



**American
Red Cross**

Emergency Medical Response

WORKBOOK



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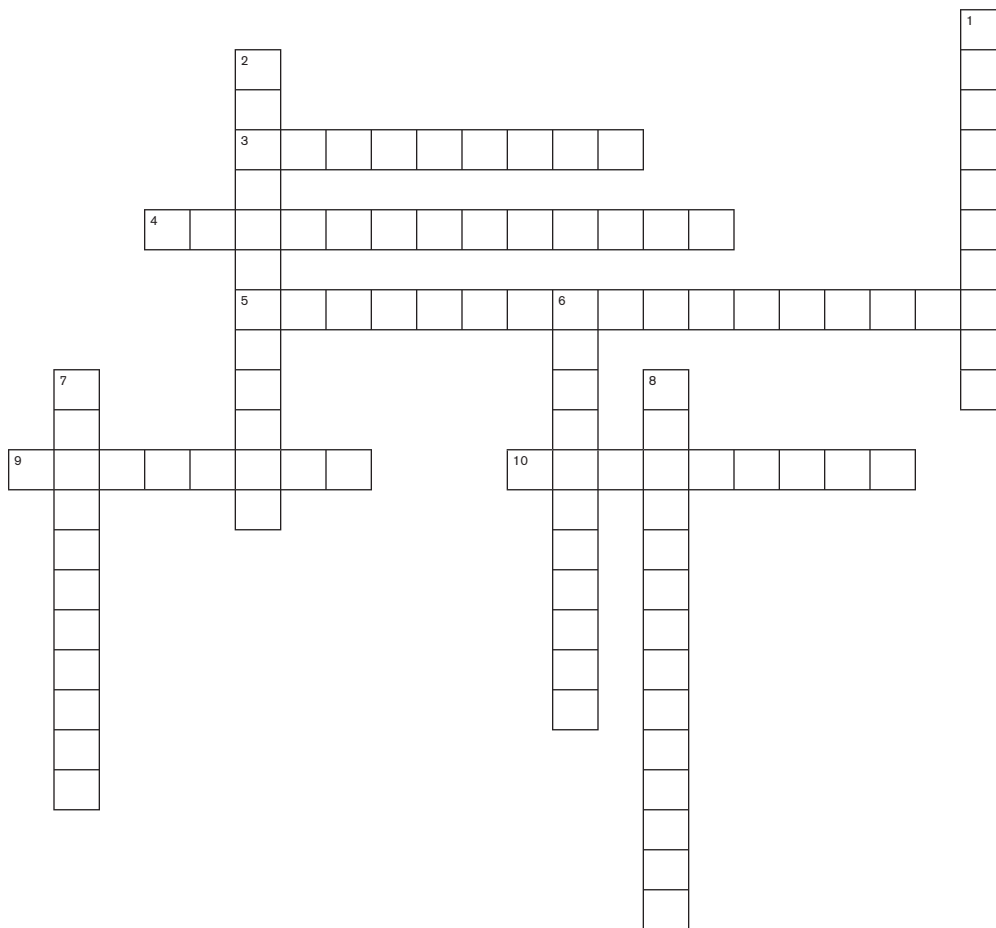
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Circulation and Cardiac Emergencies

| REVIEW OF CONCEPTS AND TERMS |

Crossword Puzzle

Directions: Complete the crossword puzzle using the clues.



DOWN

- 1 A disturbance in the regular beating of the heart
- 2 High blood pressure
- 6 Fatty substance found in animal products
- 7 Conditions or behaviors that increase the chance that a person will develop a disease
- 8 Electrical shock to disrupt the heart's electrical activity

ACROSS

- 3 Device implanted under the skin to regulate the heartbeat
- 4 Condition in which the heart stops beating or beats too ineffectively to circulate blood
- 5 A test that measures and records the heart's electrical activity
- 9 Absence of electrical activity in the heart
- 10 Delivery of blood to body cells for gas, nutrient and waste exchange

Short Answer

Directions: Supply the information requested.

- 1. Explain *ventricular fibrillation* (V-fib).

- 2. Describe CPR.

- 3. List three situations in which you can stop CPR.

- 4. Name the two most common conditions caused by cardiovascular disease.

- 5. Trace the path of an electrical impulse in the heart.

- 6. Describe the major sign of a heart attack.

- 7. Identify the four links in the Cardiac Chain of Survival.

- 8. Explain how *automated external defibrillators* (AEDs) function.

| CASE STUDY |

Directions: Read the case studies and answer the questions that follow.

