UNIT 7 CARDIO PULMONARY RESUSCITATION (CPR) AND RECOVERY POSITION

Structure

7.0 Introduction
7.1 Objectives
7.2 Assessing a Victim for CPR/Recovery Position
7.3 Cardiopulmonary Resuscitation (CPR)
  7.3.1 Concept and Purpose
  7.3.2 Procedure
  7.3.3 Safety and Precautions
7.4 Recovery Position
  7.4.1 Concept and Purposes
  7.4.2 Procedure
  7.4.3 Safety and Precautions
7.5 Let Us Sum Up
7.6 Key Words
7.7 Answers to Check Your Progress
7.8 Activities
7.9 References

7.0 INTRODUCTION

In the theory unit on “Understanding Human Body” which is Unit 2 of Block 1 of Theory course, you have learnt about how our breathing and circulatory systems function in coordination with one another to provide oxygen, glucose and other nutrients to various organs of our body. If any of these systems stop working, our brain stops functioning within a few minutes. The commonest condition where it happens is sudden cardiac arrest. However, both these systems can be revived either by CPR or by placing the victim in recovery position.

You have a little idea about these procedures since we have discussed about them in Theory Block 2, Unit 1 on “Recognizing Emergencies” and Unit 3 of the same Block on “CPR and AED”.

In this unit you will learn to assess a victim for giving CPR and placing him/her in recovery position followed by acquiring the skills for performing CPR and recovery position.

7.1 OBJECTIVES

After completion of this unit, you will be able to:

- assess a victim for recovery position and CPR;
- acquire skills in performing CPR; and
- demonstrate skills by placing a victim in recovery position.
7.2 ASSESSING A VICTIM FOR CPR/RECOVERY POSITION

Before approaching a victim you have to ensure that the environment is safe for you and the victim. We have discussed this part in detail in Unit 1 (Recognizing emergencies) and Unit 3 (CPR and AED) of Block 2 of Theory course and Unit 1 of this Practical Block. After this the most important thing is to assess whether the victim needs to be placed in recovery position or he/she needs CPR. In this section, you will learn the skills for this assessment and for performing CPR or placing the victim in Recovery Position.

Purpose

The main purpose of assessing the victim is to conduct assessment and find out which procedure must be started to resuscitate the victim in emergency.

Articles required

For this activity you need to have a volunteer. However he/she should be explained that they would have to be placed in a specific position by changing the posture. You can also take a manikin instead.

Procedure

Step 1  Ask the volunteer to act as victim. Ask him/her to lie down on their back.

Skills: The volunteer should lie down comfortably on his back with his hand on the side of his/her body and both the feet straight.

Step 2  Conduct assessment as per the flow-diagram given below:
Step 3  Tap the person on one of his shoulders and speak loudly, “Hello, Are you Okay?”

Skills : Tapping of shoulder and speaking, “Hello, Are you Okay?” should be done simultaneously. This is done to check response. If the victim is an infant (age 0-1 year), you should tap on any one of the heels of his/her foot.

Step 4  If the person does not respond, check for pulse and breathing.

Skills : Check pulse by observing carotid or radial pulse. The breathing should be checked by observing the chest rise with each effort of breathing in. Gasping should be considered as absence of breathing.

Step 5  If the person does not respond but is breathing and has pulse, place him/her in Recovery Position.

Step 6  If a victim is not responding and not breathing with no pulse, CPR should be started immediately.

Skills : The procedure for CPR is discussed in Section 7.3 and the procedure for Recovery Position is discussed in Section 7.4 of this Unit.

Step 7  Continue the procedure till victim is revived.

Thus, by assessing a victim for responsiveness and breathing you can decide what first aid care is to be provided to save his/her life.

7.3 CARDIOPULMONARY RESUSCITATION (CPR)

In the previous section we learnt how to assess the victim in emergency and decide the next step of action i.e. whether to give CPR or place the person in recovery position. In this section, we will learn about CPR and procedure of giving CPR. So, let’s begin.

7.3.1 Concept and Purpose

Concept

Cardiopulmonary Resuscitation (CPR) simply means:

Cardio – heart

Pulmonary- related to lungs

Resuscitation- revival

It is the process of revival of the functions of heart and lungs once they have stopped. This is done by an alternating process of compressing the
chest of the person and giving him/her artificial breathing in a cycle of 30 chest compressions and 2 artificial rescue breaths. This is an emergency procedure which is repeated till the functions of heart and lungs are restored (Fig 7.1).

We have discussed the concept of CPR in detail in Theory Unit 3 of Block 2 of Theory course.

