

## CHAPTER 3

# FIRST AID FOR SPECIAL WOUNDS

### INTRODUCTION

★ Basic lifesaving steps are discussed in Chapters 1 and 2: *clear the airway/restore breathing, stop the bleeding, protect the wound, and treat/prevent shock*. They apply to first aid measures for all injuries. Certain types of wounds and burns will require special precautions and procedures when applying these measures. This chapter discusses first aid procedures for special wounds of the head, face, and neck; chest and stomach wounds; and burns. It also discusses the techniques for applying dressings and bandages to specific parts of the body.

#### Section I. GIVE PROPER FIRST AID FOR HEAD INJURIES

##### 3-1. Head Injuries

A head injury may consist of one or a combination of the following conditions: a concussion, a cut or bruise of the scalp, or a fracture of the skull with injury to the brain and the blood vessels of the scalp. The damage can range from a minor cut on the scalp to a severe brain injury which rapidly causes death. Most head injuries lie somewhere between the two extremes. Usually, serious skull fractures and brain injuries occur together; however, it is possible to receive a serious brain injury without a skull fracture. The brain is a very delicate organ; when it is injured, the casualty may vomit, become sleepy, suffer paralysis, or lose consciousness and slip into a coma. All severe head injuries are potentially life-threatening. For recovery and return to normal function, casualties require proper first aid as a vital first step.

##### 3-2. Signs/Symptoms (081-831-1000)

A head injury may be *open* or *closed*. In open injuries, there is a visible wound and, at times, the brain may actually be seen. In closed injuries, no visible injury is seen, but the casualty may experience the same signs and symptoms. Either closed or open head injuries can be life-threatening if the injury has been severe enough; thus, if you suspect a head injury, evaluate the casualty for the following:

- Current or recent unconsciousness (loss of consciousness).
- Nausea or vomiting.

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- Convulsions or twitches (involuntary jerking and shaking).
- Slurred speech.
- Confusion.
- Sleepiness (drowsiness).
- Loss of memory (does casualty know his own name, where he is, and so forth).
- Clear or bloody fluid leaking from nose or ears.
- Staggering in walking.
- Dizziness.
- A change in pulse rate.
- Breathing problems.
- Eye (vision) problems, such as unequal pupils.
- Paralysis.
- Headache.
- Black eyes.
- Bleeding from scalp/head area.
- Deformity of the head.

### 3-3. General First Aid Measures (081-831-1000)

*a. General Considerations.* The casualty with a head injury (or suspected head injury) should be continually monitored for the development of conditions which *may require* the performance of the necessary basic lifesaving measures, therefore be prepared to—

- Clear the airway (and be prepared to perform the basic lifesaving measures).

- Treat as a suspected neck/spinal injury until proven otherwise. (See Chapter 4 for more information.)

- Place a dressing over the wounded area. DO NOT attempt to clean the wound.

- Seek medical aid.

- Keep the casualty warm.

- DO NOT attempt to remove a protruding object from the head.

- DO NOT give the casualty anything to eat or drink.

*b. Care of the Unconscious Casualty.* If a casualty is unconscious as the result of a head injury, he is not able to defend himself. He may lose his sensitivity to pain or ability to cough up blood or mucus that may be plugging his airway. An unconscious casualty must be evaluated for breathing difficulties, uncontrollable bleeding, and spinal injury.

(1) *Breathing.* The brain requires a constant supply of oxygen. A bluish (or in an individual with dark skin—grayish) color of skin around the lips and nail beds indicates that the casualty is not receiving enough air (oxygen). Immediate action must be taken to clear the airway, to position the casualty on his side, or to give artificial respiration. *Be prepared* to give artificial respiration if breathing should stop.

(2) *Bleeding.* Bleeding from a head injury usually comes from blood vessels within the scalp. Bleeding can also develop inside the skull or within the brain. In most instances bleeding from the head can be controlled by proper application of the field first aid dressing.

#### CAUTION (081-831-1033)

DO NOT attempt to put unnecessary pressure on the wound or attempt to push any/brain matter back into the head (skull). DO NOT apply a pressure dressing.

(3) *Spinal injury.* A person that has an injury above the collar bone or a head injury resulting in an unconscious state should be suspected of having a neck or head injury *with spinal cord damage*. Spinal cord injury may be indicated by a lack of responses to stimuli, stomach distention (enlargement), or penile erection.

(a) *Lack of responses to stimuli.* Starting with the feet, use a sharp pointed object—a sharp stick or something similar, and prick the casualty lightly while observing his face. If the casualty blinks or frowns, this indicates that he has feeling and may not have an injury to the spinal cord. If you observe *no response* in the casualty's reflexes after pricking upwards toward the chest region, you must use extreme caution and treat the casualty for an *injured spinal cord*.

(b) *Stomach distention (enlargement).* Observe the casualty's chest and stomach. If the stomach is distended (enlarged) when the casualty takes a breath and the chest moves slightly, the casualty may have a spinal injury and must be treated accordingly.

(c) *Penile erection.* A male casualty may have a penile erection, an indication of a spinal injury.

### CAUTION

Remember to suspect any casualty who has a *severe head injury* or who *is/unconscious* as possibly having a *broken neck or a spinal cord injury!* It is better to treat conservatively and assume that the neck/spinal cord is injured rather than to chance further injuring the casualty. Consider this when you position the casualty. See Chapter 4, paragraph 4-9 for treatment procedures of spinal column injuries.

c. *Concussion.* If an individual receives a heavy blow to the head or face, he may suffer a brain concussion, which is an injury to the brain that involves a temporary *loss of some or all* of the brain's ability to function. For example, the casualty may not breathe properly for a short period of time, or he may become confused and stagger when he attempts to walk. A concussion may only last for a short period of time. However, if a casualty is suspected of having suffered a concussion, he must be seen by a physician as soon as conditions permit.

d. *Convulsions.* Convulsions (seizures/involuntary jerking) may occur after a mild head injury. When a casualty is convulsing, protect him from hurting himself. Take the following measures:

- (1) Ease him to the ground.
- (2) Support his head and neck.

- (3) Maintain his airway.
- (4) Call for assistance.
- (5) Treat the casualty's wounds and evacuate him immediately.

*e. Brain Damage.* In severe head injuries where brain tissue is protruding, *leave the wound alone*; carefully place a first aid dressing over the tissue. *DO NOT remove or disturb any foreign matter that may be in the wound.* Position the casualty so that his head is higher than his body. Keep him warm and *seek medical aid immediately.*

#### NOTE

- DO NOT forcefully hold the arms and legs if they are jerking because this can lead to broken bones.
- DO NOT force anything between the casualty's teeth—especially if they are tightly clenched because this may obstruct the casualty's airway.
- Maintain the casualty's airway if necessary.

#### 3-4. Dressings and Bandages (081-831-1000 and 081-831-1033)

★ *a. Evaluate the Casualty (081-831-1000).* Be prepared to perform lifesaving measures. The basic lifesaving measures may include clearing the airway, rescue breathing, treatment for shock, and/or bleeding control.

*b. Check Level of Consciousness/Responsiveness (081-831-1033).* With a head injury, an important area to evaluate is the casualty's level of consciousness and responsiveness. Ask the casualty questions such as—

- "What is your name?" (Person)
- "Where are you?" (Place)
- "What day/month/year is it?" (Time)

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Any incorrect responses, inability to answer, or changes in responses should be reported to medical personnel. Check the casualty's level of consciousness every 15 minutes and note any changes from earlier observations.

