ADMINISTRATIVE PROBLEMS

Questions of an administrative nature (missing pages in subcourse, etc.) should be addressed to your primary instructor (group leader). If you have questions of an administrative nature after you have completed the course, you may write or call the Army Institute for Professional Development (AIPD) at the following:

Address: Army Institute for Professional Development
ATTN: ATIC-IPS (Student Services)
U.S. Army Training Support Center
Newport News, VA 23628-0001

Telephone: DSN 927-2127/3322
Commercial (757) 878-2127/3322

E-mail: teama@atsc.army.mil

CONTENT

Questions about the content of this subcourse should be directed to your primary instructor (group leader). If you still have questions or comments concerning course content, write or call the instructional systems specialist responsible for the subcourse. The instructional systems specialist responsible for this edition of the subcourse is Roy Davis, Multimedia Development Branch, Department of Distance Learning.

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2250 Stanley Road Room 326
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Commercial (210) 221-8079

E-mail: Roy.Davis@cen.amedd.army.mil

CLARIFICATION OF TRAINING LITERATURE TERMINOLOGY

When used in this publication, words such as "he," "him," "his," and "men" are intended to include both the masculine and feminine genders unless specifically stated otherwise or when obvious in context.

This subcourse is approved for resident and correspondence course instruction. It reflects the current thought of the Academy of Health Sciences and conforms to printed Department of the Army doctrine as closely as currently possible. Development and progress render such doctrine subject to change.

The "D" edition of the Combat Lifesaver Course replaces the previous "C" edition.

This subcourse may be reproduced locally, if needed.

COMBAT LIFESAVER COURSE: BUDDY-AID TASKS

INTERSCHOOL SUBCOURSE 0824

U.S. Army Medical Department Center and School
Fort Sam Houston, Texas

GENERAL

Interschool Subcourse 0824, Combat Lifesaver Course: Buddy-Aid Tasks, contains information needed to successfully complete the written and performance examinations for IS0824. These examinations should be passed prior to taking the examinations for the remaining subcourse (IS0825, Combat Lifesaver Course: Medical Tasks) in the Combat Lifesaver Course. The instruction in this subcourse includes buddy-aid and health maintenance tasks that all soldiers are required to know. All of the tasks contain important, lifesaving information. Terminal learning objectives for this subcourse are given below.

TASK: Take protective measures against disease, heat, and cold.

CONDITIONS: Given a field environment and any needed items.

STANDARDS: Applies the preventive measures given in this subcourse and instructs other soldiers to take preventive measures as needed.

TASK: Evaluate and treat a casualty.

CONDITIONS: Given a casualty with one or more of the following problems--blocked airway, no respiration, amputation or bleeding from a limb, open chest wound, open abdominal wound, open head wound, fractured limb, fractured spine, shock, burn, cold injury, heat injury, and/or nerve agent poisoning--and any needed items.

STANDARDS: Performs needed procedures in accordance with the procedures given in this subcourse.

TASK: Transport a casualty.

CONDITIONS: Given a casualty in need of evacuation, materials for improvised litter (if available), and assistant(s) (if available).

STANDARDS: Evacuates the casualty using appropriate one-man or two-man manual carry or improvised litter in accordance with the procedures given in this subcourse.

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ADMINISTRATIVE INSTRUCTIONS

SUBCOURSE CONTENT

NOTE: The 91W Health Care Specialist is currently the 91B Medical Specialist. The 91B becomes 91W on 1 Oct 2001.

This subcourse contains 15 lessons. Each lesson presents information needed to successfully perform buddy-aid tasks and soldier health maintenance tasks given in Soldier Training Publication 21-1-SMCT, Soldier's Manual of Common Tasks: Skill Level 1, and FM 21-11, First Aid for Soldiers.

Since the tasks covered in this subcourse are tasks which all soldiers are expected to already know, no instruction other than self-study of this subcourse is required prior to taking the subcourse examinations. However, classes on the tasks covered in this subcourse may be offered prior to taking the examinations and/or before a student is retested on any task not passed. The decision rests with the course manager.

A student who successfully completes the written and performance examinations for IS0824 is eligible to take the classes and examinations covering the tasks taught in IS0825, Combat Lifesaver Course: Medical Tasks.

SUPPLEMENTARY REQUIREMENTS

Materials Needed. You will be furnished with needed materials at the time you take the examinations for this subcourse. Successful completion of the written (multiple-choice) examination and all performance (hands-on) examinations is required for successful completion of the Combat Lifesaver Course.

Supervisory Assistance. You can prepare for the subcourse examinations on your own. Instructors will monitor the written examination and will evaluate performance tasks using performance checklists similar to the ones contained in this subcourse.

References. This subcourse contains all information needed to pass the written and performance tests on the buddy-aid tasks. No supplementary references are needed.

SUGGESTED STUDY PROCEDURES

After reading and studying the text assignment of a lesson, complete the lesson exercises at the end of the lesson. If possible, answer the exercises without referring back to the lesson text. After completing the exercises, check your answers against the solutions in the Appendix. For each exercise answered incorrectly, reread the subcourse material referenced and rework the exercise.

If the lesson exercises contain a performance exercise, practice performing the task and have someone check your actions against the performance checklist. When you take the actual performance examinations, an instructor will grade your performance using checklists similar to those contained in this subcourse. Keep practicing until you can score a GO on all steps.

Complete each lesson before proceeding to the next.

As you study this subcourse, you may wish to write comments on the student comment sheet located at the end of this subcourse. If so, remove, fold, tape, and mail the comment sheet after you complete the examinations.

GRADING AND CERTIFICATION

This subcourse has a multiple-choice written examination and several performance (hands-on) examinations. Consult the objectives (task, conditions, and standards) at the beginning of each lesson to determine the learning objectives.

You must score a minimum of 70 percent on the written examination and a GO on each performance examination in order to satisfactorily complete this subcourse. A NO-GO on any step of a performance checklist will result in a NO-GO for the entire checklist.

The written examination will be proctored. You will not be allowed to use the subcourse or notes during the examination.

The primary instructor (or a designated assistant) will be responsible for grading the written and performance examinations. Please consult your primary instructor or his designated assistant for any questions concerning retaking a failed examination (written or performance). An examination may have more than one version. If so, the alternate version may be used for retesting.

A student who successfully completes the entire Combat Lifesaver Course (IS0824 and IS0825) will receive 40 credit hours from the Army Institute for Professional Development (AIPD), Newport News, Virginia. There is no partial credit. AIPD will send a notice of completion to the primary instructor for each student who has successfully completed the entire course. The primary instructor will then forward the notice to the students.

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LESSON 1

PRACTICE INDIVIDUAL PREVENTIVE MEDICINE COUNTERMEASURES

TASK

Identify preventive measures for protection against arthropod bites and arthropod-borne diseases, water and food borne diseases, respiratory diseases, sexually transmitted diseases and AIDS, heat injures, and cold injuries.

CONDITIONS

Given multiple-choice items pertaining to preventive measures.

STANDARD

Score 70 or more points on the 100-point written examination.

REFERENCES

FM 21-10, Field Hygiene and Sanitation.
FM 21-11, First Aid for Soldiers.
DA Pam 40-12, Who Needs *It? *VD.

1-1. INTRODUCTION

History has often demonstrated that the course of battle is influenced more by the health of the troops than by strategy or tactics. Part of your function as a combat soldier is to recognize potentially dangerous situations and take preventive measures. This includes taking measures against potential health hazards as well as protecting yourself against enemy action. As a combat lifesaver, it is easier for you to remind a soldier in your squad or team to take preventive measures against disease and environmental injuries than it is to treat and evacuate the soldier later because he is too ill to perform his combat duties.

1-2. TAKE PREVENTIVE MEASURES AGAINST BITING INSECTS

Biting insects are a source of discomfort, minor pain, and skin irritation. This, in itself, should be enough to make soldiers take preventive measures against these pests. However, biting insects also contribute to the spread of disease. These diseases can incapacitate soldiers and, in some cases, be fatal. "Insect-borne diseases" (diseases transmitted by insects) include diseases transmitted by true insects (such as mosquitoes,

lice, and fleas) and by certain other pests that closely resemble insects (such as ticks and mites). Examples of insect-borne diseases include malaria (mosquitoes), yellow fever (mosquitoes), typhus (lice), Rocky Mountain spotted fever (ticks), and plague (fleas).

a. Apply Insect Repellent

One of the best ways to keep insects from transmitting a disease to you is to use insect repellent. Some guidelines are given below.

Apply the insect repellent (DEET) to all exposed skin areas other than the skin around the eyes. The repellent skin lotion is also applied two inches under the edges of the battle dress uniform.

Cover ankle and wrist areas with repellent to keep ticks and mites from creeping through openings in the uniform.

Blouse the uniform inside boots and apply repellent where they meet.

Apply repellent to the shirt area over the shoulder blades and any other areas where the uniform fits tightly. Mosquitoes usually cannot "bite" (puncture the skin) through clothing unless the clothing is tight against the skin.

Reapply repellent every 6 hours if strenuous work is being performed.

Reapply repellent as soon as practical after stream crossings since much of the repellent was probably washed off.

b. Wear Uniform Properly

Soldiers should wear their uniforms as the commander directs. This usually includes wearing headgear to protect the top of the head, rolling sleeves down, tucking shirts and undershirts in at the waist, blousing the uniform, and lacing boots completely. Tears and holes in clothing should be repaired.

c. Keep Body Clean

Soldiers should wash daily with soap and water if the tactical situation permits. Take a full bath or shower at least once every week. If showers or baths are not available, you should use a washcloth daily to wash your genital area, your armpits, your feet, and any other areas where you sweat or which become wet. These areas include the thighs and, for females, under the breasts. Use of perfumed soaps or feminine deodorants in the field could cause irritation. . Use improvised showers if regular showering devices are not available. Avoid bathing in stagnant water.

Use a buddy system to examine each other for the presence of ticks, lice, fleas, and mites.

d. Keep Uniform Clean

Uniforms should be washed at least once each week by supporting military laundries. If a military laundry is not available, uniforms should be scrubbed with soap and water to eliminate the ticks and mites that are on the uniform.

If ticks, mites, or lice are a problem, uniforms should be treated with permethrin clothing repellent (IDA kit) to kill these pests. Special attention must be paid to the seams of uniforms since the seams may contain insect eggs which will hatch unless the uniform is properly treated.

e. Take Malaria Pills

Soldiers in an area where malaria may be a problem will be given medication to take. This medication protects against the worst effects of the disease, but does not make a soldier immune to malaria. Soldiers must still take preventive measures against mosquitoes and other insects.

1-3. TAKE PREVENTIVE MEASURES AGAINST WATER AND FOOD BORNE DISEASES

Diarrhea refers to the frequent passage of abnormally watery bowel movements. Dysentery is a term applied to a number of intestinal diseases characterized by inflammation of the intestines, abdominal pain, and bowl movements containing blood and mucus. Diarrhea and dysentery are often caused by disease organisms found in human and animal feces. These organisms enter the body through the consumption of water or food that has been contaminated with feces, such as water in a lake contaminated by untreated sewage. Food can be contaminated by fecal material on a person's hands or under his fingernails.

a. Disinfect Drinking Water With Iodine Tablets

Whenever possible, drinking water should be obtained from a source that has been approved for consumption. In the field, however, water may have to be obtained from other sources. Always assume that water from an unapproved source is contaminated and must be disinfected before drinking. The following procedures are used to disinfect water with iodine tablets.

Fill a canteen with the cleanest, clearest water available.

Check the color of the iodine tablets. The tablets should be gray in color. Discard any tablets which are not uniformly steel gray, that are stuck together or crumbled should not be used.

Add two tablets to the one-quart canteen. (NOTE: If a two-quart canteen is being used, add four tablets to the water.)

Replace the cap on the canteen and wait 5 minutes for the tablets to dissolve.

Shake the canteen to mix the dissolved tablets and the water.

Loosen the cap on the canteen, turn the canteen upside down, and squeeze. This will force water to flow over the threads of the cap and canteen neck and will disinfect them.

Turn the canteen upright and tighten the cap on the canteen.

Wait an additional 30 minutes before drinking the water. The time is needed to ensure that the iodine has sufficient time to kill all of the harmful microorganisms in the water.

b. Disinfect Drinking Water by Boiling.

If iodine tablets are not available, disinfect contaminated water by boiling.

Fill your canteen cup with water and bring to a rolling boil for 5 to 10 minutes. Allow the water to cool before drinking. In an emergency, bringing the water to a boil for as little as 15 seconds will help.

c. Disinfect Drinking Water by Adding Bleach.

Add two drops of household bleach (5% sodium hypochlorite) to a one-quart canteen filled with water. If the water is cloudy or very cold, add an additional two drops. (NOTE: If a two-quart canteen is being used, double the amount of bleach added to the water.) Replace the cap on the canteen and shake vigorously. Loosen the canteen cap, disinfect the threads as described above, and retighten the cap. Wait 30 minutes before drinking or using the water.

d. Disinfect Drinking Water With Chlorine Ampules.

Mix one ampule with 1/2 canteen **cup** of water. Pour 1/2 **capful** into your canteen. Shake, disinfect threads, and wait 30 minutes before drinking.

e. Obtain Food From Approved Sources.

Obtain food, liquid refreshments, and ice only from sources approved by the local military medical authority. Do not buy food or drink from unapproved civilian sources. These sources almost never meet the high standards of the medical authority. Obtaining ice from an unapproved source is particularly dangerous because few civilian vendors disinfect their water before freezing it. Freezing does not kill bacteria. As the ice melts, bacteria in the ice will become active again.

f. Wash Hands.

Hands can collect germs from many sources (the ground, dust in the air, the latrine door, weapons, the hands of other soldiers, etc.).

Soldiers should wash their hands after using the latrine and before eating. At least 30 seconds should be spent washing with soap and water, paying special attention to cleaning under fingernails. Handwashing devices should be set up near latrines and dining areas. Water from canteens can be used if other sources are not available.

1-4. TAKE PREVENTIVE MEASURES AGAINST RESPIRATORY DISEASES

Respiratory diseases are usually transmitted from person to person by droplets spread from the nose, mouth, throat, or lungs of an infected person. A person who sneezes or coughs throws many droplets into the air. These droplets carry disease germs that can be inhaled by another person. Examples of communicable respiratory diseases include the common cold, influenza (flu), pneumonia, and streptococcal throat infection (strep). Protect against respiratory diseases by using the following guidelines.

Avoid close contact with soldiers that have respiratory diseases.

Encourage sick soldiers to go to sick call.

Avoid using towels, caps, cigarettes, eating utensils, cups, and other objects handled by people with respiratory diseases.

Have an opening in fighting positions for fresh air since fresh air dilutes contaminated air and carries much of the contamination away.

1-5. TAKE PREVENTIVE MEASURES AGAINST SEXUALLY TRANSMITTED DISEASES (STD) AND ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS)

Sexually transmitted diseases (also called venereal diseases) are transmitted from person to person by sexual intercourse (heterosexual or homosexual). Examples of sexually transmitted diseases (STD) include syphilis and gonorrhea. Although these diseases will not prevent a soldier from fighting, they may make him miserable. Left untreated, some sexually transmitted diseases can cause death. The best preventive measure is to refrain from sexual contact (abstinence) or to have sexual contact with only one partner who has no other sexual contacts. Casual sex is to be avoided. Using a prophylactic (latex condom) provides reasonably good protection against these diseases for both males and females since it provides physical separation of the sex organs. (There is no other practical mechanical device that will protect females from contamination by male secretions.) Washing the sexual parts and urinating immediately after sexual intercourse may decrease, but not eliminate the chance of becoming infected. Seek medical attention if discharge or sores on sexual parts are noted.

AIDS (acquired immunodeficiency syndrome) is a fatal disease contracted through sexual contact (homosexual or heterosexual) with an infected person or from the transfer of blood (usually through used intravenous needles) from an infected person. AIDS is not transmitted through casual contact, such as touching. Preventive measures against sexually transmitted diseases are also effective against AIDS. In addition, illicit, intravenous (I.V.) drugs should not be used. Sexual partners of I.V. drug abusers are also at risk of exposure to AIDS.

1-6. TAKE PREVENTIVE MEASURES AGAINST HEAT

A soldier who is in good physical condition and is not injured or sick may think he has nothing to worry about when working or marching in a hot climate. Even a healthy person can suffer heat injury. Heat injuries can be painful and, in some cases, fatal. Heat injuries may result when a soldier is exposed to extreme heat from the sun or high temperatures. The body can loose more than a quart of water per hour through sweat. Lost fluids must be replaced quickly since the body relies upon water to cool itself. Preventive measures against heat injuries include consuming adequate amounts of water and salt, wearing clothing properly, and taking rest breaks. Acclimation and protection from undue heat exposure are also important. A soldier who has previously suffered a heat injury is at higher-than-normal risk of having another heat injury. Dark-yellow urine is an indication that not enough fluids are being consumed.

a. Drink Sufficient Water.

The amount of water a soldier needs to drink depends upon the temperature and upon the work being done. A soldier working in a hot environment should drink at least one full canteen (one quart) of cool water every hour, but not more than 12 quarts daily. A soldier performing strenuous physical labor or working in a very hot environment should drink at least one to one and a half quarts of cool water every hour; daily intake should not exceed 12 quarts. Soldiers should drink small quantities of cool water frequently, even if they are not thirsty.

Soldiers should drink extra water before an attack or mission or before starting hard work. The excess water will help to keep them physically strong and mentally alert until the situation allows time to drink again.

A soldier wearing individual protective equipment (IPE), which is worn at mission-oriented protective posture (MOPP) levels, is especially prone to heat injury and should drink plenty of water.

b. Eat Meals to Replace Salt.

A soldier who eats three full meals each day should get enough salt to replace the salt lost through perspiration. Encourage soldiers to eat meals even if they are not hungry.

Soldiers should <u>not</u> take salt tablets as a preventive measure against heat injuries.

c. Use Work/Rest Cycles.

Rest breaks should be taken if the tactical situation allows. Rest breaks give the body a chance to cool off. A soldier performing heavy work in a hot (85-87.9 °F) environment should rest about 30 minutes for each hour worked. If possible, soldiers should rest in a shaded area. Working in the shade whenever possible will also help to prevent heat injury.

d. Wear Uniform Loosely.

In hot environments, soldiers should wear their uniforms loosely fitting, especially at the neck, wrists, and legs. This allows better air circulation that helps to cool off the body. If the mission permits, clothing should be loosened and web gear and packs removed during rest breaks.

WARNING

Soldiers should not take off protective chemical gear in a chemical environment.

1-7. TAKE PREVENTIVE MEASURES AGAINST COLD

Cold injuries are caused by the body losing heat faster than the heat can be replaced. Cold injuries are most likely to occur when an unprepared soldier is exposed to cold winter temperatures. Cold injuries can be painful and are sometimes fatal. A soldier may be unaware that he is developing a cold injury until it is too late. Although cold injuries are often associated with very cold weather, preventive measures against cold are needed anytime the temperature drops to 50°F or below. Wind will also accelerate the loss of body heat (wind-chill factor).

A person who has previously suffered from cold injuries has a higher-than-normal risk of having another cold injury.

a. Wear Uniform Properly.

Soldiers should wear an adequate amount of properly fitting clothing. The clothing should be worn in loose layers as layering allows air to be trapped inside the clothing. This trapped air helps to slow down the loss of body heat.

When clothing becomes wet, it loses much of its ability to keep the body warm. Therefore, sweating should be kept to a minimum. If a soldier has strenuous work to do, he should remove a layer or two of outer clothing before starting the work in order to reduce sweating. When he has completed his work, the dry clothing should be put on again.

b. Exercise.

Exercising the large muscle groups (shoulders, trunk, and legs) produces heat and increases blood circulation. If the military situation prevents excessive movement, soldiers should change their positions frequently, move their feet, wiggle their toes, exercise their fingers, and use their hands to massage and warm their faces.

c. Drink Water.

Many soldiers do not drink enough fluids in cold weather, especially if it is inconvenient to drink such as during cold weather operations. Dehydration (excessive loss of body fluids) is a risk in cold weather just as it is during hot weather. Dark-yellow urine is an indication that not enough fluids are being consumed.

d. Avoid Alcohol and Tobacco.

Alcoholic beverages should be avoided since they cause the body to loose heat faster. Tobacco should also be avoided as it inhibits circulation.

e. Protect Feet.

Feet probably perspire more and are less ventilated than other parts of the body. This moisture accumulates in socks and decreases their ability to insulate feet from the cold. Soldiers should carry dry pairs of socks with them and change wet or damp socks as soon as practical, usually during a rest break. Body heat can be used to dry wet socks if they are placed inside the soldier's shirt.

Boots should fit and be laced loosely.

Feet should be washed daily and foot powder applied as needed.

f. Protect Hands.

Soldiers should wear gloves or mittens (with inserts) to protect their hands and wrists.

Soldiers should avoid direct skin contact with snow, ice, bare metal, or fuel.

g. Use Buddy System.

It is often easier to notice the first signs of frostbite and other cold injuries on someone else rather than on yourself. Because of this, soldiers should watch one another's faces and hands for signs of cold injury. If signs of cold injury are noticed, have the soldier massage his face, put his hands under his arms for warmth, or take other measures to restore warmth and adequate blood circulation to the affected body part.

Continue with Exercises

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PRACTICE EXERCISES: LESSON 1

INSTRUCTIONS: Answer the following exercises by circling the letter of the response that best answers the question or best completes the sentence or by writing the missing term in the blank provided. After you have answered all of the exercises, check your answers against the "Answers to Practice Exercises". For each exercise answered incorrectly, reread the lesson material referenced.

1. Malaria is a disease that is transmitted by:

   a. Fleas.
   b. Lice.
   c. Mites.
   d. Mosquitoes.
   e. Ticks.

2. When applying insect repellent, you should apply the spray or lotion to all areas of exposed skin except the areas around the _____.

3. When you are performing strenuous work in a hot, insect-infested area, you should reapply insect repellent every_____ hour(s).

4. When applying insect repellent, be sure to apply the repellent to what part of your shirt?

   a. The area over your shoulder blades.
   b. The area over your elbows.
   c. Your pockets.

5. When performing work outdoors in an insect-infested area, you should:

   a. Blouse your uniform inside your boots.
   b. Take off your shirt.
   c. Remove your headgear.
   d. Roll up your shirtsleeves.

6. When possible, you should bathe _____.

7. When you are in an insect-infested area, you should wash your uniform every _____.

8. Malaria pills provide:

a. Complete protection against malaria.
b. Some protection against the worst effects of the disease, but does not guarantee full protection against the disease.

9. Always assume that water sources that have not been approved by military authority are _____-.

10. You need to fill your canteen with water from a source in the field. You should use the _____ , _____ water available.

11. You are filling a one-quart canteen with clear water. How many iodine tablets should you add to the canteen? _____

12. Before adding iodine tablets to water, check to make sure that the tablets are _____ in color.

13. You have added iodine tablets to a canteen of water. You should wait _____ minutes, shake the canteen, disinfect the threads, and wait _____ more minutes before drinking the water.

14. When you wash your hands, you should wash them with soap and water for at least:

a. 15 seconds.
b. 30 seconds.
c. 1 minute.

15. A soldier says, "Ice can safely be bought from local civilian sources because the freezing kills the disease-causing bacteria." Is he right?

a. Yes.
b. No.

16. If you use a towel that has just been used by a person with a respiratory disease, can the towel transmit the disease to you?

a. Yes.
b. No, respiratory diseases are only transmitted by direct personal contact.
c. No, respiratory diseases are transmitted by insects.

17. A male with AIDS can spread the disease:

a. Only to other males with whom he has sexual contact.
b. Only to females with whom he has sexual contact.
c. To both males and females with whom he has sexual contact.

18. The use of a condom can help prevent the spread of sexually transmitted diseases from:

a. Males to females.
b. Females to males.
c. Males to males.
d. All of the above.

19. The best protective measures against STD are _____ and _____.

20. What is the best way of replacing the salt that your body loses due to hot weather?

a. Take one salt tablet for each hour that you work.
b. Eat table salt freely while you work.
c. Dissolve one packet of salt from your rations in your canteen and repeat each time you refill your canteen.
d. Eat three full meals each day.

21. You are preparing to attack an enemy-held position. Should you drink extra water before the attack?

a. Yes, the water will help you keep physically strong and mentally sharp during the attack.
b. Yes, the water will help to counteract blister agents used in chemical warfare.
c. No, the water will make you sluggish.
d. No, the water will make you more likely to be overcome by chemical agents used against you.

22. You are working very hard in a hot environment. How much water should you drink?

a. Enough so that you are not thirsty.
b. Enough so that you remain slightly thirsty.
c. At least one canteen (one quart) every two hours.
d. At least one canteen (one quart) every hour.

23. Which of the following work procedures is/are correct when you are in a hot environment?

a. When your leader calls a rest break, continue to work if you are not too tired.
b. Avoid working in the shade.
c. Take your rest break in a shady area.
d. All of the above are correct work procedures.

24. A person who has previously suffered cold injuries needs to take _____ than normal precautions against cold.

a. Greater.
b. Less.

25. In cold weather, you should:

a. Reduce the amount of food you eat.
b. Exercise your muscles.
c. Drink as little water as possible.
d. Increase your intake of alcoholic beverages.
e. Do all of the above.

26. Which of the following is a proper procedure to protect your feet in cold weather?

a. Do not wash your feet.
b. Lace your boots tightly.
c. Change your socks during rest breaks.
d. Wear five pairs of socks at one time.

Check Your Answers on Next Page

IS0824 LESSON 1 Practice Exercise Solutions

1. d (para 1-2)
2. eyes (para 1-2a)
3. Six (para 1-2a)
4. a (para 1-2a)
5. a (para 1-2b)
6. daily (para 1-2c)
7. week (para 1-2d)
8. b (para 1-2e)
9. contaminated (para 1-3a)
10. cleanest, clearest (para 1-3a)
11. two (para 1-3a)
12. gray (para 1-3a)
13. 5; 30 (para 1-3a)
14. b (para 1-3f)
15. b (para 1-3e)
16. a (para 1-4)
17. c (para 1-5)
18. d (para 1-5)
19. abstinence; having sex with only one partner who has no other sexual contacts (para 1-5)
20. d (para 1-6b)
21. a (para 1-6a)
22. e (para 1-6d)
23. c (para 1-6c)
24. a (para 1-7)
25. b (para 1-7b)
26. c (para 1-7e)

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LESSON 2

PERFORM FIRST AID TO CLEAR AN OBJECT STUCK IN THE THROAT OF A CONSCIOUS CASUALTY

TASK

Aid a conscious person with an upper airway obstruction.

CONDITIONS

Given a simulated conscious casualty (standing or sitting) with an upper airway obstruction.

STANDARD

Score a GO on the performance checklist.

REFERENCES

STP 21-1-SMCT, Soldier's Manual of Common Tasks: Skill Level 1.
FM 21-11, First Aid for Soldiers.

2-1. INTRODUCTION

An upper airway obstruction (blockage) occurs when an object enters a person's trachea (windpipe) and obstructs airflow. The blockage can be caused by food, blood clots or loose teeth resulting from a head injury, vomitus (regurgitated stomach contents) which has been inhaled, or objects such as buttons. The blockage must be expelled or removed and breathing restored. A blockage that stops breathing or greatly reduces the amount of air that can be inhaled and exhaled can quickly lead to unconsciousness and death.

2-2. RECOGNIZE A PERSON WITH AN AIRWAY OBSTRUCTION

A person with an airway obstruction will automatically begin to cough or at least try to cough. In addition, he will probably clutch his throat. This clutching action is natural, but it has also been adopted as the universal distress signal for choking. This sign alerts other people that the problem is an airway obstruction rather than another problem such as a heart attack.

FIGURE 2-1. UNIVERSAL DISTRESS SIGNAL FOR CHOKING

2-3. EVALUATE THE BLOCKAGE

a. Partial Blockage With Good Air Exchange

If the person with an obstruction can speak or cough forcefully, he has a partial blockage with good air exchange. (A partial blockage means that the airway is not completely blocked and air can still get to and from the person's lungs. Good air exchange indicates that the person can still inhale and exhale enough air to carry on all life processes.) A person may have good air exchange even though he makes a high-pitched sound between coughs.

b. Partial Blockage With Poor Air Exchange

If the person has a weak cough, makes high-pitched noises (like crowing) while inhaling, or has a bluish tint around his lips and fingernail beds, he has a partial blockage with poor air exchange. A person with poor air exchange is not inhaling enough air to continue carrying on all life processes. If the person is not helped, he will become unconscious and die.

CAUTION: If you cannot decide whether a conscious casualty has good or poor air exchange, tell him to speak to you. If he does not speak, assume he has an obstructed airway.

c. Complete Blockage

If the person's airway is completely blocked, he can neither inhale nor exhale (no air exchange occurring). This means he cannot speak at all. Quick action is needed to clear the airway.

2-4. DETERMINE WHAT ACTIONS ARE NEEDED

a. Partial Blockage With Good Air Exchange

Encourage a person with good air exchange to keep coughing until the obstruction is coughed up. Do not interfere with his efforts. Do not leave the person since "good" air exchange can rapidly deteriorate to "poor" air exchange or complete blockage, either of which can result in unconsciousness and death. Be prepared to administer manual thrusts should his condition worsen.

b. Partial Blockage With Poor Air Exchange/Complete Blockage

If a person has poor air exchange or a complete blockage, call for help and begin administering manual thrusts. If possible, send someone to seek medical help.

If the person has significant abdominal injuries, is noticeably pregnant, or has a waist that is too large to encircle, administer chest thrusts. Otherwise administer abdominal thrusts.

> **CAUTION**: The manual thrusts presented in this lesson are used with a conscious casualty who is sitting or standing. If the casualty becomes unconscious or is lying down, administer the modified thrusts described in Lesson 3. Back blows are no longer used to dislodge an airway obstruction in an adult.

2-5. ADMINISTER ABDOMINAL THRUSTS

Stand behind the casualty, insert your arms under his arms, and wrap your arms around his waist.

Make a fist with one hand and place the thumb side of your fist on the midline of the casualty's abdomen slightly above his navel (belt buckle) and well below the bottom tip of his breastbone.

Grasp your fist with your other hand.

Press your fists into the casualty's abdomen using a quick inward and upward motion, then relax the hold. Each thrust should be a separate and distinct movement delivered with the intent of dislodging and expelling the object causing the blockage.

Continue administering abdominal thrusts at a rate of one thrust every 4 or 5 seconds until the obstruction is expelled or the casualty becomes unconscious.

If the casualty loses consciousness, call for help again, move backward, and lower the casualty onto the ground so that he is in a supine (on his back) position. (Procedures for

the following actions can be found in Lesson 3, Perform Mouth-To-Mouth Resuscitation.) Open the casualty's mouth and perform a finger sweep. Then open the casualty's airway, administer two full breaths, and evaluate the effectiveness of your ventilations. If the airway is still blocked, perform modified abdominal thrusts, administer finger sweeps, and administer two full breaths until the obstruction is expelled or removed and the airway is open. Once the airway is open, check for breathing. If the casualty is not breathing on his own, check his carotid pulse. If a pulse is present, continue mouth-to-mouth resuscitation.

FIGURE 2-2. ADMINISTERING AN ABDOMINAL THRUST

2-6. ADMINISTER CHEST THRUSTS

Stand behind the casualty, place your arms under his armpits, and encircle his chest. Make a fist with one hand and place the thumb side on the center of the casualty's breastbone (sternum).

WARNING

A thrust delivered directly to the ribs or to the bottom of the sternum can result in the ribs or the xiphoid process (a small bone at the bottom of the sternum) being fractured and puncturing internal organs such as the lungs and heart.

Grasp your fist with your other hand.

Thrust inward so the sternum is depressed about 1 1/2 to 2 inches; then relax the hold.

CAUTION: If the casualty is a child (8 years old or less), the sternum should be depressed only 1 to 1 1/2 inches.

FIGURE 2-3. ADMINISTERING A CHEST THRUST

Continue administering chest thrusts at a rate of one thrust every 4 or 5 seconds until the obstruction is expelled or the casualty becomes unconscious. Each thrust should be a separate and distinct movement.

If the casualty loses consciousness, call for help, move backward, and lower the casualty onto the ground so that he is in a supine (on his back) position. (Procedures for the following actions can be found in Lesson 3, Perform Mouth-To-Mouth Resuscitation.) Open the casualty's mouth and perform a finger sweep. Then open the casualty's airway, administer two full breaths, and evaluate the effectiveness of your ventilations. If the airway is still blocked, perform modified chest thrusts, administer finger sweeps, and administer two full breaths until the obstruction is expelled or removed and the airway is open (two full breaths administered successfully). Once the airway is open, check for breathing. If the casualty is not breathing on his own, check his carotid pulse. If a pulse is present, continue mouth-to-mouth resuscitation.

Team up with two other persons. Practice administering abdominal and chest thrusts while the third person observes and grades you using the performance checklists. DO NOT apply full force to the simulated casualty when performing manual thrusts.

Continue with Exercises
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PRACTICE EXERCISES: LESSON 2

INSTRUCTIONS: Answer exercises 1 through 11 by circling the letter of the response that best answers the question or best completes the sentence or by writing the missing term in the blank provided. After you have answered all of the exercises, check your answers against the "Practice Exercises Solutions". For each exercise answered incorrectly, reread the lesson material referenced.

1. You walk into a room. The only other person in the room has a scared look on his face. He quickly places his hand around the front part of his throat, but does not say anything. What is happening?

   a. The person is feeling faint.
   b. The person is choking.
   c. The person is in shock.
   d. The person has a fractured neck.

2. Before giving manual thrusts to a choking casualty, you should:

   a. Determine if the casualty has good, poor, or no air exchange.
   b. Check the casualty's pulse.
   c. Slap the casualty on his back.
   d. Have the casualty lie down and elevate his feet.

3. If the person with an obstruction can speak or cough forcefully, you should:

   a. Begin administering manual thrusts.
   b. Begin slapping the person on the back.
   c. Encourage the person to keep coughing.
   d. Have the person lie down before be becomes unconscious.

4. A person with partial airway blockage and poor air exchange is treated the same as a person with:

   a. Complete airway blockage.
   b. Partial airway blockage and good air exchange.

5. You are going to administer manual thrusts to a choking casualty. When is the chest thrust used rather than the abdominal thrust?

_____
_____
_____

6. An abdominal thrust is delivered using a:

a. Quick inward and downward motion.
b. Slow inward and downward motion.
c. Quick inward and upward motion.
d. Slow inward and upward motion.

7. When performing an abdominal thrust, your fist should be _____ _____.

8. Manual thrusts should be delivered every _____ to_____seconds until the object is expelled or the casualty _____.

9. When performing a chest thrust, your fist should be over the _____ of the casualty's breastbone.

10. When administering a chest thrust to an adult, the casualty's sternum should be depressed about _____ to _____ inches.

11. What should you do if the casualty passes out (becomes unconscious) before the obstruction is expelled?

_____
_____
_____

Check Your Answers on Next Page

IS0824 LESSON 2 Practice Exercise Solutions

1. b (para 2-2)

2. a (para 2-3)

3. c (para 2-4)

4. a (para 2-4b)

5. The person has significant abdominal injuries.
   The person is noticeably pregnant.
   The person's waist is too large to encircle. (para 2-4b)

6. c (para 2-5)

7. on the midline slightly above the casualty's navel (para 2-5)

8. 4 to 5; loses consciousness (paras 2-5, 2-6)

9. center or middle (para 2-6)

10. 1 1/2 to 2 (para 2-6)

11. Call for help again.
    Lower casualty to the ground so he is lying on his back.
    Perform a finger sweep.
    Begin administering mouth-to-mouth resuscitation.
    (paras 2-5, 2-6)

12. See performance checklist.

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PERFORMANCE CHECKLIST

ADMINISTER ABDOMINAL THRUSTS TO A STANDING OR SITTING CASUALTY

Situation: A person in a restaurant suddenly gets up and gives the sign for choking. You are the nearest person to the casualty. You decide to administer abdominal thrusts.

	GO	NO GO
Question: When are chest thrusts preferred to abdominal thrusts?		
Answer: _____	_____	_____
Stands behind the casualty.	_____	_____
Inserts arms under the casualty's arms and around the casualty's waist.	_____	_____
Makes fist and places thumb side of fist on midline slightly above the casualty's navel.	_____	_____
Covers fist with other hand.	_____	_____
Presses fists into abdomen using quick inward, upward motion [simulate, do not use full force]; then relaxes the hold.	_____	_____
Administers abdominal thrusts at a rate of one thrust every 4 or 5 seconds until the blockage is expelled or the casualty becomes unconscious.	_____	_____
Question: What should you do if the casualty loses consciousness before the obstruction is expelled?		
Answer: _____	_____	_____
OVERALL EVALUATION (A no-go on any step gives an overallevaluation of no-go.)	GO _____	NO GO _____

PERFORMANCE CHECKLIST

ADMINISTER CHEST THRUSTS TO A STANDING OR SITTING CASUALTY

Situation: A person in a restaurant suddenly gets up and gives the sign for choking. You are the nearest person to the casualty. You decide to administer chest thrusts.

	GO	NO GO
Question: When are chest thrusts preferred to abdominal thrusts?		
Answer:_____ _____	_____	_____
Stands behind the casualty.	_____	_____
Inserts arms under the casualty's armpits and around the casualty's chest.	_____	_____
Makes fist and places thumb side of fist on center of the casualty's breastbone.	_____	_____
Covers fist with other hand.	_____	_____
Depresses sternum [simulate, do not use full force]; then relaxes the hold.	_____	_____
Administers abdominal thrusts at a rate of one thrust every 4 or 5 seconds until the blockage is expelled or the casualty becomes unconscious.	_____	_____
Question: How far should the sternum be depressed if the casualty is an adult?		
Answer:_____	_____	_____
Question: What should you do if the casualty loses consciousness before the obstruction is expelled?		
Answer:_____ _____	_____	_____
OVERALL EVALUATION (A no-go on any step gives an overall evaluation of no-go.)	GO _____	NO GO _____

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LESSON 3

PERFORM MOUTH-TO-MOUTH RESUSCITATION

TASK

Restore respiration by opening the airway, performing manual thrusts and finger sweeps to remove airway obstructions, and administering mouth-to-mouth (or mouth-to-nose) resuscitation.

CONDITIONS

Given a simulated nonbreathing casualty.

STANDARD

Score a GO on the performance checklist.

REFERENCES

STP 21-1-SMCT, Soldier's Manual of Common Tasks: Skill Level 1.
FM 21-11, First Aid for Soldiers.
"Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiac Care," The Journal of the American Medical Association, Volume 268, Number 16 (October 28, 1992) pp. 2171-2302.

3-1. INTRODUCTION

Mouth-to-mouth resuscitation is used to restore respiration (breathing) to an unconscious casualty who is not breathing. It is also used with a casualty who loses consciousness (passes out) while you are trying to remove an upper airway obstruction (Lesson 2). The modified abdominal and chest thrusts can also be used with a conscious casualty with poor or no air exchange who is lying on his back. Speed is critical in restoring respiration. Checking and restoring respiration takes precedence over all other injuries the casualty may have suffered. The brain can be injured if it is without oxygen for as little as four minutes.

WARNING

Do not perform mouth-to-mouth or mouth-to-nose resuscitation in a chemical environment (chemical agents present).

3-2. CHECK FOR RESPONSIVENESS

If you come upon a person who appears to be unconscious, check for responsiveness by gently shaking the person's shoulder and calling out, "Are you OK?" If the casualty does not respond, assume mouth-to-mouth resuscitation is needed. Call for help and begin resuscitation procedures.

CAUTION: If you come upon a casualty in a dangerous area (under hostile fire, near a burning vehicle, etc.), remove the casualty (and yourself) from the danger before beginning mouth-to-mouth resuscitation.

3-3. POSITION THE CASUALTY FOR MOUTH-TO-MOUTH RESUSCITATION

The casualty should be positioned on his back (supine position) and on a flat, firm surface (floor, ground, etc.). If the casualty is not lying on his back, kneel at his side, position his arms above his head, grasp his clothing at his far shoulder and hip, and pull gently. This will cause the casualty's body to roll as a unit toward you. Do not twist the body since twisting could cause additional damage to any spinal (neck or back) injury. Return the casualty's arms to his sides.

CAUTION: If a spinal injury is suspected (see Lesson 10) and assistance is available, support the casualty's head and neck while one or more helpers gently turn the casualty's trunk and legs.

The sequence for treating a casualty who became unconscious while you were attempting to remove an obstruction is given in Lesson 2.

3-4. OPEN THE CASUALTY'S AIRWAY

Many times, an unconscious casualty's tongue may be blocking his airway. The muscles of the tongue relax when a person loses consciousness. The tongue may then slide to the back of the mouth and cover the opening to the trachea (windpipe). If foreign material or vomitus is visible in the casualty's mouth, remove it using a quick finger sweep (paragraph 3-7), but do not spend an excessive amount of time doing so. Moving the tongue away from the trachea may cause the casualty to resume breathing on his own. Even if the casualty has not stopped breathing, the procedures for opening the airway will allow him to breathe easier.

The two preferred methods of opening the casualty's airway are the head-tilt/chin-lift method and the jaw thrust method. The head-tilt/-chin-lift method is the method normally used. The jaw thrust method is used if you suspect that the casualty has suffered a fractured neck or severe head injury (deformed appearance or major wounds visible). The jaw thrust method keeps movement of the neck to a minimum.

CAUTION: The head-tilt/neck-lift method of opening the airway is no longer recommended since lifting the neck could cause damage to the spinal cord if the casualty's neck is fractured.

a. Head-Tilt/Chin-Lift

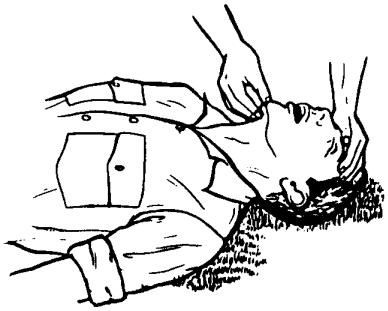

FIGURE 3-1. HEAD-TILT/CHIN-LIFT

Kneel near the casualty's shoulders.

Place one of your hands on the casualty's forehead and apply firm, backward pressure with your palm to tilt the casualty's head back.

Place the fingertips of your other hand under the tip of the bony part of the casualty's lower jaw and lift the jaw to bring the chin forward. The fingertips should not press deeply into the soft tissues under the chin since the pressure could interfere with the casualty's airway. Use your fingertips, not your thumb, to lift the chin.