Scenario A

You are called to the scene of a drowning at a nearby lake. A 10-year-old child has just been removed from the water after being submerged for about 3 or 4 minutes. Your primary assessment reveals that the child is not breathing and has no pulse.

1. You are preparing to perform chest compressions. Where do you place your hands to be most effective?
 - a. Uppermost portion of the sternum
 - b. Atop the xiphoid process at the lower sternum
 - c. In the middle of the chest
 - d. Directly over the nipple area
2. You would compress the child's chest to which depth?
 - a. About 1 inch
 - b. About 1½ inches
 - c. About 2 inches
 - d. At least 2½ inches
3. Which of the following is most important for you to do when performing chest compressions on the child?
 - a. Keeping the elbows flexed with each compression
 - b. Pausing in between the up and down motion
 - c. Rocking back and forth as you compress the chest
 - d. Allowing the chest to recoil fully after each compression

4. An AED becomes available, and you prepare to use it. Which of the following is most important for you to do before using it with this child?
 - a. Correctly placing the pads on the child's chest
 - b. Ensuring that the child is not lying in a puddle of water
 - c. Using pediatric defibrillation pads if available
 - d. Checking to see if spare batteries are included

Scenario B

You arrive at an office building in response to a call about an employee who suddenly started complaining of chest pain. The patient also is complaining of shortness of breath and feeling sick to his stomach.

1. You obtain a SAMPLE history from the patient. Which of the following suggests that the patient is experiencing a heart attack? Select all that apply.
 - a. The pain is described as squeezing and unrelieved by rest.
 - b. The pain does not radiate.
 - c. The patient has a history of hypertension.
 - d. The patient is sitting up and leaning forward.
 - e. The patient complains of feeling dizzy.
 - f. The patient's face is flushed.
2. As the *emergency medical responder (EMR)* on the scene, which of the following would you do first if you suspect that the patient is having a heart attack?
 - a. Get the patient to stop any activity and rest.
 - b. Summon more advanced medical personnel.
 - c. Closely monitor the patient's vital signs.
 - d. Begin CPR.

3. Your local protocol allows you to administer medication to the patient. After asking the patient about the use of medications, you determine that it is safe to administer it. You would administer which of the following?
 - a. 1 chewable baby aspirin
 - b. A single dose of acetaminophen (Tylenol®)
 - c. Two tablets of ibuprofen (Motrin®)
 - d. One 5-grain adult aspirin tablet

Scenario C

You are on the scene of an apartment fire and are caring for a 6-month-old infant. After opening the infant's airway, you find that she is not breathing and does not have a pulse. You immediately give 2 ventilations, noting that the chest rises and falls, and you quickly scan for severe bleeding.

1. Which action would you do next?
 - a. Begin chest compressions.
 - b. Deliver 5 back blows.
 - c. Give ventilations.
 - d. Do a finger sweep.
2. You determine that the infant needs chest compressions. Which of the following would you use to perform chest compressions?
 - a. The heel of your hand
 - b. Two fingers of one hand
 - c. Thumb side of your fist
 - d. Both thumbs
3. Another EMR arrives on the scene to assist you with CPR. The cycle of compressions and ventilations that you would perform is—
 - a. 30 compressions and 2 ventilations.
 - b. 15 compressions and 1 ventilation.
 - c. 15 compressions and 2 ventilations.
 - d. 30 compressions and 1 ventilation.

| SELF-ASSESSMENT |

Directions: Answer the questions by selecting the correct letter(s).

1. Which of the following is the most common type of abnormal cardiac rhythm?
 - a. Atrial fibrillation
 - b. Sinus rhythm
 - c. *Ventricular tachycardia* (V-tach)
 - d. *Ventricular fibrillation* (V-fib)
2. You are assessing a child who has experienced a cardiac arrest. You understand that this is most likely the result of—
 - a. Drowning.
 - b. Breathing problems.
 - c. Motor-vehicle injury.
 - d. Poisoning.
3. You are the only EMR present and are performing CPR. Where would you position yourself to give chest compressions?
 - a. At the patient's head
 - b. Between the patient's legs
 - c. Even with the patient's shoulders
 - d. On the patient's side at the chest
4. You have been performing CPR on a patient and the patient begins to breathe. You also note a pulse. Which action is most appropriate?
 - a. Cancel the call for more advanced medical personnel.
 - b. Stop chest compressions but continue ventilations.
 - c. Continue to monitor the patient while maintaining an open airway.
 - d. Obtain an AED to check the heart rhythm.