### *c. Position the Casualty (081-831-1033).*

#### **WARNING (081-831-1033)**

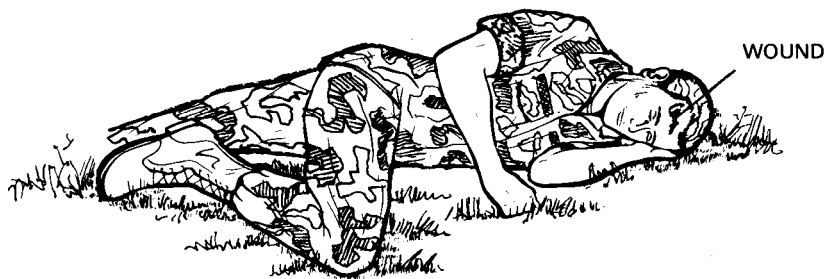
DO NOT move the casualty if you suspect he has sustained a neck, spine, or severe, head injury (which produces any signs or symptoms other than minor bleeding). See task 081-831-1000, *Evaluate the Casualty*.

● If the casualty is conscious or has a minor (superficial) scalp wound:

○ Have the casualty sit up (unless other injuries prohibit or he is unable); OR

○ If the casualty is lying down and is not accumulating fluids or drainage in his throat, elevate his head slightly; OR

○ If the casualty is bleeding from or into his mouth or throat, turn his head to the side or position him on his side so that the airway will be clear. Avoid pressure on the wound or place him on his side—opposite the site of the injury (Figure 3-1).



*Figure 3-1. Casualty lying on side opposite injury.*

● If the casualty is unconscious or has a severe head injury, then suspect and treat him as having a potential neck or spinal injury, *immobilize and DO NOT move the casualty*.

**NOTE (081-831-1033)**

If the casualty is choking and/or vomiting or is bleeding from or into his mouth (thus compromising his airway), position him on his side so that his airway will be clear. Avoid pressure on the wound; place him on his side opposite the side of the injury.

**WARNING (081-831-1033)**

If it is necessary to turn a casualty with a suspected neck/spine injury; roll the casualty gently onto his side, keeping the head, neck, and body aligned while providing support for the head and neck. DO NOT roll the casualty by yourself but seek assistance. *Move him only if absolutely necessary*, otherwise keep the casualty immobilized to prevent further damage to the neck/spine.

**d. Expose the Wound (081-831-1033).**

- Remove the casualty's helmet (if necessary).
- In a chemical environment:

o If mask and/or hood is not breached, apply *no* dressing to the head wound casualty. If the "all clear" *has not been given*, DO NOT remove the casualty's mask to attend the head wound:  
OR

o If mask and/or hood *have* been breached and the "all clear" *has not been given*, try to repair the breach with tape and apply *no* dressing; OR

o If mask and/or hood *have* been breached and the "all clear" *has been given* the mask can be removed and a dressing applied.

**WARNING**

DO NOT attempt to clean the wound, or remove a protruding object.

**NOTE**

If there is an object extending from the wound, DO NOT remove the object. Improvise/bulky dressings from the cleanest material available and place these dressings around the protruding object for support after applying the field dressing.

**NOTE**

Always use the casualty's field dressing, not your own!

*e. Apply a Dressing to a Wound of the Forehead/Back of Head (081-831-1033).* To apply a dressing to a wound of the forehead or back of the head—

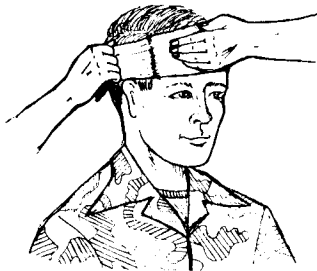
- (1) Remove the dressing from the wrapper.
- (2) Grasp the tails of the dressing in both hands.

(3) Hold the dressing (white side down) directly over the wound. DO NOT touch the white (sterile) side of the dressing or allow anything except the wound to come in contact with the white side.

(4) Place it directly over the wound.

(5) Hold it in place with one hand. If the casualty is able, he may assist.

(6) Wrap the first tail horizontally around the head; ensure the tail covers the dressing (Figure 3-2).



*Figure 3-2. First tail of dressing wrapped horizontally around head.*



(7) Hold the first tail in place and wrap the second tail in the opposite direction, covering the dressing (Figure 3-3).



*Figure 3-3. Second tail wrapped in opposite direction.*

(8) Tie a nonslip knot and secure the tails at the side of the head, making sure they DO NOT cover the eyes or ears (Figure 3-4).



*Figure 3-4. Tails tied in nonslip knot at side of head.*

*f. Apply a Dressing to a Wound on Top of the Head (081-831-1033).* To apply a dressing to a wound on top of the head-

- (1) Remove the dressing from the wrapper.
- (2) Grasp the tails of the dressing in both hands.

- (3) Hold it (white side down) directly over the wound.
- (4) Place it over the wound (Figure 3-5).



*Figure 3-5. Dressing placed over wound.*

- (5) Hold it in place with one hand. If the casualty is able, he may assist.

- (6) Wrap one tail down under the chin (Figure 3-6), up in front of the ear, over the dressing, and in front of the other ear.

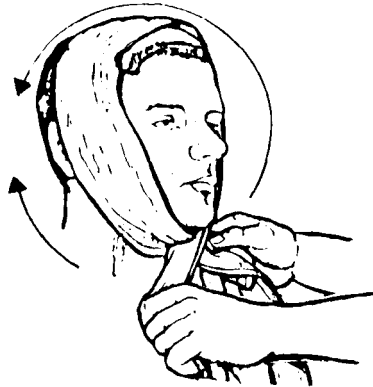


*Figure 3-6. One tail of dressing wrapped under chin.*

**WARNING**

(Make sure the tails remain wide and close to the front of the chin to avoid choking the casualty.)

(7) Wrap the remaining tail under the chin in the opposite direction and up the side of the face to meet the first tail (Figure 3-7).



*Figure 3-7. Remaining tail wrapped under chin in opposite direction.*

(8) Cross the tails (Figure 3-8), bringing one around the forehead (above the eyebrows) and the other around the back of the head (at the base of the skull) to a point just above and in front of the opposite ear, and tie them using a nonslip knot (Figure 3-9).



*Figure 3-8. Tails of dressing crossed with one around forehead.*



Figure 3-9. Tails tied in nonslip knot (in front of and above ear).

**g. Apply a Triangular Bandage to the Head.** To apply a triangular bandage to the head—

- (1) Turn the base (longest side) of the bandage up and center its base on center of the forehead, letting the point (apex) fall on the back of the neck (Figure 3-10 A).
- (2) Take the ends behind the head and cross the ends over the apex.
- (3) Take them over the forehead and tie them (Figure 3-10 B).
- (4) Tuck the apex behind the crossed part of the bandage and/or secure it with a safety pin, if available (Figure 3-10 C).