Lift the chin forward until the upper and lower teeth are almost brought together. The mouth should not be closed as this may block the airway. If needed, the thumb may be used to depress the casualty's lower lip slightly to keep his mouth open.

b. Jaw Thrust

Kneel behind the casualty's head and rest your elbows on the surface on which the casualty is lying (ground or floor).

Place one hand on each side of the casualty's head and grasp the angles of the lower jaw with your fingertips. Place your thumbs on the jaw just below the level of the teeth.

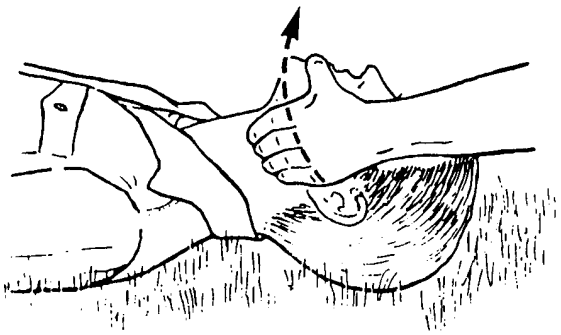

FIGURE 3-2. JAW THRUST

Lift with both hands to move the jaw forward (upward). This action will also cause the casualty's head to tilt back somewhat. Keep the head and neck from moving more than necessary. If mouth-to-mouth resuscitation efforts are not effective, you may need to increase the backward tilt of the head slightly.

If the casualty's lips are still closed after the jaw has been moved forward, use your thumbs to retract the lower lip and allow air to enter the casualty's mouth.

3-5. CHECK FOR BREATHING

Place your ear over the casualty's mouth and nose with your face toward the casualty's chest. Maintain the open airway (head-tilt/chin-lift or jaw thrust) during your check. (The examination process should take 3 to 5 seconds.)

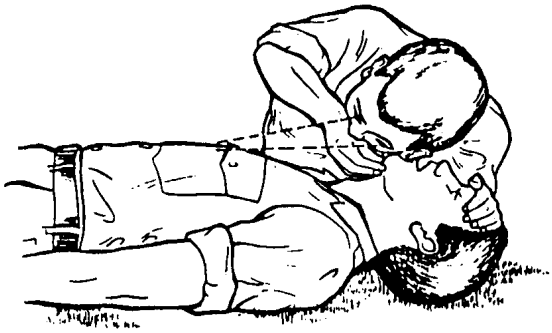

FIGURE 3-3. CHECKING FOR BREATHING WHILE MAINTAINING OPEN AIRWAY

Look for the rise and fall of the casualty's chest and abdomen.

Listen for sounds of breathing.

Feel for his breath on the side of your face.

If the casualty is breathing and has good air exchange, keep his airway open and proceed to look for life-threatening injuries (massive bleeding, etc.). If he is not breathing or if he is breathing weakly, start mouth-to-mouth resuscitation.

3-6. INITIATE MOUTH-TO-MOUTH RESUSCITATION

a. Maintain Open Airway

Keep the casualty's airway open by maintaining the head-tilt/chin-lift or jaw thrust. Keeping the casualty's lower jaw forward prevents the tongue from blocking the airway.

b. Close Casualty's Nose

If you are using the head-tilt/chin-lift, use the thumb and index finger of your hand on the casualty's forehead to gently pinch the casualty's nostrils closed.

If you are using the jaw thrust, close the casualty's nostrils by placing your cheek tightly against the nose.

c. Administer Two Full Breaths

Open your mouth wide and take a deep breath.

Place your mouth over the casualty's mouth. Make sure that your mouth forms a good seal so that air will not escape when you blow air into the casualty's mouth. Maintaining the open airway will keep the casualty's mouth open slightly.

Blow a breath into the casualty's mouth. As you blow, observe the casualty's chest. If air is getting into the casualty's lungs, his chest will rise.

After blowing the first breath, quickly break the seal and take another deep breath. Seal your mouth over the casualty's mouth again and blow. Administering the two breaths (ventilations) should take about 2 to 3 seconds.

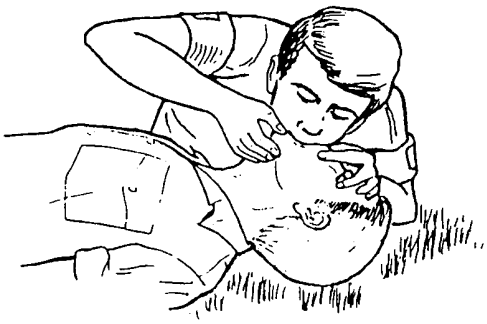

FIGURE 3-4. ADMINISTERING MOUTH-TO-MOUTH RESUSCITATION

Break the seal over the casualty's mouth and release his nose. This will allow the casualty's body to exhale.

> **CAUTION:** If you cannot seal off the casualty's nose or if the casualty has injuries to his mouth or jaw area that prevent you from administering mouth-to-mouth resuscitation, administer mouth-to-nose resuscitation instead. Close the casualty's mouth so air will not escape, seal your mouth over the casualty's nose, and blow the two breaths (ventilations) into his nostrils.

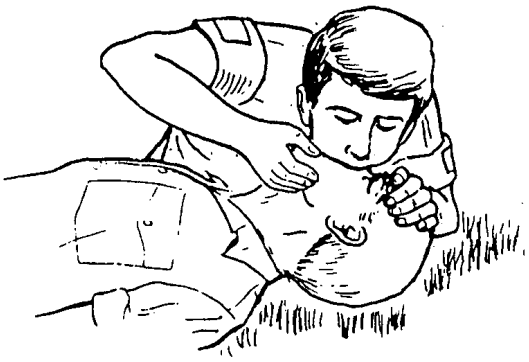

FIGURE 3-5. ADMINISTERING MOUTH-TO-NOSE RESUSCITATION

d. Evaluate Effectiveness of the Ventilations

If the casualty begins breathing again on his own, look for injuries. (You do not need to check for a pulse. His heart will be beating if he is breathing on his own.) After treating the injuries, evacuate the casualty to a medical treatment facility. Do not leave the casualty alone since his breathing may stop again. The casualty may still require help to keep his airway open.

If air goes in and out of the casualty's lungs (chest rises and falls) but he does not start breathing on his own, check his pulse (paragraph 3-10).

If the casualty's chest did not rise and fall, then fresh air is not getting into his lungs. Try to open the casualty's airway more (lift the chin more and/or increase the tilt of the head) and administer two full breaths again. If the casualty's chest still does not rise, a foreign object is probably blocking his airway. Administer finger sweeps (paragraph 3-7) and manual thrusts (paragraphs 3-8 and 3-9) as needed to unblock his airway. Once the airway is unblocked, administer two full breaths again and reevaluate.

3-7. PERFORM A FINGER SWEEP

If you can see a foreign object in an unconscious casualty's mouth or if you strongly suspect the presence of a foreign object in an unconscious casualty's mouth, perform a finger sweep.

WARNING

<u>Do not</u> use the finger sweep technique if the casualty is conscious. The finger sweep can trigger a conscious casualty's "gag reflex" and cause him to vomit.

Open the casualty's mouth. If the casualty's mouth does not open readily, cross your finger and thumb and push his teeth apart by pushing against his upper teeth with your thumb and against the lower teeth with your finger.

Grasp the casualty's tongue and lower jaw between your thumb and fingers and lift. This tongue-jaw lift makes objects easier to locate.

Insert the index finger of your free hand down along the inside of the casualty's cheek to the base of his tongue and sweep the mouth with a "hooking" motion. If a foreign object is encountered, you may need to push the object to the side of the casualty's mouth before you can secure and remove the object.

> **CAUTION:** Take care to avoid forcing the object deeper into the casualty's airway.

Pull the object to the front of the casualty's mouth and remove the object.

Reopen the casualty's airway and try to administer two full breaths again. Observe the chest to see if it rises.

> If the casualty begins breathing on his own, treat any major injuries and evacuate the casualty.
>
> If the casualty's chest rises and falls but he does not breathe on his own, check the casualty's pulse (paragraph 3-10).
>
> If you are unable to ventilate the casualty (chest does not rise), perform manual thrusts (paragraphs 3-8, and 3-9) to dislodge the obstruction.

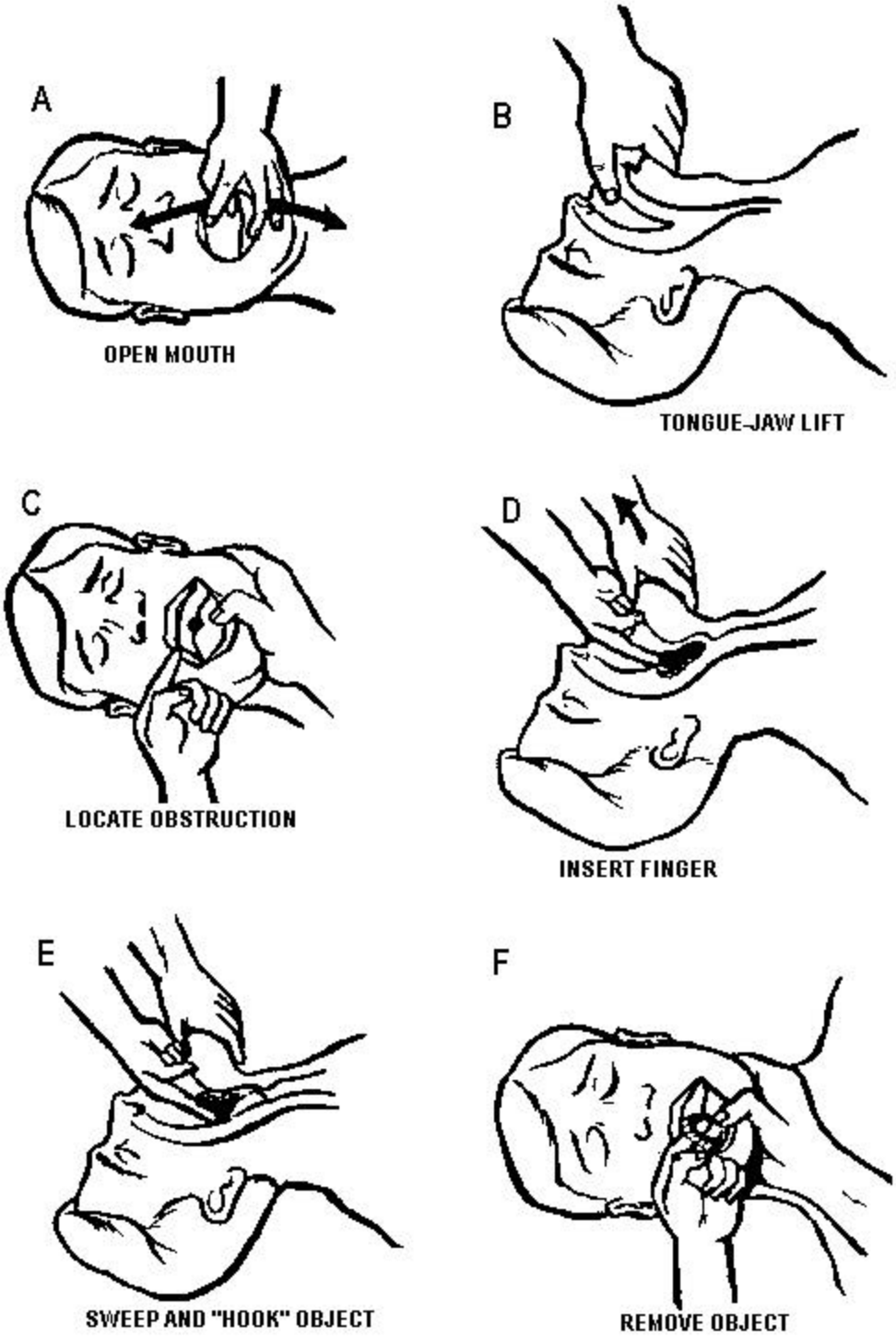

FIGURE 3-6. PERFORMING A FINGER SWEEP

3-8. ADMINISTER MODIFIED ABDOMINAL THRUSTS

A manual thrust acts like an artificial cough. Each thrust is performed with the intent of dislodging the obstruction without having to perform additional thrusts. The abdominal thrust used with a standing casualty is modified to use on a casualty lying down. The modified abdominal thrust is the preferred method of administering a manual thrust to an unconscious casualty.

FIGURE 3-7. ADMINISTERING A MODIFIED ABDOMINAL THRUST

WARNING

If the casualty has a serious abdominal wound, is noticeably pregnant, or is extremely overweight, administer a modified chest thrust instead of a modified abdominal thrust.

Kneel astride the casualty's thighs.

Place the heel of one hand on the midline of the casualty's abdomen slightly above the navel (belt buckle) and well below the tip of the breastbone (xiphoid process). Do not make your hand into a fist.

Place the heel of your other hand on top of the first hand and point your fingers toward the casualty's head.

Press into the abdomen using a quick forward (inward) and upward thrust. The thrust can be delivered by locking your elbows and shifting your body weight forward.

Release the pressure on the casualty's abdomen (shift your body weight backward).

If you think the obstruction has been dislodged, perform a finger sweep and administer two full breaths. If the airway is open, check for a pulse and for spontaneous breathing (casualty breathing on his own).

If the obstruction was not dislodged, administer another modified abdominal thrust. .If you administer 6 to 10 thrusts without apparently dislodging the obstruction, call for help again, perform a finger sweep, and administer two more breaths. Repeat

the cycle of thrusts, finger sweep, and breaths until the object is expelled and the casualty's airway is open (chest rises during ventilations).

CAUTION: If the casualty vomits, turn him onto his side and use a quick finger sweep to remove vomitus from his mouth.

3-9. ADMINISTER MODIFIED CHEST THRUSTS

The chest thrust used with a standing casualty is modified to use on a casualty lying down. The modified chest thrust is used to remove an airway obstruction in an unconscious casualty if the casualty has a serious abdominal wound, is noticeably pregnant, or is extremely overweight.

Kneel close beside the casualty's chest.

Locate the lower edge of the casualty's rib cage.

Run the fingers of your hand nearest the casualty's feet along the lower edge of the rib cage until you come to the notch where the rib meets the breastbone in the middle of the lower portion of the casualty's chest. Place your middle finger (same hand) on the notch; then place your index finger next to your middle finger.

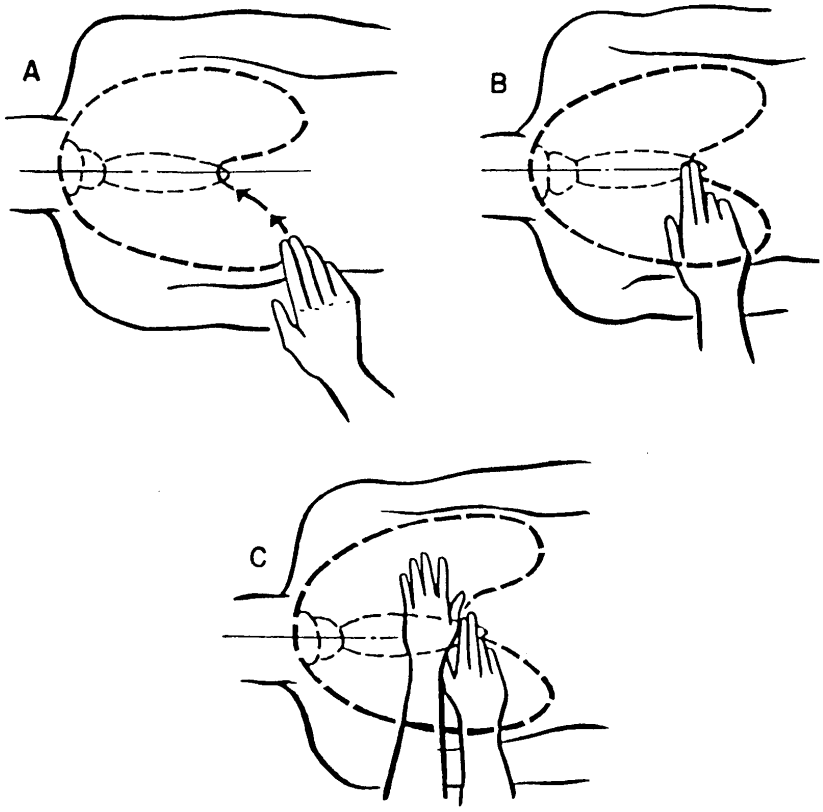

FIGURE 3-8. LOCATING COMPRESSION SITE FOR CHEST THRUST

Place the heel of your other hand on the casualty's breastbone next to and above (toward the casualty's head) your two fingers. Do not form a fist. The heel of this hand is on the compression site (lower half of the sternum and above the xiphoid process).

> **CAUTION:** Make sure the heal of your hand is on the breastbone and not resting on the ribs.

Remove your fingers from the notch area and place that hand on top of the hand on the compression site. Either extend or interlace your fingers.

Straighten your arms and lock your elbows. Position your shoulders directly above your hands.

Using the weight of your body, apply enough pressure straight down to depress the casualty's breastbone 1½ to 2 inches. (NOTE: If casualty is a child 8 years or younger, depress the breastbone 1 to 1½ inches.)

FIGURE 3-9. ADMINISTERING A MODIFIEDCHEST THRUST

WARNING

Do not bend your elbows, rock, or allow your shoulders to sag. Release the pressure by shifting the weight of your body backward.

Do not remove your hands from the compression site. If you happen to remove your hands from the site, repeat the procedures for locating the compression site. Delivering a thrust at the wrong compression site can cause injury to the casualty.

If you think the obstruction has been dislodged, perform a finger sweep to remove the obstruction and administer two full breaths. If the airway is open, check for a pulse and for spontaneous breathing.

If the obstruction was not dislodged, administer another chest thrust. If you administer 6 to 10 thrusts without apparently dislodging the obstruction, call for help again,

perform a finger sweep, and administer two more breaths. Repeat the cycle of thrusts, finger sweep, and breaths until the object is expelled and the casualty's airway is open (chest rises during ventilations).

3-10. CHECK FOR PULSE

After you have ensured that the casualty's airway is open by successfully delivering two full breaths, check for a pulse. (Pulse beats indicate that the heart is still pumping blood.)

Continue to maintain the casualty's airway. If the head-tilt/chin-lift method is being used, keep one hand pressing on the casualty's forehead.

Locate the carotid artery on the side of the casualty's neck that is closest to you. One carotid artery is located in the groove on the left side of the windpipe (trachea) and another carotid artery is located in the groove on the right side of the windpipe.

Use the index and middle fingers of your free hand to feel for the artery in the groove next to the casualty's Adam's apple (larynx).

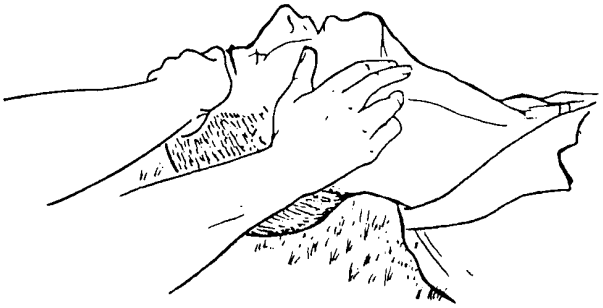

FIGURE 3-10. FEELING FOR THE CAROTID PULSE

Once the artery is located, gently press on the artery with your middle and index fingers and feel for a pulse for 5 to 10 seconds. Also look for signs of spontaneous breathing (rising and falling of the casualty's chest, etc.) while checking the pulse.

> **CAUTION:** Do not use your thumb to feel for the casualty's pulse. If you use your thumb, you may mistake the pulse in your thumb for the casualty's pulse.

Evaluate the situation and perform needed actions.

> If the casualty has no pulse, cardiopulmonary resuscitation (CPR) must be begun. If you are qualified, begin administering CPR and, if possible, send a soldier to get medical help. If you are not qualified to administer CPR, seek medical help (usually the combat medic). (NOTE: Administering CPR is not a combat lifesaver task.)

> If the casualty has a pulse but is not breathing on his own, continue mouth-to-mouth resuscitation (paragraph 3-12).

If the casualty resumes breathing on his own, check for injuries. Continue to monitor the casualty's breathing and be prepared to resume administering mouth-to-mouth resuscitation if needed.

3-11. CONTINUE MOUTH-TO-MOUTH RESUSCITATION

If the casualty's airway is open (any obstruction removed), he has a pulse, and he is not breathing on his own, continue to administer mouth-to-mouth resuscitation. (NOTE: Mouth-to-nose resuscitation is delivered at the same rate.)

Open the casualty's airway.

Take a deep breath.
Close the casualty's nostrils (pinch nose or press cheek against nose).

Seal your mouth over the casualty's mouth.

Blow the breath into the casualty's lungs. Observe the rising of the casualty's chest to ensure that the ventilation is effective.

Break your seal over the casualty's mouth and release his nose. Observe the casualty's chest fall and listen for exhale.

CAUTION: If the chest does not rise and fall, reposition his airway (tilt head back more or lift jaw more) and try again.

Repeat ventilations at the rate of one ventilation (breath) every 5 seconds (10-12 ventilations per minute). Use the following count: "One, one-thousand; two, one-thousand; three, one-thousand; four, one-thousand; (ADMINISTER BREATH); one, one-thousand; two, one-thousand; etc.

After about one minute (10 to 12 ventilations), stop ventilating the casualty and check the carotid pulse again. Observe for spontaneous breathing (chest rising and falling) as you feel for the pulse. The procedure should take 3 to 5 seconds.

If the casualty has no pulse, CPR is needed. If you are not qualified to administer CPR, send for or seek medical aid.

If the casualty has a pulse and is breathing on his own, check for other injuries while continuing to monitor the casualty's breathing.

If the casualty has a pulse but is not breathing on his own, continue to administer ventilations at the rate of one ventilation every 5 seconds. Continue to check the casualty's pulse after every 10 to 12 ventilations.

Continue administering mouth-to-mouth resuscitation until:

The casualty begins breathing on his own.

You are relieved by a qualified person.

You must seek medical help (no pulse).

You must continue with your combat duties.

You are too exhausted to continue.

3-12. MONITOR THE CASUALTY

Once you have established that the casualty is breathing on his own, continue to monitor the casualty's breathing. Ensure that the casualty's airway remains open. If breathing difficulties arise, call for help and repeat the steps for clearing the airway and performing mouth-to-mouth resuscitation, as needed.

(**NOTE:** If the casualty is breathing on his own but is still unconscious, the combat lifesaver can insert an oropharyngeal airway to help maintain an open airway. This procedure is covered in IS0825.)

Continue with Exercises

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PRACTICE EXERCISES: LESSON 3

INSTRUCTIONS: Answer exercises 1 through 22 by circling the letter of the response that best answers the question or best completes the sentence or by writing the missing term in the blank provided. After you have answered all of the exercises, check your answers against the "Practice Exercises Solutions" . For each exercise answered incorrectly, reread the lesson material referenced.

1. While jogging in the park early one morning, you come upon a person lying on the grass who is apparently unconscious. What should be your first action in rendering aid to this person?

   a. Check his pulse.
   b. Call out, "Are you OK?"
   c. Begin administering abdominal thrusts.
   d. Open his airway.
   e. Perform a finger sweep to remove any airway obstruction.

2. A conscious person has an obstructed airway. You are preparing to administer abdominal thrusts to the person while he is standing. Suddenly he passes out. What should you do?

   a. Administer abdominal thrusts while holding the person in a standing position.
   b. Administer chest thrusts while holding the person in a standing position.
   c. Lay the person on his back and prepare to administer modified abdominal thrusts.
   d. Lay the person on his abdomen and administer back blows.

3. When preparing to administer mouth-to-mouth resuscitation to a casualty with no visible injuries, you should open the casualty's airway using the _____ method.

4. The jaw thrust method is preferred to the head-tilt/chin-lift method if _____ _____ .

5. What is the most common cause of airway blockage in an unconscious casualty? _____

6. You find an unconscious person who does not appear to be breathing. After opening his airway, he begins to breathe normally. What should you do now?

   a. Help keep the person's airway open and check for injuries.
   b. Begin mouth-to-mouth resuscitation.
   c. Turn the person onto his chest.
   d. Begin cardiopulmonary resuscitation.

7. In the head-tilt/chin-lift method of opening a casualty's airway, one hand is used to press on his forehead. How is the thumb on the opposite hand used?

a. Lifts the casualty's chin by hooking the thumb under the casualty's jaw.
b. Keeps the casualty's lower lip depressed, if needed.
c. Hooks over the casualty's bottom teeth to ensure a good grip on the casualty's chin.
d. Presses against the casualty's nose to seal off his nostrils.

8. When performing the head-tilt/chin-lift method of opening a casualty's airway, you _____ allow your fingers to press deeply in the soft tissues under the chin.

a. Should.
b. Should not.

9. When you check for breathing, you should:

a. Watch the casualty's chest.
b. Listen for sounds of breathing.
c. Be aware of any exhaled breath blowing against your face.
d. Do all of the above.

10. When initiating mouth-to-mouth resuscitation, you should:

a. Close the casualty's nose, administer one full breath, release the nose, close the nose, administer a second full breath, and release the nose again.
b. Close the casualty's nose, administer two full breaths, then release the nose.
c. Close the casualty's nose, administer one full breath, and release the nose; then repeat until four full breaths have been administered.
d. Close the casualty's nose, administer four full breaths, then release the nose.

11. In which of the following cases would mouth-to-nose ventilations probably be preferred to mouth-to-mouth ventilations?

a. Casualty is pregnant.
b. Casualty has a broken arm.
c. Casualty has a broken jaw and cheek injuries.
d. Casualty has suffered a blow to the back of the head.

12. You are beginning to provide care to an unconscious casualty and have just tried to initiate mouth-to-mouth resuscitation, but the casualty's chest did not rise and fall. What should you do next?

a. Leave the casualty and seek medical help.
b. Perform a finger sweep of the casualty's mouth.
c. Slap the casualty on the back between his shoulder blades.
d. Open the casualty's airway more and try to administer two breaths again.

13. When helping a person with an airway obstruction, finger sweeps are used only if the casualty is _____.

14. You are going to administer a manual thrust to remove an airway obstruction. A modified chest thrusts is preferred if the casualty is _____, is _____, or has _____ wounds.

15. You are preparing to administer an abdominal thrust to a casualty lying on his back. How should you position your hands?

a. Place the heel of one hand midway between the casualty's navel and his groin. Place the other hand on his forehead.
b. Form a fist with one hand and place it on the casualty's navel. Form a fist with the other hand and place it on the casualty's abdomen so that the thumbs of your fists are touching.
c. Place the heel of one hand slightly above the casualty's navel. Place the other hand on top of the first hand.
d. Form a fist with one hand and place it slightly below the casualty's breastbone. Then wrap your other hand around the fist.

16. You are going to administer chest thrusts to an unconscious casualty. How should your hands be placed?

a. Place the heel of one hand on the lower half of the breastbone about a fingerwidth above the notch where the bottom of the lowest rib meets the breastbone. Place the other hand on top of the first hand.
b. Form a fist with one hand and put it in the middle of the breastbone. Wrap your other hand around the fist.
c. Place the heel of one hand a fingerwidth below the notch where the bottom of the lowest rib meets the breastbone. Place the other hand on top of the first hand.
d. Place the heel of one hand just below the middle of the breastbone and the heel of the other hand just above the middle of the breastbone.

17. When delivering a chest thrust to an unconscious adult casualty, the casualty's breastbone should be pushed straight down about _____ to _____ inches.

18. You have just administered two breaths and found that the casualty's airway is open (chest rises and falls when ventilations administered), but the casualty does not begin breathing on his own. What should you do now?

_____

19. Which of the following is a correct location for checking the casualty's carotid pulse while performing mouth-to-mouth resuscitation?

a. Over the casualty's Adam's apple.
b. The groove to the right of the casualty's Adam's apple.
c. The groove to the left of the casualty's Adam's apple.
d. Choices b and c above.
e. Choices a, b, and c above.

20. You are administering mouth-to-mouth (or mouth- to-nose) resuscitation. You should administer:

a. Two to four breaths every minute.
b. Five to nine breaths every minute.
c. Ten to twelve breaths every minute.
d. Fourteen to eighteen breaths every minute.

21. You are successfully administering mouth-to-mouth resuscitation. You have checked the casualty's pulse and found that his heart is still beating. When do you check his pulse again?

a. After two to four breaths.
b. After five to nine breaths.
c. After ten to twelve breaths.
d. After fourteen to eighteen breaths.

22. Once you have performed mouth-to-mouth resuscitation and the casualty begins to breathe on his own, you:

a. Do not have to worry about his breathing any more.
b. Should monitor his breathing in case you need to perform mouth-to-mouth resuscitation again.

23. If possible, practice administering mouth-to-mouth resuscitation on a manikin. (Be sure that you are instructed on the proper care of the manikin before you begin.) If a manikin is not available, practice with a partner. Have a person evaluate your performance with a checklist.

If possible, practice administering mouth-to-mouth resuscitation on a manikin (Be sure that you are instructed on the proper care of the manikin before you begin.) If a manikin is not available, practice with a partner. Have a person evaluate your performance with a checklist.

Performance checklist

Check Your Answers on Next Page

IS0824 LESSON 3 Practice Exercise Solutions

1. b (para 3-2)
2. c (para 3-3)
3. head-tilt/chin-lift (para 3-4)
4. you think the casualty has a severe head injury or fractured neck (para 3-4)
5. The tongue. (para 3-4)
6. a (para 3-5)
7. b (para 3-4a)
8. b (para 3-4a)
9. d (para 3-5)
10. b (para 3-6b, c)
11. c (para 3-6c)
12. d (para 3-6d)
13. unconscious (para 3-7)
14. noticeably pregnant; extremely overweight; serious abdominal wound (para 3-8)
15. c (para 3-8)
16. a (para 3-9)
17. 1 1/2 to 2 (para 3-9)
18. Check for a pulse. (para 3-10)
19. d (para 3-10)
20. c (para 3-11)
21. c (para 3-12)
22. b (para 3-12)

PERFORMANCE CHECKLIST

PERFORM MOUTH-TO-MOUTH RESUSCITATION

Situation: You have just found a casualty who appears to be unconscious. (Note: Checklist assumes the casualty's airway is blocked and pulse is still present.)

	GO	NO GO
Checks for responsiveness.	_____	_____
Calls for help.	_____	_____
Positions casualty on his back with his arms at his side (if not already in that position).	_____	_____
Performs quick finger sweep.	_____	_____
Selects appropriate method of opening airway (head-tilt/chin-lift or jaw thrust).	_____	_____
Question: When is the jaw thrust preferred over the head-tilt/chin-lift?	_____	_____

Answer: _____

Head-Tilt/Chin-Lift

Places one hand on casualty's forehead and presses with palm of hand to tilt head back.	_____	_____
Places fingertips of other hand under tip of casualty's jaw and lifts. jaw forward	_____	_____

Jaw Thrust

Rests elbows on surface on which casualty is lying.	_____	_____
Grasps angles of casualty's jaw (one hand on each side) and lifts jaw forward.	_____	_____
Checks casualty for breathing (looks for chest rising and falling, listens for sounds of breathing, and feels with cheek for air flow).	_____	_____
Seals nostrils closed and seals mouth over casualty's mouth while maintaining open airway. One hand maintains pressure on the casualty's forehead.	_____	_____
Administers two full breaths.	_____	_____
Releases casualty's nostrils and breaks seal over mouth.	_____	_____

	GO	NO GO
If chest does not rise and fall, repositions airway and administers two breaths again.	_____	_____
If airway still blocked, administers finger sweep and appropriate manual thrusts.	_____	_____
Finger Sweep		
Grasps tongue and lower jaw between thumb and index finger and lifts jaw open.	_____	_____
Inserts index finger of other hand along inside of cheek to base of tongue and uses a hooking motion to remove any visible obstruction.	_____	_____
Question: When are chest thrusts preferred over abdominal thrusts?	_____	_____

Answer: _____
_____
_____

Modified Abdominal Thrust		
Kneels astride the casualty's thighs.	_____	_____
Places heel of one hand just above casualty's navel on midline, places heel of other hand on top of first, and points fingers toward casualty's head.	_____	_____
Delivers a forward, upward thrust; then relaxes the pressure.	_____	_____
Performs 6 to 10 thrusts.	_____	_____
Performs a finger sweep.	_____	_____
Repeats attempt to ventilate casualty.	_____	_____
Continues cycle of abdominal thrusts, finger sweep, and two ventilations until the obstruction is expelled.	_____	_____
Modified Chest Thrust		
Kneels beside casualty's chest.	_____	_____
Locates compression site by running fingers along bottom of rib cage to locate notch where rib and sternum meet and placing heel of second hand on sternum one fingerwidth above notch.	_____	_____

	GO	NO GO
Places heel of first hand on heel of second hand and positions shoulders over the compression site. Fingers must not rest on casualty's chest.	_____	_____
Depresses sternum 1 to 2 inches [simulated if a person is used as the casualty], then relaxes the pressure.	_____	_____
Performs 6 to 10 thrusts.	_____	_____
Performs finger sweep.	_____	_____
Repeats attempt to ventilate casualty.	_____	_____
Continues cycle of chest thrusts, finger sweep, and two ventilations unit the the obstruction is expelled.	_____	_____
Checks carotid pulse with fingertips (5 to 10 seconds).	_____	_____
Ventilates the casualty at the rate of one cycle (deep breath, pinch nose and and seal mouth, blow, break seal and release nose) every 5 seconds.	_____	_____
Rechecks the pulse after 1 minute.	_____	_____
Goes for help if pulse not found; continues ventilations if pulse is present.	_____	_____
Continues to monitor casualty's breathing after casualty resumes breathing on his own.	_____	_____
OVERALL EVALUATION (A no-go on any step gives an overall evaluation of no-go.)	GO _____	NO GO _____

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LESSON 4

PERFORM FIRST AID FOR BLEEDING OF AN EXTREMITY

TASK

Apply a field dressing, elevation, manual pressure, a pressure dressing, and a tourniquet, as needed, to a wound on a casualty's limb.

CONDITIONS

Given a simulated casualty with bleeding from a limb and needed supplies.

STANDARD

Score a GO on the performance checklist.

REFERENCES

STP 21-1-SMCT, Soldier's Manual of Common Tasks: Skill Level 1.
FM 21-11, First Aid for Soldiers.

4-1. INTRODUCTION

A casualty who is losing blood (hemorrhaging) may die unless the bleeding is stopped. Bleeding from a limb (arm or leg) can usually be controlled by applying a field dressing, applying manual pressure, elevating the injured limb, and (if needed) applying a pressure dressing. If these methods do not control the bleeding, a tourniquet can be placed around an upper arm or thigh to stop the flow of blood below the band.

The term dressing refers to the material that is placed directly over the wound. The dressing absorbs some of the blood and helps a clot to form. The clot "plugs" the wound to stop the bleeding. The dressing also protects the wound from additional contamination and injury.

A bandage is the material used to hold (secure) the dressing in place so the dressing will not slip and destroy the clot that is forming. The ends of the bandage are called the tails.

The field dressing consists of a pad of sterile (germ-free) white dressing with a bandage (usually olive-drab) already attached to the dressing pad. The field dressing is wrapped in paper and then sealed in a plastic envelope. The field dressing is also called the first aid dressing and the combat dressing.

> **CAUTION:** Monitor the casualty's respirations if he is unconscious. If the casualty stops breathing, administer mouth-to-mouth or mouth-to-nose resuscitation (except in a chemical environment).

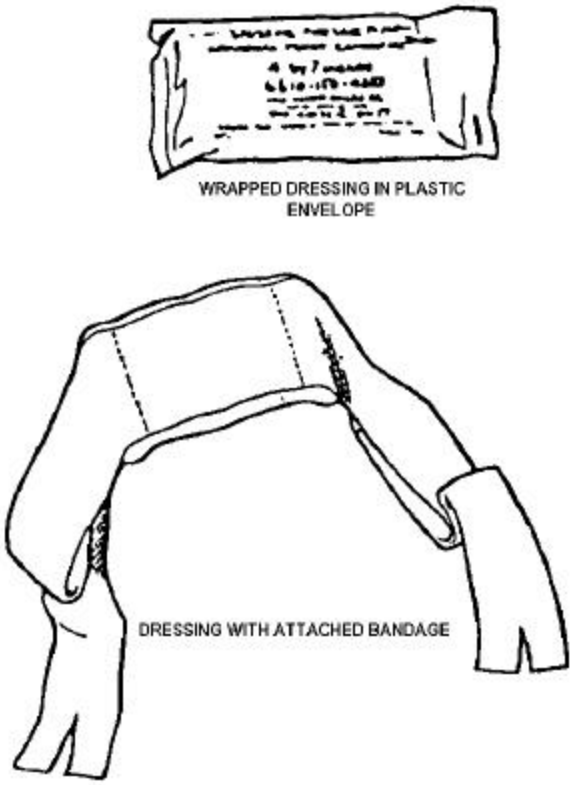

FIGURE 4-1. FIELD DRESSING

4-2. EXPOSE THE WOUND

Tear, cut, push, and/or lift the casualty's clothing from the area around the wound so you can see the full extent of the injury.

WARNING

If you are in a chemical environment, do not expose the wound. Place the dressing over the wound and protective clothing and evacuate the casualty.

Avoid causing additional damage to the wound. If clothing is stuck to the wound area, cut or tear around the stuck material and leave that part of the clothing stuck to the wound. Do not try to remove objects from the wound. Do not try to clean the wound.

Look for both entry and exit wounds.

4-3. APPLY AND SECURE FIELD DRESSING

After you have exposed the wound, obtain a field dressing. If the soldier still has a field dressing in his plastic individual first aid case, use this field dressing first in order to conserve your supplies. [NOTE: If you use up all of the field dressings in your aid bag, improvise a dressing and bandage using the cleanest cloth available.]

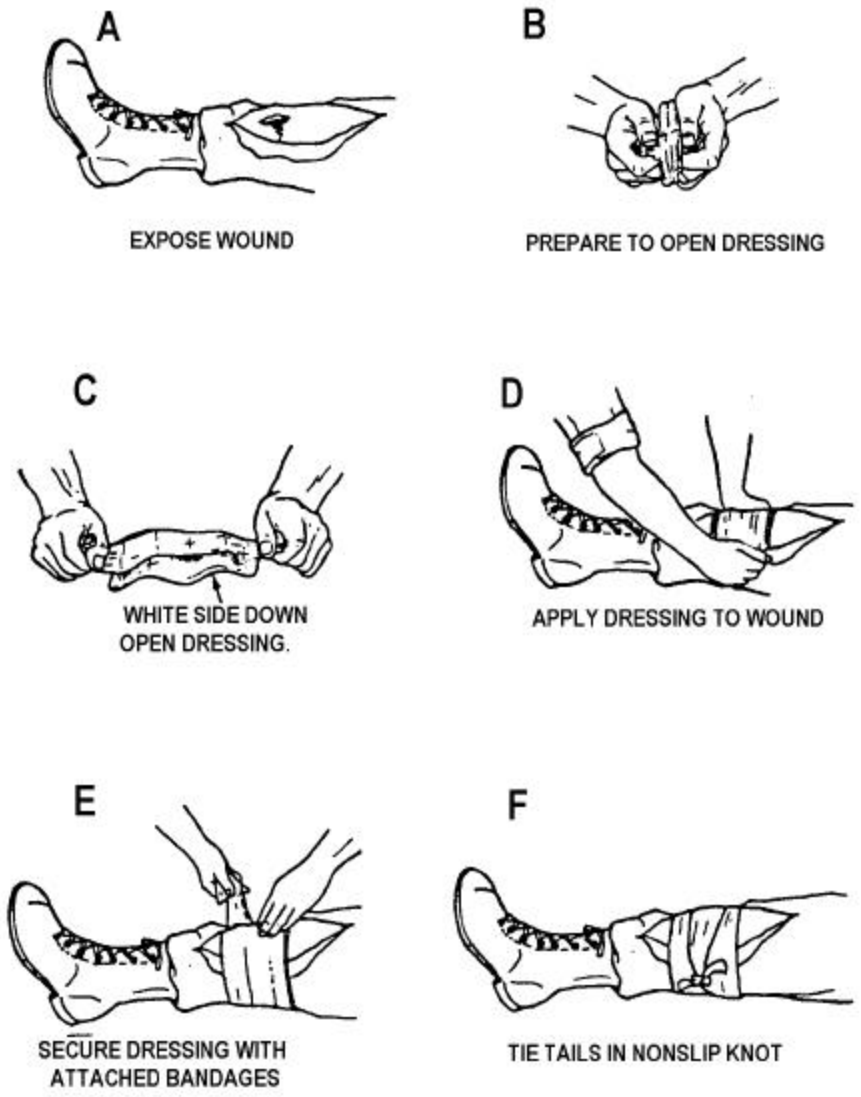

FIGURE 4-2. APPLYING AND SECURING A FIELD DRESSING

Tear the plastic envelope and remove its contents.

Twist the paper wrapper until it breaks or tear it open.

Grasp the folded bandage/tails with both hands.

Hold the field dressing above the exposed wound with the white side of the dressing material toward the wound.

Pull on the bandage/tails so the dressing opens and flattens.

CAUTION: Do not touch the white sterile side of the dressing.

Place the dressing on the wound. Remember, the white side goes on the wound.

> **CAUTION:** If there is an impaled object (stick, etc.) sticking out of the wound, do not remove the object. Use bulky dressing made from the cleanest material available to build up the area around the protruding object in order to stabilize the object and protect the wound. Then apply a bandage over the dressing.

Place one hand on top of the dressing to hold the dressing in place. If the casualty is conscious, you can have him hold the dressing in place while you secure it.

Wrap one of the bandages around the injured body part with your free hand. As you wrap, cover one of the exposed sides of the dressing with the bandage. (The bandage can usually be wrapped around a limb more than once.) Bring the tail back over the dressing.

Wrap the other bandage around the injured body part in the opposite direction. As you wrap, cover the remaining exposed side of the dressing with the bandage. Bring the tail back to the dressing.

Tie the tails into a nonslip knot over the outer edge of the dressing, not over the wound itself. (Tying the knot over the wound could cause additional injury to the wound site.) The tails should be tied firm enough to prevent the dressing from slipping, but loose enough to insert two fingers between the knot and the dressing.

If the wound is on a limb, check the circulation below (distal to) the bandage. If the skin below the bandage becomes cool to the touch, bluish, or numb or if a pulse cannot be detected below the bandage, the bandage may be too tight and interfering with circulation. If so, loosen and retie the tails; then check the circulation again. If circulation is not restored, evacuate the casualty as soon as possible. Medical treatment may be needed to keep the limb from being amputated due to poor blood circulation and tissue death.