5. To use an AED, which of the following must be present? Select all that apply.
 - a. Absence of a pulse
 - b. Obstructed airway
 - c. No evidence of the chest rising and falling
 - d. Pale or ashen skin
 - e. Lack of responsiveness
6. You are applying AED pads to a child and notice that the pads may touch each other. Which action is most appropriate?
 - a. Cut one of the pads in half, using a half instead of the whole.
 - b. Use just one pad instead of both pads.
 - c. Put one pad on the chest and the other pad on the back between the shoulder blades.
 - d. Use both pads on the chest, overlapping the edges of the pads.
7. Which structure in the heart is responsible for initiating an electrical impulse?
 - a. *Atrioventricular (AV) node*
 - b. *Sinoatrial (SA) node*
 - c. Right atrium
 - d. Left ventricle
8. Which of the following would you least expect to find when assessing an older adult who may be having a heart attack?
 - a. Shoulder aches
 - b. Indigestion
 - c. Fatigue
 - d. Chest pain
9. You are called to a patient's home because the patient is complaining of chest pain. Which of the following would lead you to suspect that the patient is experiencing angina and not a heart attack?
 - a. Pain spreading to the jaw and neck
 - b. Pain that eases with resting
 - c. Pain that is persistent
 - d. Pain accompanied by difficulty breathing
10. You and another EMR are performing two-rescuer CPR. You would expect to switch positions approximately every—
 - a. 2 minutes.
 - b. 4 minutes.
 - c. 6 minutes.
 - d. 8 minutes.
11. You arrive on the scene where another EMR is performing CPR on a patient. Which of the following would you do first?
 - a. Call for a position change at the end of the last compression cycle
 - b. Immediately begin giving ventilations to the patient
 - c. Confirm if more advanced medical personnel have been called
 - d. Obtain an AED, if available
12. An AED has delivered a shock to the patient. Which of the following would you do next?
 - a. Wait for the device to re-analyze the heart rhythm.
 - b. Continue to monitor the patient's condition.
 - c. Place the patient in a face-up position while maintaining an open airway.
 - d. Begin performing CPR for about 2 minutes.
13. When interviewing a patient who is complaining of chest pain, which question is most appropriate to ask initially?
 - a. "Have you ever had this type of pain before?"
 - b. "Can you tell me how you feel right now?"
 - c. "Does the pain move or spread anywhere?"
 - d. "Is the pain crushing or squeezing?"

14. Which of the following statements best reflects the experience of a heart attack in a woman?
 - a. Women often report their symptoms earlier than men.
 - b. Women rarely experience shortness of breath.
 - c. Chest pain in women typically is sudden and short-lived.
 - d. Like men, women commonly experience chest pain as the main complaint.
15. You are preparing to apply AED pads to a patient's chest when you notice a transdermal medication patch. You should—
 - a. Place the pads directly over the medication patch.
 - b. Move the medication patch to another area on the chest.
 - c. Remove the medication patch with a gloved hand.
 - d. Apply the pads to a chest area away from the patch.

| SELF-ASSESSMENT: ENRICHMENT |

Preventing Coronary Heart Disease

Directions: Answer the questions by selecting the correct letter(s).

1. Which of the following statements about *coronary heart disease* (CHD) is the most accurate?
 - a. CHD develops suddenly, leading to a decreased oxygen supply to the heart.
 - b. CHD ranks second as the cause of death in adults in the United States.
 - c. CHD involves arterial narrowing due to a buildup of fatty substances.
 - d. CHD is primarily linked to genetics and family history.
2. Which of the following risk factors for CHD is a person unable to change?
 - a. Diet
 - b. Ethnicity
 - c. Obesity
 - d. Activity level
3. Which of the following is appropriate to do to control the risk factors for CHD? Select all that apply.
 - a. Increase the intake of fast foods.
 - b. Participate in a regular exercise program.
 - c. Eat foods that are high in animal fats.
 - d. Avoid cigarette smoking.
 - e. Maintain blood pressure control.

| SKILL SHEETS |

Refer to the *Emergency Medical Response* textbook for the following skill sheets for this chapter:

- CPR—Adult and Child, pages 312–313
- CPR—Infant, page 314
- Two-Rescuer CPR—Adult and Child, pages 315–316
- Two-Rescuer CPR—Infant, pages 317–318
- AED—Adult, Child and Infant, pages 319–321