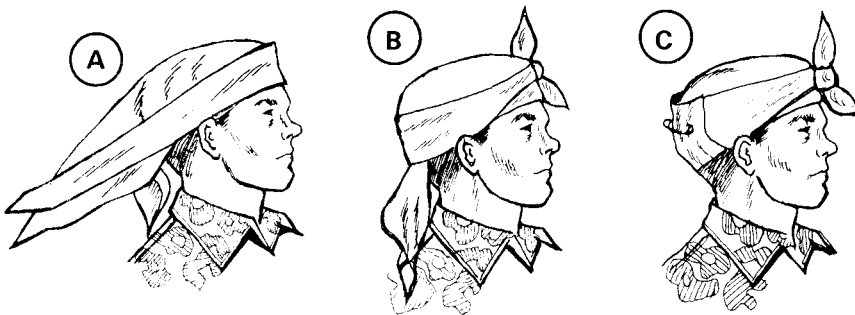


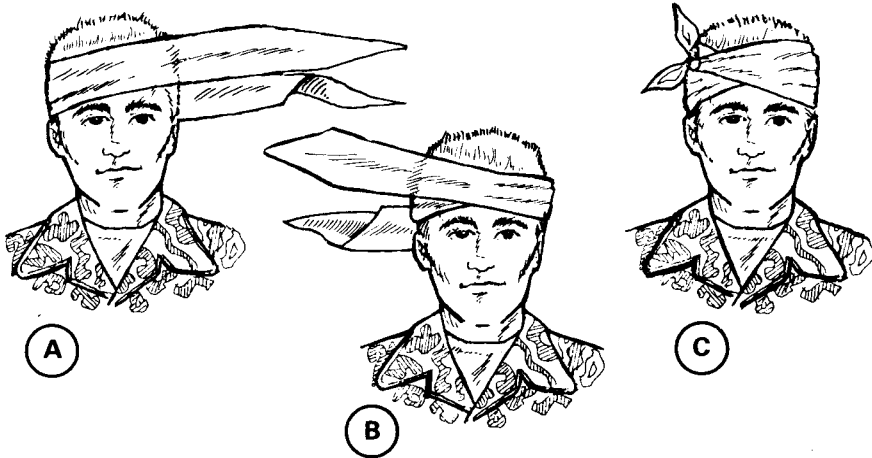
Figure 3-10. Triangular bandage applied to head (Illustrated A thru C).

*h. Apply a Cravat Bandage to the Head.* To apply a cravat bandage to the head-

(1) Place the middle of the bandage over the dressing (Figure 3-11 A).

(2) Cross the two ends of the bandage in opposite directions completely around the head (Figure 3-11 B).

(3) Tie the ends over the dressing (Figure 3-11 C).



*Figure 3-11. Cravat bandage applied to head (Illustrated A thru C).*

## **Section II. GIVE PROPER FIRST AID FOR FACE AND NECK INJURIES**

### **3-5. Face Injuries**

Soft tissue injuries of the face and scalp are common. Abrasions (scrapes) of the skin cause no serious problems. Contusions (injury without a break in the skin) usually cause swelling. A contusion of the scalp looks and feels like a lump. Laceration (cut) and avulsion (torn away tissue) injuries are also common. Avulsions are frequently caused when a sharp blow

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separates the scalp from the skull beneath it. Because the face and scalp are richly supplied with blood vessels (arteries and veins), wounds of these areas usually bleed heavily.

### 3-6. Neck Injuries

Neck injuries may result in heavy bleeding. Apply manual pressure above and below the injury and attempt to control the bleeding. Apply a dressing. Always evaluate the casualty for a possible neck fracture/spinal cord injury; if suspected, seek medical treatment immediately.

#### ★ NOTE

Establish and maintain the airway in cases of facial or neck injuries. If a neck fracture or spinal cord injury is suspected, immobilize or stabilize casualty. See Chapter 4 for further information on treatment of spinal injuries.

### 3-7. Procedure

When a casualty has a face or neck injury, perform the measures below.

*a. Step ONE.* Clear the airway. Be prepared to perform any of the basic lifesaving steps. Clear the casualty's airway (mouth) with your fingers, remove any blood, mucus, pieces of broken teeth or bone, or bits of flesh, as well as any dentures.

*b. Step TWO.* Control any bleeding, especially bleeding that obstructs the airway. Do this by applying direct pressure over a first aid dressing or by applying pressure at specific pressure points on the face, scalp, or temple. (**See Appendix E for further information on pressure points.**) If the casualty is bleeding from the mouth, position him as indicated (c below) and apply manual pressure.

#### CAUTION

Take care not to apply too much pressure to the scalp if a skull fracture is suspected.

*c. Step THREE.* Position the casualty. If the casualty is bleeding from the mouth (or has other drainage, such as mucus, vomitus,

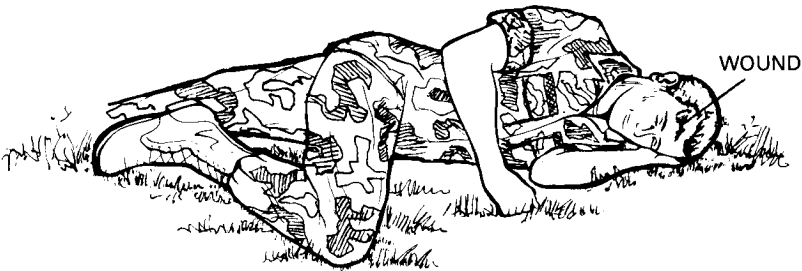
or so forth) and is conscious, place him in a comfortable sitting position and have him lean forward with his head tilted slightly down to permit free drainage (Figure 3-12). DO NOT use the sitting position if-

- It would be harmful to the casualty because of other injuries.

- The casualty is unconscious, in which case, place him on his side (Figure 3-13). If there is a suspected injury to the neck or spine, immobilize the head before turning the casualty on his side.



*Figure 3-12. Casualty leaning forward to permit drainage.*



*Figure 3-13. Casualty lying on side.*

### CAUTION

If you suspect the casualty has a neck/spinal injury, then immobilize his head/neck and treat him as outlined in Chapter 4.

d. *Step FOUR.* Perform other measures.

(1) Apply dressings/bandages to specific areas of the face.

(2) Check for missing teeth and pieces of tissue. Check for detached teeth in the airway. Place detached teeth, pieces of ear or nose on a field dressing and send them along with the casualty to the medical facility. Detached teeth should be kept damp.

(3) Treat for shock and seek medical treatment IMMEDIATELY.

### 3-8. Dressings and Bandages (081-831-1033)

a. *Eye Injuries.* The eye is a vital sensory organ, and blindness is a severe physical handicap. Timely first aid of the eye not only relieves pain but also helps prevent shock, permanent eye injury, and possible loss of vision. Because the eye is very sensitive, any injury can be easily aggravated if it is improperly handled. Injuries of the eye may be quite severe. Cuts of the eyelids can appear to be very serious, but if the eyeball is not involved, a person's vision usually will not be damaged. However, lacerations (cuts) of the eyeball can cause permanent damage or loss of sight.

(1) *Lacerated/torn eyelids.* Lacerated eyelids may bleed heavily, but bleeding usually stops quickly. Cover the injured eye with a sterile dressing. DO NOT put pressure on the wound because you may injure the eyeball. Handle torn eyelids very carefully to prevent further injury. Place any detached pieces of the eyelid on a clean bandage or dressing and immediately send them with the casualty to the medical facility.

(2) *Lacerated eyeball (injury to the globe).* Lacerations or cuts to the eyeball may cause serious and permanent eye damage. Cover the injury with a loose sterile dressing. DO NOT put pressure on the eyeball because additional damage may occur. An important point to remember is that when one eyeball is injured, you should immobilize both eyes. This is done by applying a bandage to both eyes. Because the eyes move together, covering both will lessen the chances of further damage to the injured eye.

### CAUTION

DO NOT apply pressure when there is a possible laceration of the eyeball. The eyeball contains fluid. Pressure applied over the eye will force the fluid out, resulting in/permanent injury. APPLY PROTECTIVE DRESSING WITHOUT ADDED PRESSURE.



(3) *Extruded eyeballs.* Soldiers may encounter casualties with severe eye injuries that include an extruded eyeball (eyeball out-of-socket). In such instances you should gently cover the extruded eye with a loose moistened dressing and also cover the unaffected eye. DO NOT bind or exert pressure on the injured eye while applying a loose dressing. Keep the casualty quiet, place him on his back, treat for shock (make warm and comfortable), and evacuate him immediately.