> **CAUTION:** Do not remove the dressing from the wound. Removing the dressing could interfere with any clot that has begun to form.

4-4. APPLY MANUAL PRESSURE

Apply direct pressure over the dressing with your hand. This pressure will help to compress the damaged blood vessels and control the bleeding. Maintain this pressure for 5 to 10 minutes. If the casualty is conscious and can follow instructions, you can have him apply the manual pressure himself.

FIGURE 4-3. APPLYING MANUAL PRESSURE

4-5. ELEVATE THE INJURED LIMB

Elevate the injured limb above the level of the casualty's heart to decrease bleeding. An injured leg can be raised by placing the foot and ankle on a pack, log, rock, or other object. An injured forearm can be elevated by placing the forearm on the casualty's chest if he is lying on his back or by having the casualty place his arm on top of his head if he is sitting. Elevating the injured limb and applying manual pressure should be done at the same time when no fracture is involved.

WARNING

Examine an injured extremity (arm or leg) for fractures (visible broken bone, deformity of the limb, etc.) before elevating the limb. If a fracture is suspected, do not elevate the wound until the limb has been splinted.

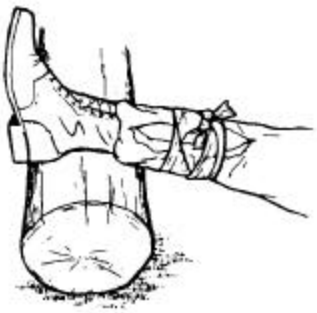

FIGURE 4-4. ELEVATING THE WOUND

4-6. APPLY A PRESSURE DRESSING

If blood continues to seep from the dressing after you have secured the dressing, applied manual pressure, and elevated the wound (if applicable), you should apply a pressure

dressing. The objective of applying a pressure dressing is to stop the bleeding, not to stop all blood circulation below the wound. (Stopping all blood circulation would endanger the body tissue below the pressure dressing.)

WARNING

A pressure dressing is applied <u>only</u> to a wound on an extremity (arm or leg).

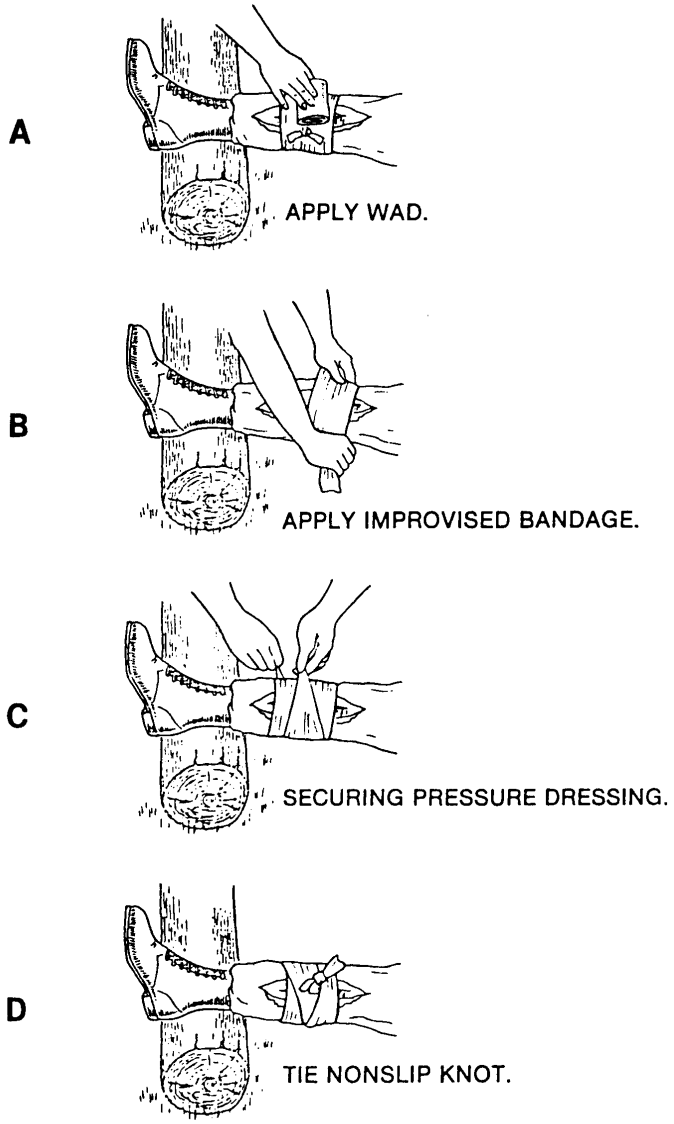

FIGURE 4-5. APPLYING A PRESSURE DRESSING

Place a wad of material on top of the dressing and directly over the wound. The wad can be made from a folded muslin bandage (cravat) from the combat lifesaver aid bag, a rag, material torn from clothing, or similar material that can be folded several times.

CAUTION: The pressure dressing is applied on top of the field dressing. The field dressing is not removed or retied. Moving the field dressing would interfere with any clot that has begun to form.

Place a bandage over the wad of padding and wrap the bandage tightly around the limb. The bandage is usually made from a muslin bandage from the combat lifesaver aid bag or other material torn and folded into a cravat. Other materials such as a handkerchief, sock, or strip of cloth torn from a shirt can also be used. Wire and narrow material, such as a shoestring, are not used since they are likely to damage blood vessels and nerve tissue.

Tie the ends of the bandage to secure the padding. A nonslip knot should be tied directly over the wound. The bandage should be tight enough so only the tip of one finger can be inserted under the bandage. Do not tie the bandage so tight that it cuts off blood circulation.

Check the circulation below the pressure dressing. If the skin below the pressure dressing becomes cool to the touch, bluish, or numb, or if the pulse below the pressure dressing is no longer present, the pressure dressing may be too tight. If so, loosen and retie the tails. If circulation is not restored, evacuate the casualty as soon as possible. [NOTE: The pressure dressing can be loosened and retied without disturbing the blood clot forming under the field dressing.]

Apply manual pressure over the pressure dressing.

If the pressure dressing controls the bleeding, proceed to check the casualty for other injuries. Recheck the circulation below the pressure dressing periodically and monitor the casualty for shock (Lesson 8).

If the wound continues to bleed, apply a tourniquet as described in the following paragraphs.

4-7. DETERMINE WHEN A TOURNIQUET IS NEEDED

A tourniquet is a constricting band placed around a limb (upper arm or thigh) in order to stop the flow of the blood below the band.

A tourniquet is needed when the amount of blood being lost from a limb endangers the casualty's life and the bleeding cannot be stopped by the application of a field dressing, manual pressure, elevation, and pressure dressing.

A tourniquet is not used for wounds to the head, neck, or trunk.

A tourniquet is not used for a wound on the hand or foot. Bleeding from the amputation of part of a hand or part of a foot can be controlled by application of a pressure dressing, manual pressure, and elevation. It does not require the application of a tourniquet.

A tourniquet is needed when there has been an amputation (complete severing) of an upper arm, forearm, thigh, or lower leg.

WARNING

Do not attempt to control the bleeding from an amputation of a limb (not part of a hand or foot) by applying a field or pressure dressing.

Apply a tourniquet to the arm or leg even if the stump is not bleeding severely. The lack of bleeding is due to the body's normal defenses (constriction of blood vessels), but the stump will begin to bleed profusely when the blood vessels relax.

4-8. GATHER MATERIALS FOR MAKING A TOURNIQUET

a. Tourniquet Band

You will need a band of strong, pliable material which is at least two inches wide when folded and will retain this width after being tightened. A folded muslin bandage (usually called a cravat), a folded handkerchief, or a folded strip of clothing will do. Do not use wire or shoestrings for a tourniquet band. A wide tourniquet will protect the tissue beneath the tourniquet when it is tightened. If a very narrow tourniquet is used, the nerves and blood vessels beneath the tourniquet may be seriously damaged.

b. Rigid Object

A rigid object, usually a stick, is needed to tighten the tourniquet.

c. Securing Materials

Additional material may be needed to secure the rigid object once the tourniquet has been tightened. If the tourniquet band is long enough, the tails can be used to secure the rigid object. If not, a piece of cloth similar to the tourniquet band will be needed.

d. Padding

Material is placed between the limb and the tourniquet band to protect the skin from being pinched and twisted when the band is tightened. Soft, smooth material should be used for padding. The casualty's shirt sleeve or trouser leg can be used as padding.

4-9. SELECT A TOURNIQUET SITE

Select an upper arm or thigh site. If the wound is in the upper arm or thigh, select a site that is two to four inches above the edge of the wound or amputation site. If the wound or amputation is below the elbow or knee, select a site above the joint and as close to the joint as possible. A tourniquet should not be placed over a joint or over a fracture site.

4-10. APPLY A TOURNIQUET

WARNING

A tourniquet is used only as a last resort (other than an amputation) when blood loss from a wound endangers the casualty's life and the bleeding cannot be controlled by other methods. The portion of the limb below the tourniquet may need to be amputated when the casualty reaches a medical treatment facility. Using a tourniquet usually means sacrificing a limb in order to save a life.

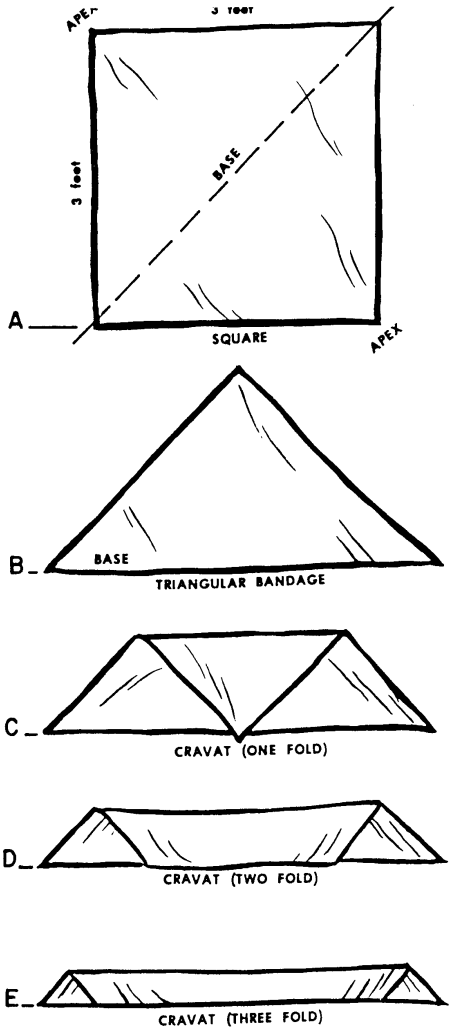

FIGURE 4-6. FOLDING A MUSLIN BANDAGE OR A SQUARE OF MATERIAL INTO A TOURNIQUET BAND

Place padding around the limb where the tourniquet will be applied. If the casualty's shirt sleeve or trouser leg is covering the tourniquet site, smooth the shirt or trouser material and apply the tourniquet over the clothing.

Place the tourniquet band material around the tourniquet site.

Tie the band with a half-knot (the same as the first part of tying a shoe). Place the rigid object on top of the half-knot.

Tie a full knot over the rigid object.

Twist the rigid object either clockwise or counterclockwise until the tourniquet is tight and the bright red bleeding has stopped. Bright red blood is from a severed artery. Generally, darker blood is from a vein. Dark blood may continue to ooze even after the tourniquet has been properly applied. There should be no pulse below the tourniquet.

Wrap the tails of the tourniquet band around the end of the rigid object so the rigid object will not untwist, bring the tails under the limb, and tie the tails in a nonslip knot.

> **CAUTION:** If the rigid object cannot be secured with the tails of the tourniquet band, wrap a piece of material around the limb below the level of the tourniquet. Then wrap the ends of the material around one end of the rigid object so the tourniquet will not unwind, and tie the tails of the material in a nonslip knot. The rigid object is secured below the tourniquet so the securing material will not interfere with blood circulation above the tourniquet.

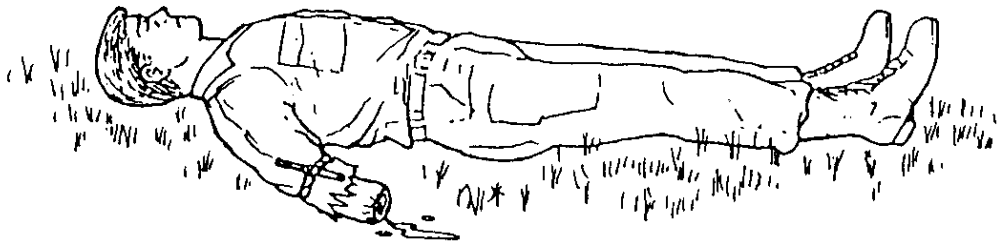

FIGURE 4-7. TOURNIQUET APPLIED TO AN ARM AMPUTATION

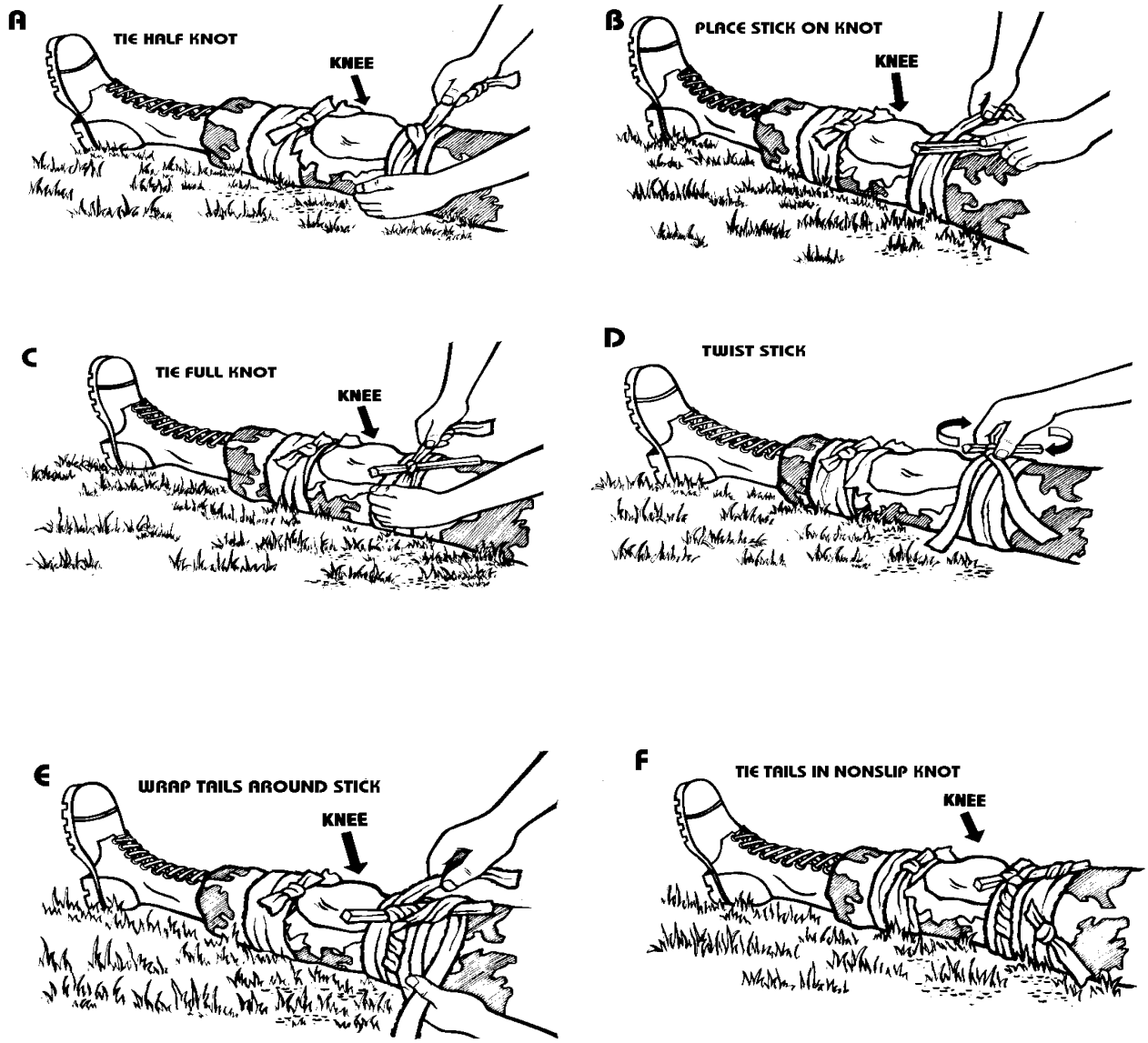

FIGURE 4-8. APPLYING A TOURNIQUET TO A LIMB

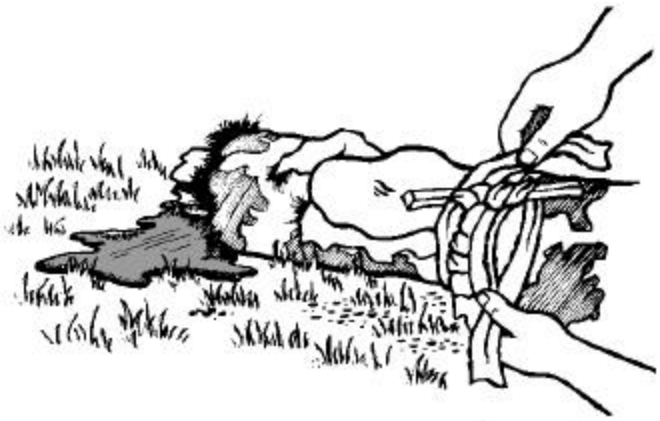

FIGURE 4-9. TOURNIQUET APPLIED TO A LEG AMPUTATION

Do not cover the tourniquet. Leave the tourniquet in full view so it can be located quickly by medical personnel.

WARNING

Do not loosen the tourniquet once it is in place and has stopped the blood flow. If it is loosened, the wound will start to bleed again. The additional blood loss may cause the casualty to go intoshock, which could be fatal.

A tourniquet should only be loosened by medical personnel at a medical treatment facility.

4-11. DRESS AN AMPUTATION

After the tourniquet has been applied to an amputation of the arm or leg, place a dressing made of soft, absorbent material over the end of the stump and secure the dressing with bandages. The dressing will help prevent additional contamination of the wound and will help protect the wound from additional injury.

4-12. MARK THE CASUALTY

Write a "T" and the time of application on the casualty's forehead with a pen, the casualty's blood, mud, or other substance. The "T" alerts medical personnel that a tourniquet has been applied.

Continue to monitor the casualty and treat for shock.

If possible, practice applying a field dressing, pressure dressing, and tourniquet to a simulated casualty. If you are using a person as the simulated casualty, do not tighten the pressure dressing and tourniquet enough to seriously interfere with blood circulation. Have another person score you performance using a performance checklist

If possible, practice applying a field dressing, pressure dressing, and tourniquet to a simulated casualty. If you are using a person as the simulated casualty, do not tighten the pressure dressing and tourniquet enough to seriously interfere with blood circulation. Have another person score your performance using a performance checklist.

Continue with Exercises

PRACTICE EXERCISES: LESSON 4

INSTRUCTIONS: Answer exercises 1 through 27 by circling the letter of the response that best answers the question or best completes the sentence or by writing the missing term in the blank provided. After you have answered all of the exercises, check your answers against the "Practice Exercises Solutions". For each exercise answered incorrectly, reread the lesson material referenced.

1. The material placed on the wound to absorb the blood is called the _____; the material which is used to keep the first pad of material from slipping off the wound is called the _____.

2. Why should you avoid removing a dressing from a bleeding wound? _____
_____

3. Why should you push away any loose clothing near a casualty's open wound before applying a field dressing?

   a. To allow the wound to get air.
   b. To provide a sterile work area.
   c. To see the extent of the wound.
   d. To apply ointment to the wound.

4. When would you apply a field dressing to a wound without exposing the wound?

   a. In a rainy area.
   b. In a chemically-contaminated area.
   c. In an extremely hot area.
   d. In an extremely cold area.

5. A casualty is bleeding from a wound in the leg. Part of the trouser material next to the wound is stuck to the wound. You should:

   a. Tear around the stuck material so as to not pull the material from the wound.
   b. Gently pull the material from the wound area.

6. What part of the field dressing should be applied directly over an open wound?

   a. Olive-drab tails.
   b. Top side of the dressing (side to which tails are attached).
   c. White side of the dressing.
   d. Either side of the dressing.

7. You have just applied a field dressing to a wound on the casualty's arm. Under what circumstance would you loosen the field dressing?

   a. The bleeding has stopped.
   b. The casualty has lost consciousness.

c. The dressing has become completely soaked with blood.
d. There is no pulse below (distal to) the dressing.

8. When applying a field dressing to a bleeding wound on the arm, the tails should be tied in a nonslip knot:

a. Directly over the center of the wound.
b. Over the outer edge of the dressing.
c. On the other side of the arm (away from the wound).
d. Wherever the tails happen to cross.

9. After applying a field dressing to a bleeding wound on the casualty's forearm, you should also apply _____ _____ directly over the wound; then _____ the arm if the arm is not _____.

10. A pressure dressing is usually:

a. Another field dressing.
b. Folded material secured by a cravat.

11. A pressure dressing is applied:

a. Two to four inches above the field dressing.
b. On top of the field dressing.
c. Two to four inches below the field dressing.

12. When applying a pressure dressing, the tails should be tied:

a. Directly over the wound.
b. Over the outer edge of the dressing.
c. On the other side of the arm (away from the wound).
d. Wherever the tails happen to cross.

13. A casualty is bleeding from a wound on his forehead. You have applied a field dressing, but the wound is still bleeding. Should you apply a pressure dressing to the wound?

a. Yes.
b. No.

14. Which of the following is applied with the intent of stopping blood circulation?

a. Field dressing.
b. Manual pressure.
c. Pressure dressing.
d. Tourniquet.

15. The portion of the limb below the pressure dressing is cool to the touch and the nail beds on the limb are bluish. The pressure dressing should be _____ and _____. If the condition does not improve,_____ the casualty.

16. In which of the following situations would you apply a tourniquet without first trying to control the bleeding with a pressure dressing?

a. Severe bleeding from a wound on the leg.
b. Severe bleeding from a wound on the forearm.
c. Amputation of the arm near the elbow.
d. Amputation of the toes.

17. Which one of the following is preferred for a tourniquet band?

a. A wire that is 36 inches long.
b. A bootlace.
c. A rubber constricting band.
d. A square of cloth (about 36 inches on each side) folded to a width of about 2 inches.

18. You are going to apply a tourniquet band (cravat) made from a piece of folded material such as a muslin bandage. The band should be at least _____ wide when folded.

a. ½inch.
b. 1 inch.
c. 1½ inches.
d. 2 inches.

19. Should padding be placed between the tourniquet band and the casualty's limb?

a. Yes.
b. No.

20. A tourniquet should be applied between the heart than the wound but not on a joint.

a. Yes.
b. No.

21. If the amputation site is about one inch below the elbow joint, the tourniquet is applied:

a. Between the wound and the elbow.
b. Directly over the elbow.
c. Slightly above the elbow.
d. Four to six inches above the elbow.

22. A casualty has just had his arm amputated just above the wrist, but the bleeding is not severe. What should you do?

a. Leave the stump exposed to the air.

b. Apply a tourniquet two to four inches above the amputation site.

c. Apply a pressure dressing to the stump.

d. Apply a tourniquet above the elbow.

23. Which one of the following statements gives a proper rule for tightening a tourniquet?

a. A tourniquet should be loose enough so that you can slip two fingers under the tourniquet band.

b. A tourniquet should be loose enough so that you can slip the tip of one finger under the tourniquet band.

c. A tourniquet is to be tightened until the bright red bleeding has stopped; darker blood oozing from the wound can be ignored.

d. A tourniquet is to be tightened until both the bright red bleeding and the darker venous bleeding have stopped completely.

24. Once you have tightened the tourniquet, you must:

a. Check the casualty's carotid pulse.
b. Secure the rigid object so the tourniquet will not unwind.
c. Apply a field dressing over the rigid object.
d. Remove the rigid object and tie the tails in a nonslip knot.

25. Once the tourniquet has been applied, should it be covered with a blanket, poncho, or similar material?

a. Yes.
b. No.

26. The lower part of the casualty's arm has been amputated. You have applied a tourniquet. How is the stump treated?

a. The stump is dressed and bandaged.
b. The stump is left exposed to facilitate drainage.

27. You have applied a tourniquet to a casualty's left leg. Which one of the following is a proper method of marking the casualty?

a. Write a "T" and the time of application on the casualty's forehead.
b. Write a "T" and the time of application on the dressing over the stump.
c. Write "LL" and the time of application on the casualty's forehead.
d. Write "LL" and the time of application on the dressing over the stump.
e. Write your initials on the casualty's chest.

Check Your Answers on Next Page

IS0824 LESSON 4 Practice Exercise Solutions

1. dressing; bandage. (para 4-1)
2. Removing the dressing pad could destroy the clot which is forming and it is the clot which stops the bleeding. (paras 4-1, 4-3, 4-6)
3. c (para 4-2)
4. b (para 4-2)
5. a (para 4-2)
6. c (para 4-3)
7. d (para 4-3)
8. b (para 4-3)
9. manual pressure; elevate; fractured (or broken). (paras 4-4, 4-5)
10. b (para 4-6)
11. b (para 4-6)
12. a (para 4-6)
13. b (para 4-6)
14. d (para 4-7)
15. loosened, retied; evacuate. (para 4-6)
16. c (para 4-7)
17. d (para 4-8)
18. d (para 4-8)
19. a (paras 4-8d)
20. a (para 4-9)
21. c (para 4-9)
22. d (para 4-9)
23. c (para 4-10)
24. b (para 4-10)
25. b (para 4-10)
26. a (para 4-11)

27. a (para 4-12)

See Performance Checklist

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PERFORMANCE CHECKLIST

APPLY A DRESSING, PRESSURE DRESSING, AND TOURNIQUET

Situation: You have located a casualty who is losing a good deal of blood from a wound on an extremity.

	GO	NO GO
Exposes wound.	_____	_____
Removes the field dressing from plastic and paper wrappers contaminating the white side of the dressing.	_____	_____
Grasps the tails of the field dressing with both hands, holds the dressing directly over the wound with the white side down, pulls the dressing open, and places the dressing pad directly over the wound.	_____	_____
Holds (or has casualty hold) the dressing in place and wraps one tail around the injured limb, covering one exposed edge of the dressing.	_____	_____
Wraps other tail in opposite direction so the other edge of the dressing pad is covered.	_____	_____
Ties the tails into a nonslip knot over outer edge of the dressing (not over the wound). Should be able to insert two fingers under the knot.	_____	_____
Checks the casualty's circulation below the injury.	_____	_____
Loosens and reties tails if the bandage is too tight.	_____	_____
Applies direct hand pressure over the dressing or has the casualty apply pressure if he is able.	_____	_____
Checks limb for fracture.	_____	_____
Elevates the wound above the level of the heart if limb is not fractured.	_____	_____
Applies a pressure dressing if bleeding continues.	_____	_____
Folds material as necessary to form pressure dressing wad (pad).	_____	_____
Places wad on top of the field dressing pad directly over the wound.	_____	_____
Wraps a strip of cloth (cravat) tightly around the wad and limb.	_____	_____

	GO	NO GO
Ties a nonslip knot directly over the wound to secure the wad. Should be able to insert only one fingertip under pressure dressing bandage.	_____	_____
Checks circulation below the injury.	_____	_____
Loosens and reties the bandage if needed.	_____	_____
Applies a tourniquet if bleeding continues.	_____	_____
Makes a band (cravat) at least two inches wide.	_____	_____
Wraps the tourniquet around the upper arm or thigh.	_____	_____
Has padding (shirt sleeve, etc.) between tourniquet band and skin.	_____	_____
Ties a half-knot.	_____	_____
Places the rigid object (stick) on top of the half-knot.	_____	_____
Ties a full knot over the rigid object.	_____	_____
Twists the stick to tighten the tourniquet. [Simulate if practicing on a person.]	_____	_____
Secures rigid object to prevent tourniquet from untwisting using the ends of the tourniquet band or a strip of cloth (cravat) wrapped around the limb (below the tourniquet) and ties the tails in a nonslip knot.	_____	_____
Marks the casualty's forehead with a "T" and the time of application.	_____	_____

OVERALL EVALUATION (A no-go on any step gives an overall evaluation of no-go.)	GO	NO GO
	_____	_____

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LESSON 5

PERFORM FIRST AID FOR AN OPEN CHEST WOUND

TASK

Apply a dressing to a casualty with an open chest wound.

CONDITIONS

Given a simulated casualty with an open chest wound and needed supplies.

STANDARD

Score a GO on the performance checklist.

REFERENCES

STP 21-1-SMCT, Soldier's Manual of Common Tasks: Skill Level 1.
FM 21-11, First Aid for Soldiers.

5-1. INTRODUCTION

The body has two lungs. Each lung is enclosed in a separate airtight area within the chest. If an object punctures the chest wall and allows air to get into one of these area, the lung within that area can not fully expand (collapses). In order for both lungs to collapse, both sides of the chest would have to be punctured. Any degree of collapse, however, interferes with the ability to inhale a sufficient amount of air. An excessive buildup of pressure from air or blood around the collapsed lung can also cause compression of the heart and other lung.

5-2. CHECK FOR SIGNS AND SYMPTOMS OF AN OPEN CHEST WOUND

An open chest wound can be caused by the chest wall being penetrated by a bullet, knife blade, shrapnel, or other object. If you are not sure if the wound has penetrated the chest wall completely, treat the wound as though it were an open chest wound. Some of the signs and symptoms of an open chest wound are given below.

Sucking or hissing sounds coming from chest wound. (When a casualty with an open chest wound breathes, air goes in and out of the wound. This air sometimes causes a "sucking" sound. Because of this distinct sound, an open chest wound is often called a "sucking

chest wound.")

Blood coughed up.

Frothy blood. (The air going in and out of an open chest wound causes bubbles in the blood coming from the wound.)

Shortness of breath or difficulty in breathing.

Chest not rising normally when the casualty inhales.

Pain in the shoulder or chest area that increases with breathing.

Bluish tint of lips, inside of mouth, fingertips, or nail beds. (This color change is caused by the decreased amount of oxygen in the blood.)

Signs of shock - Rapid and weak heartbeat.

5-3. LOCATE AND EXPOSE OPEN CHEST WOUND

Expose the area around the open chest wound by removing, cutting, or tearing the clothing covering the wound. If clothing is stuck to the wound, do not try to remove the stuck clothing as this may cause additional pain and injury. Cut or tear around the stuck clothing. Do not try to clean the wound or remove objects from the wound.

Check for entry and exit wounds. Look for a pool of blood under the casualty's back and use your hand to feel for wounds. If there is more than one open chest wound, treat the more serious (largest, heaviest bleeding) wound first.

WARNING

If you are in a chemical environment, seal and dress the wound(s) without exposing the wound(s).

5-4. SEAL AND DRESS THE OPEN CHEST WOUND

Since air can pass through a dressing, you must seal an open chest wound to stop air from entering the chest and collapsing the lung.

a. Open Field Dressing Wrapper

Tear open one end of the plastic wrapper of a field dressing. Remove the inner packet (the

field dressing wrapped in paper) and put it aside. Continue to tear around the edges of the plastic wrapper until a flat surface is created. This plastic wrapper will be used to make an airtight seal which will keep air from entering the chest cavity through the wound. If there is both an entry wound and an exit wound, the plastic wrapper can be torn to make two seals if the wounds are not too large. The edges of the sealing material should extend at least two inches beyond the edges of the wound.

> **CAUTION:** Avoid touching the inside surface of the plastic wrapper. The inner surface will be applied directly to the wound and should be kept as free from contamination as possible.

b. Have Casualty Exhale

Tell the casualty to exhale (breathe out) and hold his breath. This forces some of the air out of the chest wound. The more air that can be forced out of the chest before the wound is sealed, the better the casualty will be able to breathe after the wound is sealed. Have the casualty resume normal breathing after the wound is sealed.

If the casualty is unconscious or cannot hold his breath, place the wrapper over the wound after his chest falls but before it rises.

c. Place Wrapper Over Wound

Place the inside surface of the plastic wrapper (the side without printing) directly over the hole in the chest to seal the wound.

Check the plastic wrapper to ensure that it extends two inches or more beyond the wound edges in all directions. If the wrapper does not have a two-inch margin, it may not form an airtight seal and may even be sucked into the wound. If the wrapper is not large enough or is torn, use foil, a poncho, cellophane, or similar material to form the seal.

d. Tape Wrapper in Place

Tape down three edges of the plastic, usually the top edge and two side edges. This creates a "flutter valve" effect. When the casualty inhales, the plastic is sucked against the wound and air cannot enter the wound. When the casualty exhales, air may be able to exit the wound through the untaped (bottom) edge of the plastic.

> **Caution:** If the securing material is not taped down, it must be held in place until the dressing is applied. If the casualty is able, he can hold the sealing material in place. Otherwise, you must keep the sealing material in place while preparing to dress the wound (see Figure 5-1B).

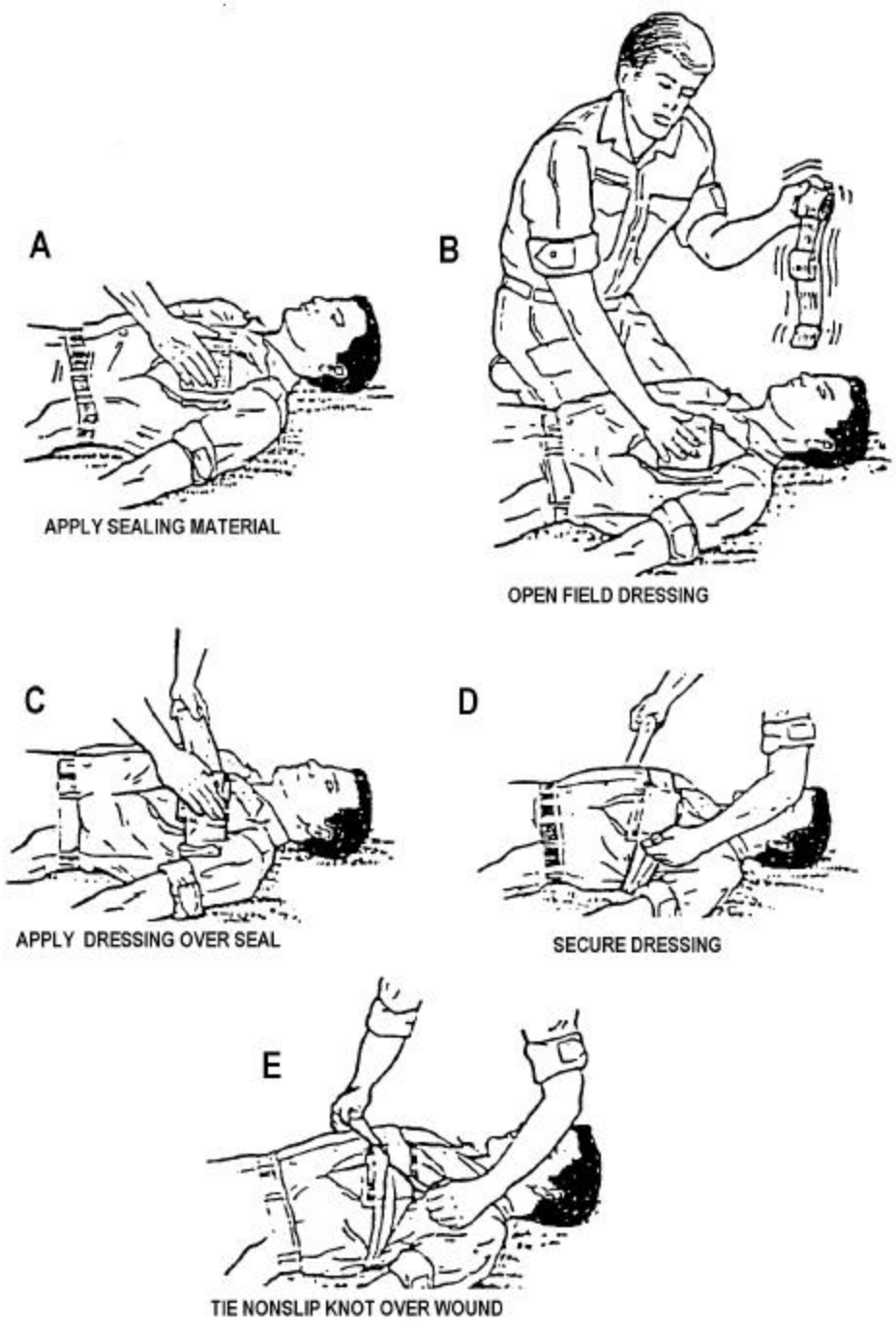

FIGURE 5-1. SEALING AND DRESSING AN OPEN CHEST WOUND

e. Apply Field Dressing

Remove the field dressing from the paper wrapper.

Place the white side of the dressing directly over the plastic wrapper. Maintain pressure on the dressing so the plastic wrapper will not slip.

WARNING

If an object is protruding from the chest wound, do not try to remove it. Place airtight material around the object to form as airtight a seal as possible. Stabilize the object by placing a bulky dressing made from the cleanest material available around the object. Apply improvised bandages to hold the sealing material and dressings in place. <u>Do not</u> wrap the bandages around the protruding object.

f. Secure Dressing

Secure the field dressing using the attached bandage. The field dressing must be tight enough to ensure that the plastic wrapper (or other sealing material) will not slip. If the casualty is able, have him hold the dressing in place while you secure it. If he cannot help, then you must hold the dressing in place while securing it.

Grasp one tail, slide it under the casualty, and bring it back over the dressing.

Wrap the other tail around the casualty in the opposite direction and bring it back over the dressing.

Tighten the tails and tie them with a nonslip knot over the center of the dressing. The knot will provide additional pressure over the wound and will help to keep the seal airtight. The field dressing should not interfere with breathing.

CAUTION: If an object is protruding from the wound, tie the knot beside the object, not on it.

WARNING

If you are not able to tape the sealing material (plastic wrapper) in place and the sealing material slips while the dressing is being applied or secured, the airtight seal may be lost. Remove the dressing and sealing material, reseal the wound, replace the dressing, and secure the dressing.

g. Seal and Dress Other Open Chest Wounds

If there is more than one open chest wound, seal and dress the other wound(s). If needed, improvise dressing from the cleanest material available and use a bandage torn from a shirt or other material to keep the sealing material and dressing in place.

5-5. POSITION A CASUALTY WITH AN OPEN CHEST WOUND

Position the casualty on his side with his injured side next to the ground. Pressure from contact with the ground acts somewhat like a splint to the injured side and helps to reduce pain. (Positioning the casualty on his uninjured side might cause a worsening of his condition.)

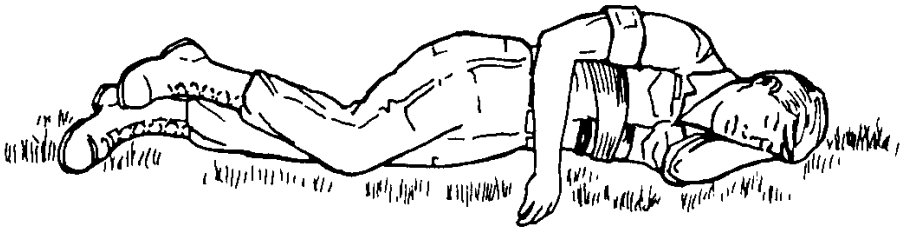

FIGURE 5-2. CASUALTY WITH DRESSED OPEN CHEST WOUND

The casualty may wish to sit up. If he can breathe easier when sitting up than lying on his side, allow him to sit up with his back leaning against a tree, wall, or other support. If he becomes tired, have him lie on his injured side again.

5-6. MONITOR A CASUALTY WITH AN OPEN CHEST WOUND

Seek medical help. If possible, send someone else after help while you stay with the casualty.

Monitor the casualty's breathing. Perform mouth-to-mouth resuscitation, if needed.

Treat for shock.

Evacuate the casualty as soon as practical.

WARNING

Air may still enter the chest cavity even if the wound is sealed and dressed. The air can cause a life-threatening condition called tension pneumothorax.

If the casualty's condition worsens (increased difficulty in breathing, shortness of breath, bluish tint to skin, etc.), lift the sealing material from the wound to let the air escape and then reseal the wound. Taping the plastic wrapper (flutter valve effect) helps to prevent tension pneumothorax.

If possible, practice applying an airtight seal and field dressing to a simulated casualty. Have another person score your performance using a performance checklist.

Continue with Exercises

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PRACTICE EXERCISES: LESSON 5

INSTRUCTIONS: Answer exercises 1 through 8 by circling the letter of the response that best answers the question or best completes the sentence or by writing the missing term in the blank provided. After you have answered all of the exercises, check your answers against the "Practice Exercises Solutions". For each exercise answered incorrectly, reread the lesson material referenced.

1. Which of the following is a sign of an open chest wound?

   a. Blood being coughed up.
   b. Hissing sound coming from a chest wound.
   c. Bluish tint to the casualty's lips.
   d. All of the above.

2. The plastic wrapper is placed over an open chest wound to:

   a. Prevent infection.
   b. Reduce blood loss.
   c. Prevent air from going through the wound and into the chest cavity.
   d. Keep the dressing from having direct contact with the wound.

3. When treating a casualty with a sucking chest wound, have him_____ and hold his breath when you put the plastic wrapper over the wound and have him _____and hold his breath when you tie the tails of the field dressing in a knot.

4. What size of material should be used for making the airtight seal?

   a. Four inches by six inches.
   b. The distance between the edge of the sealing material and the edge of the wound should be two or more inches.
   c. The sealing material should be the same size as the wound.
   d. The sealing material should be slightly smaller than the size of the wound.

5. When applying the field dressing to an open chest wound, where should you tie the tails in a nonslip knot?

a. Tie the knot in the center of the dressing.
b. Tie the knot directly over his spine.
c. Tie the knot on the uninjured side of his body.
d. Tie the knot at the edge of the dressing.

6. If an object is protruding from the chest wound, you should:

a. Not apply the airtight plastic seal.
b. Remove the object before applying the airtight plastic seal.
c. Place airtight material around the object and cover the material with a bulky dressing.

7. You have dressed an open chest wound. How can the casualty now be positioned?

a. Either sitting up or lying on his uninjured side.
b. Either sitting up or lying on his injured side.
c. Lying on his uninjured side only.
d. Lying on his injured side only.