Fig. 7.1: Giving CPR

Purpose of CPR

CPR is performed in sudden cardiac arrest, a dangerous situation where our heart can not pump out the blood to our body. Sudden cardiac arrest can occur in various situations like – electric shock, heart disease, severe blood loss, overdose of some drugs, allergic reaction, drowning and in poisonous snake bites. The lack of blood and oxygen to brain makes the person unconscious, breathing stops and death can occur within minutes.

In CPR we provide chest compressions alternating with rescue breaths in a ratio of 30 chest compression to 2 rescue breaths. This provides blood as well as oxygen to our brain to sustain life for some time. During this time we alert and call the emergency response system/emergency medical services to provide advanced care. As you have learnt in Theory Unit 3 of Block 2 on CPR & AED, the most effective treatment of sudden cardiac arrest is use of AED. But it may not be immediately available and CPR buys time for victim to sustain blood circulation and breathing till AED or help or ambulance arrives.

7.3.2 Procedure

When giving CPR the procedure is as follows:

Articles required

The following articles/equipments are required for learning various skills in performing effective CPR

1. An adult CPR manikin
2. An infant CPR manikin
Steps of Procedure for giving CPR

Step 1  As the scenario is such that the person is not responding and not breathing,

You will activate Emergency Medical Services (ambulance) and also ask for AED. Meanwhile you will start CPR.

Skills:  Emergency Medical Services are different in each country. In our country, it is calling an Ambulance or any hospital staff from the nearby hospital. Also the phone no of ambulance varies from state to state in India. The various phone numbers and helpline numbers have been provided in the Appendix 1 of Unit 1 of Block 1 of theory course. You can also update it.

Step 2  Sit on your knees on the side of the manikin.

Step 3  Place the heel of your dominant hand on the lower half of the breast bone (Fig. 7.2).

Skills:  For finding out where to place the hands on the chest while giving compressions, you can make out the centre of chest and place your hands below this centre point to give chest compressions. This roughly comes in the centre point of line drawn between two nipples on the lower side of breast bone.

Step 4  Place your other hand over this hand and lock the fingers (Fig. 7.3).

Fig. 7.2: Location for giving Chest Compressions

Fig. 7.3: Locking the fingers over the location
Step 5  Give 30 compressions fast and deep using the pressure of your body from your shoulders at the rate of 100-120 per minute(Fig. 7.4). Push at about 2 inches in adults and children (1- 8 years) and at least 1.5 inches in infants( 0-1yr). So, Push hard and Push Fast.

![Fig. 7.4: Giving Chest Compression](image)

**Skills:** The compression technique is similar in children (1-8 years of age). You can use one or both hands depending upon the age and built of the child. For infants (New born and upto one year of age) you should place index and middle fingers on the breast bone just below the nipple line as discussed in Unit 3 of Theory Block 2.

Step 6  Verify the correctness of your compressions by the “click” sound during each Compression.

**Skills:** By simply following the above steps, chest compressions are given. This is the technique for Hands-only CPR in which only chest compressions without rescue breaths are provided till help arrives or AED is made available or some other trained bystander comes to help you. Follow this if you are not comfortable doing rescue breaths. It is a good method and helps to maintain the victim till the help comes. **But it is always better to give CPR with rescue breaths.** So, try to initiate CPR with Chest compressions and rescues breaths in all situations.

Step 7  After 30 chest compressions, open the mouth of the manikin and observe for any foreign body in the nose or mouth. If you find anything, carefully take it out but avoid blind sweep (Fig. 7.5). The detailed procedure for sweeping has been discussed in Unit 4 of Block 2 of this Practical Course.

![Fig. 7.5: Open airway by sweeping out foreign matter](image)
Cardio Pulmonary Resuscitation (CPR) and Recovery Position

Step 8  Open the airways by “Head tilt and Chin lift technique” (Fig 7.6). For victim with Head and Spinal injuries, assess and use “Jaw thrust” technique discussed in Unit 1 of Practical Block 2 and Unit 2 of Theory Block 3.

**Skills:** Apply firm, backward pressure on the forehead (head tilt) while lifting the chin upward (Chin lift). This will tilt the head back and move the jaw forward.

![Fig. 7.6: Head Tilt and Chin Lift](image)

Step 9  Place the back of one hand on the forehead of the victim and block the nose by pinching it with your thumb and index finger.

**Skills:** Avoid pressing the soft tissues with your fingers as it can obstruct the airways.

Step 10  Place the fingers of the other hand under the bony part of the chin. The thumb should be placed on the upper part of the chin to open the mouth slightly.

Step 11  Place a barrier (face mask/handkerchief/chunni or dupatta) over the mouth of the victim as per your choice or if the victim is stranger.

**Skills:** This will help to avoid cross-infection.

Step 12  Take a deep breath.

