will teach you how to use an AED.



## The Secondary Survey

This is a thorough examination of a victim to look for other injuries or conditions that may not be visible during the initial survey. To do so, conduct a thorough examination from head to toe. Your goal is to discover:

- A detailed account of what occurred, as well as any relevant medical history.
- Symptoms Injuries or abnormalities that the casualty tells you about.
- Observable signs Injuries or abnormalities.

You can figure out what's wrong by looking at the recognition features of the various injuries and conditions described in the book's chapters. Keep track of your findings and inform the medical team of any pertinent information.

### Level of Response

You'll have noticed whether or not a casualty is conscious at first. He could have said something to you, made eye contact, or made another gesture. Perhaps you haven't received a response to your questions like "Are you all right?" or "What happened?" Now you must use the AVPU scale to determine the level of response. Because some illnesses and injuries cause a casualty's level of response to deteriorate, it's critical to assess the level and then monitor him for changes.

### Mechanisms of Injury

The type of injury a person suffers is directly proportional to the manner in which the injury occurs. The mechanisms that caused the injury also determine whether a casualty receives a single or multiple injuries. This is why it's crucial to have a record of what happened.

In many cases, only those who deal with the casualty on the scene, such as first responders, can obtain this crucial information. Examine the circumstances in which an injury occurred, as well as the forces involved.

The data is useful because it aids emergency responders and medical personnel in predicting the type and severity of injury, as well as treatment options. As a result, the casualty's diagnosis, treatment, and likely outcome are aided.

### Circumstances of Injury

If you know exactly how the incident happened, you can predict the extent and type of injuries sustained as a result of impact—for example, a fall from a height or the impact of a car crash. In a side-impact collision, for example, a car occupant is more likely to sustain serious injuries than in a frontal collision at the same speed.

This is due to the fact that the side of the car offers less protection and cannot absorb as much energy as the front. A specific pattern of injuries can be suspected in a driver wearing a

seatbelt whose vehicle is struck either head on or from behind. The driver's body will be propelled in one direction, but the driver's head will lag behind for a short time before moving.

This causes a “whiplashing” motion in the neck (below). The seatbelt restraint may have also caused injuries to the victim, such as a fractured breastbone and possibly bruising of the heart or lungs. Face injuries are possible as a result of contact with the steering wheel or an inflated airbag.

### Exertion of Forces on the Body

Another important indicator of the type or severity of any injury is the energy forces exerted during the impact. A person who falls from a height of 3 feet (1 m) or less onto hard ground, for example, will most likely suffer bruising but no serious injury. A fall from a height of more than 10 feet (3 meters), on the other hand, is more likely to cause serious injuries like a pelvic fracture or internal bleeding. A seemingly minor fall can conceal a more serious injury. In vulnerable people, such as the elderly, those with bone disorders, or those taking blood thinners, a fall from a standing position can result in serious head or other injuries.



### Questions to Consider While on the Scene

When attending a casualty, ask the casualty and any witnesses' questions to try to figure out how the injury occurred. Witnesses are particularly important if the victim is unable to communicate with you. The following are some examples of possible questions:

- What was the extent of the casualty?
- What type of surface did she land on?
- Is there evidence of body contact with a solid object, such as the floor, a coffee table, or a vehicle's windshield?
- How did she fall? (For example, twisting falls can stretch or tear the ligaments or tissues around a joint such as the knee or ankle.)

### Further Reading:

- ✓ First aid at work Paperback – October 1, 2013 by Health and Safety Executive
- ✓ Community Care First Aid: Your Guide to First Aid in the Home and Clinical Microbiology Made Ridiculously Simple 7th Edition by Mark T. Gladwin