8. You have given buddy-aid to a casualty with an open chest wound. His breathing had improved, but is now getting worse. He is short of breath, his lips are turning blue, and he is becoming very restless. What can you do to help the casualty?

a. Nothing, the casualty's reactions are normal.
b. Place a pressure dressing over the wound.
c. Administer modified abdominal thrusts.
d. Lift the sealing material from the wound, let the air escape from the chest cavity, and then make the wound airtight again.

Check Your Answers on Next Page

IS0824 LESSON 5 Practice Exercise Solutions

1. d (para. 5-2)
2. c (para. 5-3)
3. exhale; exhale. (para. 5-4b)
4. b (para. 5-4c)
5. a (para. 5-4f)
6. c (para. 5-4e)
7. b (para 5-5)
8. d (para. 5-6)
9. See the checklist.

PERFORMANCE CHECKLIST

DRESS AN OPEN CHEST WOUND

Situation: You have evaluated a casualty and found only one serious wound, an open chest wound. You are not in a hazardous environment.

	GO	NO GO
Exposes wound.	_____	_____
Opens field dressing plastic wrapper to create a flat surface without touching the inside surface of the plastic wrapper.	_____	_____
Places inside surface of plastic wrapper over wound when casualty exhales.	_____	_____
Ensures that plastic wrapper extends at least 2 inches beyond the edges of the wound. (Obtains and applies other airtight material to seal wound, if needed.).	_____	_____
Tapes three sides of wrapper.	_____	_____
Applies white side of field dressing over plastic wrapper.	_____	_____
Secures dressing with bandage.	_____	_____
Ties tails in a nonslip knot over the center of the dressing.	_____	_____
Applies manual pressure over wound (5 to 10 minutes if practical).	_____	_____
Positions casualty on injured side or, if casualty desires, sitting up and leaning against a support.	_____	_____
Checks for tension pneumothorax. (If found, lifts seal, lets air escape, reseals wound, and secures seal.)	_____	_____

OVERALL EVALUATION (A no-go on any step gives an overall evaluation of no-go.)	GO	NO GO
	_____	_____

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LESSON 6

PERFORM FIRST AID FOR AN OPEN ABDOMINAL WOUND

TASK

Identify proper procedures for treating a casualty with an open abdominal wound.

CONDITIONS

Given multiple-choice items pertaining to open abdominal wounds.

STANDARD

Score 70 or more points on the 100-point written examination.

REFERENCES

STP 21-1-SMCT, Soldier's Manual of Common Tasks: Skill Level 1.
FM 21-11, First Aid for Soldiers.

6-1. INTRODUCTION

The body's abdominal cavity contains organs such as the stomach, small intestine, large intestine, liver, kidneys, and spleen. Several large arteries and veins are also located in the abdominal cavity. An object that punctures the muscular abdominal wall can injure one or more organs, cause severe bleeding, and result in infection that could spread to the organs within the cavity.

An open abdominal wound can be caused by the muscular abdominal wall being penetrated by a bullet, by a stab from a knife, by an object blown from an explosion, or by falling on a sharp object.

6-2. POSITION A CASUALTY WITH AN OPEN ABDOMINAL WOUND

After evaluating the casualty and finding an open abdominal wound, position the casualty on his back with his knees up (flexed). This position helps to prevent further exposure of the abdominal organs, lessen pain, control shock, and relieve pressure on the abdominal area by allowing the abdominal muscles to relax.

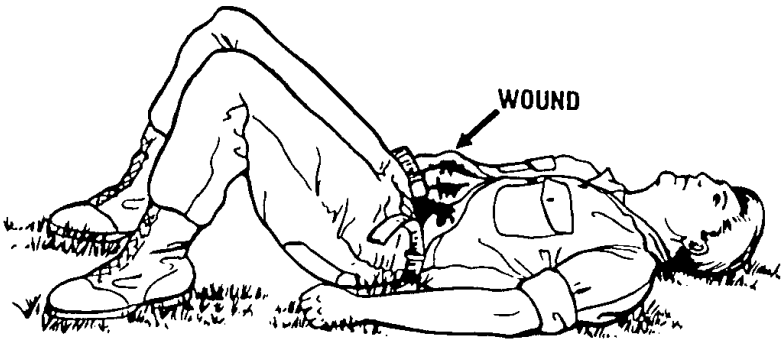


FIGURE 6-1. CASUALTY IN KNEES-UP (FLEXED) POSITION

6-3. DRESS AN OPEN ABDOMINAL WOUND

a. Locate and Expose Open Abdominal Wound(s)

Check the casualty's abdominal region for both entry and exit wounds. Use your hand to check the casualty's back for wounds. Look for a pool of blood. If more than one open abdominal wound is found, treat the more serious wound (largest, heaviest blood loss, etc.) first.

Expose the area around the open abdominal wound by removing, cutting, or tearing the clothing covering the wound. If clothing is stuck to the wound, do not try to remove the stuck clothing as this may cause additional pain and injury. Cut or tear around the stuck clothing. Do not try to probe, clean, or remove foreign objects from the wound.

WARNING

If you are in a chemical environment, dress the wound without exposing the wound.

b. Position Dislodged Organs

Sometimes, part of an intestine or other organ is forced out through the wound. If an organ is outside the body, do not try to push the organ back into the body. Do not touch the exposed organ with your hands. If the organ is lying on the ground, use a dressing, T-shirt, or other clean, dry material to gently pick up the organ and place the organ on top of the casualty's abdomen near the wound (not on or in the wound).

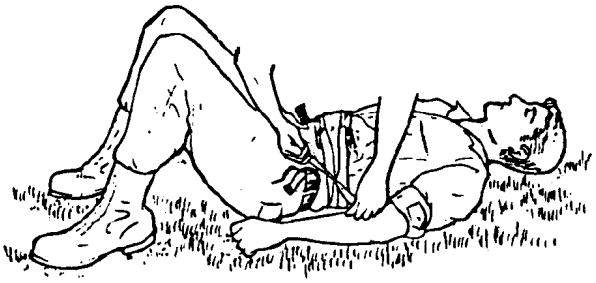
CAUTION: Do not probe, clean, or try to remove any foreign object from the abdomen. Do not touch any exposed organs with the bare hands. Do not push organs back into the body.

c. Place Dressing Over Wound

Open the casualty's field dressing and place the white side of the dressing over the wound and any protruding organs.

If the field dressing is too small to cover the wound and any protruding organs or if a field dressing is not available, use elastic gauze bandage or the cleanest materials available as a dressing. Clothing, part of a blanket, or similar materials may be used. Improvise bandages from strips of clothing to secure the dressing.

SECURE DRESSING



TIE TAILS ON SIDE

FIGURE 6-2. DRESSING AN OPEN ABDOMINAL WOUND

WARNING

If a foreign object is protruding from the wound, do not attempt to remove the object. Improvise bulky dressings from the cleanest material available and build up the area around the object in order to stabilize the object. Secure the dressing with improvised bandages.

d. Secure the Dressing

Hold the dressing with one hand to keep it from slipping.

Grasp one tail and slide it under the casualty.

Reach down on the other side of the casualty, grasp the tail under the casualty, and pull.

Bring the tail up the casualty's side, over the dressing, and to the other side.

Wrap the other tail in the opposite direction (down the side, under the back, and up the side to the dressing).

Tie the tails in a nonslip knot on the outer edge of the dressing closest to the casualty's side. Do not tie the knots over the wound site.

> **CAUTION:** The bandages should be tight enough to keep the dressing from slipping, but should not be tight enough to place pressure on the wound. You should be able to insert two fingers between the knot and the dressing. The primary purpose of the dressing is to protect the wound from further contamination, not to control the bleeding through pressure. Pressure could cause additional damage to the organs of the abdominal cavity.

Elastic gauze bandages applied over exposed abdominal organs (especially intestines) should be moistened with I.V. solution using the I.V. tubing.

e. Dress Other Abdominal Wound(s)

If other abdominal wounds are present (both entry and exit wounds are present, for example), dress and bandage the wounds.

f. Reinforce Dressings

If the situation allows and materials are available, reinforce the dressings by covering them with cravats, strips torn from a T-shirt, or other strips of cloth. The improvised bandages will provide additional support and protection. Tie the tails of the reinforcement bandages

on the opposite edge side of the field dressing (not over the field dressing knot). The reinforcing material should be tight enough to help keep the dressing from slipping, but loose enough to prevent additional pressure on the wound.

CAUTION: Do not tie any knots over the wound site.

6-4. MONITOR A CASUALTY WITH AN OPEN ABDOMINAL WOUND

Keep the casualty in the knees-up position.

Get medical help for the casualty as soon as possible. The dressing cannot adequately control internal bleeding (blood flowing into the abdominal cavity). The risks of serious infection and damage to internal organs are also present. If possible, send someone else to get help while you treat the casualty.

CAUTION: Do not give the casualty anything to eat or drink. If the casualty complains of thirst, moisten his lips with a damp cloth.

Administer mouth-to-mouth resuscitation if the casualty stops breathing.

If you must leave the casualty, tell him to stay on his back and keep his knees up.

Continue with Exercises

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PRACTICAL EXERCISES: LESSON 6

INSTRUCTIONS: Answer the following exercises by circling the letter of the response that best answers the question or best completes the sentence or by writing the missing term in the blank provided. After you have answered all of the exercises, check your answers against the "Practice Exercises Solutions". For each exercise answered incorrectly, reread the lesson material referenced.

1. How should a casualty with an open abdominal wound be positioned while the wound is being dressed and bandaged?

   a. Flat on his back.
   b. On his back with his head and shoulders raised.
   c. On his back with his feet elevated higher than the level of his heart.
   d. On his back with his knees raised.
   e. On his side with the injured side down.

2. A casualty has both an entry and an exit wound in his abdominal region. Which wound should you treat first?

   a. The entry wound.
   b. The exit wound.
   c. The more serious wound.

3. A casualty has an open abdominal wound. A loop of intestine is protruding from the wound and lying on the ground. What should you do?

_____

_____

4. When securing the dressing over an open abdominal wound, the tails should be tied:

   a. Over the center of the dressing.
   b. On the outer edge of the dressing.
   c. Over the casualty's spine.

5. When securing the field dressing, the bandages should be tied:

a. Loose enough to avoid putting pressure on the wound but tight enough to keep the dressing in place.
b. Tight enough to control the bleeding but not tight enough to stop blood circulation.
c. As tightly as possible.

6. If you reinforce the abdominal dressings, where should you tie the knots of the reinforcing bandages?

a. Directly over the wound.
b. At the same place the tails of the field dressing were tied.
c. On the edge of the dressing, but not on the same edge that the field dressing tails were tied.

7. Which of the following statements is/are true?

a. Remove sticks or other objects protruding from the abdominal wound.
b. Dress the abdominal wound without exposing the wound if you are in a chemical environment.
c. Use the cleanest material available to clean the abdominal wound before applying the dressing.
d. Place any protruding organs inside the open abdominal wound or directly over the open wound.
e. All of the above are proper procedures for treating an open abdominal wound.

8. You have dressed and bandaged an open abdominal wound. The casualty says that he is hungry and thirsty. What should you do?

a. Give the casualty something to eat and drink.
b. Give the casualty something to drink, but nothing to eat.
c. Give the casualty some fruit that will help to satisfy both his hunger and his thirst.
d. Moisten the casualty's lips, but do not give him anything to eat or drink.

Check Your Answers on Next Page

IS0824 LESSON 6 Practice Exercise Solutions

1. d (para 6-2)

2. c (para 6-3a)

3. Use clean material to pick up the intestine loop, place it on the casualty's abdomen, and place a dressing over the intestine and the wound. (para 6-3a)

4. b (para 6-3c)

5. a (para 6-3c)

6. c (para 6-3e)

7 b (para 6-3a)

8. d (para 6-4)

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LESSON 7

PERFORM FIRST AID FOR AN OPEN HEAD WOUND

TASK

Apply a dressing to a casualty with an open head wound.

CONDITIONS

Given a simulated casualty with an open head wound and needed supplies.

STANDARD

Score a GO on the performance checklist.

REFERENCES

STP 21-1-SMCT, Soldier's Manual of Common Tasks: Skill Level 1.
FM 21-11, First Aid for Soldiers.

7-1. INTRODUCTION

A head injury may be the only injury (such as a single blow to the head) or it may be combined with other injuries (such as head and body injuries caused by an explosion). A head injury may consist of a cut or bruise of the scalp, a concussion, a fracture of the skull with injury to the brain, extruding brain matter, or a combination of these injuries. If the skin has been broken, it is called an open head injury. If the skin has not been broken, it is a closed head injury. Both can be life threatening.

7-2. IDENTIFY SIGNS AND SYMPTOMS OF OPEN AND CLOSED HEAD INJURIES

Bleeding from the scalp is sign of an open head injury. The following signs and symptoms are also indications of a head injury, even if no open wound is present.

Visible skull fracture.

Visible brain tissue.

Deformity of the head.

Clear or bloody fluid leaking from the nose or ear.

"Black eyes."

Bruising behind one or both ears.

Headache, nausea, or vomiting.

Loss of consciousness (either current or recent unconsciousness).

Vision problems.

Staggering or dizziness.

Drowsiness.

Mental confusion.

Slurred speech.

Convulsions, twitching.

Difficulty in breathing.

Paralysis.

7-3. CHECK A CASUALTY'S LEVEL OF CONSCIOUSNESS

When a head injury is present, always check the casualty's level of consciousness by using the AVPU system to evaluate the casualty.

A-alert

V-responds to verbal commands only

P-responds to pain only

U-unresponsive

Remember to reassess the casualty at frequent intervals.

7-4. POSITION A CASUALTY WITH A HEAD INJURY

If the casualty is conscious, does not have a severe head or spinal injury, and other injuries do not prohibit his sitting up, have the casualty sit up. The casualty should lean against a tree, wall, or other stable object, if possible.

WARNING

A casualty with signs and symptoms of head injury other than minor wounds is presumed to have a serious head injury and a possible fractured neck. Avoid moving the casualty if possible. If you must move the casualty, have other soldiers help you support the casualty's head and neck.

If the casualty is conscious, does not have a severe head or spinal injury, is not accumulating drainage in his throat, and is not able to sit up, elevate his head slightly.

If the casualty is choking, nauseous, vomiting, or bleeding from his mouth, position the casualty on his side in order to promote drainage and to maintain an open airway. Place the casualty on the side opposite that of the wound (wound away from the ground).

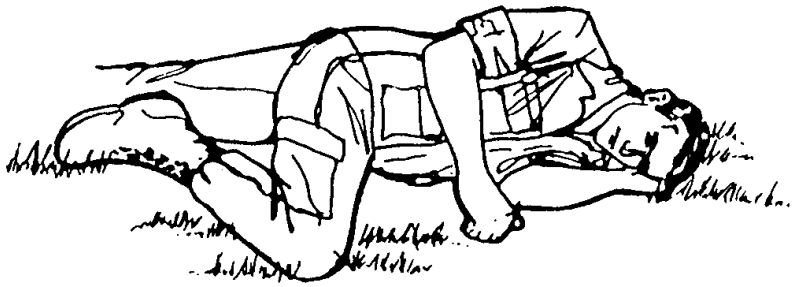

FIGURE 7-1. CASUALTY POSITIONED ON HIS SIDE

If the casualty is having convulsions (involuntary muscle movements such as uncontrolled jerking or shaking), ease him to the ground and gently support his head and neck. Do not try to forcefully hold his arms and legs. Trying to "pin down" jerking limbs will probably cause additional injury. A casualty with convulsions presents a two-fold problem in that you must treat his injuries and you must also keep him from causing additional injury to himself.

7-5. EXPOSE THE HEAD WOUND

Remove the casualty's headgear.

WARNING

If the casualty is wearing a mask and hood and the "all clear" signal has not been given, do not remove the casualty's mask and hood or attempt to dress the wound. If the mask or hood has been breached, repair the breach with tape or wet cloth stuffing, if possible.

<u>Do not</u> attempt to clean the wound or attempt to push any brain matter back into the head. If an object is protruding from the wound, make bulky dressings from the cleanest material available, build up the area around the object, and secure the dressing with improvised bandages.

7-6. APPLY A DRESSING TO A WOUND ON THE FOREHEAD OR BACK OF THE HEAD

Remove a field dressing from its wrappers. (If a field dressing is not available, improvise a dressing and bandages from the cleanest materials available.)

Grasp a tail in each hand, hold the dressing directly over the wound with the white side of the dressing toward the wound, pull the dressing open, and place the white side of the dressing directly over the wound.

Place one hand on the dressing to keep it from slipping. (You may have the casualty hold the dressing in place if he is able.)

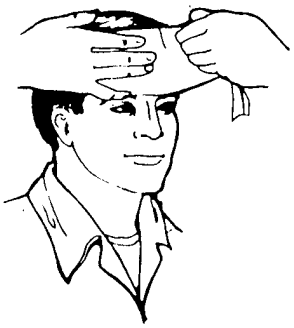

FIGURE 7-2. WRAPPING TAIL HORIZONTALLY AROUND THE HEAD (WOUND ON FOREHEAD

CAUTION: Apply the dressing and bandage so as to not interfere with the casualty's vision or hearing unless the eye or ear is injured.

Wrap one tail horizontally around the casualty's head and bring it back across the dressing. Angle the bandage so that it will cover the top or bottom edge of the dressing.

Wrap the second tail around the casualty's head in the opposite direction.

Bring the tail back across the dressing angled so it will cover the other edge (top or bottom) of the dressing.

Continue to wrap the bandage around the head again until it meets the first tail.

Tie the tails in a nonslip knot on the side of the head.

CAUTION: The bandages should be tight enough so the dressing will not slip but not tight enough to place undue pressure on the wound.

FIGURE 7-3. TYING TAILS ON THE SIDE OF THE HEAD (WOUND ON FOREHEAD)

Tuck in any excess tails. Tucking in excess material will keep the tails from catching on an object or accidentally hitting the casualty in the eye.

7-7. APPLY A DRESSING TO THE TOP OF THE HEAD

Remove a field dressing from its wrappers.

Grasp a tail in each hand, hold the dressing directly over the wound with the white side of the dressing toward the wound, pull the dressing open, and place the white side of the dressing directly over the wound. (If a field dressing is not available, improvise a dressing and bandages from the cleanest materials available.)

Place one hand on top of the dressing to hold it in place.

Grasp the near tail with the other hand.

Bring the tail down in front of the ear, under the chin, up in front of the opposite ear, over the dressing, and to a point just above and in front of the first ear (about a one and one-fourth circle).

> **CAUTION:** When passing a tail under the chin, make sure that the tail remains wide and close to the front of the chin. This will keep the bandage from choking the casualty.

Remove your hand from the dressing and grasp the other (free) tail.

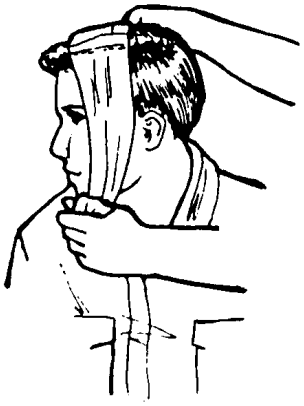

FIGURE 7-4. BRINGING THE TAIL UNDER THE CHIN (WOUND ON TOP OF HEAD)

Bring that tail down the opposite side of the face in front of the ear, under the chin, and up until it meets the first tail (about a three-fourths circle).

Cross the tails so that each makes a 90º turn. The cross should be made slightly above and in front of the ear.

Bring one tail across the casualty's forehead and above the eyebrows until it is in front of the opposite ear (about a half circle).

FIGURE 7-5. CROSSING THE TAILS (WOUND ON TOP OF HEAD)

Bring the other tail back above the ear, low behind the head at the base of the skull, and up to a point above and in front of the opposite ear (about a half circle) where it meets the first tail. (Bringing the tail across the base of the skull will keep the bandage from slipping.) Tie the tails in a nonslip knot in front of and above the ear.

Tuck in the excess material from the tails.

> **CAUTION:** Apply the dressing and bandage so as to not interfere with the casualty's vision or hearing unless the eye or ear is injured.

FIGURE 7-6. TYING THE TAILS (WOUND ON TOP OF HEAD)

7-8. APPLY A DRESSING TO THE CHEEK OR SIDE OF THE HEAD

Remove a field dressing from its wrappers.

Grasp a tail in each hand, hold the dressing directly over the wound with the white side of the dressing toward the wound, pull the dressing open, and place the white side of the dressing directly over the wound so that the tails are vertical. (If a field dressing is not available, improvise a dressing and bandages from the cleanest materials available.)

Place one hand on top of the dressing to hold it in place. If the casualty is able, you can have the casualty hold the dressing in place while you secure it.

Bring the top (uppermost) tail over the top of the head, down in front of the ear, under the chin, up the side of the face, and over the dressing to a point just above the ear (a full circle). Avoid covering the ear, if possible.

> **CAUTION:** When passing a tail under the chin, make sure that the tail remains

wide and close to the front of the chin. This will keep the bandage from choking the casualty.

CAUTION: Apply the dressing and bandage so as to not interfere with the casualty's vision or hearing unless the eye or ear is injured.

Bring the other (bottom) tail down, under the chin, up the side of the face, in front of the ear, and over the top of the head until it meets the first tail (almost a full circle).

FIGURE 7-7. BRINGING SECOND TAILAROUND TO MEET FIRST TAIL (WOUND ON CHEEK)

Cross the two tails just above the ear on the injured side of the face.

FIGURE 7-8. CROSSING THE TAILS (WOUND ON CHEEK)

Bring one tail across the forehead (above the eyebrows) to a point just in front of the opposite ear (the ear on the uninjured side of the face).

Bring the other tail above the ear, low behind the back of the head at the base of the skull, and above the other ear until it meets the first tail.

Tie the tails in a nonslip knot just above and in front of the ear on the uninjured side of the head. Tuck in the ends of the tails.

> **CAUTION:** If fluid is coming from the casualty's ear, put a field dressing or clean cloth over the ear to protect the ear and absorb the drainage. Secure the dressing loosely, but tight enough to keep the dressing from slipping. Evacuate the casualty as soon as possible.

FIGURE 7-9. TAILS TIED IN NONSLIP KNOT AND ENDS TUCKED (WOUND ON CHEEK)

7-9. MONITOR A CASUALTY WITH A HEAD INJURY

Position the casualty as described in paragraph 7-4.

A casualty with a serious head wound (brain tissue visible, fractured skull, deformity of the head, or fluid leaking from an ear) or who does not regain consciousness should be examined by medical personnel, evacuated to a medical treatment facility as soon as possible.

Any person with a head injury should be evaluated by medical personnel (medic, physician assistant, etc.) even if evacuation is not needed.

If you remain with the casualty, check his level of consciousness every 15 minutes. Use the AVPU system to evaluate. If the casualty falls asleep, wake the casualty to check his level of consciousness. Note any changes from earlier observations.

Do not give the casualty anything to eat or drink. Eating or drinking may cause him to vomit.

Do not apply a pressure dressing to a head wound. The dressing should be adequate to control the bleeding.

Treat for shock, if necessary.

Practice dressing a wound on a casualty's forehead, on his cheek, and on top of his head. Have someone check your performance against a performance checklist.

See the performance checklist.

Continue with Exercises

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PRACTICE EXERCISES: LESSON 7

INSTRUCTIONS: Answer the following exercises by circling the letter of the response that best answers the question or best completes the sentence or by writing the missing term in the blank provided. After you have answered all of the exercises, check your answers against the "Practice Exercises Solutions". For each exercise answered incorrectly, reread the lesson material referenced.

1. Which of the following is a sign of a closed head injury?

   a. Black eye.
   b. Clear fluid leaking from an ear.
   c. Slurred speech.
   d. Convulsions.
   e. All of the above.

2. You have been thrown to the ground by an explosion and dazed. A soldier in your squad comes to you, checks you over quickly, and asks, "What is your name? What is the date? Where are we?" What is happening?

   a. The soldier is showing signs of mental confusion and has probably suffered a head injury.
   b. The soldier wants you to talk so he can check you for a sucking chest wound.
   c. The soldier is checking you for symptoms of a head injury.
   d. The soldier is showing signs of suffering a nervous breakdown.

3. A casualty's arms and legs are jerking after he fell from a wall. How can you help this person?

   a. Put the casualty against a tree and tie him to the tree.
   b. Help the casualty to lie down and gently support his head.
   c. Get help and pin down the casualty's limbs.
   d. Do not attempt to assist the casualty yourself. A medical person who can administer an appropriate tranquilizer to the casualty is needed.

4. You are in a chemical environment when you come upon a wounded soldier. The soldier has his chemical protective gear on, but his hood has been penetrated and the soldier appears to have an open head wound. What should you do?

a. Remove the hood and protective mask, dress the wound, and replace the mask and hood.
b. Lift the hood, dress the wound, and replace the hood.
c. Apply a dressing to the wound through the tear in the hood, then apply manual pressure to stop the bleeding.
d. Apply a pressure dressing to the outside of the mask directly over the wound.
e. Attempt to repair the hood without dressing the wound.

5. Which of the following is true concerning tying the nonslip knot of a field dressing applied to an open wound on the forehead?

a. The tails are tied on the side of the casualty's head.
b. The tails are tied at the center of the dressing directly over the wound.
c. The tails are tied at the base of the casualty's skull.
d. The tails are tied wherever they happen to cross.

6. When applying the field dressing to a casualty with an open wound on the top of his head, you should bring the tail down _____ the casualty's ear, pass the tail under his chin _____, and bring the tail up the opposite side.

a. In front of; as close to the throat as possible.
b. Behind; as close to the throat as possible.
c. Over; as close to the throat as possible.
d. Behind; close to the front of the chin.
e. In front of; close to the front of the chin.
f. Over; close to the front of the chin.

7. A soldier has fallen off a ladder. He is conscious and does not seem to have any fractures or open wounds. He does, however, have some bloody fluid draining from his left ear. What should you do?

a. Cover the left ear with a dressing or clean cloth and seek medical help.
b. Apply a pressure dressing to the left ear and seek medical help.
c. Have the soldier lie on his left side until the drainage stops; then apply a dressing to the left ear.
d. Have the soldier lie on his right side; no dressing is needed.

8. You are staying with a casualty who has suffered a head injury. You should check his level of consciousness every:

a. 5 minutes.
b. 15 minutes.
c. 30 minutes.
d. 60 minutes.
e. Time the casualty wakes up.

9. A casualty has suffered a head injury. After you dress the wound and send someone to get medical help, the casualty goes to sleep. What should you do?

a. Let the casualty sleep until he awakens on his own.
b. Wake the casualty up every 15 minutes and check his level of consciousness.
c. Give him something to drink or eat in order to keep him awake.
d. Begin performing mouth-to-mouth resuscitation.

IS0824 LESSON 7 Practice Exercise Solutions

1. e (para 7-2)
2. c (para 7-3)
3. b (para 7-4)
4. e (para 7-5)
5. a (para 7-6)
6. e (para 7-7)
7. a (paras 7-8, 7-9)
8. b (para 7-9)
9. b (para 7-9)

PERFORMANCE CHECKLIST

DRESS AN OPEN HEAD WOUND

Situation: A casualty has an open wound on his head. The wound does not appear to be severe, the casualty is conscious, and no other wounds appear to be present. You are not in a hazardous environment.

	GO	NO GO
Checks casualty's level of consciousness.	_____	_____
Positions casualty (sitting position if casualty is willing, on back with head raised if casualty cannot sit up).	_____	_____
Exposes wound.	_____	_____
Opens field dressing and places white side of field dressing over the wound.	_____	_____
Keeps dressing from moving while securing dressing (holds dressing in place or has casualty to hold dressing.	_____	_____
Secures dressing with bandages.		
Forehead: Takes tails around head horizontally, covers edges of dressing with tails, and tie tails in a nonslip knot on the side of the head.	_____	_____
Cheek: Takes tails around head vertically, crosses tails above ear on injured side, and ties tails in a nonslip knot above and in front of the ear on the uninjured side of the head.	_____	_____
Top: Takes tails around head vertically in front of ears, crosses tails above and in front of one ear, and ties tails in a nonslip knot on the other side of the head.	_____	_____
Bandages are tight enough to hold dressing in place without interfering with blood circulation or breathing (any bandage and under chin remains wide close to front of chin).	_____	_____

	GO	NO GO
Eyes and ears are not covered unnecessarily.	_____	_____
Any excess tails are tucked in the bandage.	_____	_____
Question: What would you do if the casualty looses consciousness and you cannot evacuate the casualty for a while?	_____	_____

Answer: _____

_____

_____

OVERALL EVALUATION (A no-go on any step gives an overall evaluation of no-go.)	GO	NO GO
	_____	_____

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LESSON 8

PERFORM FIRST AID TO PREVENT OR CONTROL SHOCK

TASK

Identify the procedures for preventing/controlling shock.

CONDITIONS

Given multiple-choice examination items pertaining to shock.

STANDARD

Score 70 or more points on the 100-point written examination.

REFERENCES

STP 21-1-SMCT, Soldier's Manual of Common Tasks: Skill Level 1.
FM 21-11, First Aid for Soldiers.

8-1. INTRODUCTION

There are several causes of shock. On the battlefield, hypovolemic (low blood volume) shock will be the primary type of shock present. If not properly treated, shock can result in death.

8-2. IDENTIFY THE SIGNS AND SYMPTOMS OF SHOCK

Hypovolemic shock is usually caused by severe bleeding, but it can also be caused by a severe loss of body fluids from other causes such as severe burns (second and third degree burns on 20 percent or more of the body surface), vomiting, diarrhea, and excessive sweating. Other indications of hypovolemic shock include:

Sweaty but cool (clammy) skin, pale skin color, and/or blotchy or bluish skin around the mouth.

Nausea.

Anxiety (casualty restless or agitated).

Change in level of consciousness such as mental confusion.

Increased breathing rate.

Unusual thirst.

8-3. POSITION THE CASUALTY TO PREVENT/CONTROL SHOCK

After you restore breathing to the casualty (if needed), control any major bleeding, and dress any major wounds, you must take measures to prevent or control shock. The procedures for preventing shock are basically the same as those for controlling (treating) shock.

a. Normal Shock Position

Move the casualty to cover, if possible.

Position the casualty on his back. If possible, place a poncho or blanket under the casualty to protect him from the temperature or dampness of the ground.

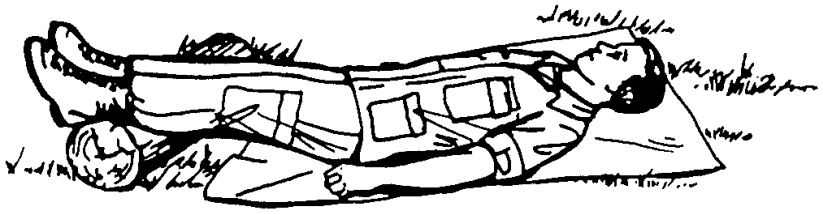

FIGURE 8-1. NORMAL POSITIONING OF CASUALTY TO CONTROL SHOCK

Elevate the casualty's legs so that his feet are slightly higher than the level of his heart. (This helps the blood in the veins of his legs to return to his heart.) Place a small log, field pack, box, rolled field jacket, or other stable object under the casualty's feet or ankles in order to maintain the elevation.

WARNING

Check for fractures of the lower limbs (Lesson 10) before elevating the legs). Do not elevate the legs until all lower limb fractures have been splinted.

b. Shock Positions for Special Injuries

Certain casualties are not placed in the normal position for shock.

Suspected Fracture of the Spine. Do not move a casualty with a suspected spinal fracture unless it is necessary for the safety of the casualty and the rescuers. Do not elevate his legs. Immobilize his head, neck, and back (Lesson 11), if possible.

Open Chest Wound. If the casualty wants to sit up, help him to sit with his back to a wall, tree, or other support. If the casualty wants to lie down, position him so that he is lying on his injured side.

WARNING

Check for fractures of the arms and forearms before allowing the casualty to sit up. Check for fractures of the limbs before turning the casualty on his side.

Open Abdominal Wound. Keep the casualty on his back with his knees flexed.

Head Wound. Treat a severe head wound as though a spinal injury is present. A casualty with a minor head wound should be allowed to sit up. If the casualty has bleeding into the mouth or if he does not want to sit up, position him on his side with his wound up and his head turned so that fluid can drain from his mouth.

Unconsciousness. Position an unconscious casualty on his side with his head turned so fluids can drain from his mouth. If the casualty vomits, quickly perform a finger sweep to clear his airway.

8-4. TAKE ADDITIONAL MEASURES TO PREVENT/CONTROL SHOCK

a. Reassure the Casualty

Keep the casualty calm. Tell the casualty that you are helping him. Be confident in your

ability to help the casualty and have a "take charge" attitude. Your words and actions can do much to reassure the casualty and reduce his anxiety. Be careful of any comments you make regarding the casualty's condition.

b. Loosen the Casualty's Clothing

Loosen any binding clothing, including boots. Tight clothing can interfere with blood circulation.

WARNING

Do not loosen or remove the casualty's clothing in a chemical environment.

c. Keep the Casualty From Being Too Warm or Too Cool

In warm weather, keep the casualty in the shade. If natural shade is not available, erect an improvised shade using a poncho and sticks or other available materials. Fan him if needed. Fanning promotes the evaporation of perspiration and cools the casualty.

In cool weather, cover the casualty with a blanket, poncho, or other available materials to keep him warm and dry. Place covering under the casualty to prevent chilling due to contact with cold or wet ground.

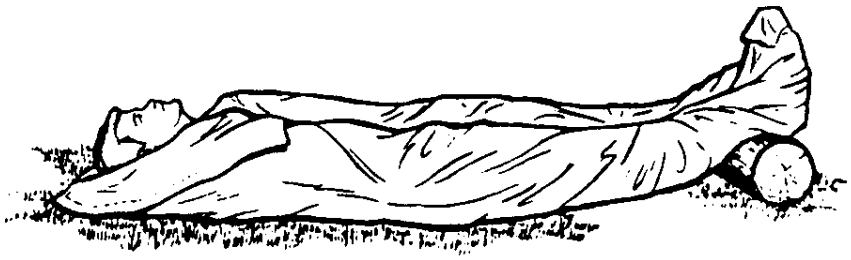

FIGURE 8-2. CASUALTY BEING TREATED FOR SHOCK IN COOL WEATHER

d. Seek Help or Evacuate Casualty

If the casualty is showing signs and symptoms of hypovolemic shock, he needs more fluid in his blood circulatory system. Fluid volume can be increased by putting fluids into the casualty's veins [administering an intravenous infusion (I.V.)] to replace lost body fluids. A combat lifesaver or combat medic can administer fluids intravenously. Do not give a casualty in shock anything to eat or drink.

If you leave the casualty alone in order to get help, tell him you are going to get medical help and will return. Turn the casualty's head to one side before you leave. This will help to keep the casualty from choking should he vomit.

If additional help is not available, evacuate the casualty if practical.

Continue with Exercises

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PRACTICE EXERCISES: LESSON 8

INSTRUCTIONS: Answer the following exercises by writing the required words or phrases in the blanks provided. After you have completed all of the exercises, check your answers against the "Practice Exercises Solutions". For each exercise answered incorrectly, reread the lesson material referenced.

1. List four causes of hypovolemic shock.

   _____

   _____

   _____

   _____

2. A soldier has skin that is pale, wet, and cool. He is breathing at a rapid rate. He is unusually thirsty, but cannot drink because he feels as though he will "throw up" if he tries to drink. This soldier is probably suffering from _____.

3. Indicate how each of the following casualties should be positioned if he has the condition indicated with no additional injuries.

   a. Open abdominal wound. _____

   b. Open chest wound. _____

   c. Spinal fracture. _____

   d. Minor head injury. _____

   e. Unconsciousness _____

   f. Arm wound with severe blood loss. _____

4. You should loosen the casualty's clothing unless _____ _____.

5. If the weather is hot, you should _____.
and _____.

6. If the weather is cool, you should _____.
and _____.

Check Your Answers on Next Page

IS0824 LESSON 8 Practice Exercise Solutions

1. Severe bleeding.
   Severe burns.
   Severe vomiting.
   Severe diarrhea.
   Excessive sweating. (para 8-2)

2. Shock (or hypovolemic shock). (para 8-2)

3. a. (abdominal) On back with knees flexed (raised).

   b. (chest) Sitting up or lying on injured side.

   c (spine) Left in position found with head, neck, and back immobilized.

   d. (head) Sitting up or lying on side with wound up.

   e. (unconscious) On side with head turned to promote fluid drainage.

   f. (arm) On back with legs elevated. (para 8-3b)

4. You are in a chemical environment. (para 8-4b)

5. Shade the casualty; fan him. (para 8-4c)

6. Cover the casualty; protect him from the ground. (para 8-4c)

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LESSON 9

PERFORM FIRST AID FOR A SUSPECTED FRACTURE

TASK

Splint a suspected fracture of the arm or leg.

CONDITIONS

Given a simulated casualty with a suspected fracture of the arm or leg and needed materials.

STANDARD

Score a GO on the performance checklist.

REFERENCES

STP 21-1-SMCT, Soldier's Manual of Common Tasks: Skill Level 1.
FM 21-11, First Aid for Soldiers.

9-1. INTRODUCTION

A fracture is a break in a bone. A fracture can cause discomfort, disability, and even death.

A closed fracture is a break in the bone without a break in the skin. Even though the skin is not cut or broken, the tissue beneath the skin may be damaged.

An open fracture is a break in the bone with a break in the overlying skin as well. The break in the skin may be caused by the sharp end of the broken bone or by a foreign object, such as a bullet, penetrating the skin. Open fractures are especially serious due to the danger of infection.

A dislocation occurs when the bones comprising a joint (elbow, knee, wrist, etc.) are forced out of their proper positions.

A sprain results when a joint is twisted beyond its normal limits of motion and the connecting tissues around the joint tear.

A dislocation or sprain can produce signs and symptoms similar to those of a fracture and should be treated as a fracture of the joint.

9-2. IDENTIFY SIGNS AND SYMPTOMS OF A FRACTURED ARM OR LEG

Some of the signs and symptoms of a fractured limb (arm or leg) are:

Bone sticking through the skin.

Pain, tenderness, swelling, and/or bruise at a particular location. (The site of the tenderness or bruise is probably the site of the fracture.)

Arm or leg appears to be shorter or is in an abnormal position (looks deformed).

Difficulty in moving an arm or leg.

> **CAUTION**: Do not have the casualty attempt to move the injured arm or leg to test this symptom. Rely upon what the casualty tells you.

Massive injury to an arm or leg. (Even if the bone is not broken, the pain caused by the wound may be lessened if the arm or leg is splinted after it has been dressed and bandaged.)

"Snapping" sound heard by the casualty at the time of the injury.

9-3. PREPARE THE CASUALTY

There are some actions that need to be taken before you splint the suspected fracture.

a. Reassure Casualty

Tell the casualty that you are taking care of him. If you must leave the casualty to locate materials needed to make a splint, be sure to tell him that you will return quickly. Talk to the casualty even if he appears to be unconscious.

b. Locate Site of Fracture

The site of the fracture is where the bone has broken the skin or where the pain, tenderness, bruise, abnormal bend in arm, or other indicator of a fracture is located.

c. Check Circulation Below Fracture

Evaluate the casualty's blood circulation in the limb below the fracture site. A person with poor circulation should be evacuated to a medical treatment facility as soon as possible after the limb is splinted. A quick evacuation will help to prevent the loss of the limb.

Pulse. Feel the casualty's pulse at a site below the fracture. Lack of a pulse or a weak pulse indicates that poor circulation is present. A weak pulse can be determined by comparing the pulse felt below the fracture with the pulse felt at the same location on the uninjured limb. (Instructions for taking a pulse are given in Subcourse IS0825.)

Color. In a light-skinned person, a pale, white, or bluish-gray skin color indicates poor circulation. To check the circulation in a dark-skinned individual, press on a nail on the injured limb and the corresponding nail on the uninjured limb. Release both nails at the same time. If the color returns to the nail bed of the uninjured limb faster than it returns to the nail bed of the injured limb, the casualty probably has poor circulation in the injured limb.

Temperature. Place your hand on the area beneath the injury. Then place your hand on the corresponding area on the uninjured arm or leg. If the skin of the injured limb is cooler than the skin on the uninjured limb, the casualty probably has poor circulation in the injured limb.

Numbness. If the area feels numb or tingling to the casualty, the area probably has poor circulation.

d. Loosen Clothing

Loosen any clothing that is tight or which binds the casualty. Boots should not be removed unless they are needed to immobilize an injured neck (Lesson 10) or there is actual bleeding from the foot.

WARNING

Do not remove or loosen any of the casualty's protective clothing if you are in a chemical environment.

e. Remove Jewelry

Remove any jewelry that is on the casualty's injured limb and put the jewelry into his pocket. Jewelry is removed because the limb may swell and cause the jewelry to interfere with blood circulation. Be sure to tell the casualty what you are doing and why.

f. Dress Wounds

Dress any open wounds (including burns) on the injured limb before applying the splint.

> **CAUTION**: If a bone is sticking out, do not attempt to push the bone back under the skin. Apply the dressing over the bone and the wound. Do not attempt to straighten or realign the injured limb.

If bandages were applied, evaluate the casualty's blood circulation in the limb below the fracture site again. If the first evaluation indicated adequate circulation and this evaluation indicates poor circulation, loosen the bandages, retie the tails, and recheck the circulation. If the circulation does not return to its previous level, the casualty should be evacuated as soon as practical.