Step 13  Encircle the mouth of the victim by your mouth, making a tight seal (Fig. 7.7).

Step 14  Blow the air into the mouth of the victim for one second and check the rise of chest (Fig. 7.7).

**Skills:** In case of children and infants, the rescue breaths need not be too forceful. Moreover, in infants the seal of your mouth should cover both nose and mouth.

![Fig. 7.7: Giving Rescue Breaths](image)
Practical Manual-I

Step 15 If you can not see the chest rise, again position victim’s head by jaw thrust or head tilt and chin lift technique discussed earlier and make a good seal between the mouth of victim and your mouth. Blow the air again into the mouth of the victim and keep observing the rise of chest (Fig. 7.8).

![Fig. 7.8: Observe Rise and Fall of Chest](image)

Step 16 Repeat the continuous cycles of 30 chest compressions and 2 rescue breaths.

**Skills:** When other trained person is available, one can give chest compression and the other person can give rescue breaths. Both the persons should switch their roles after every 2 minutes (or 5 cycles) (Fig. 7.9). For children below 8 years and infants, with 2 rescuers the ratio of compression and breaths is 15:2.

![Fig. 7.9: Two rescuer CPR](image)

Step 17 If an AED becomes available, turn it on and follow the AED’s voice instructions.

**Skills:** If AED prompts you to do CPR, continue cycles of 30 chest compressions and 2 rescue breaths. If AED prompts you to stop CPR, assess the victim for response and breathing and follow the flow diagram in Section 7.2. (We have discussed about AED in detail in Unit 3 of theory block 2 on CPR and AED and in the next Unit of this Block on AED)
Step 18  If AED is not available, continue the cycles of 30 chest compressions and 2 rescue breaths.

Remember:
CPR has to be continued till:
- the victim starts responding and/or breathing
- specialized medical help arrives
- Someone (a trained personnel) relieves you
- AED becomes available.

Step 19  Transport as soon as medical help arrives. Record and Report thereafter as required.

7.3.3 Safety and Precautions

The safety precautions to be followed are as follows:

1. Chest compressions:
   - Follow the recommended position of hands. It will prevent fracture of ribs and provide desired effective chest compressions.
   - There should not be any movement of your wrists when giving compressions.
   - Elbows should be straight.
   - The contact with chest wall should not be lost at any time.
   - Allow complete chest recoil (coming of chest in its original position) after each compression.
   - The rate should be at least 100-120/minute.
   - You should keep on counting from 1…. 30 to make the compressions synchronous.
   - Minimize any interruptions between the compressions.

2. Rescue breaths:
   - If chest rise is not visible, rescue breaths are not effective.
   - It means that either the mouth to mouth seal is not proper or rescue breaths are not enough or forceful or the airway is not patent.
   - Avoid pressing the soft tissues of nose with your fingers as it can obstruct the airways.
   - Take a deep breath before giving rescue breaths. Never blow twice – one after the another without taking a deep breath in between as the oxygen concentration will be less.
   - Each breath should be given over 1 second.
Check Your Progress 1

1. True or False:
   a. The two rescue breaths must be given together. True/False ……
   b. Chest rise shows that the rescue breaths are effective. True/False ……
   c. Chest compressions alone can be effective inreviving the person in certain cases. True/False ……
   d. Sweeping action can help to clear the airway. True/False ……
   e. Apply the force from the shoulders in CPR. True/False ……

Thus, in this section we talked about CPR and procedure for performing CPR. We will now proceed towards discussion on Recovery Position.

7.4 RECOVERY POSITION

In this section we will highlight the role of Recovery Position and purpose and procedure for putting a victim in recovery position.

7.4.1 Concept and Purpose

Concept

In an unresponsive person, the tone of the muscles is lost making them flabby. Similarly the tongue, which is attached to the lower jaw, also gets relaxed and flabby. It falls backwards and obstructs the airway. You have already read in the previous section that in a non-responsive person, the airway can be opened and maintained using “Head tilt and chin lift” technique.

However, in a nonresponsive person who is breathing “Head tilt and chin lift” technique has no use and also the airway in this situation can be obstructed by secretions and any fluids/blood collected in the oral cavity. These secretions can cause choking in the victim. So, in order to remove these secretions the victim is placed in such a position where the body is on the side (side lying position) and upper leg is flexed and lower leg is extended with mouth open. Hence, the secretions then can drain out from the mouth to the outside (Fig. 7.10).

Fig. 7.10: Recovery Position

Purpose of recovery position

Recovery position helps to maintain breathing in a non-responsive but breathing victim having pulse by prevention of choking which occurs due to tongue of the
victim which falls back in the airways due to loss of tone or due to secretions/ 
fluids and blood collected in the oral cavity.