(4) *Burns of the eyes.* Chemical burns, thermal (heat) burns, and light burns can affect the eyes.

(a) *Chemical burns.* Injuries from chemical burns require immediate first aid. Chemical burns are caused mainly by acids or alkalis. The first aid is to flush the eye(s) immediately with large amounts of water for at least 5 to 20 minutes, or as long as necessary to flush out the chemical. If the burn is an acid burn, you should flush the eye for at least 5 to 10 minutes. If the burn is an alkali burn, you should flush the eye for at least 20 minutes. After the eye has been flushed, apply a bandage over the eyes and evacuate the casualty immediately.

(b) *Thermal burns.* When an individual suffers burns of the face from a fire, the eyes will close quickly due to extreme heat. This reaction is a natural reflex to protect the eyeballs; however, the eyelids remain exposed and are frequently burned. If a casualty receives burns of the eyelids/face, DO NOT apply a dressing; DO NOT TOUCH; seek medical treatment immediately.

(c) *Light burns.* Exposure to intense light can burn an individual. Infrared rays, eclipse light (if the casualty has looked directly at the sun), or laser burns cause injuries of the exposed eyeball. Ultraviolet rays from arc welding can cause a superficial burn to the surface of the eye. These injuries are generally not painful but may cause permanent damage to the eyes. Immediate first aid is usually not required. Loosely bandaging the eyes may make the casualty more comfortable and protect his eyes from further injury caused by exposure to other bright lights or sunlight.

### CAUTION

In certain instances both eyes are usually bandaged; but, in hazardous surroundings leave the uninjured eye uncovered so that the casualty may be able to see.

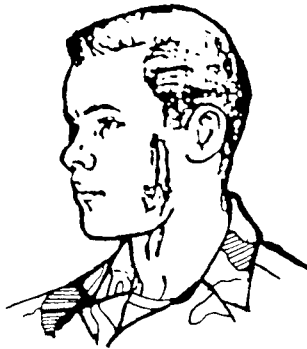
*b. Side-of-Head or Cheek Wound (081-831-1033).*

Facial injuries to the side of the head or the cheek may bleed profusely (Figure 3-14). Prompt action is necessary to ensure that the airway remains open and also to control the bleeding. It may be necessary to apply a dressing. To apply a dressing—

- (1) Remove the dressing from its wrapper.
- (2) Grasp the tails in both hands.

(3) Hold the dressing directly over the wound with the white side down and place it directly on the wound (Figure 3-15 A).

(4) Hold the dressing in place with one hand (the casualty may assist if able). Wrap the top tail over the top of the head and bring it down in front of the ear (on the side opposite the wound), under the chin (Figure 3-15 B) and up over the dressing to a point just above the ear (on the wound side).



*Figure 3-14. Side of head or cheek wound.*

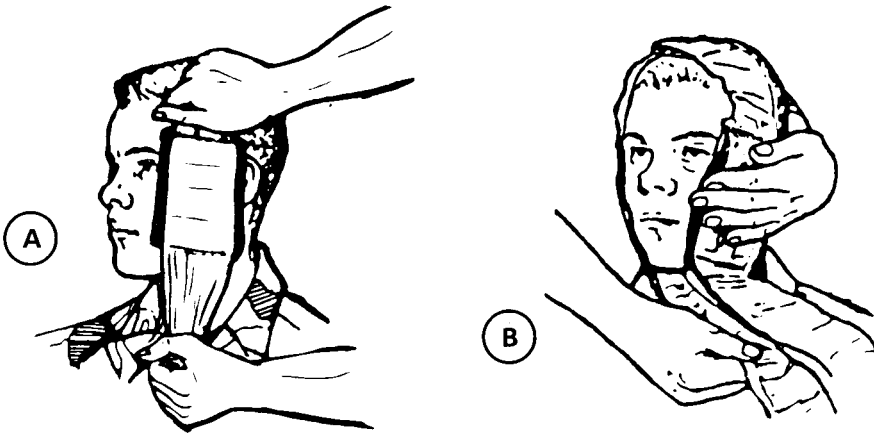


Figure 3-15. Dressing placed directly on wound. Top tail wrapped over top of head, down in front of ear, and under chin (Illustrated A and B).

NOTE

When possible, avoid covering the casualty's ear with the dressing, as this will decrease his ability to hear.

(5) Bring the second tail under the chin, up in front of the ear (on the side opposite the wound), and over the head to meet the other tail (on the wound side) (Figure 3-16).



Figure 3-16. Bringing second tail under the chin.

(6) Cross the two tails (on the wound side) (Figure 3-17) and bring one end across the forehead (above the eyebrows) to a point just in front of the opposite ear (on the uninjured side).



*Figure 3-17. Crossing the tails on the side of the wound.*

(7) Wrap the other tail around the back of the head (at the base of the skull), and tie the two ends just in front of the ear on the uninjured side with a nonslip knot (Figure 3-18).



*Figure 3-18. Tying the tails of the dressing in a nonslip knot.*

*c. Ear Injuries.* Lacerated (cut) or avulsed (torn) ear tissue may not, in itself, be a serious injury. Bleeding, or the drainage of fluids from the ear canal, however, may be a sign of a head injury, such as a skull fracture. DO NOT attempt to stop the flow from the inner ear canal nor

put anything into the ear canal to block it. Instead, you should cover the ear lightly with a dressing. For minor cuts or wounds to the external ear, apply a cravat bandage as follows:

(1) Place the middle of the bandage over the ear (Figure 3-19 A).

(2) Cross the ends, wrap them in opposite directions around the head, and tie them (Figures 3-19 B and 3-19 C).

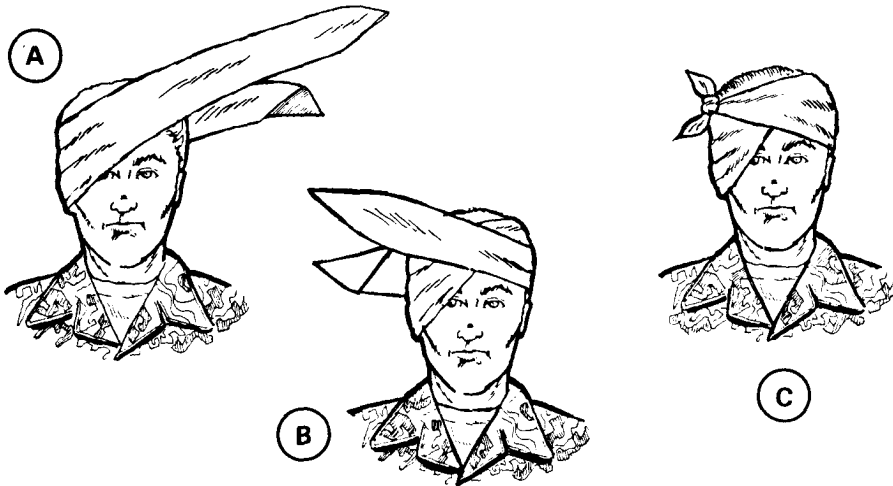


Figure 3-19. Applying cravat bandage to ear (Illustrated A thru C).

(3) If possible, place some dressing material between the back of the ear and the side of the head to avoid crushing the ear against the head with the bandage.

*d. Nose Injuries.* Nose injuries generally produce bleeding. The bleeding may be controlled by placing an ice pack over the nose, or pinching the nostrils together. The bleeding may also be controlled by placing torn gauze (rolled) between the upper teeth and the lip.