9-4. GATHER SPLINTING MATERIALS

A splint is formed by a rigid object or objects being applied and secured to the injured limb in a manner that will keep the broken bone from moving (immobilize the fracture). If the fractured bone is not splinted, the surrounding muscles, blood vessels, and nerves may be injured by the fractured ends of the bone. You will need rigid object(s), padding, and securing materials.

a. Rigid Objects

Tree branches, poles, boards, sticks, or other rigid objects can be used. Normally, two rigid objects (one for each side of the fractured limb) are used. The rigid objects should be fairly straight and be long enough to extend beyond the joint above the fracture site and beyond the joint below the fracture site. Even the casualty's own body can be used when other materials are not available. His chest can be used to immobilize a fractured arm and an uninjured leg can be used to immobilize a fractured leg.

b. Padding

Padding is needed to keep the rigid objects from rubbing against the skin on the injured limb. Blankets, jackets, ponchos, extra clothing, shelter halves, leafy plants, or the casualty's trouser leg or shirt sleeve can be used as padding. The padding helps to prevent excessive pressure that could interfere with blood circulation. Extra padding should be used at bony body areas such as the elbow, wrist, knee, and ankle and at sensitive areas such as the groin and armpit.

c. Securing Materials

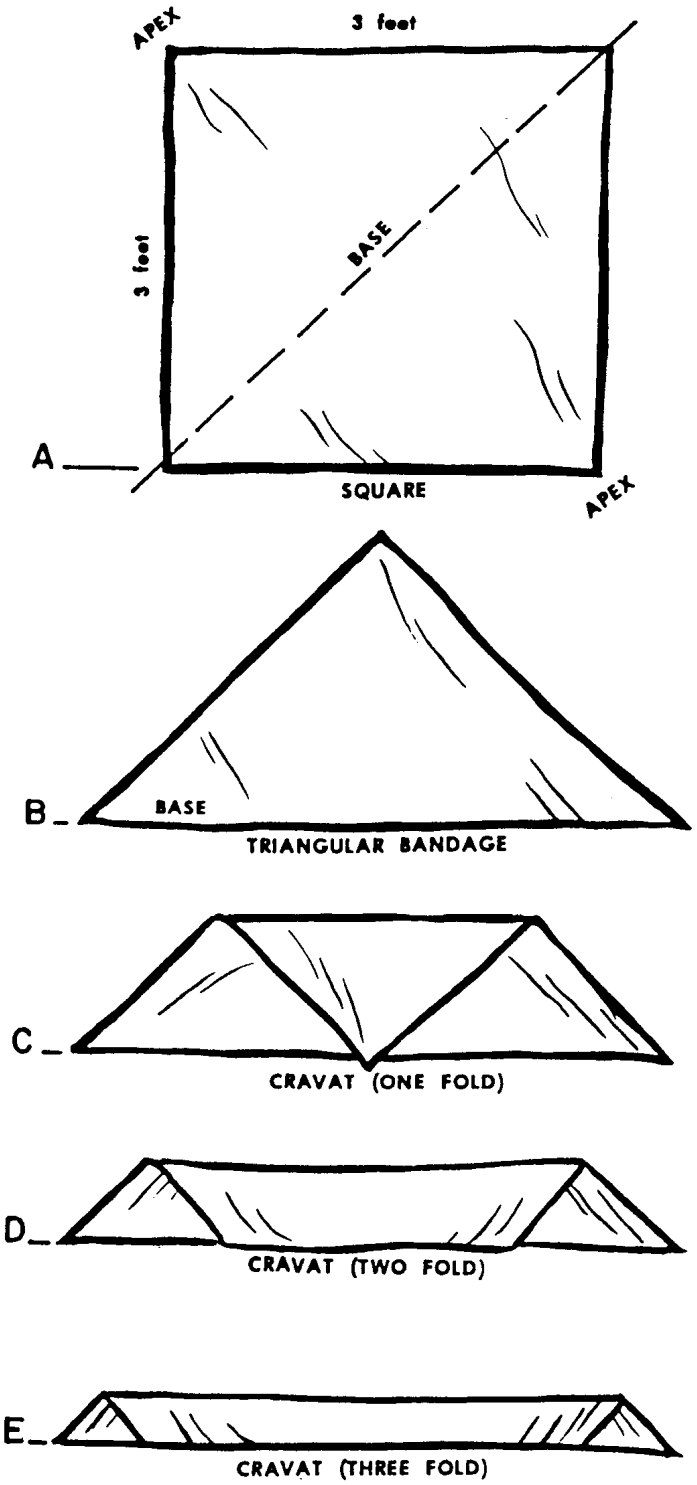

FIGURE 9-1. MAKING CRAVATS FROM A MUSLIN BANDAGE

Rigid objects are normally secured with cravats made from muslin bandages. Rigid objects can also be secured with strips of clothing, belts, pistol belts, bandoleers, or similar materials. Narrow materials such as wire and cord should not be used to secure the rigid objects in place since they could interfere with blood circulation. The steps for making cravats are summarized below.

Cut or tear a square about three feet on each side from pliable material such as a shirt or sheet if muslin bandages are not available.

Fold the square along the diagonal so that it is triangular in shape.

Cut or tear along the fold to form two triangles. (Each triangle becomes a cravat.)

Fold the top of the triangle down until the tip of the triangle touches the base (longest side).

Continue to fold until the cravat is the correct size (usually about three folds).

9-5. SPLINT THE LIMB

WARNING

Do not try to straighten or reposition the fractured limb. Splint the limb in the position you find it. Move the limb as little as possible while applying and securing the splint.

a. Position the Securing Materials

Push the securing materials (cravats, etc.) under natural body curvatures, such as the knees. Then gently move the securing materials up or down the limb until they are in proper position.

Place securing materials under the limb both above and below the fracture site. If possible, place two cravats above the fracture site and two cravats below the fracture site (above the upper joint, between the upper joint and the fracture, between the fracture and the lower joint, and below the lower joint.)

CAUTION: Do not place securing material directly under the suspected fracture site. The pressure caused by the securing material when it is tightened could result in additional injury to the fracture site.

b. Position the Rigid Objects

Place the rigid objects so that one is on each side of the injured limb. When possible, position the rigid objects so the joint above the fracture and the joint below the fracture can be immobilized. If the fracture is in the lower leg, for example, the splint should extend above the knee and below the ankle. (Note: If a forearm is fractured, the wrist is usually immobilized by the splint and the elbow is usually immobilized by a sling and swathe.) Make sure that the ends of the rigid objects are not pressing against a sensitive area such as the armpit or groin. Pressure on these areas can interfere with blood circulation.

c. Apply Padding

Place padding between the rigid objects and the limb to be splinted. Apply extra padding to joints and sensitive areas.

d. Secure the Rigid Objects

Wrap the securing materials around the rigid objects and limb so that the rigid objects immobilize the limb. Tie the ends (tails) of each securing cravat in a nonslip knot on the outer rigid object and away from the casualty. (The knots are tied on the outer rather than the inner rigid object to make loosening and retying the cravats easier should that procedure become necessary.) The securing material should be tight enough to hold the rigid objects securely in place, but not tight enough to interfere with blood circulation.

e. Check Circulation

Observe the limb below the cravats for signs of impaired circulation as you secure the rigid objects. After they have been secured, recheck the limb's circulation as described in paragraph 9-3c. If your check before splinting the fracture showed normal circulation and your check now shows poor circulation, loosen the securing materials, reposition the rigid object if the end of the object is pressing against the casualty's body (especially at the armpit or groin), and/or add padding. Retie the securing materials using nonslip knots on the outer rigid object. Make sure that the securing materials keep the rigid objects from slipping. Recheck the circulation. If the limb still has poor circulation, evacuate the casualty as soon as possible.

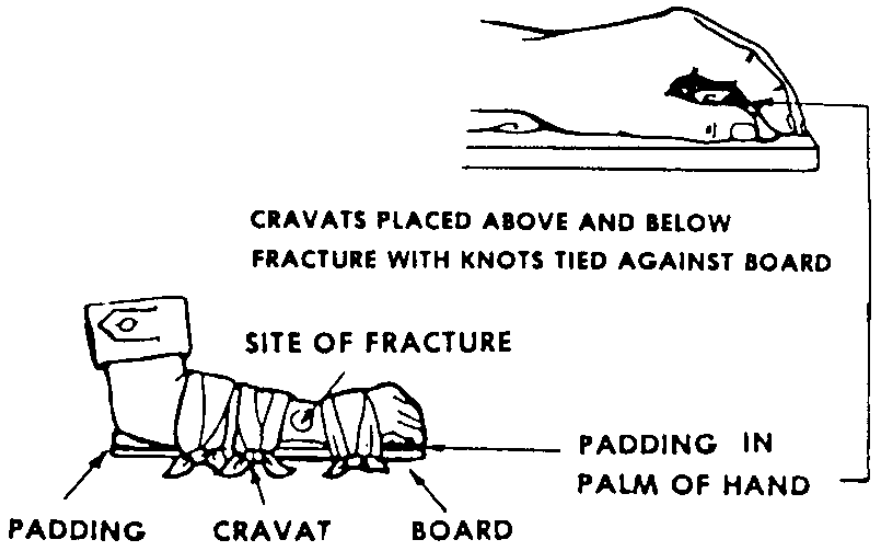

FIGURE 9-2. SINGLE-BOARD SPLINT APPLIED TO A FRACTURED WRIST

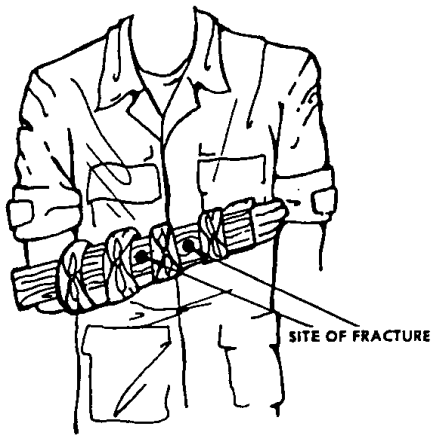

FIGURE 9-3. SPLINT APPLIED TO A FRACTURED FOREARM

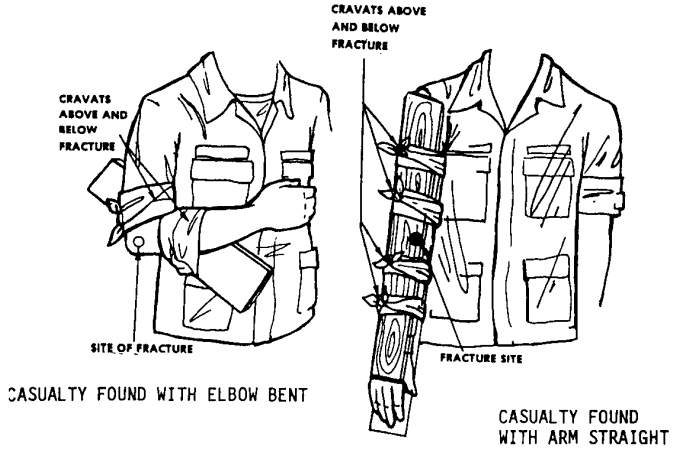

FIGURE 9-4. SPLINT APPLIED TO A FRACTURED ELBOW

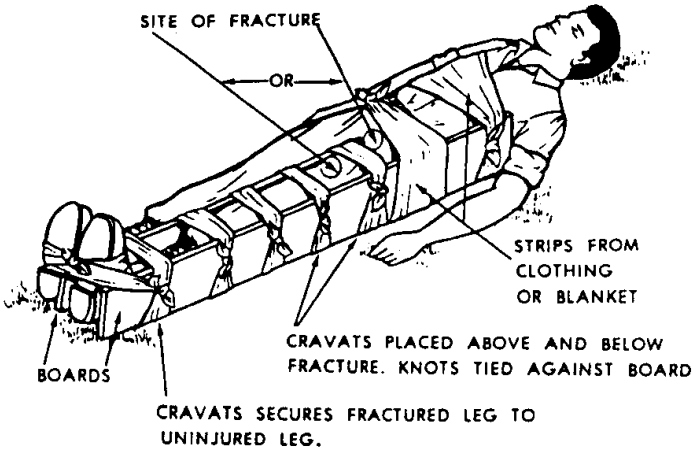

FIGURE 9-5. SPLINT APPLIED TO A FRACTURE OF THE UPPER LEG (THIGH)

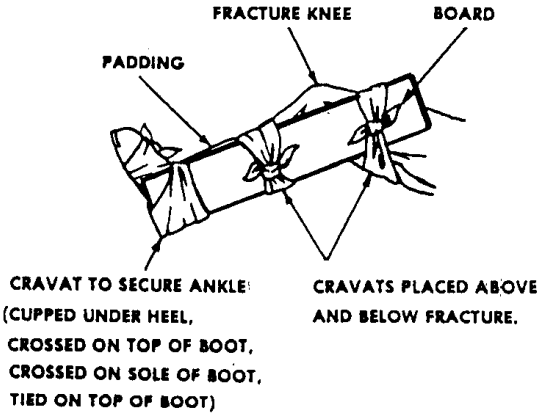

FIGURE 9-6. SPLINT APPLIED TO A FRACTURED KNEE (BENT)

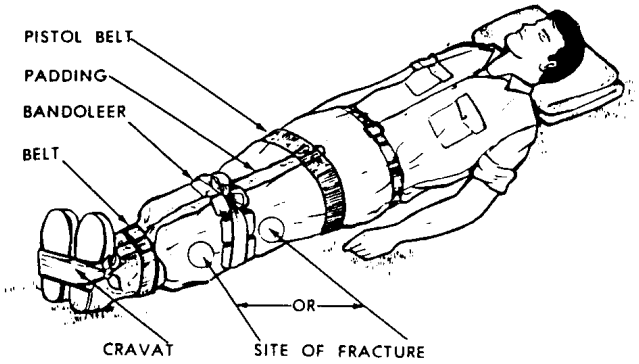

FIGURE 9-7. UNINJURED LEG USED AS A SPLINT

9-6. APPLY A SLING AND SWATHE TO A FRACTURED ARM

A sling is usually used to secure and support a fractured forearm, wrist, or hand after the fracture has been splinted. When the upper arm is fractured, a sling and swathes can be used to immobilize the arm.

A sling can be made using a triangular bandage, strips of torn material, or the casualty's shirt or jacket.

a. Apply a Triangular Bandage Sling

A triangular bandage sling is usually made from a muslin bandage, but any material that does not stretch (such as a fatigue shirt, trousers, poncho, blanket, or shelter-half) can be used.

Fold, cut, or tear the material into a triangular shape (same as beginning a cravat).

Insert the material under the injured arm so that the arm is in the center, the apex of the sling is beyond the elbow, and the top corner of the material is over the shoulder of the injured side.

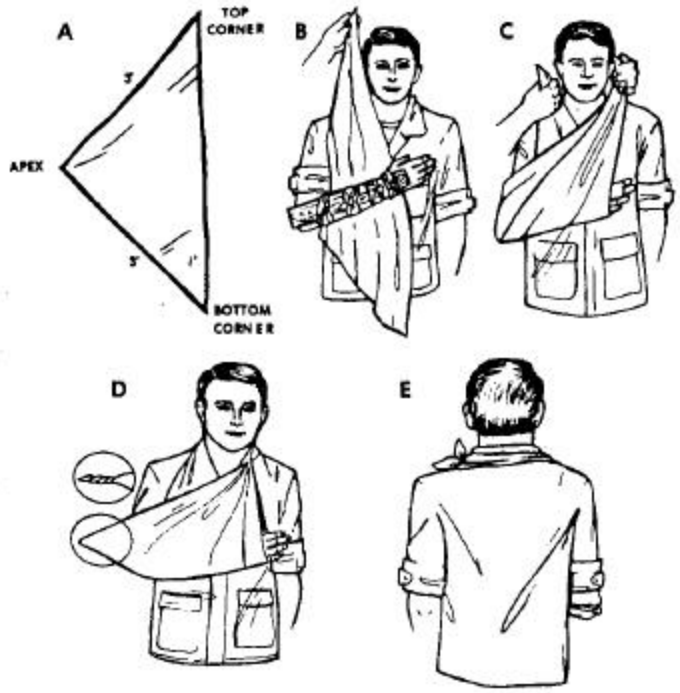

FIGURE 9-8. APPLYING A TRIANGULAR BANDAGE SLING

Position the forearm so that the hand is slightly higher than the elbow (about a 10-degree angle).

Bring the lower portion of the material over the injured arm so that the bottom corner goes over the shoulder of the uninjured side.

Bring the top corner behind the casualty's neck.

Tie the two corners together so that the knot will not slip. The knot should fit into the "hollow" at the side of the neck on the uninjured side. (If the casualty's right arm is fractured, for example, tie the knot so it will rest in the hollow on the left side of his neck.)

Twist the apex of the sling and tuck it in at the elbow. (The corner can also be secured using a safety pin.) This secures the elbow and keeps the forearm from slipping out of the sling.

b. Apply a Jacket Flap Sling

If the time or the materials to make a triangular bandage sling are not available, the flap of a BDU jacket (coat) or a field jacket (coat) can be used as a sling.

Position the forearm on the casualty's chest with the hand positioned slightly higher than the elbow.

Undo the jacket so that the lower portion (flap) can be brought over the arm to form a sling.

FIGURE 9-9. BDU JACKET FLAP SLING

Bring the flap up over the forearm to the pocket area. Position the elbow so the elbow is inside the sling and will not slip out of the sling.

Push a stick or other rigid object through the flap and the upper portion of the jacket so the flap will not slip.

c. Apply Swathes

A swathe is a large strip of cloth, muslin bandage, field dressing, blanket strip, pistol belt, trouser belt, bandoleer, or other material used to immobilize an arm. The swathe should be three to six inches wide. Two swathes are normally applied when the chest is used as a rigid object (one above the fracture and one below the fracture) or when the elbow is not bent.

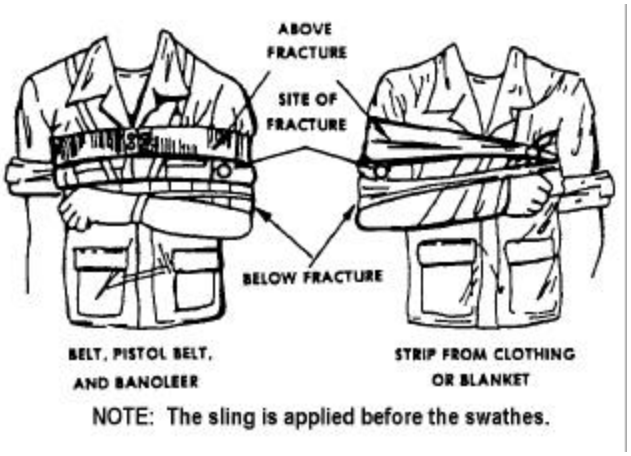

FIGURE 9-10. SLING AND SWATHES APPLIED WHEN CHEST USED AS RIGID OBJECT

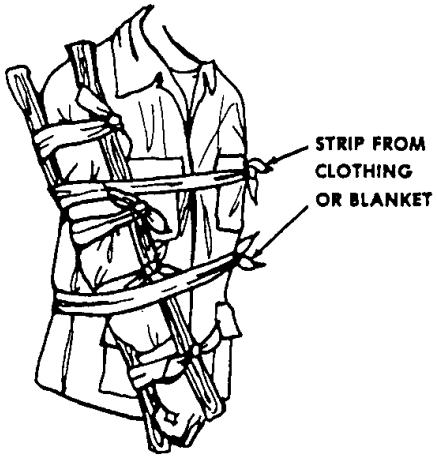

FIGURE 9-11. SWATHES APPLIED TO A FRACTURED ELBOW

FIGURE 9-12. SLING AND SWATHE APPLIEDTO A FRACTURED FOREARM

CAUTION: Do not apply a swathe on top of the fracture site. The pressure of the swathe could cause additional damage to the nerves and blood vessels around the broken bone.

Normally, a single swathe is used to help immobilize the arm after a fractured forearm has been splinted and a sling applied. Steps for applying the swathe are given below.

Place one end of the swathe at the breast pocket near the uninjured arm.

Wrap the swathe across the sling, around the upper arm on the injured side, behind the casualty's back, under the uninjured arm, and back to the breast pocket.

Tie the two ends in a nonslip knot over the breast pocket on the uninjured side.

Continue with Exercises

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PRACTICE EXERCISES: LESSON 9

INSTRUCTIONS: Answer exercises 1 through 11 by circling the letter of the response that best answers the question or best completes the sentence or by writing the required term in the blank provided. After you have answered all of the exercises, check your answers against the "Practice Exercises Solutions"For each exercise answered incorrectly, reread the lesson material referenced.

A performance checklist for exercise 28 is provided at the end of the practice exercises.

1. A soldier has fallen and you suspect he has broken his leg. Someone says, "Difficulty in moving the limb is a sign of a fracture. Ask him to raise his leg as high as he can." What should you do?

   a. Ignore the suggestion since difficulty in moving the injured limb is not a sign of a fracture.
   b. Ask the casualty how his leg feels, but do not ask him to move his leg.
   c. Gently lift the casualty's leg and check for numbness.
   d. Tell the casualty to raise his injured leg as high as he can.
   e. Tell the casualty to raise both legs as high as he can and see if he can lift the injured leg as high as the uninjured leg.

2. When splinting a fractured limb, you should check the circulation below the fracture site:

   a. Before applying the splint.
   b. After applying the splint.
   c. Both before and after applying the splint.

3. A casualty has a fractured arm. You can check his circulation by pressing on his _____ and observe how quickly the color returns.

4. You find a casualty with a fractured leg. The end of the broken bone has penetrated the skin and is sticking out. How should you treat this wound?

a. Dress the wound without attempting to straighten the limb or to push the bone back under the skin.
b. Pull on the end of the limb (hand or foot) until the bone returns to its proper position; then dress the wound.
c. Gently push the bone back under the skin; then dress the wound.
d. Gently pull on the end of the limb (hand or foot) and gently push the bone back under the skin until the bone returns to its proper position; then dress the wound.
e. Splint the limb without dressing the wound and without straightening the limb or pushing the bone back under the skin.

5. Which of the following should <u>not</u> be used as a rigid object in splinting a fractured leg?

a. A tree limb.
b. A loaded rifle.
c. The casualty's uninjured leg.
d. Broken tent pole.

6. You are splinting a broken leg. Which one of the following areas requires extra padding?

a. Middle of the upper leg (thigh).
b. Middle of the lower leg (calf).
c. Knee.
d. Site of the fracture.

7. Rigid objects should be secured:

a. Above the fracture site.
b. At the fracture site.
c. Below the fracture site.
d. Above and below the fracture site.
e. Above, at, and below the fracture site.

8. You have splinted a casualty's upper arm. Before you applied the splint, he had good circulation below the fracture. Now he has poor circulation. What should you do?

_____

_____

_____

9. When applying a sling to a fractured arm, the casualty's hand should be _____ his elbow.

a. Slightly higher than.
b. Slightly lower than.
c. Even with.

10. A casualty has a fracture half way between his shoulder and his elbow. Where should the swathe(s) be applied?

a. Above the fracture site.
b. At the fracture site.
c. Below the fracture site.
d. Above and below the fracture site.
e. Above, at, and below the fracture site.

11. A sling and a swathe are being applied to a fractured right forearm. The ends of the sling are to be tied at the side of the neck on the casualty's _____ side and the ends of the swathe are to be tied over the breast pocket on the casualty's _____ side.

a. Injured; injured.
b. Injured; uninjured.
c. Uninjured; injured.
d. Uninjured; uninjured.

If possible, practice splinting a fractured limb. Have another person score your performance using the performance checklist.

Check Your Answers on Next Page

IS0824 LESSON 9 Practice Exercise Solutions

1. b (para 9-2)
2. c (paras 9-3c, 9-5e)
3. fingernails (para 9-3c)
4. a (para 9-3f)
5. b (para 9-4a)
6. c (paras 9-4b, 9-5c)
7. d (para 9-5a)
8. Loosen the cravats securing the splint, reposition the rigid objects, add padding (if needed), retie the cravats, and recheck the circulation below the cravats. (para 9-5e)
9. a (para 9-6a)
10. d (para 9-6c)
11. d (paras 9-6a, 9-6c)

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PERFORMANCE CHECKLIST

SPLINT A SUSPECTED FRACTURE

Situation: You have evaluated the casualty and determined that he has a fracture of the (upper arm, forearm, thigh, lower leg -- choose one).

	GO	NO GO
Reassures casualty.	_____	_____
Locates fracture site.	_____	_____
Checks circulation below fracture site.	_____	_____
Loosens tight clothing.	_____	_____
Removes any jewelry on the injured limb.	_____	_____
Dresses open wounds on limb (if present).	_____	_____
Question: What should you do if a bone is sticking out of the open the limb?		
Answer:_____	_____	_____
Checks circulation below fracture site.	_____	_____
Splints the fracture in the position found (does not attempt to straighten limb).	_____	_____
Places cravats (or other securing material) under limb with at least one cravat above the fracture site and at least one cravat below the site and none over the fracture site.	_____	_____
Places rigid objects on each side of the fractured limb.	_____	_____
Places padding between limb and rigid objects.	_____	_____
Secures rigid objects in place with cravats.	_____	_____
Ties nonslip knots on the outside rigid object.	_____	_____

	GO	NO GO
Checks the casualty's circulation below the injury.	_____	_____
If limb has poor circulation, loosens cravats, repositions rigid objects (if needed), adds padding (if needed), and reties the cravats.	_____	_____
Cravats tied tight enough to securely hold the rigid objects in place.	_____	_____
Question: What would you do if the casualty has poor blood circulation below the fracture and adjusting the splint does not help?		
Answer: _____	_____	_____

_____

_____

NOTE: The following steps are performed for a fracture of a forearm, wrist, or hand.

Makes a triangular bandage to use as a sling.	_____	_____
Positions the injured arm in the center of the sling with apex beyond the elbow and top end over shoulder of injured side and behind the casualty's neck.	_____	_____
Brings other end of the sling over injured arm and ties ends at the neck on the uninjured side.	_____	_____
Twists and tucks the apex of the sling at the elbow.	_____	_____
Wraps swathe around upper arm and chest so the casualty's injured arm is immobilized and the uninjured arm is still free.	_____	_____
Ties the ends of the swathe in a nonslip knot on the casualty's uninjured side.	_____	_____

OVERALL EVALUATION	GO	NO GO
(A no-go on any step gives an overall evaluation of no-go.)	_____	_____

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LESSON 10

IMMOBILIZE A SUSPECTED SPINAL INJURY

TASK

Identify proper procedures for immobilizing a suspected spinal injury.

CONDITIONS

Given multiple-choice items pertaining to spinal injuries.

STANDARD

Score 70 or more points on the 100-point written examination.

REFERENCES

STP 21-1-SMCT, Soldier's Manual of Common Tasks: Skill Level 1.
FM 21-11, First Aid for Soldiers.

10-1. INTRODUCTION

The spinal column (also called the backbone or spine) consists of a series of bones called vertebrae. The top seven vertebrae are the bones of the neck. The spinal column surrounds and protects the spinal cord. The spinal cord consists of nerves which carry impulses between the brain and the rest of the body. If the spinal cord is severed (cut completely), the muscles and sensations controlled by the portion of the spinal cord below the cut will not function.

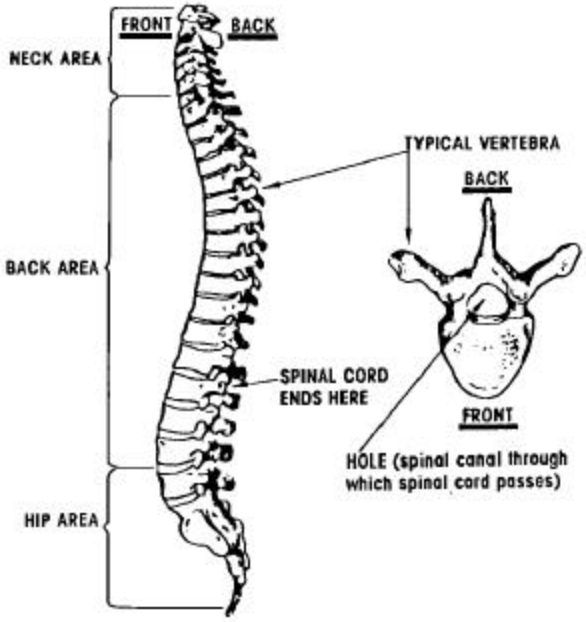

FIGURE 10-1. SPINAL COLUMN

10-2. IDENTIFY SIGNS AND SYMPTOMS OF A FRACTURED SPINE

Always check a casualty who is lying down and breathing for spinal injury, especially if the casualty has suffered a fall or has been hit in the back. Signs and symptoms of an injured spine include:

Pain or tenderness of the neck or back.

Cut or bruise on the neck or back.

Inability to move part of the body (paralysis), especially the legs.

Lack of feeling in a body part. (Touch the casualty's arms and legs and ask if he feels your hand.)

Loss of bladder and/or bowel control.

Weak respiration.

Head or back in an unusual position.

10-3. MOVE A CASUALTY WITH A SUSPECTED SPINAL INJURY, IF NECESSARY

WARNING

Do not move a casualty with a suspected fracture of the spine unless it is necessary to move the casualty from an immediate life-threatening danger (fire, etc.) or if the casualty is not breathing and you must position him for mouth-to-mouth resuscitation. Moving the casualty could result in permanent paralysis or even death.

If a life-threatening danger exists, it may be necessary to move the casualty out of danger before providing treatment. If the casualty must be moved prior to treatment, great care must be taken to avoid causing additional injury to the casualty. A minimum of four soldiers must be used to move the casualty. Procedures for lifting a casualty using the four-man arms carry (a four-man variation of the two-man arms carry discussed in Lesson 14) are given below.

The first soldier (the leader who is the most experienced person available lifesaver) kneels at the casualty's head facing the casualty's feet, places his hands on each side of the casualty's head and jaw, and pulls back slightly to manually immobilize the head and neck.

FIGURE 10-2. MANUALLY IMMOBILIZING THE CASUALTY'S HEAD AND NECK

The other three soldiers kneel at the casualty's side and place their hands and forearms under the casualty's shoulders, waist, hips, thighs, knees, and ankles.

On the command, "Lift," from the leader, all soldiers rise to their knees in unison, keeping the casualty's head and spine in straight alignment.

If a long spine board is available or one can be improvised from a door or board, the casualty should be placed on the spine board. The spine board will help to immobilize the casualty's spine during evacuation. The following steps are used to place the casualty on a spine board.

When the leader gives the command, "Lift," a fifth soldier slides the spine board into position under the casualty.

On the command, "Lower," from the leader, the soldiers bend in unison and gently lower the casualty onto the spine board while keeping the head and spine in alignment.

The soldiers then secure the casualty to the spine board, carefully lift the spine board, and move the casualty to safety. The leader should keep manual traction on the casualty's head while the other four soldiers carry the spine board and casualty.

When a safe location is reached, the soldiers gently lower the spine board and casualty onto a flat surface and fully immobilize the casualty as described in paragraph 10-4.

If a spine board is not available and there is no time to improvise one, the casualty is moved using the four-man arms carry. Steps for moving a casualty after the casualty has been lifted are given below.

On the leader's command, "Turn," the soldiers gently turn the casualty toward their chests as the leader gently turns the casualty's head to maintain spinal alignment.

On the leader's command, "Rise," the soldiers stand in unison, maintaining alignment of the head and spine.

The casualty is then carried out of danger.

When a safe location is reached, the soldiers gently lower the casualty onto a flat surface by reversing the lifting procedures and fully immobilize the casualty as described in paragraph 10-4.

10-4. IMMOBILIZE THE CASUALTY'S SPINE

If the casualty has signs and symptoms of a fractured spine, immobilize the casualty's back, neck, and head.

Treat any casualty that you think may have a spinal injury as though you were certain he had a fractured spine.
Treat any casualty with a severe head injury as though he also has a fractured neck.

WARNING

Do not attempt to straighten the casualty's head or back if it is in an abnormal position.

Tell the casualty to keep still. Any movement could cause additional injury.

Send someone to get medical help.

If the casualty is lying on his stomach, keep him from moving until medical help arrives.

If the casualty is lying on his back, use padding to help immobilize his back, neck, and head as described below.

Roll or fold padding (such as a blanket) until it conforms to the shape of the arch of his back. Then carefully slide the padding under the arch of his back. This padding will help support and immobilize his back.

Slide a roll of cloth under the casualty's neck to help support and immobilize his neck.

Place padded rocks, small padded logs, or filled boots on each side of the casualty's head to keep it from moving. The procedure for using filled boots is described below.

Remove the casualty's boots.

WARNING

Do not remove the casualty's boots if you are in a chemical environment.

Fill the boots almost to the top with sand or small rocks.

Place material (strip of clothing, sock, etc.) on top of the sand or rocks to keep the sand or rocks from falling out.

Tie the top of the boots to keep the material from coming out.

Place the boots around the casualty's head so the head will not turn.

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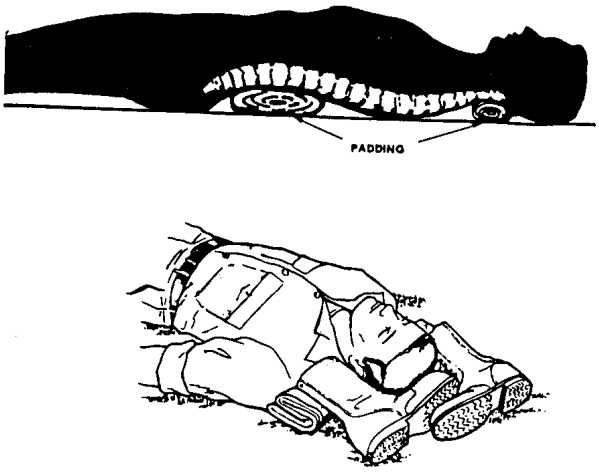

FIGURE 10-3. IMMOBILIZING A CASUALTY'S SPINE (PADDING UNDER BACK AND NECK, HEAD IMMOBILIZED WITH BOOTS)

Continue with Exercises

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PRACTICE EXERCISES: LESSON 10

INSTRUCTIONS: Answer the following exercises by circling the letter of the response that best answers the question or best completes the sentence or by writing the required term in the blank provided. After you have answered all of the exercises, check your answers against the "Practice Exercises Solutions". For each exercise answered incorrectly, reread the lesson material referenced.

1. A fracture of the spinal column is especially dangerous because:

   a. The nerves located in the spinal column may be damaged.
   b. The artery located in the spinal column may be damaged.
   c. The vein located in the spinal column may be damaged.
   d. The muscles surrounding the spinal column may be damaged.

2. A soldier lying on his back has been injured from an explosion. He says that he cannot move his legs. When you touch one of his legs, he states that he cannot feel anything. This soldier:

   a. May or may not have a spinal fracture; turn the casualty onto his stomach and examine his back.
   b. May or may not have a spinal fracture, but treat the casualty as though you were sure his spine was fractured.
   c. Definitely has a spinal fracture.
   d. Has a closed fracture of the leg.

3. You find a soldier lying on his stomach (prone) with his head turned to one side. The soldier is conscious and tells you that he thinks he has injured his back. What should you do?

   a. Turn him onto his back, place a cloth roll under the arch of his back and immobilize his head with boots or padded rocks.
   b. Have another soldier hold the casualty's feet. Put your arms under the casualty's arms and pull until his back is in proper alignment. Then send the other soldier to get medical help.
   c. Tell the casualty to keep still and not move. Send someone to obtain medical help.

4. A casualty is lying on his stomach and is breathing. You believe that he may have a fractured spine. Under what condition would you move the casualty?

a. You need to move the casualty away from an immediate life-threatening danger.
b. His spine is in an abnormal position and you need to straighten the alignment.
c. You should never move the casualty.

5. If a casualty with a suspected spinal fracture is lying on his back, you should:

a. Slip a rolled up blanket beneath the arch of his back to help immobilize any spinal fracture of the back.
b. Slip a roll of cloth under his neck to help immobilize any spinal fracture of the neck.
c. Immobilize the head, such as placing a rock or log on each side of his head and putting padding between the objects and the casualty's head.
d. Perform all three of the above procedures.

6. A casualty with a suspected spinal fracture is lying face up. When would you <u>not</u> use the casualty's boots to immobilize his head?

_____

7. Briefly list the steps for immobilizing a casualty's spine if the casualty is lying on his back and chemical agents are not present.

_____

_____

_____

_____

_____

_____

_____

_____

Check Your Answers on Next Page

IS0824 LESSON 10 Practice Exercise Solutions

1. a (para 10-1)
2. b (para 10-2)
3. a (para 10-3)
4. c (para 10-3)
5. d (para 10-4)
6. Chemical agents are present. (para 10-4)
7. Instruct casualty to not move.

   Send someone to seek medical help, if possible.

   Slide rolled or folded material under the arch of the casualty's back.

   Slide rolled or folded material under casualty's neck.

   Remove casualty's boots.

   Fill the boots with sand or small rocks, put material over sand or rocks, and tie the top of the boots.

   Place boots or other padded objects around casualty's head so the head will not turn. (Do not attempt to straighten spine. Do not move the casualty any more than necessary.) (para 10-4)

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LESSON 11

PERFORM FIRST AID FOR BURNS

TASK

Identify the proper procedures for treating a casualty with burns.

CONDITIONS

Given multiple-choice examination items pertaining to burns.

STANDARD

Score 70 or more points on the 100 point written examination.

REFERENCES

STP 21-1-SMCT, Soldier's Manual of Common Tasks: Skill Level 1.
FM 21-11, First Aid for Soldiers.

11-1. INTRODUCTION

This lesson is basically divided into three areas: classifying burns, stopping additional injury, and treating existing burns.

When you first discover the burn casualty, you should eliminate the source of the burn (if still present) in order to protect both the casualty and yourself. Once this has been done, make sure the casualty is breathing, any major bleeding has been controlled, and measures have been taken to control shock. Exactly when the burn wound is treated depends upon the seriousness of the injury and upon other injuries which the casualty suffered. A burn with serious bleeding should be treated quickly. If a burned area is on a fractured limb, the burn should be dressed and bandaged before the limb is splinted. Minor burns on a casualty with a life-threatening injury may not need to be treated until the casualty is seen by medical personnel at the medical treatment facility.

11-2. CLASSIFY BURN AS TO TYPE

Burns can be classified by their cause and by their severity. Burns can result from thermal, electrical, chemical, or radiant sources. They are usually rated as being first, second, or third degree in severity.

a. Thermal Burns

Thermal burns are caused by heat. They can be caused by coming into contact with a flame, hot object, hot liquid, hot gas (such as steam), or the fireball from a nuclear explosion.

b. Electrical Burns

Electrical burns are caused by an electrical current passing through the body. They can be caused by coming into contact or near contact with a charged ("live") electrical wire or lightning. Electrical burns can be deceiving. The burn may not appear to be serious because only a small area of skin is burned. In reality, however, a great deal of damage may have been done to the casualty's body. Electrical burns involve both an entry burn where the current entered the body and an exit burn where the current left the body. An exit burn may appear on any part of the body and can be in a quite different location from the entry burn. The sole of the foot is a common location for the exit burn.

c. Chemical Burns

Chemical burns are caused by contact with liquid or dry chemicals such as ammonia, caustic soda, quick-lime, or white phosphorus (WP).

d. Radiant Energy Burns

Radiant energy injuries are caused by bright visible light (such as lasers and electric welding arcs) or other forms of light energy that are not visible (such as ultraviolet light, infrared light, and microwaves). The primary danger is damage to the eyes.

Laser Beam. A person who looks directly into a laser (light amplification by stimulated emission of radiation) beam can receive damage to the retinas at the back of his eyes. Laser burns cause a decrease in his sight. The injury may not cause pain.

Welding Arcs. A person who looks directly at a welding arc can receive burns on the surface of his eyes that result in severe pain and sensitivity to light. The pain and sensitivity to light may last two or three days until the burn has healed. Mild symptoms may appear even if the person did not look directly at the welding arc.

e. Severity

First Degree Burns. First degree burns cause the skin to be red and painful (like a sunburn), but does not produce blisters.

Second Degree Burns. Second degree burns are more serious. The skin is red and painful and blisters are present.

Third Degree Burns. Third Degree Burns. Third degree or full thickness burns destroy skin and extend down through underlying tissue to bone. The third degree burn area may not be painful because the nerves have been destroyed, but the surrounding second and first degree burn areas may be painful.

11-3. PUT OUT FLAMES

If the casualty's clothing is on fire, cover the casualty with a large piece of nonsynthetic material, such as a wool or cotton blanket, and roll the casualty on the ground until the flames are smothered. If nonsynthetic material cannot be obtained quickly, get the casualty to the ground and have him roll on the flames until the flames go out.

> **CAUTION:** Do not use synthetic materials such as nylon and rayon because they may melt and cause additional injury.

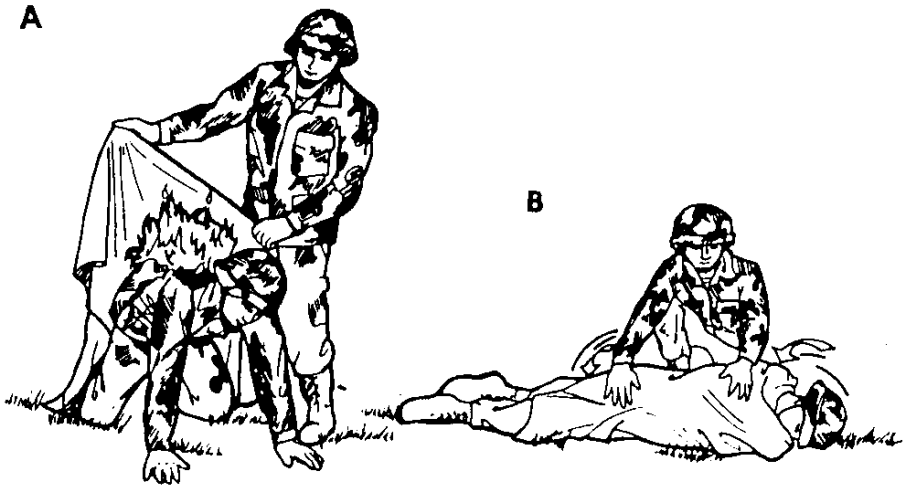

FIGURE 11-1. SMOTHERING FLAMES

11-4. REMOVE A CASUALTY FROM ELECTRICAL CURRENT

If the casualty is still in contact with the source of the electrical current, such as lying on a "live" electrical wire, separate the casualty from the source of the current. Assume that any electrical wire is alive (carrying electrical current) and can be a danger to yourself as well as to the casualty.

WARNING

Do not touch the electrical wire or the casualty as long as he is in contact with the wire. Electrical current can pass from the wire through the casualty to you.

a. Stop the Current

If the electrical current can be turned off quickly, such as flipping a nearby switch, turn off the current first. If it will take more time to turn off the current than to separate the casualty from the electrical wire, cut off the electrical current after you have removed the casualty from the current and have administered aid.

b. Separate Casualty and Current

Remove Wire from Casualty. Loop a dry rope, dry clothing, or other material which will not conduct electricity under the casualty's body and lift the casualty from the wire. Have a second person use a nonconducting object, such as a dry wooden pole, to move the wire away from the casualty. Then, gently lower the casualty to the ground.

FIGURE 11-2. REMOVING AN ELECTRICALWIRE FROM UNDER A CASUALTY

Remove Casualty from Wire. If you cannot remove the wire (no other soldier to help, for example), then remove the casualty from the wire.

Use nonconducting material to drag the casualty from the wire. Do not let your body come into contact with the casualty during the process.