7.4.2 Procedure

The procedure for recovery position is as follows:

Articles required

For this activity you need to have a volunteer to act as victim. However, 
he/she should be explained that they will have to be placed in a specific 
position by changing the posture.

Procedure

Step 1 Ask the volunteer to act as victim. Ask him/her to lie down 
on his back

Step 2 Tap the person on one of his shoulders and speak loudly, 
“Hello, Are you Okay?” If the victim is an infant (age 0-1 
year), you should tap on any of the heels of his/her foot.

Skills: This helps to check response.

Step 3 If the person does not respond, check for the breathing. If the 
breathing is present, place the victim in recovery position.

Step 4 Sit on your knees on the side of the victim.

Step 5 Hold the person’s hand near you and raise it straight along 
his/her head (Fig. 7.11).

Fig. 7.11: Hold the person’s hand and raise it straight

Step 6 Take the person’s other hand, fold it at the elbow and place 
the back of the hand against the cheek on your side 
(Fig 7.12).

Fig. 7.12: Keeping the other hand under the cheek on your side
Step 7  Hold the leg of the person (on opposite side to you) and raise it by folding on the hip joint (Fig. 7.13).

Fig. 7.13: Position to hold the leg

Step 8  Hold the person from hip and the raised leg and roll over towards you.

Step 9  The person now should rest in a lateral or side-lying position supported by his elbow and knee (Fig. 7.14).

Fig. 7.14: Recovery Position

Skills: These steps should be done smoothly and swiftly.

Step 10  Record and report.

7.4.3 Safety and Precautions

A victim will only be placed in recovery position if he/she is not responding but has pulse and is breathing. If a victim is not responding and not breathing, immediate CPR should be started.

In the recovery position, the victim needs to be continuously monitored as he/she can switch over from one state to another i.e. from non-responding to responding or breathing to not breathing and vice versa. Accordingly, we have to provide the first aid care to him/her as discussed in section 7.2.

Check Your Progress 2

1. Define Recovery Position.

............................................................................................................................................
............................................................................................................................................
............................................................................................................................................  ...

2. List the indications for giving Recovery Position.

............................................................................................................................................
............................................................................................................................................
............................................................................................................................................
............................................................................................................................................
7.5 LET US SUM UP

Hence, in this practical we learnt about procedure for giving CPR and placing the victim in Recovery Position. So, whenever need arises you as a first aid provider should be confident and skillful in assessing the victim and resuscitating the victim as per the need. In the next unit, we will discuss the use of AED in resuscitation of the victim.

7.6 KEY WORDS

Compressing : Pressing down with pressure
Repeated : Doing in a manner which occurs one after the another
Coordination : In a harmonious manner or working with one another
Ensure : Making sure
Gasping : Shortness or difficulty to take breaths
Alert : Fully aware and attentive
Advanced : Modern and well developed, better qualified
Blind : Inappropriate, Not proper
Sweep : Clean out
Technique : Method or skill
Recommended : Suggested
Recoil : Rebound or spring back through force of impact or elasticity
Enough : Adequate/Sufficient as per requirement
Forceful : With force or effort
Seal : Close securely
Patent : Open and unobstructed
Concentration : Amount of a particular substance contained within a solution
Relaxed : Free from tension
Flabby : Soft, loose, not firm
Obstruct : Block or Prevent movement
Secretions : Discharge from body tissues
Fluids : A substance which flows easily e.g. water
Switch over : Change
7.7 ANSWERS TO CHECK YOUR PROGRESS

Check Your Progress 1

1. a. False  b. True  c. True  d. True  e. True

Check Your Progress 2

1. Recovery position is the position which helps to maintain breathing in a non responsive but breathing victim.

2. Recovery position is indicated for non responsive and breathing victim for prevention of choking which occurs due to tongue of the victim which falls back in the airways due to loss of tone or due to secretions/fluids and blood collected in the oral cavity.

7.8 ACTIVITIES

Activity 1

Enact a role play wherein a person is lying and you have been called to provide emergency care. Assess the victim for giving CPR following the steps described in the unit. Record in Log-Book. (Self Activity)

Activity 2

Perform CPR step by step on the manikin provided. Record in Log-Book. (Supervised Activity)

Activity 3

Practice Recovery Position on your peers. Record in Log-Book. (Supervised Activity)

Activity 4

Practice Recovery Position in Self study group. Record in Log-Book and paste a picture of your work. (Self Activity)

7.9 REFERENCES


4. http://www.heart.org/HEARTORG/CPRAndECC/CPR_UCM_001118_SubHomePage.jsp#.WYWwu5NIjG1s

Cardio Pulmonary Resuscitation (CPR) and Recovery Position