### CAUTION

DO NOT attempt to remove objects inhaled in the nose. An untrained person who removes such an object could worsen the casualty's condition and cause permanent injury.

e. *Jaw Injuries.* Before applying a bandage to a casualty's jaw, remove all foreign material from the casualty's mouth. If the casualty is unconscious, check for obstructions in the airway. When applying the bandage, allow the jaw enough freedom to permit passage of air and drainage from the mouth.

(1) *Apply bandages attached to field first aid dressing to the jaw.* After dressing the wound, apply the bandages using the same technique illustrated in Figures 3-5 through 3-8.

**NOTE**

The dressing and bandaging procedure outlined for the jaw serves a twofold purpose. In addition to stopping the bleeding and protecting the wound, it also immobilizes a fractured jaw.

(2) *Apply a cravat bandage to the jaw.*

(a) Place the bandage under the chin and carry its ends upward. Adjust the bandage to make one end longer than the other (Figure 3-20 A).

(b) Take the longer end over the top of the head to meet the short end at the temple and cross the ends over (Figure 3-20 B).

(c) Take the ends in opposite directions to the other side of the head and tie them over the part of the bandage that was applied first (Figure 3-20 C).

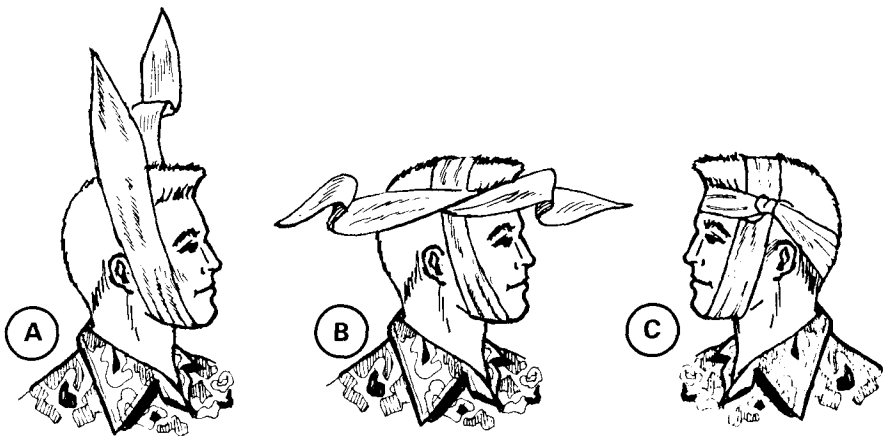


Figure 3-20. Applying cravat bandage to jaw (Illustrated A thru C).

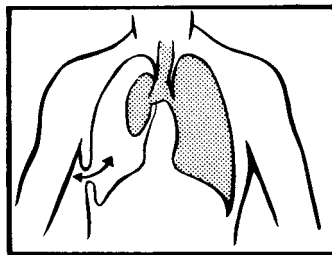
**NOTE**

The cravat bandage technique is used to immobilize a fractured jaw or to maintain a sterile dressing that does not have tail bandages attached.

**Section III. GIVE PROPER FIRST AID FOR CHEST AND ABDOMINAL WOUNDS AND BURN INJURIES**

**3-9. Chest Wounds (081-831-1026)**

Chest injuries may be caused by accidents, bullet or missile wounds, stab wounds, or falls. These injuries can be serious and may cause death quickly if proper treatment is not given. A casualty with a chest injury may complain of pain in the chest or shoulder area; he may have difficulty with his breathing. His chest may not rise normally when he breathes. The injury may cause the casualty to cough up blood and to have a rapid or a weak heartbeat. A casualty with an open chest wound has a punctured chest wall. The sucking sound heard when he breathes is caused by air leaking into his chest cavity. This particular type of wound is dangerous and will collapse the injured lung (Figure 3-21). Breathing becomes difficult for the casualty because the wound is open. The soldier's life may depend upon how quickly you make the wound airtight.



*Figure 3-21. Collapsed lung.*

**3-10. Chest Wound(s) Procedure (081-831-1026)**

★ *a. Evaluate the Casualty (081-831-1000).* Be prepared to perform lifesaving measures. The basic lifesaving measures may include clearing the airway, rescue breathing, treatment for shock, and/or bleeding control.

***b. Expose the Wound.*** If appropriate, cut or remove the casualty's clothing to expose the entire area of the wound. Remember, DO NOT remove clothing that is stuck to the wound because additional injury may result. DO NOT attempt to clean the wound.

#### NOTE

Examine the casualty to see if there is an entry and/or exit wound. If there are two wounds (entry, exit), perform the same procedure for both wounds. Treat the more serious (heavier bleeding, larger) wound first. It may be necessary to improvise a dressing for the second wound by using strips of cloth, such as a torn T-shirt, or whatever material is available. Also, listen for sucking sounds to determine if the chest wall is punctured.

#### CAUTION

If there is an object extending from (impaled in) the wound, DO NOT remove the object. Apply a dressing around the object and use additional improvised bulky materials/dressings (use the cleanest materials available) to buildup the area around the object. Apply a supporting bandage over the bulky materials to hold them in place.

#### CAUTION (081-831-1026)

DO NOT REMOVE protective clothing in a chemical environment. Apply dressings over the protective clothing.

***c. Open the Casualty's Field Dressing Plastic Wrapper.*** The plastic wrapper is used with the field dressing to create an airtight seal. If a plastic wrapper is not available, or if an additional wound needs to be treated; cellophane, foil, the casualty's poncho, or similar material may be used. The covering should be wide enough to extend 2 inches or more beyond the edges of the wound in all directions.

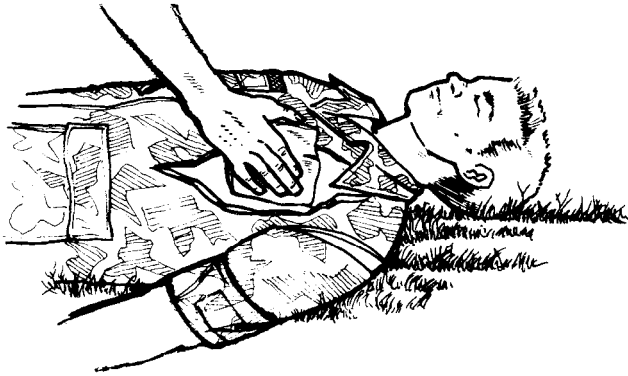


(1) Tear open one end of the casualty's plastic wrapper covering the field dressing. Be careful not to destroy the wrapper and DO NOT touch the inside of the wrapper.

(2) Remove the inner packet (field dressing).

(3) Complete tearing open the empty plastic wrapper using as much of the wrapper as possible to create a flat surface.

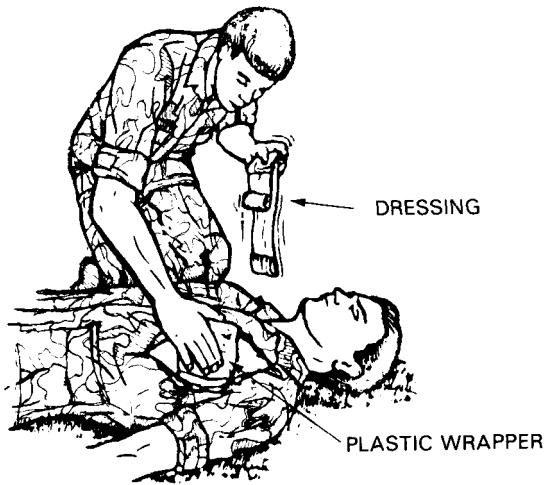
*d. Place the Wrapper Over the Wound (081-831-1026).* Place the inside surface of the plastic wrapper directly over the wound *when the casualty exhales* and hold it in place (Figure 3-22). The casualty may hold the plastic wrapper in place if he is able.