WARNING

When separating the casualty from an electrical wire, assume the wire is still charged even if you think the current is turned off.

c. Check for Breathing

Electrical shock often renders the casualty unconscious and causes difficulties in breathing and heartbeat. Check the casualty's respirations after you have separated him from the wire. Administer mouth-to-mouth resuscitation to the casualty if needed.

WARNING

Never attempt to administer mouth-to-mouth resuscitation until the wire and the casualty have been separated.

11-5. REMOVE CHEMICALS THAT CAUSE BURNS

Chemicals that attack the skin should be removed as soon as possible.

a. Liquid Chemicals

Pour as much water as possible over the burned area. (This is commonly called "flushing" the area.) Use water from a canteen, Lyster bag, or water trailer if it is available. If a sufficient amount of water is not available, use any nonflammable fluid to flush the area.

b. Dry Chemicals

Use a clean, dry cloth to brush off loose particles of the dry chemical. Take care to avoid getting the particles on your body. After brushing off the particles, flush the area with as much water or other nonflammable liquid as possible.

WARNING

If a large amount of water or other nonflammable liquid is not available, do not apply any water in an attempt to flush the dry chemical from the skin. A small amount of water applied to a dry chemical burn may cause a chemical reaction that transforms the dry chemical into an active, burning substance.

c. White Phosphorus

White phosphorus is used in marking rounds and grenades. It begins to give off heat and light when exposed to air. Quickly smother the flame with water and cover the area with wet materials or mud. The wet material or mud will keep air from getting to the white phosphorus and thus keep the particles from burning. Get medical help or evacuate the casualty. Medical personnel can remove the phosphorus particles from the casualty's flesh. Do not attempt to remove the particles yourself. Keep air from reaching the phosphorus particles.

WARNING

Do not use grease or oil on a white phosphorus burn. Grease or oil may cause the body to absorb the poisonous white phosphorus particles.

Do not use copper sulfate on a white phosphorus burn.

d. Radioactive Fallout

Burns caused by radioactive particles sticking to the casualty's skin are treated by brushing the particles from the casualty and flushing the skin with water. Take care to keep the radioactive particles and contaminated water from coming into contact with your skin or your clothing.

e. Chemicals in the Eye

Chemicals can destroy the tissues of the eye. The eye must be flushed with water as quickly as possible.

Position the casualty's head so the eye to be flushed is lower than the other eye. This keeps chemicals from the eye being flushed from flowing into the other eye. Hold the casualty's eyelid open.

Pour the water gently into the eye. Pour from the inner edge of the eye (end closest to the nose) to the outer edge.

Continue to flush the eye with water for at least 20 minutes.

11-6. TREAT RADIANT ENERGY (LASER) BURNS OF THE EYE

A radiant energy burn to the eye will affect the casualty's vision. Keep the casualty from looking at the light source and/or remove him from the path of the radiation. Protect the soldier from additional exposure to the radiant energy source and keep the casualty out of bright sunlight.

The casualty's eyes do not need to be bandaged. The casualty may feel more comfortable if a cloth is placed over his eyes. If a bandage is applied, only bandage the involved eye. Do not place anything over his eyes if he needs to walk or continue to perform his mission.

Evacuate the casualty when the mission allows so he can be examined by medical personnel.

11-7. TREAT SKIN BURNS

At the time of the burn, apply copious amounts of water to the burn site.

a. Expose Burned Area(s)

Cut and gently lift away any clothing covering the burned area. Do not pull clothing over the burned area. Leave any piece of clothing that sticks to the burned area in place.

WARNING

If you are in a chemical environment, do not expose the wound. Apply the dressing over the casualty's clothing. Do not attempt to decontaminate skin where blisters have formed.

b. Remove Jewelry

If the casualty is wearing jewelry on a burned arm or hand, remove the jewelry and put it in the casualty's pocket. Burns often cause the limbs to swell and the jewelry may have to be cut off later if it is not removed now. Tell the casualty what you are doing and why.

c. Dress and Bandage Burned Area(s)

Apply a field dressing over the burned area, unless the area is on the face or genitalia, and secure the dressing using the attached tails. The dressing will help to prevent additional contamination. Tie the tails tight enough to hold the dressing in place, but not so tight as to put undue pressure on the injury. If a field dressing is not available or if the burned area is too big to be covered by the dressing, use the cleanest material available to cover the burned area. Secure the material with strips of cloth.

Do not try to clean the burned area before applying the dressing.

Do not break any blisters that have formed.

Do not apply any grease, ointments, or medications to the burned area.

If the burn is an electrical burn, find and dress both the entry and the exit wounds.

If the burn is caused by white phosphorus, keep the dressing wet.

d. Check for Shock

Fluid lost due to a severe burn can result in shock. Take appropriate measures to prevent shock if they have not already been started. If the casualty is not in shock and is not nauseated, you can give him small amounts of cool water to drink. Stop administering the water if the casualty feels as though he may vomit or if signs or symptoms of shock develop. If second and third degree burns cover over 20 percent of his body surface, an intravenous infusion (I.V.) should be started by the combat lifesaver or the combat medic. Initiating an I.V. is taught in IS0825.

e. Get Medical Help

Seek medical help or evacuate the casualty, if practical. Casualties with serious burns should be seen by medical personnel as soon as practical.

Continue with Exercises

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PRACTICE EXERCISES: LESSON 11

INSTRUCTIONS: Answer the exercises by circling the letter of the response that best answers the question or best completes the sentence or by writing the required term in the blank provided. After completing the exercises, check your answers against the "Practice Exercises Solutions". For each exercise answered incorrectly, reread the lesson material referenced.

1. A burn which is caused by heat, such as from a fire or hot liquid, is called a

   _____ burn.

2. A burn in which the skin is destroyed and muscle tissue is exposed is a:

   a. First degree burn.
   b. Second degree burn.
   c. Third degree burn.

3. A burn in which the skin is red but no blisters are present is a:

   a. First degree burn.
   b. Second degree burn.
   c. Third degree burn.

4. A burn in which the skin is red and blistered is a:

   a. First degree burn.
   b. Second degree burn.
   c. Third degree burn.

5. A person who looks directly into a laser beam may suffer a(n):

   a. Chemical burn.
   b. Electrical burn.
   c. Radiant energy burn.
   d. Thermal burn.

6. A person's clothing has caught on fire. You have a nylon blanket and a wool blanket nearby. Which should you use to wrap around the casualty to put out the flames?

a. Nylon blanket.
b. Wool blanket.
c. Either blanket.
d. Neither blanket.

7. The back of a soldier's shirt has caught on fire. You have no nonsynthetic material to cover the soldier. You should:

a. Roll him on the ground until the flames go out.
b. Have him lie on his stomach until the flames go out.
c. Have him stand up and pat the flames out with your hands.

8. You find a person lying across a "live" electrical wire. Which of the following is true?

a. You can safely touch either the person or the wire.
b. You can safely touch the wire, but not the person.
c. You can safely touch the person, but not the wire.
d. You cannot safely touch either the person or the wire.

9. Of the following items, which should be used to move a casualty who is lying on an electrical wire?

a. A wet rope.
b. A metal wire.
c. A shirt that has been soaked in sterile water.
d. A dry wooden pole.

10. A liquid chemical splashed into a soldier's right eye and he is in pain from the burning sensation. You should immediately:

a. Place a dressing on the eye.
b. Turn his head so his right eye is lower than the left eye and flush the right eye with water.
c. Turn his head so his right eye is higher than the left eye and flush the right eye with water.
d. Put oil or grease on the inside surface of the eyelid and leave the eye exposed to the air.

11. A casualty has a chemical burn caused by white phosphorus. You have flushed the

area with water to put out the flames. Which of the following procedures should you perform next?

a. Use a knife to cut the particles out of the casualty's skin.
b. Cover the wound with wet cloths or mud.
c. Cover the wound with grease or oil.
d. Leave wound exposed to the air.
e. Either b or c above.

12. Treatment for a radiant energy burn to the eyes includes:

a. Applying ointment to the eyes.
b. Flushing the eyes with water.
c. Protecting the eyes from bright sunlight.
d. Putting wet dressings over the eyes.

13. You are in a chemical environment and find a soldier with a thermal burn to the side of his chest. You should:

a. Expose the burned area, apply ointment or grease to the burned area, and apply a field dressing.
b. Expose the burned area and apply a field dressing.
c. Apply ointment or grease to the burned area without exposing the wound; then apply a field dressing.
d. Apply a field dressing to the burned area.
e. Leave the burned area exposed to the air.

Check Your Answers on Next Page

IS0824 LESSON 11 Practice Exercise Solutions

1. thermal (para 11-2a)
2. c (para 11-2e)
3. a (para 11-2e)
4. b (11-2e)
5. c (para 11-2d)
6. b (para 11-3)
7. a (para 11-3)
8. d (para 11-4)
9. d (para 11-4b)
10. b (para 11-5a)
11. b (para 11-5c)
12. c (para 11-6)
13. d (para 11-7a)

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LESSON 12

PERFORM FIRST AID FOR HEAT INJURIES

TASK

Identify the three types of heat injuries and the treatment for each.

CONDITIONS

Given multiple-choice examination items pertaining to heat injuries.

STANDARD

Score 70 or more points on the 100 point written examination.

REFERENCES

STP 21-1-SMCT, Soldier's Manual of Common Tasks: Skill Level 1.
FM 21-11, First Aid for Soldiers.

12-1. INTRODUCTION

Heat injuries usually occur during hot weather or when a person is working near equipment that produces heat. Heat injury can also occur during temperate conditions. Heat injury can occur whenever the normal temperature control mechanisms of the body are overwhelmed. This may occur when fluids are not adequately replaced, soldiers are not adequately rested, or body heat is not adequately dissipated.

Even a healthy person can suffer heat injury. Heat injuries can be painful and, in some cases, fatal. The three principal types of heat injuries are heat cramps, heat exhaustion, and heat stroke.

12-2. IDENTIFY SIGNS AND SYMPTOMS OF HEAT CRAMPS

Heat cramps are painful muscle spasms (contractions) caused by loss of water and salt from the body, usually through perspiration. Signs and symptoms of heat cramps include:

Grasping or massaging an arm or leg.

Bending over in an effort to relieve the pain of an abdominal cramp.

Skin wet with perspiration.

Unusual thirst.

12-3. TREAT HEAT CRAMPS

Move the casualty to a cool, shaded area to rest. If there is no shade, improvise a shade using ponchos, blankets, or other available materials.

Loosen the casualty's clothing around his neck and waist and loosen his boots.

WARNING

Do not loosen the casualty's clothing if you are in a chemical environment.

Have the casualty slowly drink one quart (one canteen) of cool water. (Drinking the water too rapidly may cause the casualty to vomit, thus losing even more fluid from the body.)

If cramps continue seek medical help or evacuate the casualty as soon as possible. If the casualty improves have them continue with fluid replacement as indicated for the climate and environment he or she is in. The casualty should be evaluated by the combat medic to ensure adequate treatment.

12-4. IDENTIFY SIGNS AND SYMPTOMS OF HEAT EXHAUSTION

Heat exhaustion is primarily caused by the body losing water, usually through perspiration, without the water being adequately replaced. Heat exhaustion usually occurs in fit individuals who are involved in extreme physical exertion in a hot environment and are not acclimatized. The signs and symptoms of heat exhaustion are very similar to those of shock. The first five signs and symptoms listed are the most common.

a. Most Common Signs and Symptoms of Heat Exhaustion

Profuse sweating with pale, cool skin.

Weakness or faintness.

Dizziness.

Headache.

Loss of appetite.

b. Other Signs and Symptoms of Heat Exhaustion

Heat cramps.

Nausea (with or without vomiting).

Chills ("gooseflesh").

Rapid breathing.

Urge to defecate.

Tingling in hands or feet.

Mental confusion.

12-5. TREAT HEAT EXHAUSTION

Move the casualty to a cool, shaded area to rest. If there is no shade, improvise a shade using ponchos, blankets, or other available materials.

Have the casualty lie on his back and elevate his legs (normal shock position).

Remove the casualty's clothing around his neck and waist and loosen his boots.

Pour water over the casualty and fan him in order to cool his body faster.

WARNING

Do not loosen or remove clothing or pour water over the casualty if you are in a chemical environment.

Have the casualty slowly drink at least a canteen (one quart) of cool water.

Elevate his legs.

Seek medical help as soon as possible. If the casualty cannot drink the water due to severe nausea or if he vomits, initiate an intravenous infusion and evacuate the casualty to a medical treatment facility.

If the casualty recovers from heat exhaustion, have him perform only light duty for the remainder of the day if the mission permits he should be evaluated by the combat medic if at all possible.

12-6. IDENTIFY SIGNS AND SYMPTOMS OF HEAT STROKE

Heat stroke (also called sunstroke) usually occurs in people who work in a very hot, humid environment for a prolonged period of time. In heat stroke, the body's temperature regulating system fails and the body's internal (core) temperature increases to dangerous levels. Heat stroke is a medical emergency that can be fatal if the casualty's body is not cooled quickly. The following are signs and symptoms of heat stroke.

Altered mental status (key sign).

May or may not be sweating.

Skin that is hot and flushed (red).

Headache.

Weakness.

Dizziness.

Nausea or stomach pains.

Seizures.

Weak and rapid pulse and respiration.

Sudden loss of consciousness.

WARNING

Monitor all soldiers for signs and symptoms of heat injury, changes in perspiration and complaints about the heat; these are signs that must be addressed. If necessary apply emergency aid measures immediately.

12-7. TREAT HEAT STROKE

WARNING

Heat stroke is a medical emergency. If the body temperature is not lowered quickly, brain injury or death may result. Do not leave the casualty alone in order to seek medical aid as long as you can continue cooling efforts. If possible, send someone to get medical help while you treat the casualty.

Move the casualty to a cool, shaded area or improvise a shade.

Loosen or remove the casualty's outer garments.

Position the casualty on his back with his feet elevated. Pour cool water over the casualty, fan him vigorously, and massage his arms and legs with cool water. (Massaging increases blood circulation and promotes heat loss.) Mist is more effective then pouring water.

WARNING

Do not loosen or remove clothing, pour water over the casualty, or massage his limbs if you are in a chemical environment.

Initiate an intravenous infusion.

If evacuation is delayed, continue to give IV fluids and continue cooling efforts.

Monitor the casualty's breathing. Administer mouth-to-mouth resuscitation if needed.

Evacuate the casualty as soon as possible. Perform measures to cool the casualty's body while he is being evacuated.

WARNING

Do not delay evacuation in order to start cooling measures. Perform cooling measures en route to the medical treatment facility.

Continue with Exercises

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PRACTICE EXERCISES: LESSON 12

INSTRUCTIONS: Answer the following exercises by circling the letter of the response that best answers the question or best completes the sentence or by writing the required term in the blank provided. After you have answered all of the exercises, check your answers against the "Practice Exercises Solutions". For each exercise answered incorrectly, reread the lesson material referenced.

1. A primary cause of heat injury is _____ being lost from the body without being adequately replaced.

2. The heat injury whose primary symptom is painful muscle contractions is

   _____.

3. List the five most common signs/symptoms of heat exhaustion.

   _____.

   _____.

   _____.

   _____.

   _____.

4. Lack of perspiration is a sign of:

   a. Heat cramps.
   b. Heat exhaustion.
   c. Heat stroke.

5. What is different in treating a heat injury casualty in a chemical environment and treating a heat injury casualty in a nonchemical environment?

   a. In a chemical environment, you do not loosen the casualty's clothing.
   b. In a chemical environment, you do not have the casualty lie down.
   c. In a chemical environment, you do not elevate the casualty's legs.

6. A person suffering from heat injury should drink at least _____of cool water, if possible.

a. One pint.
b. One quart.
c. One gallon.
d. One and one-half gallon.

7. Protecting the person from the sun, loosening constricting clothing, and replacing body fluids are treatment procedures for a casualty suffering from:

a. Heat stroke.
b. Heat exhaustion.
c. Heat cramps or heat stroke.
d. Heat exhaustion or heat stroke.
e. Heat cramps, heat exhaustion, or heat stroke.

8. Which of the following is a life-threatening condition requiring immediate treatment?

a. Heat cramps.
b. Heat exhaustion.
c. Heat stroke.

9. Which of the following is/are proper procedure(s) for treating a heat stroke casualty who is not in a chemical environment?

a. Move the casualty to a shaded area.
b. Elevate the casualty's legs and massage them with cool water.
c. Pour cool water over the casualty.
d. Evacuate the casualty.
e. All of the above are proper procedures.

Check Your Answers on Next Page

IS0824 LESSON 12 Practice Exercise Solutions

1. water. (para 12-1)

2. heat cramp (para 12-2)

3. Profuse sweating with pale, cool skin.
   Weakness/faintness.
   Dizziness.
   Headache.
   Loss of appetite.
   (para 12-4a)

4. c (para 12-6)

5. a (paras 12-3, 12- 4, 12-5 , 12- 6)

6. b (para 12-3, 12- 4, 12-5, 12- 6)

7. e (paras 12-3, 12-4, 12-5, 12-6)

8. c (para 12-7)

9 e (para 12-7)

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LESSON 13

PERFORM FIRST AID FOR COLD INJURIES

TASK

Identify proper procedures for treating a cold injury casualty.

CONDITIONS

Given written items pertaining to the identification and treatment of cold injuries.

STANDARD

Score 75 or more points on the 100 point written examination.

REFERENCES

FM 21-11, First Aid for Soldiers.
STP 21-1-SMCT, Soldier's Manual of CommonTasks: Skill Level 1.
STP 8-91-SM, Soldier's Manual: CMF 91 General Medical Tasks.

13-1. INTRODUCTION

Cold weather operations can cause serious injury to a combat soldier. Exposure for prolonged periods to temperature at or below freezing may cause tissue damage or a general body cooling that can lead to death. Soldiers, however, may be in danger of cold injury even when the temperature is above freezing. The seriousness of the injury depends upon the weather (temperature and moisture), clothing, type of combat operation, and the physical and mental makeup of the individual soldier. Soldiers who have had a previous cold injury should take extra precautions against cold injury.

Preventive measures were discussed in Lesson 1, Take Preventive Measures Against Disease and Environmental Conditions, of Subcourse IS0824. The memory device COLD (keep clothing Clean, avoid Overheating your body, wear clothing in Layers, keep clothing Dry) can help in reminding soldiers to take preventive measures.

13-2. IDENTIFY SIGNS AND SYMPTOMS OF CHILBLAIN

Chilblain is caused by prolonged exposure of bare skin to cool or cold temperatures [50°F (10°C) or lower). Signs and symptoms of chilblain include:

Acutely red, swollen, hot, tender, and/or itching skin.

Open sores or bleeding lesions from continued exposure.

13-3. TREAT A CASUALTY WITH CHILBLAIN

Apply local warming (putting bare hands over the affected area on the face, putting affected hands inside the uniform under the armpits, putting bare feet against the abdomen of another soldier, etc.).

Do not rub or massage the affected area. Rubbing or massaging the area may cause tissue damage.

Apply a field dressing to lesions (sores).

Have medical personnel evaluate the casualty as soon as practical. Signs and symptoms of tissue damage may be slow to appear.

13-4. IDENTIFY SIGNS AND SYMPTOMS OF IMMERSION SYNDROME INJURIES

Immersion syndrome is caused by prolonged exposure (hours to days) to wet conditions at temperatures from 50°F to 32°F (10°C to 0°C). Immersion foot, trench foot, and trench hand are types of immersion syndrome injuries.

Signs of immersion syndrome include blisters, swelling, redness, skin hot to the touch, and bleeding. Immersion syndrome usually occurs in three stages.

In the first phase, the affected part is cold and without pain. There is a weak pulse at the site.

In the second phase, the affected limb feels hot (as though burning) and has shooting pains.

In the third phase, the casualty has pale skin, cyanosis (bluish coloring) around the nailbeds and lips, and decreased pulse strength.

13-5. TREAT A CASUALTY WITH IMMERSION SYNDROME

Dry the affected part immediately.

Rewarm the affected area gradually in warm air. Do not massage the area. The area will probably become swollen, red, and hot to the touch after it has been rewarmed. Blisters may form also.

Remove wet clothing and replace with dry, warm clothing.

Protect the casualty from injury and infection.

Elevate the affected part to reduce edema (swelling).

Evacuate to a medical treatment facility as soon as practical.

13-6. IDENTIFY SIGNS AND SYMPTOMS OF FROSTBITE

Frostbite is caused by the freezing of water in the skin and other tissues. Frostbite occurs only when the flesh is exposed to freezing temperatures [below 32ºF (0ºC)]. Frostbite usually occurs in areas most likely to be exposed to cold conditions such as the cheeks, nose, ears, chin, forehead, fingers, hands, wrists, toes, and feet. The depth and the severity of the injury depend upon the temperature and the duration of exposure. The lower the temperature, the shorter the time required to produce the injury. Frostbite is generally divided into two categories--superficial and deep.

a. Superficial Frostbite

Superficial frostbite primarily involves injury to the skin and the subcutaneous tissues just beneath the skin. Signs and symptoms of superficial frostbite include:

A reddish (in light-skinned individuals) or grayish (in dark-skinned individuals) area on the skin. (This condition is usually the first indication that frostbite is developing.)

A sudden blanching (whitening) of the affected area.

A tingling sensation, followed by numbness.

Blisters (normally filled with clear or serous fluid) and sloughing (flaking in large sheets) of affected skin. (This sign may occur 24 to 36 hours after exposure.)

b. Deep Frostbite

Deep frostbite occurs when not only the skin and subcutaneous tissue freeze but also the fat, muscle and bone tissue freeze as well. The blanching and numbness of superficial frostbite always precede the development of deep frostbite. Signs and symptoms of deep frostbite include:

Lack of feeling in the affected (frozen) tissue.

Pale, yellowish, waxy-looking skin.

Solid flesh (feels wooden to the touch).

Blisters (may occur 12 to 36 hours after freezing) normally filled with bloody fluid.

Red-violet discoloration, usually appearing 1 to 5 days after the injury occurs if the injury is not treated properly.

13-7. TREAT A CASUALTY WITH FROSTBITE

If not properly treated, frostbite can result in the loss of fingers, toes, hands, or feet. Frostbite can also result in gangrene, a life threatening condition.

Move the casualty to a sheltered area.

Loosen constricting clothing.

Remove jewelry.

If available the area should be rapidly rewarmed using warm water (between 100 and 104 degrees F). This is not prolonged soaking used only until the area is rewarmed.

If warm water not available gradually warm the exposed area. (If possible, have the casualty warm himself. Apply local warming by putting bare hands over the affected area on the face or putting affected hands inside the uniform under the armpits. If a casualty has a frostbitten foot, have him remove his boot and sock from affected foot, have another soldier open his clothing to expose his abdomen, have the casualty put his foot against the soldier's abdomen, and have the soldier close his clothing over his abdomen and the casualty's foot.)

WARNING

If a casualty with frozen feet must walk to a medical treatment facility, do not thaw the feet. Thawing and refreezing increases the damage to the feet.

If a casualty with frozen feet must be exposed to freezing temperatures during evacuation, do not thaw the feet prior to evacuation.

Do not expose the frostbitten area to extreme heat which could result in burns.

Do not apply ointments or medications to the frostbitten area.

Do not rub, massage, or soak (other than as discussed above) the frostbitten area.

Do not give alcoholic beverages or tobacco products to the casualty.

Give the casualty something warm to drink.

Protect the frostbitten area from cold and additional injury.

Evacuate the casualty to a medical treatment facility as soon as possible.

13-8. IDENTIFY SIGNS AND SYMPTOMS OF GENERALIZED HYPOTHERMIA

Generalized hypothermia (low body temperature) occurs when the entire body is cooling with a core temperature (measured rectally) below 95°F. It is caused by continued exposure to low or rapidly dropping temperatures, cold moisture, snow, or ice. Generalized hypothermia is a medical emergency that will result in death if not treated promptly.

a. Mild Hypothermia

Signs and symptoms of mild hypothermia include:

Apathetic, lethargic behavior.

Pale, cold skin.

Acetone (sweet, fruity) breath odor.

Shivering, which soon stops.

Slurred speech

Poor muscle coordination

Faint pulse.

Low body temperature (around 90°F to 95°F).

b. Severe Hypothermia

Signs and symptoms of severe hypothermia include:

Skin ice cold.

Slow, shallow respirations.

Faint, irregular pulse or lack of detectable pulse.

Glassy eyes.

Mental confusion.

Unconsciousness.

Rigid muscles

Very low body temperature (below 85°F).

13-9. TREAT A CASUALTY WITH GENERALIZED HYPOTHERMIA

a. Mild Hypothermia

Move the casualty out of the wind to a sheltered environment.

Replace wet clothing with dry clothing or sleeping bags.

Cover the casualty with blankets or other insulating material.

Apply heating pads (if available) wrapped in towels to the casualty's armpits, groin, and abdomen.

Give the casualty warm, nutritious fluids to drink.

Do not give alcoholic beverages or tobacco products to the casualty.

Wrap the casualty from head to toe and evacuate to a medical treatment facility in a recumbent (lying down) position.

b. Severe Hypothermia

Cut away wet clothing and replace with dry clothing.

Ensure that the casualty's airway remains open, but do not use an oropharyngeal airway (J-tube). Perform mouth-to-mouth resuscitation if the casualty's breathing rate drops below five respirations per minute.

Apply an additional heat source. The casualty's body is not able to generate sufficient body heat and must receive warmth from another source. One method is to place the casualty in a sleeping bag with his outer clothing removed and have another soldier remove his outer clothing and get into the sleeping bag also. Cover both soldiers with additional clothing. The casualty's body will absorb the heat given off by the second soldier's body.

Evacuate the casualty to a medical treatment facility as soon as possible. Evacuate the casualty even if you cannot detect respiration or a heartbeat.

Handle the casualty gently.

13-10. IDENTIFY SIGNS AND SYMPTOMS OF SNOW BLINDNESS

Snow blindness is a temporary loss of sight caused by ultraviolet rays from the sun reflecting off snow or ice. The condition is similar to a welding flash burn and is caused by damage to the cells covering the cornea (clear portion of the eye). Snow blindness is more likely to occur in hazy, cloudy weather than when the sun is shinning. Cloudy weather reduces the amount of visible light reaching the eyes; therefore, soldiers are less likely to take proper preventive measures such as wearing sunglasses. Ultraviolet rays, however, are not visible and are not reduced by the haze or clouds. Signs and symptoms of snow blindness include:

Scratchy feeling in the eyes as though dirt or sand were present in the eyes.

Decreased vision.

Eyes watering.

Reluctance or inability to open eyes.

Headache.

Pain as late as 3 to 5 hours later.

13-11. TREAT A CASUALTY WITH SNOW BLINDNESS

Snow blindness can usually be prevented by wearing regular or improvised sunglasses. To treat a casualty with snow blindness:

Cover the casualty's eyes with a dark cloth to protect his eyes from the light if the mission permits.

Reassure the casualty. (The condition usually heals within a few days with no permanent damage.)

Evacuate him to a medical treatment facility as soon as possible.

Continue with Exercises

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PRACTICE EXERCISES: LESSON 13

INSTRUCTIONS: Answer the following exercises by circling the letter of the response that best answers the question or best completes the sentence. After you have answered all of the exercises, check your answers against the "Practice Exercises Solutions". For each exercise answered incorrectly, reread the lesson material referenced.

1. A soldier has red, swollen, itchy areas on exposed flesh. The temperature is above freezing and the flesh has not been exposed to an excessively moist environment. The soldier is probably suffering from:

   a. Chilblain.

   b. Frostbite.

   c. Generalized hypothermia.

   d. Immersion syndrome.

   e. Snow blindness.

2. A soldier is in a cold climate. His fingers on his left hand feel swollen, hot, and tender. The soldier should:

   a. Remove the glove from his left hand and put the hand inside his uniform under his armpit.

   b. Remove the glove from his left hand and rub the hand in the snow.

   c. Remove the glove from the affected hand and leave the hand exposed until the swelling goes down.

   d. Soak the affected hand in hot water.

3. A casualty has been standing in cold water with wet feet for several hours. The soldier says his feet feel as though they are on fire with pain shooting through his feet. Which of the following is <u>not</u> a proper treatment for this condition?

   a. Dry the feet immediately.

   b. Remove wet socks and replace with dry socks.

   c. Massage the foot until the pain stops.

   d. Elevate the casualty's feet.

4. A pale yellowish area on a soldier's cheek that feels solid to the touch is a sign of:

   a. Chilblain.

   b. Frostbite.

   c. Generalized hypothermia.

   d. Immersion syndrome.

   e. Snow blindness.

5. Which of the following is an early sign of frostbite?

   a. A tingling feeling which goes away shortly.

   b. Severe muscle cramps in the affected area.

   c. Blisters on the affected area.

   d. Frozen (wooden) flesh.

6. A soldier with deep frostbite of the foot must walk through snow and freezing weather in order to reach a medical treatment facility. How should his foot be treated?

   a. The foot should be thawed; then the casualty should put on dry socks and boots and begin walking.

   b. The foot should not be thawed until the casualty reaches the medical treatment facility.

   c. The foot should be thawed, then packed in snow in order to refreeze the foot before he begins his walk.

7. A soldier has frostbitten toes. How can you rewarm them?

   a. Soak the casualty's bare foot in hot water.

   b. Soak the foot in cool water to which ice or snow has been added.

   c. Put the casualty's bare foot against your abdomen and cover the foot with clothing.

   d. Put the casualty's foot as close as possible to a roaring fire.

   e. All of the above are acceptable methods of treating frostbite.

8. A casualty has suffered frostbite and mild general hypothermia. A soldier says, "Give him a warm whiskey and a cigarette; that will warm him up." Should you follow the soldier's advice?

a. Yes.

b. No.

9. Pale and cold skin, lethargic behavior, shivering which stops without warming procedures being applied, and shallow breathing are signs of:

a. Chilblain.

b. Frostbite.

c. Generalized hypothermia.

d. Immersion syndrome.

e. Snow blindness.

10. Which of the following is a medical emergency caused by a drop in the casualty's core temperature?

a. Chilblain.

b. Frostbite.

c. Generalized hypothermia.

d. Immersion syndrome.

e. Snow blindness.

11. Treatment for hypothermia includes:

a. Soaking the casualty in hot water.

b. Applying external heat such as body heat from a fellow soldier.

c. Using an oropharyngeal airway (J-tube) to keep the casualty's airway open.

d. All of the above.

12. A soldier is walking on a snow-covered terrain. He begins to complain about sand in his eyes and his eyes are watering. He is probably suffering from:

a. Chilblain.

b. Frostbite.

c. Generalized hypothermia.

d. Immersion syndrome.

e. Snow blindness.

13. Which of the following is true concerning snow blindness?

a. Snow blindness results in permanent blindness if not treated quickly.

b. Snow blindness can only occur if the temperature is below freezing.

c. The primary treatment for snow blindness is to protect the eyes from light.

Check Your Answers on Next Page

IS0824 LESSON 13 Practice Exercise Solutions

1. a (para 13-2)
2. a (paras 13-2 & 13-3)
3. c (paras 13-4 & 13-5)
4. b (para 13-6b)
5. a (para 13-6a)
6. b (para 13-7)
7. c (para 13-7)
8. b (para 13-7)
9. c (para 13-8a,b)
10. c (para 13-8)
11. b (para 13-9b)
12. e (para 13-10)
13. c (para 13-11)

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LESSON 14

PERFORM FIRST AID FOR A NERVE AGENT INJURY

TASK

Identify the procedures for treating a nerve agent casualty.

CONDITIONS

Given multiple choice examination items pertaining to nerve agent poisoning, treatment, and decontamination.

STANDARD

Score 70 or more points on the 100-point written examination.

REFERENCES

STP 21-1-SMCT, Soldier's Manual of Common Tasks: Skill Level 1.
FM 21-11, First Aid for Soldiers.
FM 8-285, Treatment of Chemical Agent Casualties and Conventional Military Chemical Injuries.

14-1. INTRODUCTION

Nerve agents are among the deadliest of the chemical agents. Nerve agents can enter the body by inhalation, by ingestion, and through the skin and eyes. Nerve agents are absorbed rapidly and the effects are felt immediately upon entry into the body. A soldier showing signs of mild nerve agent poisoning will normally be able to administer his own Mark I (atropine and 2-PAM chloride). A soldier showing signs of moderate to severe nerve agent poisoning will not be able to help himself and requires assistance. Your first priority, however, is to ensure that you yourself are adequately protected before assisting any nerve agent casualty. You cannot adequately help the casualty if you are also overcome by the nerve agent.

14-2. TAKE PROTECTIVE MEASURES

Anytime you believe that you have been exposed to a chemical agent, your first action should be to take adequately protective measures against the agent. Put on your protective mask immediately and give the alarm. If you have signs and symptoms of mild

nerve agent poisoning (unexplained runny nose, sudden headache, dizziness, drooling, tightness in the chest, muscular twitching, stomach cramps, nausea, and/or reduced vision), administer one set of nerve agent autoinjectors to yourself and decontaminate exposed skin. Put on the rest of your protective clothing. Now you are prepared to accomplish your mission and to give aid to casualties as your mission allows.

14-3. IDENTIFY SIGNS OF SEVERE NERVE AGENT POISONING

A casualty may progress from mild to moderate to severe nerve agent poisoning rapidly. Signs of severe nerve agent poisoning include:

Strange and confused behavior.

Coughing, wheezing, and gurgling sounds while breathing.

Difficulty in breathing.

Severely pinpointed pupils.

Red eyes with tears present.

Severe difficulty in seeing.

Vomiting.

Severe muscular twitching and general weakness.

Loss of bladder and bowel control.

Decrease in heart rate (pulse).

Convulsions.

Paralysis.

Unconsciousness.

Respiratory arrest (no breathing).

14-4. MASK THE CASUALTY

The casualty may have been able to put on his protective mask before he was overcome by the nerve agent. If so, check his mask to make sure that it is on properly. If the casualty has not masked himself, then you must immediately mask him using the following procedures.

Approach the casualty. If the casualty is moving or flailing about on the ground, approach him from the area of his head and left shoulder. This will help to protect you from accidental injury.

If the casualty is not lying on his back, roll the casualty onto his back with his face up. Do this by squatting next to the casualty, grasping the casualty's clothing at the far shoulder and hip, and rolling him toward you in a gentle, even manner.

WARNING

Do not kneel when administering aid to a chemical agent casualty. If you press your knee against the contaminated ground, you may force the chemical agent into your protective clothing, which will greatly reduce the protection time afforded by your protective clothing.

Position yourself near the casualty's head, face his feet, and squat behind his left shoulder.

Open the casualty's mask carrier and remove his protective mask.

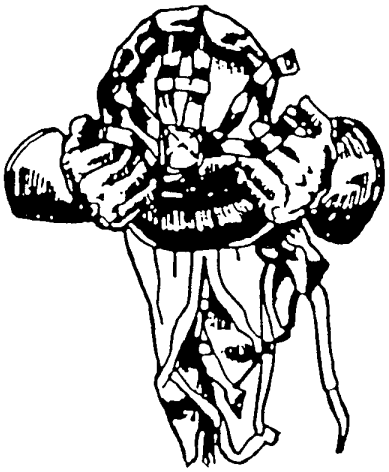

FIGURE 14-1. MASKING A CHEMICAL AGENT CASUALTY

Hold the mask over the casualty's face so that the lenses are facing up, your thumbs are on the outside of the cheek pouches of the mask, and your fingers are on the inside of the cheek pouches.

Spread the mask open and position it on the casualty's chin.

Put your thumbs through the two bottom straps of the head harness.

Cup the casualty's head with the fingers of both hands and lift his head slightly.

Slide the head harness over the casualty's head by moving your thumbs toward the back of his head and down behind his ears.

Make sure the two bottom straps of the head harness are placed below the casualty's ears and the head pad is centered in the middle of the back of his head. The temple straps should be above his ears.

The head harness should not need to be adjusted. If the straps do need to be tightened, use short, firm jerks to tighten them.

Check the mask to make sure it is completely sealed on the casualty's face. If the casualty is conscious and can follow instructions, have him clear his mask (cover the outlet valve and voicemitter and blow hard, then cover the inlet valves and inhale). If the casualty is unconscious and breathing, cover the mask's inlet valves. If the mask collapses, it is properly fitted and sealed. If it does not collapse, reseat the mask.

> **CAUTION:** If the soldier is not breathing, you cannot be sure that the mask has a good seal.

Make sure the buckles are lying flat and the straps form a straight line with the tabs.

Pull the protective hood over the casualty's head, neck, and shoulders.

14-5. ADMINISTER THREE NERVE AGENT ANTIDOTE KITS AND CANA

After the severe nerve agent poisoning casualty is masked, administer injections of atropine and 2-PAM chloride.

Check the casualty's pocket flaps and the area around the casualty for expended autoinjectors. The casualty may have administered (or attempted to administer) antidote to himself before being overcome by the effects of the nerve agent.

CAUTION: Use the casualty's Mark I kits. Do not use your personal autoinjector kits on the casualty. You may need them for yourself.

a. Select Injection Site

Normally, one of the casualty's thighs is used as the injection site. If the casualty is very thin, however, the injection is given in the large muscle of the buttocks.

Thigh. With the casualty laying on his side, position yourself near the casualty's left thigh. (This makes it easier to reach into his mask carrier for additional kits.) The injection site is on the outer part of the casualty's thigh at least the width of one hand below the hip joint and at least the width of one hand above the knee.

Buttocks. Roll the casualty onto his side and position yourself at his hip. The injection site is the upper, outer quadrant of the casualty's buttocks. The upper, outer quadrant is used to avoid hitting the major nerve in the buttocks. If the casualty's jacket is covering the injection site, lift the bottom of the jacket.

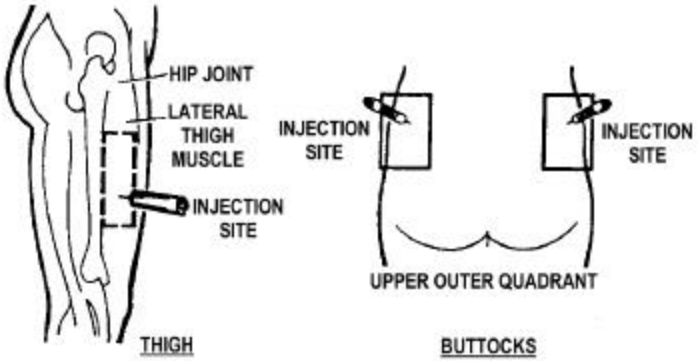

FIGURE 14-2. INJECTION SITES

b. Administer Atropine

After you have positioned yourself, remove one Mark I nerve agent antidote kit from the inside pocket of the casualty's mask carrier. (NOTE: If the temperature is near or below freezing, the casualty may be carrying the autoinjectors in another location.)

Hold the kit by the clip in your nondominant hand so that it is in front of your body at eye level and the larger 2-PAM chloride autoinjector is on top.

Use your free hand to feel the injection site area and make sure the injection site is free from buttons or other obstructions that could be hit by the needle. If the mask carrier or any other equipment is covering the injection site, move it away from the site.

Grasp the smaller (atropine) autoinjector with the thumb and first two fingers of your dominant hand (Like holding a pen or pencil).

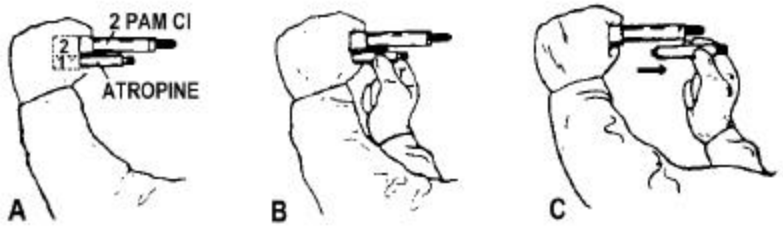

FIGURE 14-3. REMOVING THEATROPINE AUTOINJECTOR

Pull the atropine autoinjector out of the clip with a smooth motion. Do not cover or hold the green (needle) end of the autoinjector. If you do press on the green end, you may accidentally inject yourself.

Place the green (needle) end of the autoinjector against and at a 90° angle (perpendicular) to the injection site.

Apply firm, even pressure to the autoinjector until the needle is triggered (clicks). The needle will penetrate the casualty's clothing and automatically inject the medication into the casualty's muscle.

CAUTION: Do not use a jabbing motion to inject the antidote into the muscle.

Hold the autoinjector in place for at least 10 seconds to make sure that all of the medication has been injected; then pull the autoinjector out of the casualty's body at the same 90° angle.

Place the used atropine autoinjector between the last two fingers of the hand holding the clip, with the needle pointing away from your hand. Make sure the needle does not puncture or tear your protective gloves.

c. Administer 2-PAM Chloride

Grasp the remaining 2-PAM chloride autoinjector with the thumb and first two fingers of your free hand (Like holding a pen or pencil).

Pull the autoinjector out of the clip in a smooth motion. Do not touch or cover the black (needle) end of the autoinjector.

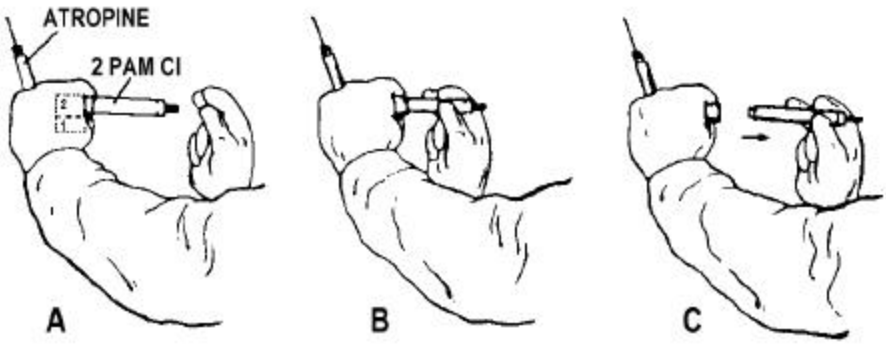

FIGURE 14-4. REMOVING THE 2-PAM CHLORIDE AUTOINJECTOR

Place the black end of the autoinjector against the injection site (same thigh or buttocks) at a 90° angle.

Apply firm, even pressure until the needle functions. Do not use a jabbing motion.

Hold the autoinjector in place for at least 10 seconds; then pull out the autoinjector. Drop the empty plastic clip with out dropping the autoinjectors.

Lay the used autoinjectors on the casualty's side.

d. Administer Second and Third Kits

Administer the second Mark I kit using the same procedures used with the first kit.

Administer the third Mark I kit using the same procedures.

The autoinjectors are administered one kit after the other until all three kits have been administered. There is no waiting period between kits. The casualty may have already given himself injections. Any kit administered by the casualty to himself must be counted as part of the three-kit maximum.

FIGURE 14-5. ADMINISTERING AN INJECTION OF 2-PAM CHLORIDE

e. Administer CANA

Administer the CANA (convulsant antidote for nerve agent) autoinjector after the third Mark I to prevent convulsions.

NOTE: CANA is NOT for use as self-aid. If you know whom you are, where you are, and what you are doing, you do not need CANA.

NOTE: DO NOT use your own CANA on the casualty. If you do, you may not have any antidote for your own treatment, if needed.

Remove the CANA autoinjector from the casualty's mask carrier and remove the packaging.

Grasp the CANA autoinjector with your dominant hand with the needle end extending beyond your thumb and two fingers (Like holding a pen or pencil).

With your other hand, pull the safety cap from the autoinjector base. The injector is now armed.

DO NOT touch the black (needle) end because you may accidentally inject yourself.

Position the black (needle) end of the autoinjector against the casualty's injection site (thigh or buttocks) at a 90° angle.

Apply firm, even pressure (not a jabbing motion) to the autoinjector until it pushes the needle into the casualty's thigh (or buttocks). Make sure you do not hit the casualty's mask carrier or any objects in the casualty's pockets.

Hold the autoinjector firmly in place for at least 10 seconds.

Carefully pull the CANA autoinjector from the casualty's injection site. Drop the safety cap.

f. Secure Used Autoinjectors

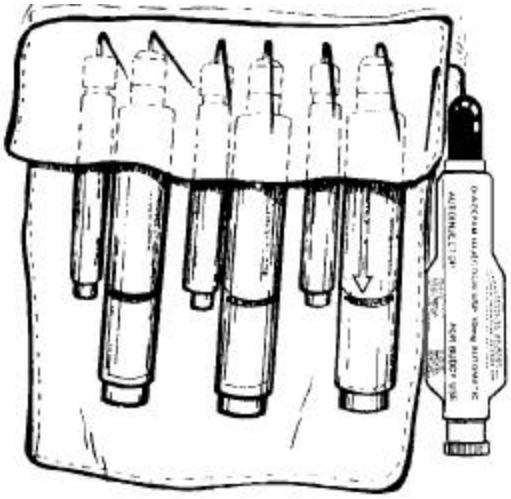

FIGURE 14-6. THREE SETS OF USED AUTOINJECTORS AND A USED CANA AUTOINJECTOR ATTACHED TO THE CASUALTY'S POCKET FLAP

Attach used autoinjectors (atropine, 2-PAM chloride, and CANA) to the casualty's outer clothing, usually the left pocket flap of his outer garment. Push the needle of the autoinjector through the pocket flap, penetrating the flap from the back. Then bend the needle down to form a hook. Repeat the procedure with the other autoinjectors. Be careful not to puncture your gloves with the needles. The used autoinjectors will tell medical personnel how much medication the soldier has received. This information will help them determine what additional care is needed

SPECIAL NOTE: The combat lifesaver can administer additional atropine and CANA carried in his aid bag. Additional information is contained in Subcourse IS0825.

14-6. DECONTAMINATE EXPOSED SKIN

a. Obtain M291 Kit

Obtain the M291 Skin Decontamination Kit from the casualty's mask carrier.

The M291 Skin Decontaminating Kit is provided to service members for skin decontamination. This kit may also be used to decontaminate selected individual equipment, such as load bearing equipment, protective gloves, mask, hood, and weapon.

NOTE: The M291 kit is for external use only. Keep decontaminating powder out of the eyes; it may be slightly irritating to the eyes. Use water to wash toxic agent out of eyes. You may also use a 0.5 percent chlorine solution to wash toxic agent out of cuts or wounds.

FIGURE 14-7. DECONTAMINATING KIT, SKIN: M291

b. Decontaminate Hands

Remove one skin decontaminating packet from the carrying pouch. Tear the packet open quickly at the notch. Although any notch may be used to open the packet, opening at the TEAR LINE will place applicator pad in a position that is easier to use.

Remove the applicator pad from packet and discard the empty packet.

Unfold the applicator pad and slip your finger(s) into the handle.

Thoroughly scrub the exposed skin on the casualty's hands (back of hand, palm, and fingers) until they are completely covered with black powder from the applicator pad.

c. Decontaminate Face

NOTE: If the casualty needs to breathe before you finish, reseal the mask, clear and check it, and tell the casualty to take a breath; then resume the decontaminating procedure.

Thoroughly scrub the exposed skin of the casualty's face until the exposed skin is completely covered with black powder from the applicator pad.

Have the casualty hold his breath and close his eyes. Grasp his mask beneath his chin and pull the hood and mask away from chin enough to allow one hand between the mask and the face. Hold mask in this position until you discard the applicator pad.

Scrub up and down across the face, beginning at front of one ear to the nose and then to the other ear.

Scrub across the face to the corner of the nose.

Scrub an extra stroke at the corner of the nose.

Scrub across the nose and tip of the nose to the other corner of the nose.

Scrub an extra stroke at the corner of the nose.

Scrub across the face to the other ear.

Next, scrub up and down across the face to the mouth and then to the other end of jawbone.

Scrub across the cheek to the corner of the mouth.

Scrub an extra stroke at the corner of the mouth.

Scrub across the closed mouth to the center of the upper lip.

Scrub an extra stroke above the upper lip.

Scrub across the closed mouth to the other corner of the mouth.

Scrub an extra stroke at the corner of the mouth.

Scrub across the cheek to the end of the jawbone.

Next, scrub up and down across the face to the chin and then to the other end of the jawbone.

Scrub across the under jaw to the chin, cupping.

Scrub an extra stroke at the center of the chin.

Scrub across the under jaw to the end of the jawbone.

Turn your hand out and quickly wipe the inside of the mask that touches the face.

Discard the applicator pad.

Immediately seal the mask, then clear and check it.

d. Decontaminate Neck

Remove a second skin decontaminating packet from the carrying pouch.

Tear the packet open quickly at the notch.

Remove the applicator pad from packet and discard the empty packet.

Without breaking the seal between the face and mask, thoroughly scrub the skin of the neck and ears until they are completely covered with black powder.

e. Redo Hands

Redo the casualty's hands until they are completely covered with black powder.

Discard the applicator pad.

Put protective gloves on the casualty.

Fasten the casualty's hood.

Bury the used pads and packets if circumstances permit.

NOTE: Remove the powder with soap and water when operational conditions permit. It does not matter how long the powder stays on the skin.

NOTE: The M291 kit is replacing the M258A1 kit. For U.S. Army personnel, replaced by the M291, the M258A1 kit will be used for decontamination of individual equipment only.

Continue with Exercises

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PRACTICE EXERCISES: LESSON 14

INSTRUCTIONS: Answer the exercises by circling the letter of the response that best answers the question or best completes the sentence or by writing the required term in the blank provided. After you have answered all of the exercises, check your answers against the "Practice Exercises Solutions". For each exercise answered incorrectly, reread the lesson material referenced.

SPECIAL INSTRUCTIONS: In exercises 1 through 4, both you and another soldier have been exposed to nerve agents. Neither of you is masked. The other soldier suddenly collapses and you are having signs and symptoms of mild nerve agent poisoning. In item numbers 1 through 4, indicate the correct sequence of actions.

1. First action.

   a. Put on your protective mask.
   b. Put the casualty's protective mask on him.
   c. Administer nerve agent antidote to the casualty.
   d. Administer nerve agent antidote to yourself.

2. Second action.

   a. Put on your protective mask.
   b. Put the casualty's protective mask on him.
   c. Administer nerve agent antidote to the casualty.
   d. Administer nerve agent antidote to yourself.

3. Third action.

   a. Put on your protective mask.
   b. Put the casualty's protective mask on him.
   c. Administer nerve agent antidote to the casualty.
   d. Administer nerve agent antidote to yourself.

4. Fourth action.

   a. Put on your protective mask.
   b. Put the casualty's protective mask on him.
   c. Administer nerve agent antidote to the casualty.
   d. Administer nerve agent antidote to yourself.

5. A soldier in combat is showing signs of severe nerve agent poisoning. You should assume that he _____ administer self-aid to himself.

   a. Can.
   b. Cannot.

6. Which of the following is <u>not</u> a sign of severe nerve agent poisoning?

   a. Convulsions.
   b. Strange behavior.
   c. Vomiting.
   d. Dilated pupils.

7. When administering aid to a casualty in a chemical environment, you should be in a:

   a. Squatting position.
   b. Kneeling position.

8. A casualty is of normal size. At what site should you inject the nerve agent antidote?

   _____

9. A casualty is very thin. At what site should you inject the nerve agent antidote?

   _____

10. When administering an autoinjector from a Mark I kit, you should leave the needle in the casualty's muscle for at least _____ seconds.

11. When using the M291 decontamination kit, you should open a packet at the notch, preferably at the tear line.

a. True.
b. False.

12. When administering a nerve agent antidote or CANA autoinjector, you should:

a. Place the needle end of the autoinjector against the injection site and press until the needle functions.
b. Position the injector two to three inches above the injection site with the needle end directly above the injection site; then hit the needle end of the injector against the injection site. Repeat until the needle functions.
c. Press on the needle end of the autoinjector until the needle pops out; then position the injector with the tip of the needle two to three inches above the injection site. Inject the needle into the muscle with a quick jab.

13. When administering a nerve agent antidote or CANA autoinjector, the injector should be at a _____ degree angle to the surface of the injection site.

14. You are administering Mark I kits to a casualty with severe nerve agent poisoning. How long should you wait between the kits?

a. Have a 1-minute waiting period between the kits.
b. Have a 5-minute waiting period between the kits.
c. Have a 10-minute waiting period between the kits.
d. Administer the kits with no waiting period between kits.

15. What is the maximum number of Mark I kits you should administer to a casualty with severe nerve agent poisoning?_____

16. You have just administered three Mark I kits and CANA to a soldier. What should you do with the used autoinjectors?

a. Leave the plastic clips and autoinjectors on the ground.
b. Put the plastic clips in the pocket of the soldier's clothing and leave the autoinjectors on the ground.
c. Stick the needles of the autoinjectors through the pocket flap of the soldier's clothing, bend the needles to secure them to the pocket flap, and leave the plastic clips on the ground.
d. Put the plastic clips in the pocket of the soldier's clothing and bury the used autoinjectors.
e. Drop the plastic clips onto the ground and place the used autoinjectors in the soldier's protective mask carrier.

Check Your Answers on Next Page

IS0824 LESSON 14 Practice Exercise Solutions

1. a (para 14-2)
2. d (para 14-2)
3. b (para 14-4)
4. c (para 14-5)
5. b (para 14-1)
6. d (para 14-3)
7 a (para 14-4)
8. Outer part of the thigh below the hip joint and above the knee. (para 14-5a)
9. Upper outer quarter of buttocks. (para 14-5a)
10. ten (para 14-5b)
11. a (para 14-6a)
12. a (para 14-5b)
13. ninety (para 14-5b)
14. d (para 14-5d)
14. Three. (para 14-5d)
16. c (para 14-5f)

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LESSON 15
TRANSPORT A CASUALTY

TASK

Transport a casualty using appropriate one-man, two-man or litter carries.

CONDITIONS

Given a simulated casualty and an assistant.

STANDARD

Score a GO on the performance checklists.

REFERENCES

STP 21-1-SMCT, Soldier's Manual of Common Tasks: Skill Level 1.
FM 8-10-6, Medical Evacuation in a Theater of Operation.
FM 21-11, First Aid for Soldiers.

SECTION I. GENERAL

15-1. INTRODUCTION

A soldier who is injured or ill needs to be evaluated by medical personnel. Medical personnel may not be available at a given location and the soldier must be transported to a medical treatment facility (usually an aid station). A soldier who is not seriously injured or ill may be able to walk to the medical treatment facility. At other times, the casualty's condition or the military situation may prevent him from reaching a medical facility on his own. Sometimes a vehicle (tracked ambulance, etc.) can reach the soldier and transport him to the aid station. At other times, he must be carried (litter, two-man carry, or one-man carry) to the aid station or to a casualty collection point (CCP) where an evacuation vehicle can pick him up and transport him to the aid station.

Manual carries must be performed correctly in order to prevent further injury to the casualty and to prevent injury to the rescuer. One-man and two-man manual carries are used to move a casualty when the time or materials needed to make a litter are not available and/or other personnel are not available to assist you in moving the casualty. In general, a casualty should not be moved before the required emergency care is given unless it is necessary to move him and yourself from a dangerous situation (enemy fire, burning

building, etc.). This lesson gives instructions for transporting such a casualty.

15-2. CHOOSE THE APPROPRIATE METHOD TO MOVE A CASUALTY ON THE BATTLEFIELD

If a casualty is to be moved (evacuated), you must decide which method is appropriate. Follow the general rules given below.

Choose an appropriate carry based on the casualty's condition, the nature of the casualty's injury, the military situation, the distance to be covered, the weight of the casualty, your strength and endurance, and obstacles that will be encountered.

Do not move a casualty with a suspected fracture of the spine unless there is an immediate, life-threatening danger, such as a fire. If the casualty must be moved, use a backboard if available.

If possible, use a vehicle to transport the casualty.

If the casualty is to be carried, use a standard litter if one can be obtained and if two or more litter bearers (including yourself, if applicable) are available. A litter allows a casualty to be moved a greater distance than do manual carries. Also, a casualty is less likely to aggravate existing injuries or suffer additional injuries if a litter is used.

If a standard litter is not available and if the time, materials, and litter bearers are available, construct and use an improvised litter. A door, ladder, cot, bench, chair, or similar objects can be used as an improvised litter.

If a litter cannot be used (insufficient time and/or insufficient materials available) and another person is available to help carry the casualty, use an appropriate two-man manual carry to transport the casualty.

If no other help is available, use an appropriate one-man carry to transport the casualty.

SECTION II. ONE-MAN CARRIES

15-3. TYPES OF ONE-MAN CARRIES

a. Fireman's Carry

The fireman's carry is usually used to quickly move an unconscious or disabled casualty for a moderate or long distance. This carry leaves one of the bearer's arms free to carry a rifle, move around obstacles, etc.

b. Support Carry

The support carry is only used with a conscious casualty who can walk or at least hop on one leg. The carry can be used for a long distance if the casualty does not tire.

c. Arms Carry

The arms carry is generally used to move a conscious or unconscious casualty for a short distance.

d. Saddleback Carry

The saddleback carry is only used for a conscious casualty who can put one or both of his arms around your neck. It is generally used to carry a casualty for a moderate or long distance.

e. Pack-Strap Carry

The pack-strap carry is generally used to carry a conscious or unconscious casualty for a moderate distance. This carry is not used if the casualty has a broken arm or wrist.

f. Pistol-Belt Carry

The pistol-belt carry is generally used to carry a conscious or unconscious casualty for a long distance. It is the preferred carry if you must use your rifle, climb banks, or move over obstacles since the carry leaves both of your hands free.

g. Pistol-Belt Drag

The pistol-belt drag is generally used to move a conscious or unconscious casualty for a short distance. This carry is primarily used when the rescuer must keep very close to the ground.

h. Neck Drag

The neck drag is generally used to move a conscious or unconscious casualty for a short distance. This carry allows the rescuer to stay close to the ground, but not as close as the pistol-belt drag. The carry can be used when moving behind a low wall, under a vehicle, or through a culvert. The neck drag is not used if the casualty has a broken arm or wrist.

i. Cradle Drop Drag

The cradle drop drag is generally used to move a conscious or unconscious casualty up or down steps or to quickly move a casualty from a life-threatening situation (fire, etc.).

15-4. TURNING OR POSITIONING A CASUALTY

Some carries require the casualty to be lying prone (on his abdomen); others require him to be lying supine (on his back). To turn the casualty either to the prone or supine position, follow these steps.

Kneel at the casualty's uninjured side.

WARNING

If you are in a chemical environment, squat--do not kneel.

Place the casualty's arms above his head and cross his far ankle over the near one.

Grasp the casualty's clothing at his far shoulder and hip and gently pull so the casualty rolls toward you. Continue until the casualty is on his abdomen or back.

Place the casualty's arms at his sides and straighten his legs.

15-5. MOVING A CASUALTY TO THE STANDING POSITION

Some one-man carries require that the casualty be moved to a standing position. If the casualty is conscious, you may be able to assist him to stand up. If the casualty is unconscious, however, you need to raise him to a standing position without his help. Two methods of moving the casualty from a prone position are presented. The second (alternate) method is used if you believe the method will be safer for the casualty due to the location of his injuries.

a. Regular Method

Position the casualty in a prone position.

Straddle the casualty, slip your hands under his chest, and lock your hands together.

Lift the casualty and begin walking backwards until he is on his knees.

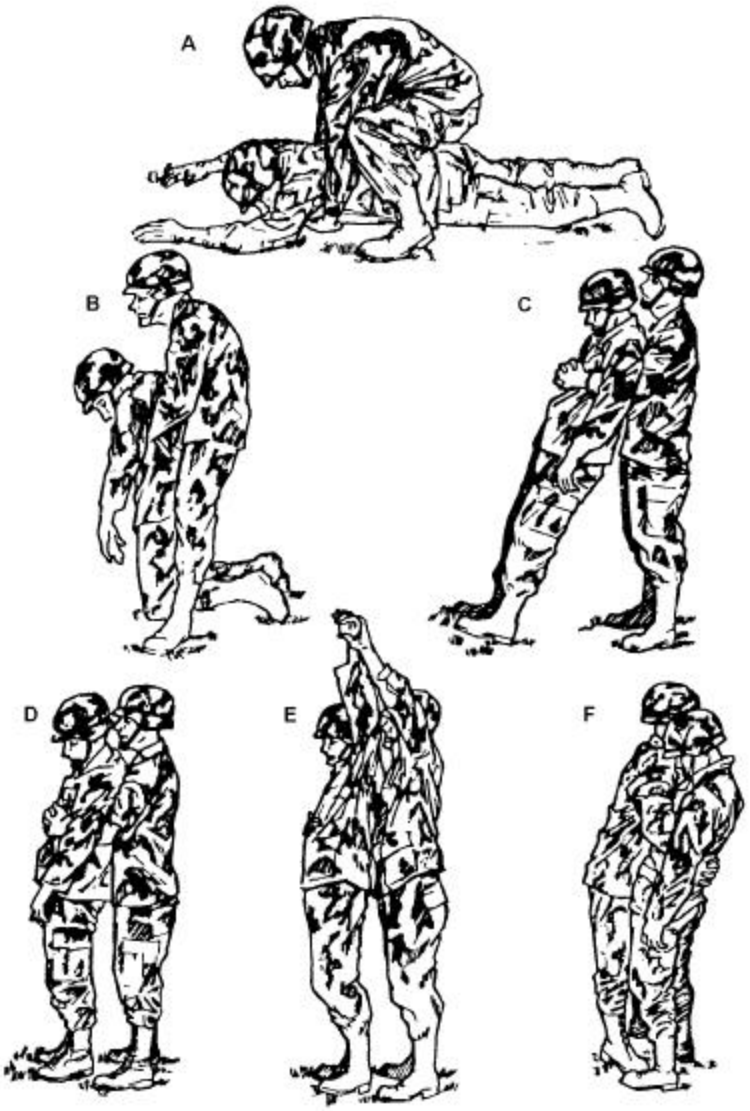


FIGURE 15-1. MOVING A CASUALTY TO HIS FEET (REGULAR METHOD)

Continue walking backward until his legs are straight and his knees are locked.

Walk forward and bring the casualty to a standing position. Keep the casualty tilted slightly backward so his knees will remain locked. If his knees do not remain locked, walk backward until they lock and then move forward until the casualty is in the standing position.

Grasp one of the casualty's wrists and raise his arm. Use your other arm to hold the casualty erect.

Move under the casualty's arm to his front, lower his arm, and hold the casualty around his waist.

Place your foot between the casualty's feet and spread his feet so his feet are about six to eight inches apart.

b. Alternate Method

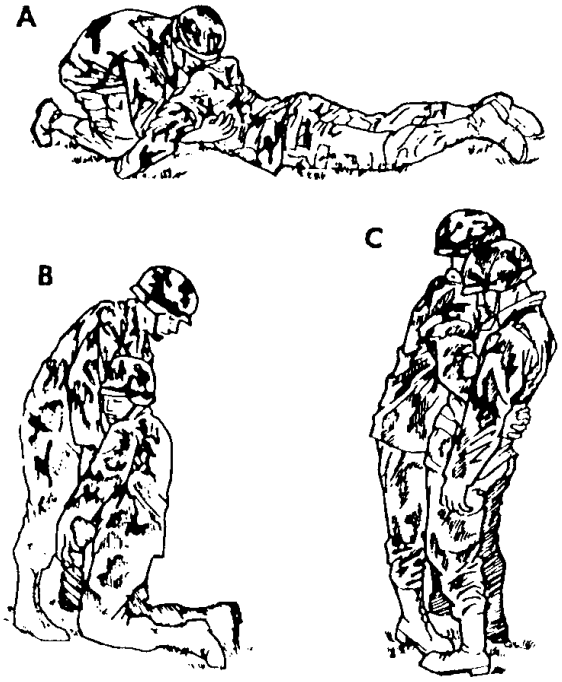


FIGURE 15-2. MOVING A CASUALTY TO HIS FEET (ALTERNATE METHOD)

Position the casualty in a prone position.

Kneel on one knee (or squat) at the casualty's head, facing his feet.

Put your hands under his armpits, down his sides, and across his back.

Rise, lifting the casualty to his knees.

CAUTION: Keep the casualty's head from snapping back.

Lower your arms, secure a hold on the casualty, and raise him to a standing position with his knees locked.

Put your arms around the casualty's waist and tilt his body slightly backward to keep his knees from buckling.

Place your foot between his feet and spread them so that his feet are six to eight inches apart.

15-6. PERFORM THE FIREMAN'S CARRY

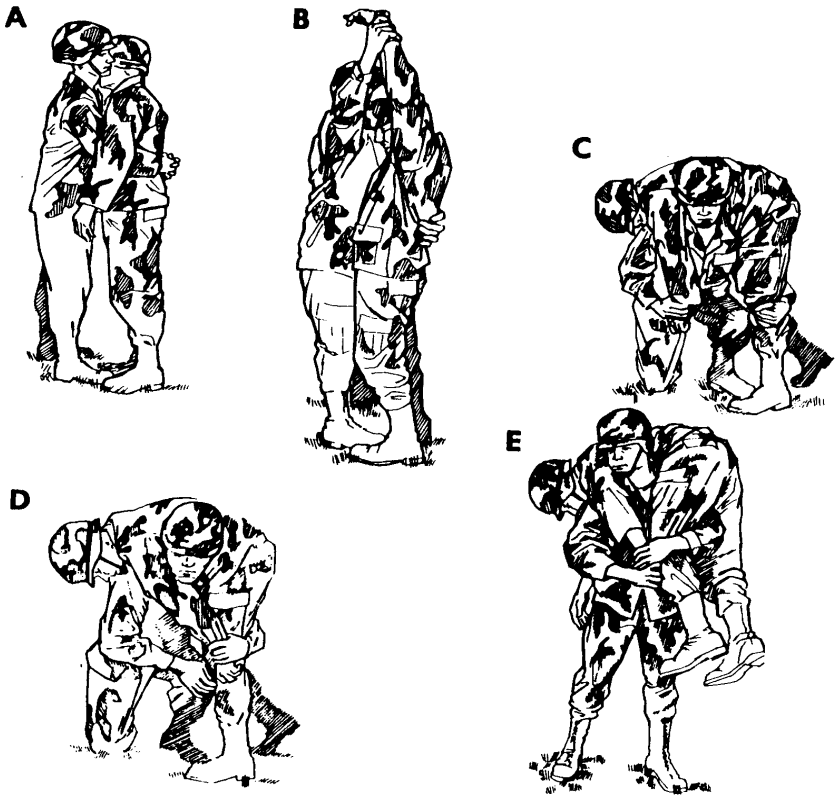


FIGURE 15-3. FIREMAN'S CARRY

Raise the casualty to a standing position.

Grasp the casualty's wrist and lift his arm over his head while continuing to support the casualty with your other arm.

CAUTION: If the casualty has an injured arm, grasp the wrist of the uninjured arm.

Bend at the waist and kneel, pulling the casualty over your shoulder. At the same time, slip your arm from his waist, pass the arm between the casualty's legs, and grasp behind the casualty's knee.

Move the hand grasping the casualty's wrist to the hand at the casualty's knee.

Grasp the casualty's wrist with the hand at the casualty's knee, freeing your other hand. Place your free hand on your knee and slowly rise to a standing position. Use the hand on your knee to help you rise without straining your back.

Adjust the casualty's body so his weight is distributed comfortably.

Move forward, carrying the casualty.

15-7. PERFORM THE SUPPORT CARRY

FIGURE 15-4. SUPPORT CARRY

Position the casualty in a sitting position.

Squat at the casualty's side so you are facing in the same direction as the casualty.

CAUTION: If the casualty has an injured leg, position yourself with the injured leg next to you.

Bring the casualty's near arm over your shoulder and grasp his wrist with your hand that is away from the casualty.

Put your near arm around the casualty's waist.

Stand up, helping the casualty to rise to a standing position.

[NOTE: You can also raise the casualty to a standing position using the steps given in paragraph 15-5.]

Assist the casualty to walk or hop on one leg. Adjust your walking motion as needed to help the casualty maintain his balance.

15-8. PERFORM THE ARMS CARRY

FIGURE 15-5. ARMS CARRY

Raise the casualty to a standing position.

Slide one of your arms under the casualty's arm, behind his back, and under his other arm.

Move to the casualty's side, bend down, and place your other arm behind the casualty's knees.

Lift the casualty from the ground and stand erect.

Carry the casualty high on your chest to lessen fatigue.

15-9. PERFORM THE SADDLEBACK CARRY

Raise casualty to a standing position. (Since the casualty is conscious, he may be able to rise with assistance.)

Grasp the casualty's wrist and lift his arm over his head while continuing to support the casualty with your other arm.

Turn so that your back is to his front and bring his arm over your shoulder. Support the casualty's waist with your other arm, if needed.

Have the casualty put his other arm around your neck. If possible, he should grasp one of his wrists with his other hand.

FIGURE 15-6. SADDLEBACK CARRY

Stoop and move your arms back and around the outside of the casualty's thighs.

Bring your hands around the back of his thighs; then bring them to the inside of his thighs. Continue to move your hands until they reach your sides and you have lifted the casualty's thighs.

Stand up and clasp your hands together in front of you.

Adjust the casualty's weight to make the weight distribution more comfortable and walk forward.

15-10. PERFORM THE PACK-STRAP CARRY

Raise the casualty to a standing position.

Grasp one of the casualty's wrists and lift his arm above his head while continuing to support the casualty's waist with your other arm.

Turn and bring the casualty's raised arm over your shoulder as you turn so your back is to the casualty's front. Bend your knees somewhat so your shoulder fits under his arm.

Release his waist, grasp his other wrist, and bring that arm over your other shoulder.

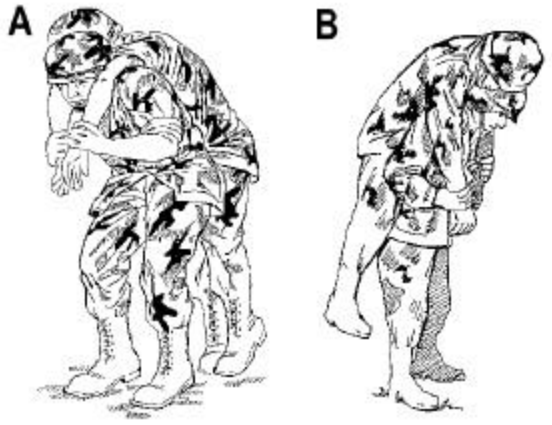


FIGURE 15-7. PACK-STRAP CARRY

CAUTION: Hold both wrists so his hands are in a palms down (palms toward your abdomen) position. Twisting the casualty's hands could result in injury to his wrists, elbows, or shoulders when he is lifted and carried.

Bend forward and hoist the casualty as high on your back as possible so his weight is resting on your back.
Walk forward, keeping bent so the casualty's weight is balanced on your back and his feet are not dragging.

15-11. PERFORM THE PISTOL-BELT CARRY

Form the sling by joining two fully-extended pistol belts together to form one large loop. If pistol belts are not available, use any material which will not break and which will not cut or bind the casualty (a rifle strap, two cravat bandages, etc.) to make the sling.

Position the casualty on his back.

Slip the sling under the casualty with the top part of the loop under his lower back, the bottom part under his thighs, the belt buckles centered behind the casualty, and a loop end extending from each side.

Move the casualty's legs apart and lie between them on your back. Thrust your arms through the loop ends. Adjust the sling so the loop ends fit over your shoulders.

Grasp the casualty's wrist and his trouser leg on his injured side.

Roll toward the casualty's uninjured side and onto your abdomen. (Both you and the casualty are now in a prone position.)

Release the casualty's wrist and leg and push yourself up until you are on your knees.

Rise to a kneeling position with your hands on your knees for support.

Rise to your feet. Lean forward to balance the casualty's weight.

Adjust the casualty's weight to a more comfortable position, if needed, and walk forward. Your hands are free to carry a rifle or other object, climb obstacles, etc.

If the casualty is unconscious and you do not have to carry anything in your hands, grasp his wrists (palms down) to help keep the casualty balanced while you are walking.

If the casualty is conscious, have him put his arms around your neck. Have him use one of his hands to grasp the wrist of the other hand.

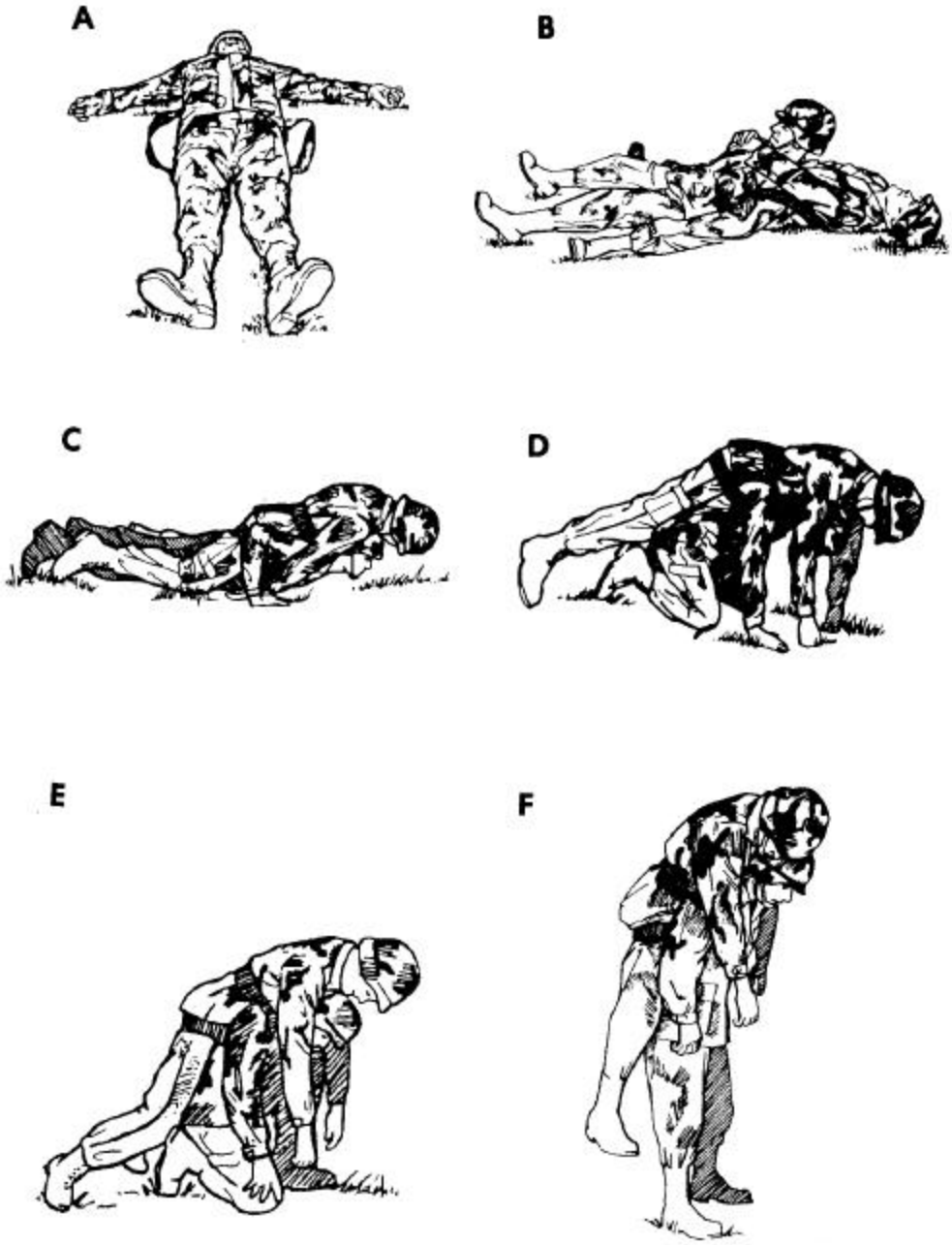


FIGURE 15-8. PISTOL-BELT CARRY

15-12. PERFORM THE PISTOL-BELT DRAG

Extend two pistol belts to their full length and join them together to make one large loop. Other materials, such as a rifle sling or two cravats, can be used if pistol belts are not available. In some cases, three pistol belts may be needed.

Position the casualty on his back.

Slip the bottom of the loop across the casualty's chest, under his armpits, and under his shoulders.

Twist the remainder of the loop to form a figure 8. The casualty is in the bottom part of the figure 8 and the top part is above his head. Adjust the loop so the buckles cross in the center of the figure 8.

Lie on your side facing the casualty with your head in the same direction as the casualty's head. Support yourself on your elbow.

Slip the arm on which you are resting through the top loop of the figure 8 and bring the loop over your shoulder (bottom shoulder).

Turn onto your abdomen. The pistol belts are now across your chest and the loop is over the shoulder farthest from the casualty.

Crawl, dragging the casualty with you.

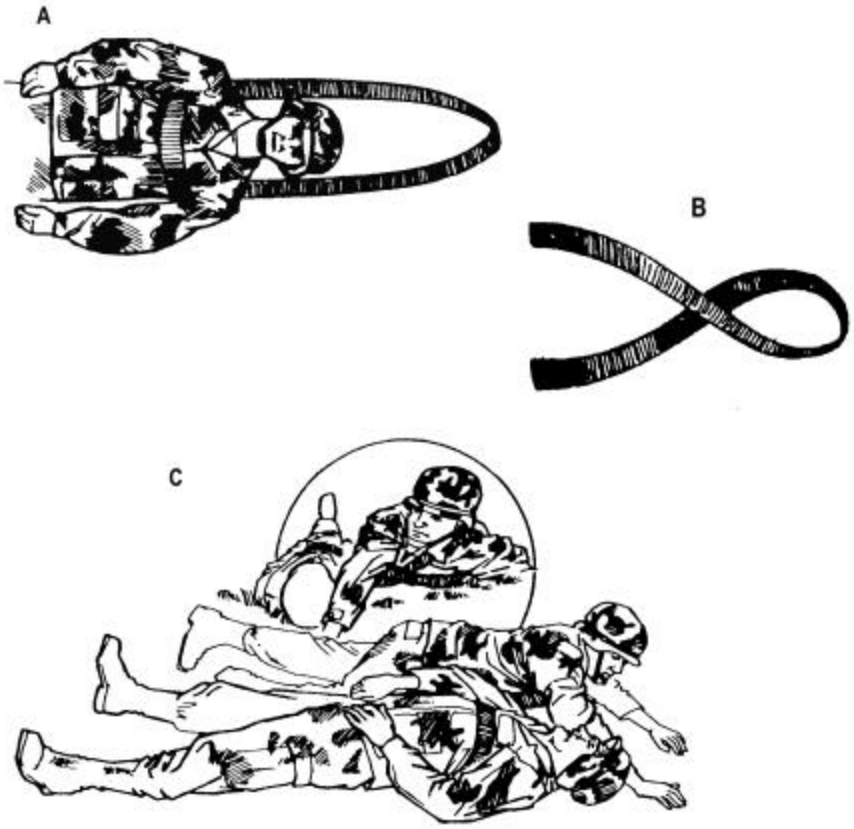


FIGURE 15-9. PISTOL-BELT DRAG

15-13. PERFORM THE NECK DRAG

FIGURE 15-10. NECK DRAG

Tie the casualty's hands together with material that will not cut his wrists, such as the casualty's field dressing or a cravat. Do not tie the materials tight enough to interfere with the blood circulation. If the casualty is conscious, have him interlock his fingers.

Face the casualty's head and straddle his hips on your knees.

Loop the casualty's arms around your neck.

Crawl forward on your hands and knees, dragging the casualty beneath.

> **CAUTION:** Keep the casualty's head from dragging on the ground.

15-14. PERFORM THE CRADLE DROP DRAG

Position the casualty on his back.

Kneel at the casualty's head.

Slide your hands (palms up) under his shoulders and grasp the clothing under his armpits.

Partially rise so the casualty is pulled to a semi-sitting position. If possible, bring your elbows together and use both forearms to support the head. If not, support his head on one of your arms.

Rise to a stooped position and walk backward, dragging the soldier.

> **CAUTION:** If you are going down steps, walk down them carefully going backward. Support the soldier's head and shoulders, letting his hips and legs drop from step to step.

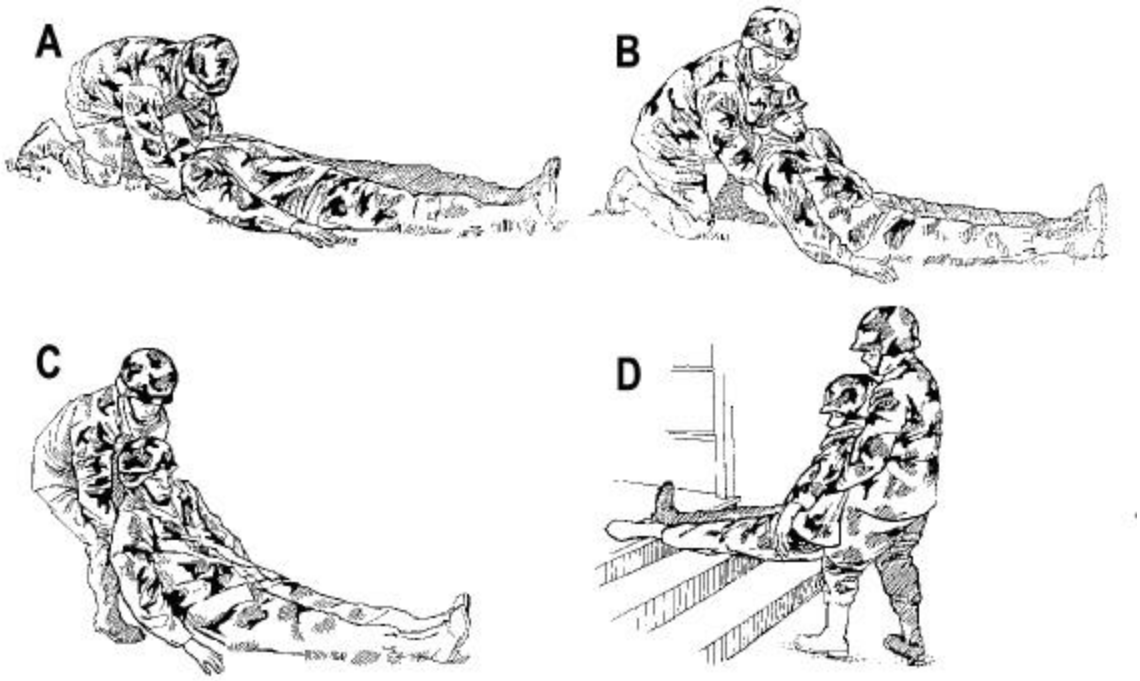


FIGURE 15-11. CRADLE DROP DRAG

SECTION III. TWO-MAN CARRIES

15-15. MOVE A CASUALTY USING THE TWO-MAN FORE-AND-AFT CARRY

Sometimes, a litter is not available and cannot be improvised. In such cases, manual carries are used to evacuate the injured soldier. A two-man manual carry is usually preferred over a one-man manual carry. The two-man fore-and-aft carry can be used to move a conscious or unconscious casualty. It is not as tiring as other carries; therefore, it is usually the preferred two-man carry for moving a casualty for a long distance.

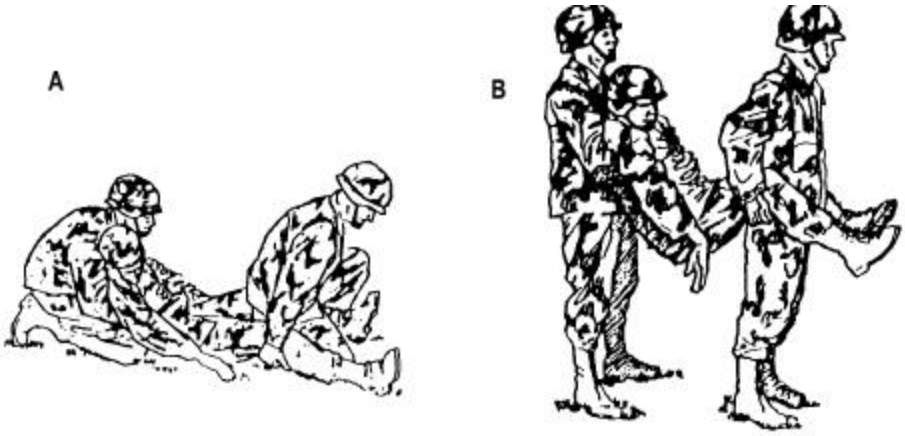


FIGURE 15-12. TWO-MAN FORE-AND-AFT-CARRY

Put the casualty on his back, arms by his sides.

The taller of the two bearers kneels at the casualty's head and faces toward the casualty's feet. He then slides his hands under the casualty's arms, across the casualty's chest, and locks his hands on the casualty's chest.

CAUTION: The taller bearer should always position himself at the casualty's head.

The second bearer spreads the casualty's legs apart and kneels between the casualty's legs with his back to the casualty's head. He then places his hands under the casualty's knees.

Both bearers rise together and lift the casualty.