*Figure 3-22. Open chest wound sealed with plastic wrapper.*

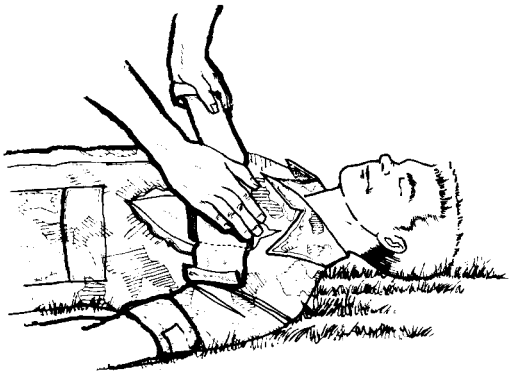
*e. Apply the Dressing to the Wound (081-831-1026).*

(1) Use your free hand and shake open the field dressing (Figure 3-23).



*Figure 3-23. Shaking open the field dressing.*

(2) Place the white side of the dressing on the plastic wrapper covering the wound (Figure 3-24).

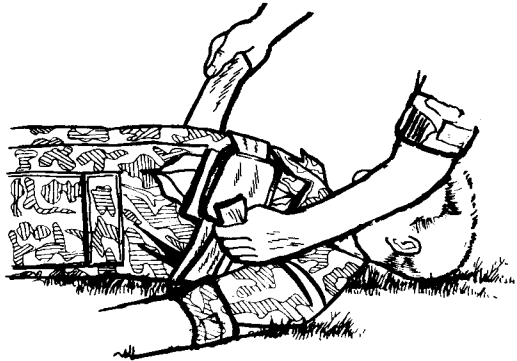


*Figure 3-24. Field dressing placed on plastic wrapper.*

**NOTE (081-831-1026)**

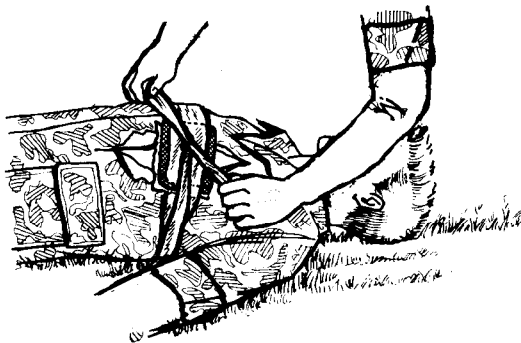
Use the casualty's field dressing, not your own.

- (3) Have the casualty breathe normally.
- (4) While maintaining pressure on the dressing, grasp one tail of the field dressing with the other hand and wrap it around the casualty's back.
- (5) Wrap the other tail in the opposite direction, bringing both tails over the dressing (Figure 3-25).



*Figure 3-25. Tails of field dressing wrapped around casualty in opposite direction.*

(6) Tie the tails into a *nonslip* knot in the center of the dressing *after* the casualty exhales and *before* he inhales. This will aid in maintaining pressure on the bandage after it has been tied (Figure 3-26). Tie the dressing firmly enough to secure the dressing without interfering with the casualty's breathing.

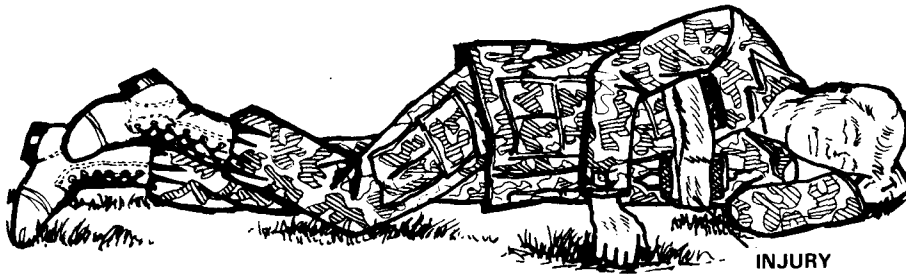


*Figure 3-26. Tails of dressing tied into nonslip knot over center of dressing.*

**NOTE (081-831-1026)**

When practical, apply direct manual pressure over the dressing for 5 to 10 minutes to help control the bleeding.

*f. Position the Casualty (081-831-1026).* Position the casualty on his injured side or in a sitting position, whichever makes breathing easier (Figure 3-27).



*Figure 3-27. Casualty positioned (lying) on injured side.*

*g. Seek Medical Aid.* Contact medical personnel.

**★ WARNING**

Even if an airtight dressing has been placed properly, air may still enter the chest cavity without having means to escape. This causes a life-threatening condition called tension pneumothorax. If the casualty's condition (for example, difficulty breathing, shortness of breath, restlessness, or grayness of skin in a dark-skinned individual [or blueness in an individual with light skin]) worsens after placing the dressing, quickly lift or remove, then replace the airtight dressing.

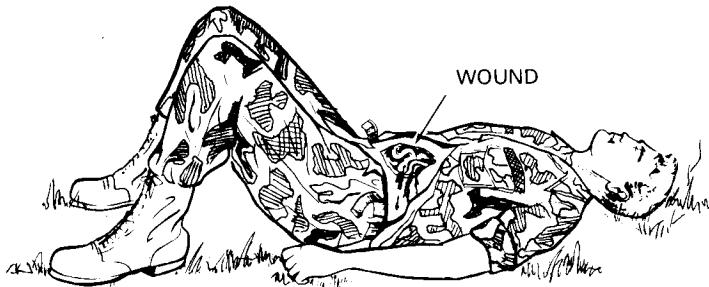
### **3-11. Abdominal Wounds**

The most serious abdominal wound is one in which an object penetrates the abdominal wall and pierces internal organs or large blood vessels. In these instances, bleeding may be severe and death can occur rapidly.

### 3-12. Abdominal Wound(s) Procedure (081-831-1025)

*a. Evaluate the Casualty.* Be prepared to perform basic lifesaving measures. It is necessary to check for both entry and exit wounds. If there are two wounds (entry and exit), treat the wound that appears more serious first (for example, the heavier bleeding, protruding organs, larger wound, and so forth). It may be necessary to improvise dressings for the second wound by using strips of cloth, a T-shirt, or the cleanest material available.

*b. Position the Casualty.* Place and maintain the casualty on his back with his knees in an upright (flexed) position (Figure 3-28). The knees-up position helps relieve pain, assists in the treatment of shock, prevents further exposure of the bowel (intestines) or abdominal organs, and helps relieve abdominal pressure by allowing the abdominal muscles to relax.



PLACE CASUALTY ON BACK TO PREVENT FURTHER EXPOSURE OF THE BOWEL UNLESS OTHER WOUNDS PREVENT SUCH ACTION. FLEX CASUALTY'S KNEES TO RELAX ABDOMINAL MUSCLES AND ANY INTERNAL PRESSURE.

*Figure 3-28. Casualty positioned (lying) on back with knees (flexed) up.*

#### *c. Expose the Wound.*

(1) Remove the casualty's loose clothing to expose the wound. However, DO NOT attempt to remove clothing that is stuck to the wound; it may cause further injury. Thus, remove any loose clothing from the wound but leave in place the clothing that is stuck.

**CAUTION (081-831-1000 and 081-831-1025)**

DO NOT REMOVE protective clothing in a chemical environment. Apply dressings *over* the protective clothing.

(2) Gently pick up any organs which may be on the ground. Do this with a clean, dry dressing or with the cleanest available material. Place the organs on top of the casualty's abdomen (Figure 3-29).



BEFORE APPLYING DRESSINGS, CAREFULLY PLACE PROTRUDING ORGANS NEAR THE WOUND TO PROTECT THEM AND CONTROL CONTAMINATION.

*Figure 3-29. Protruding organs placed near wound.*

**NOTE (081-831-1025)**

- DO NOT probe, clean, or try to remove any foreign object from the abdomen.
- DO NOT touch with bare hands any exposed organs.
- DO NOT push organs back inside the body.

*d. Apply the Field Dressing.* Use the casualty's field dressing not your own. If the field dressing is not large enough to cover the entire wound, the plastic wrapper from the dressing may be used to cover the wound first (placing the field dressing on top). Open the plastic wrapper carefully without touching the inner surface, if possible. If necessary other improvised dressings may be made from clothing, blankets, or the cleanest materials available because the field dressing and/or wrapper may not be large enough to cover the entire wound.

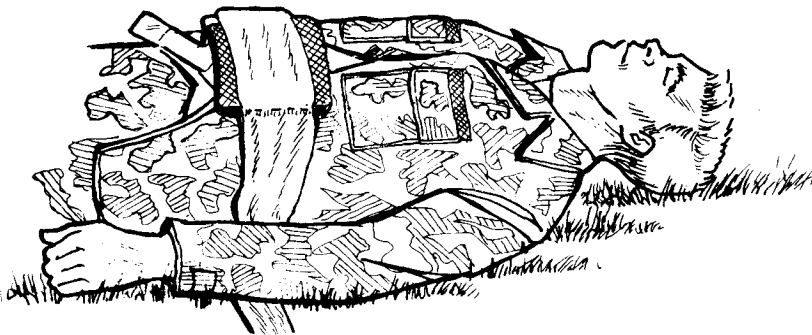
## WARNING

If there is an object extending from the wound, DO NOT remove it. Place as much of the wrapper over the wound as possible without dislodging or moving the object. DO NOT place the wrapper over the object.

(1) Grasp the tails in both hands.

(2) Hold the dressing with the white, or cleanest, side down directly over the wound.

(3) Pull the dressing open and place it directly over the wound (Figure 3-30). If the casualty is able, he may hold the dressing in place.



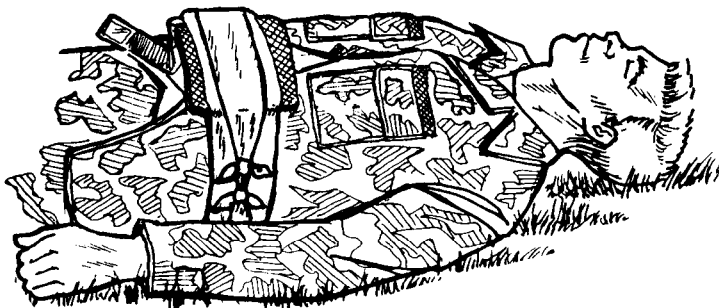
IF THE DRESSING WRAPPER IS LARGE ENOUGH TO EXTEND WELL BEYOND THE PROTRUDING BOWEL. THE STERILE SIDE OF THE DRESSING WRAPPER CAN BE PLACED DIRECTLY OVER THE WOUND, WITH THE FIELD DRESSING ON THE TOP.

*Figure 3-30. Dressing placed directly over the wound.*

(4) Hold the dressing in place with one hand and use the other hand to wrap one of the tails around the body.

(5) Wrap the other tail in the opposite direction until the dressing is completely covered. Leave enough of the tail for a knot.

(6) Loosely tie the tails with a nonslip knot at the casualty's side (Figure 3-31).

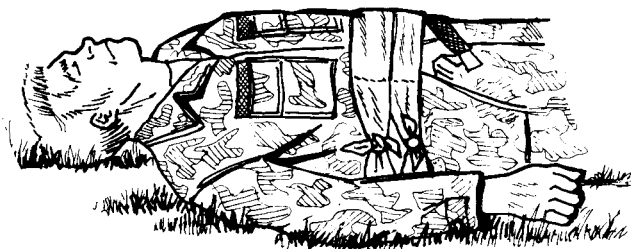


*Figure 3-31. Dressing applied and tails tied with a nonslip knot.*

### WARNING

When dressing is applied, DO NOT put pressure on the wound or exposed internal parts, because pressure could cause further injury (vomiting, ruptured intestines, and so forth). Therefore, tie the dressing ties (tails) loosely at casualty's side, not directly over the dressing.

(7) Tie the dressing firmly enough to prevent slipping without applying pressure to the-wound-site (Figure 3-32).



*Figure 3-32. Field dressing covered with improvised material and loosely tied.*

Field dressings can be covered with improvised reinforcement material (cravats, strips of torn T-shirt, or other cloth), if available, for additional support and protection. Tie improvised bandage on the opposite side of the dressing ties firmly enough to prevent slipping but without applying additional pressure to the wound.



**CAUTION (081-831-1025)**

DO NOT give casualties with abdominal wounds food nor water (moistening the lips is allowed).

*e. Seek Medical Aid.* Notify medical personnel.

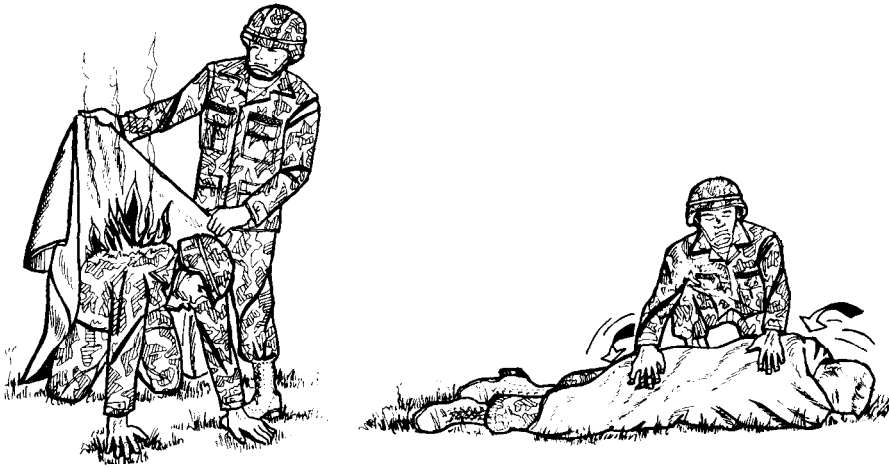
**3-13. Burn Injuries**

Burns often cause extreme pain, scarring, or even death. Proper treatment will minimize further injury of the burned area. Before administering the proper first aid, you must be able to recognize the type of burn to be treated. There are four types of burns: (1) thermal burns caused by fire, hot objects, hot liquids, and gases or by nuclear blast or fire ball; (2) electrical burns caused by electrical wires, current, or lightning; (3) chemical burns caused by contact with wet or dry chemicals or white phosphorus (WP)—from marking rounds and grenades; and (4) laser burns.

**3-14. First Aid for Burns (081-831-1007)**

*a. Eliminate the Source of the Burn.* The source of the burn must be eliminated before any evaluation or treatment of the casualty can occur.

(1) Remove the casualty quickly and cover the *thermal burn* with any large nonsynthetic material, such as a field jacket. Roll the casualty on the ground to smother (put out) the flames (Figure 3-33).



*Figure 3-33. Casualty covered and rolled on ground.*

**CAUTION**

Synthetic materials, such as nylon, may melt and cause further injury.