Both bearers walk forward, carrying the casualty.

15-16. MOVE A CASUALTY USING THE TWO-MAN SUPPORT CARRY

The two-man support carry can be used to transport either a conscious or an unconscious casualty. It is especially useful if the casualty is conscious and needs assistance walking.

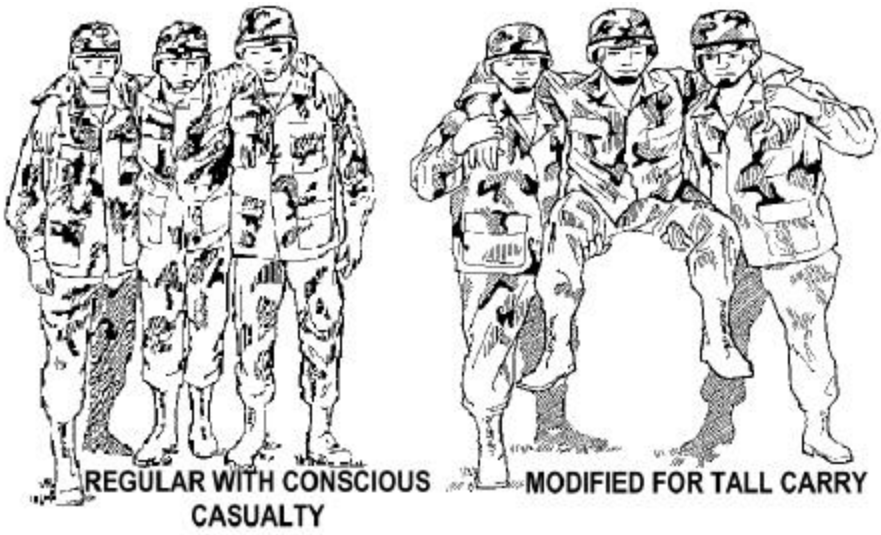


FIGURE 15-13. TWO-MAN SUPPORT CARRY

The bearers kneel on each side of the casualty and face the same direction as the casualty.

Each bearer takes the casualty's nearest arm, brings it around his neck, and grasps the casualty's wrist in his outside hand.

Each bearer puts his other arm (the arm that is nearest the casualty) around the casualty's waist.

Both bearers rise in unison, lifting the casualty. If the casualty is conscious, he can help the bearers lift his weight and may be able to walk with assistance. The arms around the casualty's waist should support most of the weight.

> **CAUTION:** If the casualty is unconscious, do not release his wrists.
>
> **CAUTION:** If the casualty is taller than the bearers, the bearers can remove their arms from around the casualty's waist and use them to lift and support the casualty's thighs. This will keep the casualty's feet from dragging.

15-17. MOVE A CASUALTY USING THE TWO-MAN ARMS CARRY

The two-man arms carry can be used to move a conscious or unconscious casualty for a moderate distance.

CAUTION: More than two bearers may be required if the casualty is heavy or if the casualty's head or legs need additional support. If a casualty with a back or neck injury has to be moved by manual carry, a four-man arms carry is used to keep the casualty's body in alignment. This carry was discussed in Lesson 10 paragraph 10-3 in this subcourse.

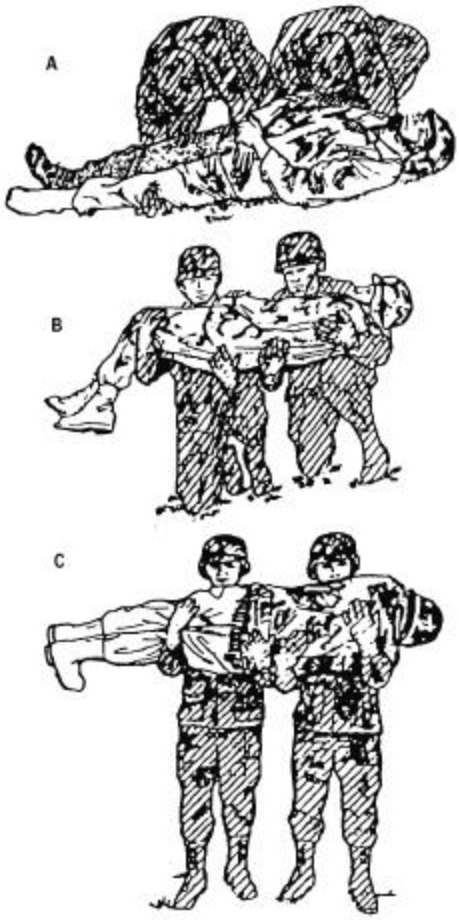


FIGURE 15-14. TWO-MAN ARMS CARRY

Position the casualty on his back and place his arms on his abdomen. If the casualty is unconscious, his hands may be loosely tied together at the wrists.

Both bearers position themselves on the same side of the casualty -- one at the casualty's chest and one at his thighs.

Both bearers kneel on one knee.

The bearer at the casualty's chest slips one arm beneath the shoulders and the other arm beneath his waist.

The bearer at the casualty's thighs slips one arm beneath the casualty's hips and the other arm beneath his knees.

Both bearers shift their weight backward in unison and lift the casualty to knee level, keeping the casualty as level as possible.

Both bearers turn the casualty's front toward to their chests.

Both bearers rise to their feet in unison.

Both bearers move forward, carrying the casualty high on their chest. (This lessens fatigue while transporting the casualty.)

15-18. MOVE A CASUALTY USING THE TWO-HAND SEAT CARRY

The two-hand seat carry can be used to move a conscious or unconscious casualty for a short distance. It can also be used to place a casualty onto a litter.

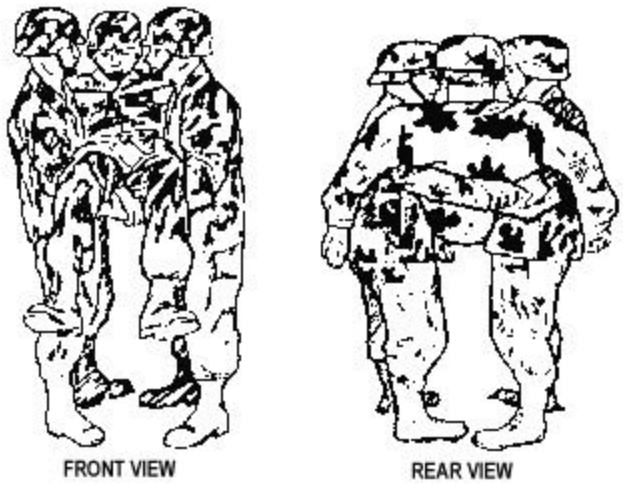


FIGURE 15-15. TWO-HAND SEAT CARRY

Position the casualty on his back.

The bearers position themselves on opposite sides of the casualty's hips, face each other, and kneel.

Each bearer passes one arm under the casualty's back and the other arm under the casualty's thigh.
The bearers grasp each other's wrists securely.

Both bearers rise in unison, lifting the casualty.

Both bearers move forward, carrying the casualty.

15-19. MOVE A CASUALTY USING THE FOUR-HAND SEAT CARRY

The four-hand seat carry is only used to carry a conscious casualty who can help support himself while he is being carried. This carry is especially useful in transporting a person with a head or foot injury for a moderate distance. It can also be used to place a casualty onto a litter.

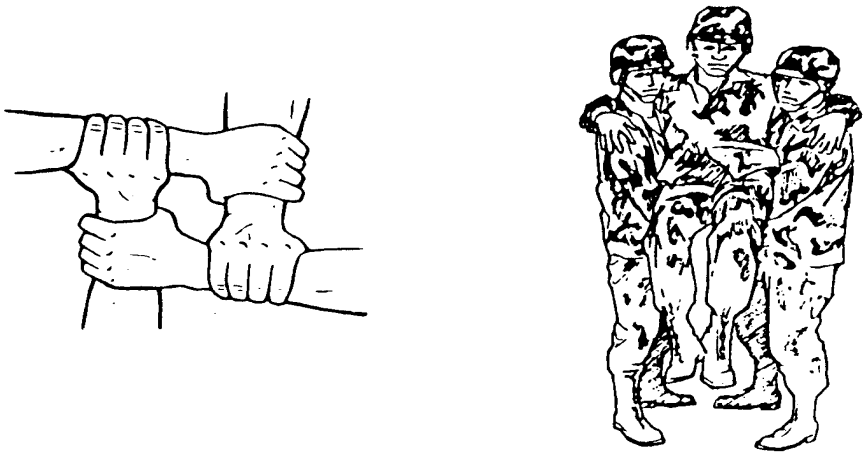


FIGURE 15-16. FOUR-HAND SEAT CARRY

Both bearers position themselves behind the casualty and face each other.

Each bearer grasps his own left wrist with his right hand and grasps the other bearer's right wrist with his left hand. This forms the seat for the casualty.

The casualty stands on his own or another soldier helps the casualty to a standing position.

Both bearers lower their bodies so the seat is low enough for the casualty to sit (about even with the casualty's knees).

The casualty sits on the bearers' forearms and places his arms around the bearers' shoulders for balance and support.

Both bearers stand erect in unison, lifting the casualty.

Both bearers move forward.

SECTION IV. LITTERS

15-20. MAKE AN IMPROVISED POLE AND PONCHO LITTER

An improvised litter can be made using two tent poles and a poncho. Variations of this litter include using straight tree limbs or similar rigid objects for the poles. When the casualty is placed on the litter, his weight will hold the litter together.

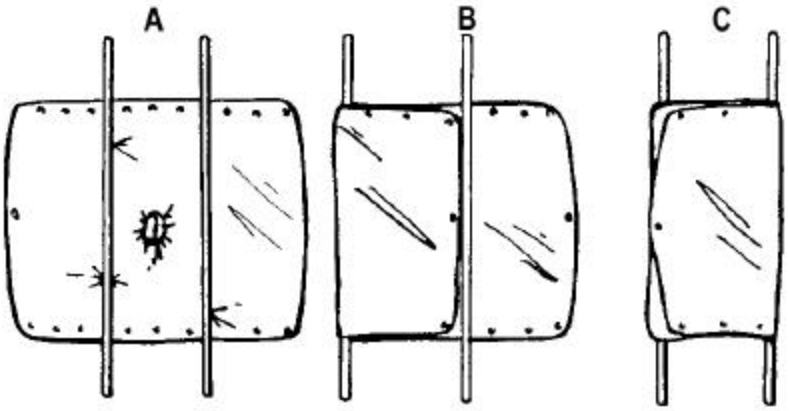


FIGURE 15-17. CONSTRUCTING AN IMPROVISED POLE AND PONCHO LITTER

Open the poncho and lay it flat on the ground.

Lay two poles across the poncho so the poncho is divided into thirds.

Reach in and pull the hood toward you and lay it flat on the poncho. Make sure the drawstrings are not hanging out of the hole. (The hood and drawstrings could catch on brush or other obstacles if left hanging.)

Fold one outer third of the poncho over the pole.

Fold the other outer third of the poncho over its pole.

15-21. MAKE AN IMPROVISED POLE AND JACKET LITTER

An improvised litter can be made using two tent poles and two or three field jackets. Tree limbs or other straight, rigid objects can be used instead of the poles. Heavy shirts or other jackets can be used instead of field jackets.

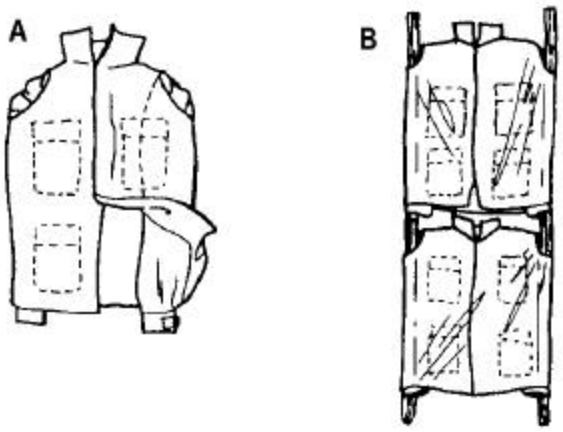


FIGURE 15-18. POLE AND JACKET IMPROVISED LITTER

Close (zip or button) the jackets (or other garments).

Turn the garments inside out, but leave the sleeves inside. Turning the garments inside out puts buttons and zippers on the inside. This keeps the casualty from lying on buttons or zippers (if on top) and keeps them from getting snagged on bushes or other obstacles (if on bottom).

Pass the poles through the sleeves.

15-22. MAKE AN IMPROVISED POLE AND SACK LITTER

An improvised litter can be made using two tent poles or similar rigid objects and two empty heavy fabric sacks, such as potato sacks.
Cut holes in the two corners of the closed end of each sack.

Place the sacks lengthwise so the open ends of the sacks are facing each other.

Slide the poles or limbs through the holes.

Overlap the open ends of the sacks about three inches to provide extra strength in the middle of the litter.

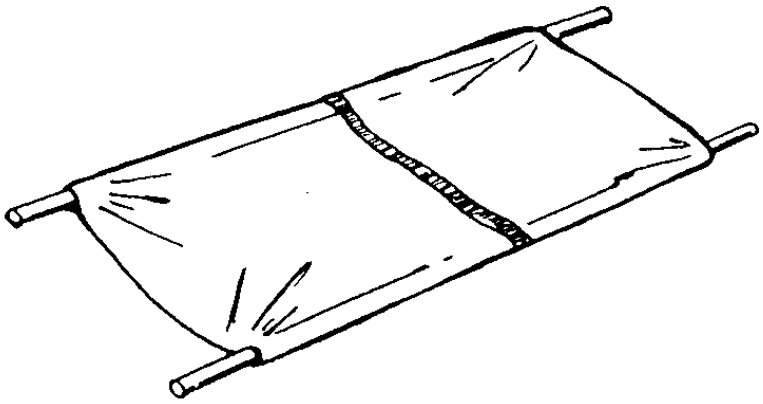


FIGURE 15-19. POLE AND SACK IMPROVISED LITTER

15-23. MAKE AN IMPROVISED BLANKET LITTER

An improvised litter can be made using only a blanket or other material. The blanket is laid on the ground and two opposite edges of the blanket are rolled toward the middle. When the casualty is placed on the blanket, the rolled edges of the blanket are used as grips. Four or more litter bearers should be used when transporting a casualty using the blanket litter.

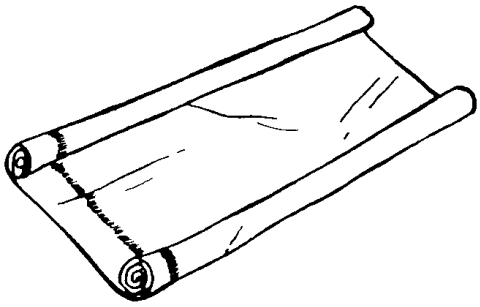


FIGURE 15-20. BLANKET LITTER

15-24. EVACUATE A CASUALTY BY LITTER

Use care when placing the casualty on the litter to avoid causing additional injury to the casualty. A modified two-man manual carry (usually a modified two-man arms carry or a modified two-man fore-and-aft carry) is used to place the casualty onto the litter. Normally, four soldiers are used to transport the litter. The litter team, however, can be composed of

more or fewer members based upon the military situation and the distance and terrain to be covered.

NOTE: The litter carry is the preferred manual carry for transporting a casualty.

a. General Rules

Explain the Procedure to the Casualty. If the casualty is conscious, tell him what you are going to do. The explanation will help to calm his fears and will help you to get his cooperation.

Walk Around the Casualty. Walk around the casualty rather than stepping over him. If you step over the casualty, he may flinch or tighten his muscles and aggravate his injuries. In addition, mud or other debris from your boots may fall into his eyes or wound.

Perform Necessary Measures Before Transporting. Make sure the casualty is breathing properly, that open wounds have been dressed and bandaged, and that fractures have been splinted before transporting the casualty (unless the casualty is being moved away from a life-threatening danger).

Have One Person in Charge. One person must give the instructions to the remainder of the team so actions will be performed in unison.

b. Position Litter

Position the casualty on his back with his arms at his sides. Place the litter (standard or improvised) near and parallel to the casualty.

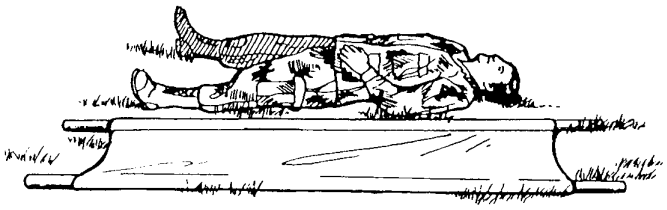


FIGURE 15-21. LITTER PLACED PARALLELTO CASUALTY

c. Place Casualty Onto Litter

Modified Two-Man Arms Carry.

Two litter bearers position themselves on the same side of the casualty (opposite side from litter) and kneel on one knee.

Bearer #1 slips his arms under the casualty's back and waist.

Bearer #2 slips his hands under the casualty's hips and knees.

Both bearers lift in unison upon command from the leader.

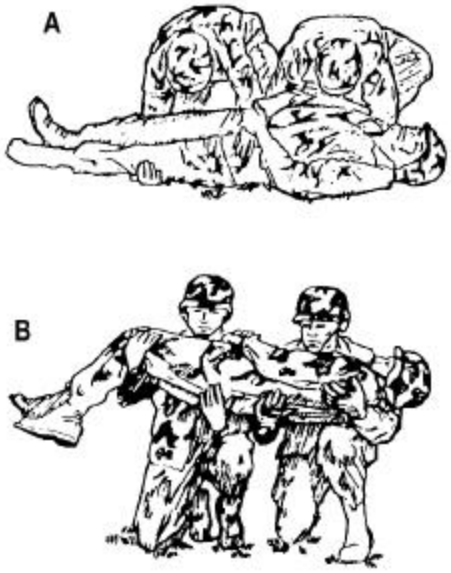


FIGURE 15-22. LIFTING A CASUALTY USING THE MODIFIED TWO-MAN ARMS CARRY

The bearers move the casualty over the litter or have another soldier push the litter under the casualty.

The bearers lower the casualty onto the litter in unison upon the leader's command.

Modified Two-Man Fore-and-Aft Carry.

FIGURE 15-23. LIFTING A CASUALTY USING THE MODIFIED TWO-MAN FORE-AND-AFT CARRY

Bearer #1 kneels behind the casualty's head, slips his arms under the casualty's arms and across the casualty's chest, and locks his hands together. If the two bearers are different in height, the taller should be Bearer #1.

Bearer #2 spreads the casualty's legs apart and squats or kneels between the casualty's legs while facing Bearer #1.

Both bearers rise in unison upon the leader's command.

The bearers move the casualty over the litter.

Both bearers lower the casualty onto the litter in unison upon the leader's command.

d. Lift Litter

If there are four litter bearers, each bearer positions himself at one of the handles, faces so that the casualty will be carried feet first (assuming the casualty will be carried feet first), and kneels on the knee nearest the litter. The leader of the litter team should position himself at the handle nearest the casualty's right shoulder and direct the other bearers. This position allows the leader to monitor the casualty during the evacuation.

Upon command of the leader, the four litter bearers lift the litter in unison and move the casualty to the aid station or collection point.

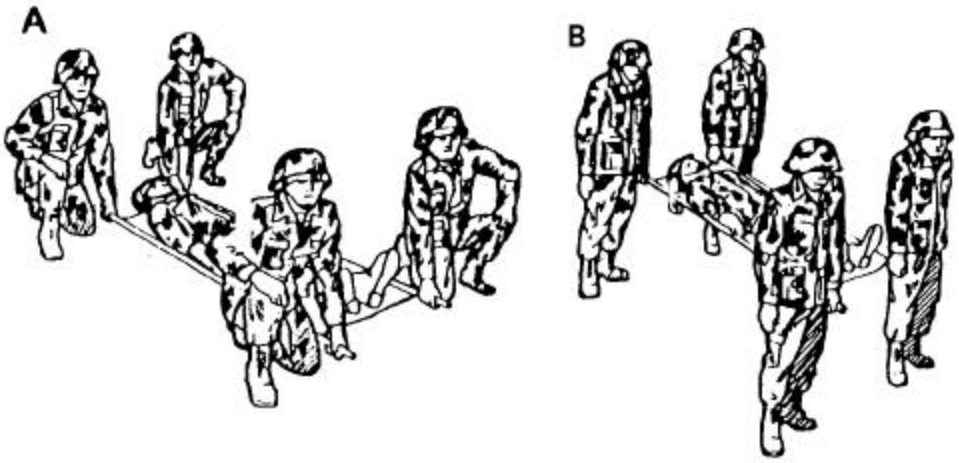


FIGURE 15-24. LIFTING A LITTER

If one or more individuals are available to help, practice performing one-man manual carries described in this lesson, especially the fireman's carry and the pistol-belt carry. (You will need two pistol belts or other material to make a loop for the pistol-belt carry and pistol-belt drag.) Check your performance against the performance checklists and the lesson materials.

If one or more individuals are available to help, practice performing two-man manual carries. Check your performance against the performance checklist.

If possible, practice making improvised litters. Check your performance against the performance checklist.

If one or more individuals are available to help, practice placing the casualty onto the improvised litter, lifting the litter, and carrying the litter. Check your performance against the performance checklist.

Continue with Exercises

Return to Table of Contents

PRACTICE EXERCISES: LESSON 15

INSTRUCTIONS: Answer the exercises by circling the letter of the response that best answers the question or best completes the sentence or by writing the required term in the blank provided. After you have answered all of the exercises, check your answers against the "Practice Exercises Solutions". For each exercise answered incorrectly, reread the lesson material referenced.

1. Of the following one-man carries, which one is usually preferred for quickly moving an unconscious or disabled casualty for a moderate distance?

   a. Arms carry.
   b. Fireman's carry.
   c. Saddleback carry.
   d. Support carry.

2. List the one-man carries that are not used with an unconscious casualty.

   _____ _____

3. What one-man carry is normally used when you need to move an unconscious casualty down a flight of stairs?

   _____

4. You must move an unconscious soldier for a short distance. You need to keep both the soldier and yourself as close to the ground as possible in order to keep from being seen by the enemy. Which of the following carries/drags should you use?

   a. Fireman's carry.
   b. Four-hand seat carry.
   c. Neck drag.
   d. Pistol-belt drag.

5. You must carry a casualty for a long distance. Also, you want to have your hands free to climb a steep embankment. What carry should you use?

   a. Arms carry.
   b. Pack-strap carry.
   c. Pistol-belt carry.
   d. Saddleback carry.

6. You want to move a heat stroke casualty to a shady area a few feet away. Which one of the following carries/drags would you use?

a. Cradle drop drag.
b. Neck drag.
c. Pistol-belt carry.
d. Saddleback carry.

7. A casualty is lying on his back. He has a dressed wound on his left side. In order to turn him onto his abdomen, you should:

a. Kneel at his left side, grab his far shoulder and hip, and pull so the casualty rolls onto his front.
b. Kneel at his left side, grab his near shoulder and hip, and push so the casualty rolls onto his front.
c. Kneel at his right side, grab his near shoulder and hip, and push so the casualty rolls onto his front.
d. Kneel at his right side, grab his far shoulder and hip, and pull so the casualty rolls onto his front.

8. When using the pack-strap carry, position the casualty's hands with the:

a. Palms up.
b. Palms down.
c. Palms facing each other.
d. Backs of the hands facing each other.

SPECIAL INSTRUCTIONS FOR EXERCISES 9 THROUGH 16: Match the one-man carries listed below with the correct illustration on the following page. Write the letter of the illustration in the blank next to the name of the manual carry.

9. ____ Fireman's carry.

10. ____ Support carry.

11. ____ Arms carry.

12. ____ Saddleback carry.

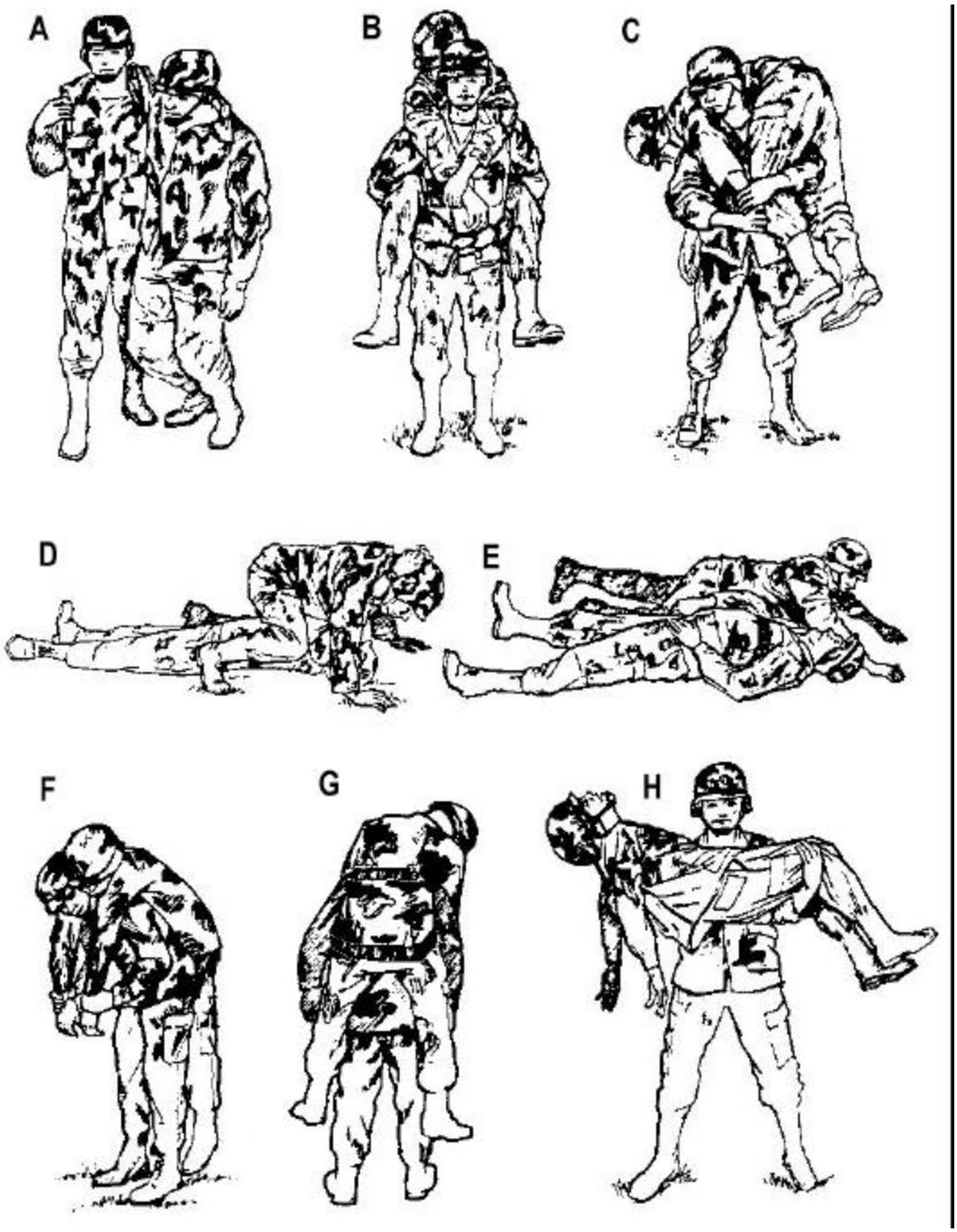
13. ____ Pack-strap carry.

14. ____ Pistol-belt carry.

15. ____ Pistol-belt drag.

16. ____ Neck drag

ILLUSTRATIONS FOR EXERCISES 9 THROUGH 16.



17. You and another soldier are going to evacuate a casualty using the two-man fore-and-aft carry. The other soldier is several inches taller than you. Will the height difference affect the carry?

a. Yes, you should support the casualty's arms.
b. Yes, you should support the casualty's legs.
c. No.

18. You are going to move a casualty using the two-man support carry. The casualty is unconscious and is taller than you and the other bearer. How will this affect the way you perform the carry?

a. You will hold on to the wrist of the casualty's arm that is around your neck.
b. You will remove your arm from around the casualty's waist and use it to lift and support the casualty's thigh.
c. You will tie the casualty's hands together.
d. You will perform a and b above.
e. You will perform a, b, and c above.

19. Which two-man carry is only used with a conscious casualty?

_____

SPECIAL INSTRUCTIONS FOR EXERCISES 20 THROUGH 24. : Match the two-man carries listed below with the correct illustration on the following page. Write the letter of the illustration in the blank next to the name of the manual carry.

20. ____ Two-man fore-and-aft carry.

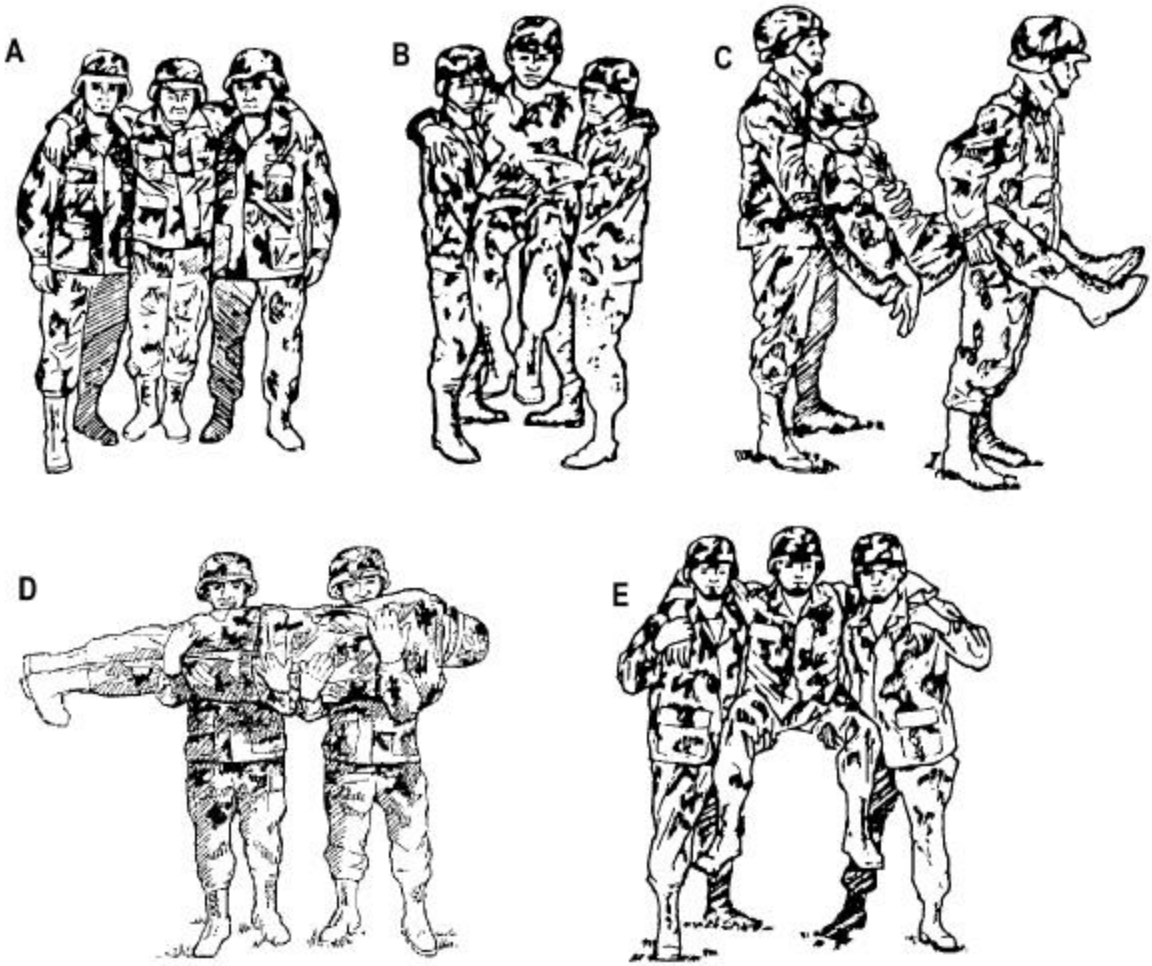
21. ____ Two-man support carry, regular.

22. ____ Two-man support carry, tall casualty.

23. ____ Two-man arms carry.

24. ____ Four-hand seat carry.

ILLUSTRATIONS FOR EXERCISES 20 THROUGH 24.



25. A soldier says, "All improvised litters require two rigid objects, such as tent poles or tree limbs." Is he correct?

a. Yes.
b. No.

26. Of the following, which is usually the preferred method of transporting an injured soldier?

a. Litter.
b. One-man carry.
c. Two-man carry.

27. When preparing field jackets for a pole and jacket improvised litter, you should close each jacket and turn it inside out with:

a. The sleeves on the outside of the jacket.
b. One sleeve outside and one sleeve inside the jacket.
c. The sleeves inside the jacket.

28. You are constructing a pole and sack improvised litter. You have cut the corners of the closed ends of the sacks. How should the sacks be positioned on the pole?

a. Both open ends should be toward the casualty's head.
b. The closed ends of the sacks should be together.
c. The open ends of the sacks should be together.
d. Both closed ends should be toward the casualty's head.

29. You and three other litter bearers are going to evacuate a casualty. You are going to direct the other bearers. Where should you position yourself?

_____

Check Your Answers on Next Page

IS0824 LESSON 15 Practice Exercise Solutions

One-Man Carries

1. b (para 15-3a)

2. Support carry; Saddleback carry.
(paras 15-3b,d)

3. Cradle drop drag. (para 15-3i)

4. d (para 15-3f)

5. c (para 15-3f)

6. a (para 15-3i)

7. d (para 15-4)

8. b (para 15-10)

9. c (para 15-6)

10. a (para 15-7)

11. H (para 15-8)

12. B (para 15-9)

13. F (para 15-10)

14. G (para 15-11)

15. E (para 15-12)

16. D (para 15-13)

Two-Man and litter carries.

17. b (para 15-15)

18. d (para 15-16)

19. Four-hand seat carry. (para 15-19)

20. C (para 15-15)

21. A (para 15-16)

22. E (para 15-16)

23. D (para 15-17)

24. B (para 15-19)

Litter Carries

25. b (paras 15-20, 15-21, 15-22, 15-23)

26. a (para 15-20)

27. c (para 15-21)

28. c (para 15-22)

29. Near the casualty's right shoulder.(para 15-24d)

Performance Checklists

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PERFORMANCE CHECKLIST
TRANSPORT A CASUALTY USING ONE-MAN FIREMAN'S CARRY

Situation: You have decided to evacuate a casualty using the fireman's carry. The casualty is lying on his back. His left side is injured. Raise the casualty using the regular method.

	GO	NO GO
Kneels at casualty's right side.	_____	_____
Places casualty's arms above his head.	_____	_____
Grasps casualty's far shoulder and far hip/thigh.	_____	_____
Rolls casualty onto his stomach as a unit.	_____	_____
Straddles the casualty, facing casualty's head.	_____	_____
Puts his hands under the casualty's chest and locks his hands.	_____	_____
Raises casualty to knees by walking backward.	_____	_____
Continues to move backward until casualty's knees lock.	_____	_____
Walks forward until casualty is in standing position.	_____	_____
Lifts casualty's arm and moves under the arm to stand facing the casualty while still supporting casualty.	_____	_____
Places arms around casualty's waist, places one foot between casualty's feet,and spreads the feet so they are 6 to 8 inches apart.	_____	_____
Grasps casualty's wrist, raises casualty's arm, stoops, and pulls casualty across shoulders.	_____	_____
Places his free arm between casualty's legs, brings hand around leg, and grasps the casualty's wrist.	_____	_____
Rises to standing position with casualty supported across shoulders and one hand free to carry weapon.	_____	_____
Walks forward without falling or dropping casualty.	_____	_____
OVERALL EVALUATION (A no-go on any step gives an overall evaluation of no-go.)	GO _____	NOGO _____

PERFORMANCE CHECKLIST

TRANSPORT A CASUALTY USING THE ONE-MAN PISTOL-BELT CARRY

Situation: You have decided to evacuate a casualty using the pistol-belt carry. The casualty is unconscious and lying on his back. His left side is injured.

	GO	NO GO
Forms a sling by joining two fully extended pistol belts together to form one large loop.	_____	_____
Slips the sling under the casualty so the top part of the loop is under his lower back, the bottom part of the loop is under his thighs, the belt buckles are centered behind the casualty, and a loop end extends from each side.	_____	_____
Lies between the casualty's legs on his back.	_____	_____
Thrusts arms through the loop ends and slips them over his shoulders.	_____	_____
Grasps the casualty's wrist and his trouser leg on his left (injured) side.	_____	_____
Rolls toward the casualty's right (uninjured) side and onto his abdomen so both are in a prone position.	_____	_____
Releases the casualty's wrist and leg and pushes himself up until he is on his knees.	_____	_____
Rises to a kneeling position, places hands on knees, and rises to his feet.	_____	_____
Balances the casualty's weight and adjusts the casualty to a more comfortable position, if needed.	_____	_____
Grasps casualty's wrists (palms down) to help balance him while walking or grasps a rifle in his hands.	_____	_____
Walks forward without falling or dropping casualty.	_____	_____
OVERALL EVALUATION (A no-go on any step gives an overall evaluation of no-go.)	GO _____	NO GO _____

PERFORMANCE CHECKLIST

TRANSPORT A CASUALTY USING A TWO-MAN MANUAL CARRY

Situation: You need to evacuate a casualty. Another soldier is available to act as your assistant, but you must instruct him in providing assistance. Move the casualty using two-man manual carries.

	GO	NO GO
Question: Which of the two-man carries is/are used only if the casualty is conscious?	_____	_____

Answer: _____
_____

TWO-MAN FORE-AND-AFT CARRY

Positions casualty on his back with arms by his sides.	_____	_____
Taller bearer kneels at the casualty's head, slides hands under the casualty's arms, and locks his hands together over the casualty's chest.	_____	_____
Other bearer kneels between the casualty's legs with his back to the other bearer and places his hands under the casualty's knees.	_____	_____
Bearers rise in unison, lifting the casualty without dropping him.	_____	_____

TWO-MAN SUPPORT CARRY

Bearers kneel on each side of casualty facing the same direction.	_____	_____
Each bearer takes casualty's nearest arm, brings it around his neck, and grasps the casualty's wrist with his outside hand.	_____	_____
Each bearer puts his arm that is nearest the casualty around the casualty's waist.	_____	_____
Both bearers rise in unison, lifting the casualty without dropping him.	_____	_____

	GO	NO GO
If the casualty is taller than the bearers, bearers remove their arms from around the casualty's waist and use them to lift the casualty's thighs so his feet will not drag.	_____	_____

TWO-MAN ARMS CARRY

Positions casualty on his back with arms on his abdomen.	_____	_____
Bearers kneel on one knee on the same side of the casualty at the casualty's chest and thighs.	_____	_____
Bearers slide their arms under the casualty. One bearer supports casualty's shoulders and waist; the other bearer supports casualty's hips and knees.	_____	_____
Bearers lift the casualty to knee level in unison and turn the casualty's front to their chests.	_____	_____
Bearers rise to their feet in unison without dropping the casualty.	_____	_____

TWO-HAND SEAT CARRY

Positions the casualty on his back.	_____	_____
Bearers kneel on opposite sides at casualty's hips.	_____	_____
Bearers slip arms under the casualty's back and thigh, then grasp each other's wrists securely.	_____	_____
Bearers rise to their feet in unison without dropping the casualty.	_____	_____

FOUR-HAND SEAT CARRY

Bearers behind the casualty and facing each other.	_____	_____
Each bearer grasps his own wrist with his right hand and grasps the other bearer's wrist with his other hand.	_____	_____
Bearers lower their bodies until the seat is about even with the casualty's knees and instructs casualty to sit on their forearms and put his arms around their shoulders.	_____	_____

Bearers stand erect in unison, lifting the casualty without dropping the casualty.	_____	_____

OVERALL EVALUATION (A no-go on any step gives an overall evaluation of no-go.)	GO _____	NO GO _____

PERFORMANCE CHECKLIST

CONSTRUCT AN IMPROVISED LITTER

Situation: You need to evacuate a casualty. You have the time and materials to construct an improvised litter. Construct an improvised litter from the materials provided.

	GO	NO GO
POLE AND PONCHO LITTER		
Opens the poncho so it is flat on the ground.	_____	_____
Lays two poles lengthwise across the poncho, dividing the poncho into thirds.	_____	_____
Makes sure the hood and drawstrings will not catch on objects.	_____	_____
Folds one outer third of the poncho over its pole, then folds the other outer third of the poncho over its pole.	_____	_____
POLE AND JACKET LITTER		
Closes two or more jackets (shirts).	_____	_____
Turns garments inside out leaving sleeves inside.	_____	_____
Lays jackets on ground in proper alignment.	_____	_____
Passes pole through the sleeves on each side.	_____	_____
POLE AND SACK LITTER		
Cuts holes in both corners of the closed end of two sacks.	_____	_____
Places the sacks lengthwise so the open ends of the sacks are facing each other.	_____	_____
Slides two poles through the holes.	_____	_____
Overlaps open ends of the sacks about 3 inches.	_____	_____
OVERALL EVALUATION	GO	NO GO
(A no-go on any step gives an overall evaluation of no-go.)	_____	_____

PERFORMANCE CHECKLIST

PLACE A CASUALTY ON A LITTER AND TRANSPORT THE CASUALTY

Situation: You need to evacuate a casualty. You have a litter (standard or improvised) and an assistant, but you must instruct him in providing assistance.. Use a modified manual carry to place the casualty on the litter and move the casualty.

	GO	NO GO
Positions the litter parallel to the casualty.	_____	_____
Modified Two-Man Arms Carry		
Kneels on one knee at the side of the casualty opposite from the litter and has the assistant kneel at his side.	_____	_____
Supports the casualty's back, waist, hips, and knees with help from his assistant.	_____	_____
Lifts casualty, moves the casualty over the litter, and lowers the casualty onto the litter with all movements performed in unison with the assistant.	_____	_____
Modified Two-Man Fore-and-Aft Carry		
Kneels behind the casualty's head and slips his arms under the casualty's arms and has the assistant face him, squat or kneel between the casualty's legs, and grasp under casualty's knees. (Student can switch with assistant.)	_____	_____
Lifts casualty, moves the casualty over the litter, and lowers the casualty onto the litter with all movements performed in unison with the assistant.	_____	_____
Lifts litter in unison with assistant.	_____	_____
Casualty does not fall from litter.	_____	_____
OVERALL EVALUATION	GO	NO GO
(A no-go on any step gives an overall evaluation of no-go.)	_____	_____

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