(2) Remove the *electrical burn casualty* from the electrical source by turning off the electrical current. DO NOT attempt to turn off the electricity if the source is not close by. Speed is critical, so DO NOT waste unnecessary time. If the electricity cannot be turned off, wrap any *nonconductive material* (dry rope, dry clothing, dry wood, and so forth) around the casualty's back and shoulders and drag the casualty away from the electrical source (Figure 3-34). DO NOT make body-to-body contact with the casualty or touch any wires because you could also become an *electrical burn casualty*.



Figure 3-34. Casualty removed from electrical source (using nonconductive material).

**WARNING**

High voltage electrical burns may cause temporary unconsciousness, difficulties in breathing, or difficulties with the heart (heartbeat).

(3) Remove the *chemical* from the *burned casualty*. Remove *liquid chemicals* by flushing with as much water as possible. If water is not available, use any nonflammable fluid to flush chemicals off the

casualty. Remove *dry* chemicals by brushing off loose particles (DO NOT use the bare surface of your hand because you could become a chemical burn casualty) and then flush with large amounts of water, if available. If *large* amounts of water are not available, then NO water should be applied because small amounts of water applied to a *dry* chemical burn may cause a chemical reaction. When white phosphorous strikes the skin, smother with water, a wet cloth, or wet mud. Keep white phosphorous covered with a wet material to *exclude* air which will prevent the particles from burning.

### WARNING

Small amounts of water applied to a *dry* chemical burn may cause a chemical reaction, transforming the dry chemical into an active burning substance.

(4) Remove the *laser burn* casualty from the source. (NOTE: Lasers produce a narrow amplified beam of light. The word laser means Light Amplification by Stimulated E mission of Radiation and sources include range finders, weapons/guidance, communication systems, and weapons simulations such as MILES.) When removing the casualty from the laser beam source, be careful not to enter the beam or you may become a casualty. Never look directly at the beam source and if possible, wear appropriate eye protection.

### NOTE

After the casualty is removed from the source of the burn, he should be evaluated for conditions requiring basic lifesaving measures (Evaluate the Casualty).

*b. Expose the Burn.* Cut and gently lift away any clothing covering the burned area, without pulling clothing over the burns. Leave in place any clothing that is stuck to the burns. If the casualty's hands or wrists have been burned, remove jewelry if possible without causing further injury (rings, watches, and so forth) and place in his pockets. This prevents the necessity to cut off jewelry since swelling usually occurs as a result of a burn.

**CAUTION (081-831-1007)**

- DO NOT lift or cut away clothing if in a chemical environment. Apply the dressing directly over the casualty's protective clothing.
- DO NOT attempt to decontaminate skin where blisters have formed.

*c. Apply a Field Dressing to the Burn.*

(1) Grasp the tails of the casualty's dressing in both hands.

(2) Hold the dressing directly over the wound with the white (sterile) side down, pull the dressing open, and place it directly over the wound. If the casualty is able, he may hold the dressing in place.

(3) Hold the dressing in place with one hand and use the other hand to wrap one of the tails around the limbs or the body.

(4) Wrap the other tail in the opposite direction until the dressing is completely covered.

(5) Tie the tails into a knot over the outer edge of the dressing. The dressing should be applied lightly over the burn. Ensure that dressing is applied firmly enough to prevent it from slipping.

**NOTE**

Use the cleanest improvised dressing material available if a field dressing is not available or if it is not large enough for the entire wound.

*d. Take the Following Precautions (081-831-1007):*

- DO NOT place the dressing over the face or genital area.
- DO NOT break the blisters.
- DO NOT apply grease or ointments to the burns.

For electrical burns, check for both an entry and exit burn from the passage of electricity through the body. Exit burns may appear on any area of the body despite location of entry burn.

- For burns caused by wet or dry chemicals, flush the burns with large amounts of water and cover with a dry dressing.

- For burns caused by white phosphorus (WP), flush the area with water, then cover with a wet material, dressing, or mud to exclude the air and keep the WP particles from burning.

- For laser burns, apply a field dressing.

- If the casualty is conscious and not nauseated, give him small amounts of water.

*e. Seek Medical Aid.* Notify medical personnel.

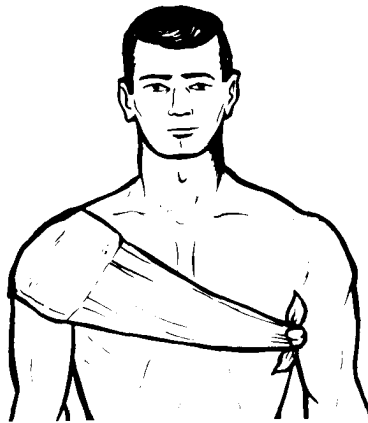
#### **Section IV. APPLY PROPER BANDAGES TO UPPER AND LOWER EXTREMITIES**

##### **3-15. Shoulder Bandage**

a. To apply bandages attached to the field first aid dressing—

(1) Take one bandage across the chest and the other across the back and under the arm opposite the injured shoulder.

(2) Tie the ends with a nonslip knot (Figure 3-35).



*Figure 3-35. Shoulder bandage.*

b. To apply a cravat bandage to the shoulder or armpit-

(1) Make an extended cravat bandage by using two triangular bandages (Figure 3-36 A); place the end of the first triangular bandage along the base of the second one (Figure 3-36 B).

(2) Fold the two bandages into a single extended bandage (Figure 3-36 C).

(3) Fold the extended bandage into a single cravat bandage (Figure 3-36 D). After folding, secure the thicker part (overlap) with two or more safety pins (Figure 3-36 E).

(4) Place the middle of the cravat bandage under the armpit so that the front end is longer than the back end and safety pins are on the outside (Figure 3-36 F).

(5) Cross the ends on top of the shoulder (Figure 3-36 G).

(6) Take one end across the back and under the arm on the opposite side and the other end across the chest. Tie the ends (Figure 3-36 H).

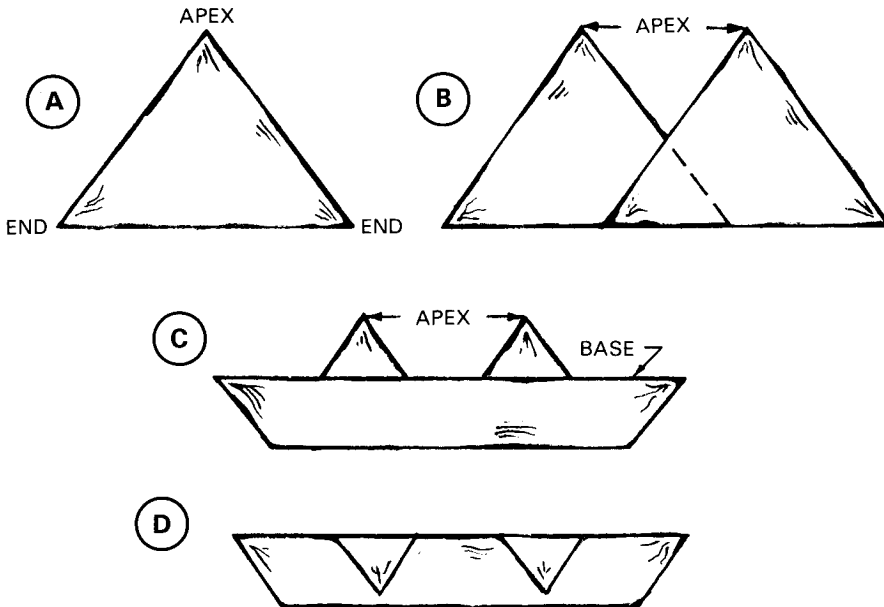


Figure 3-36. Extended cravat bandage applied to shoulder (or armpit) (Illustrated A thru H).

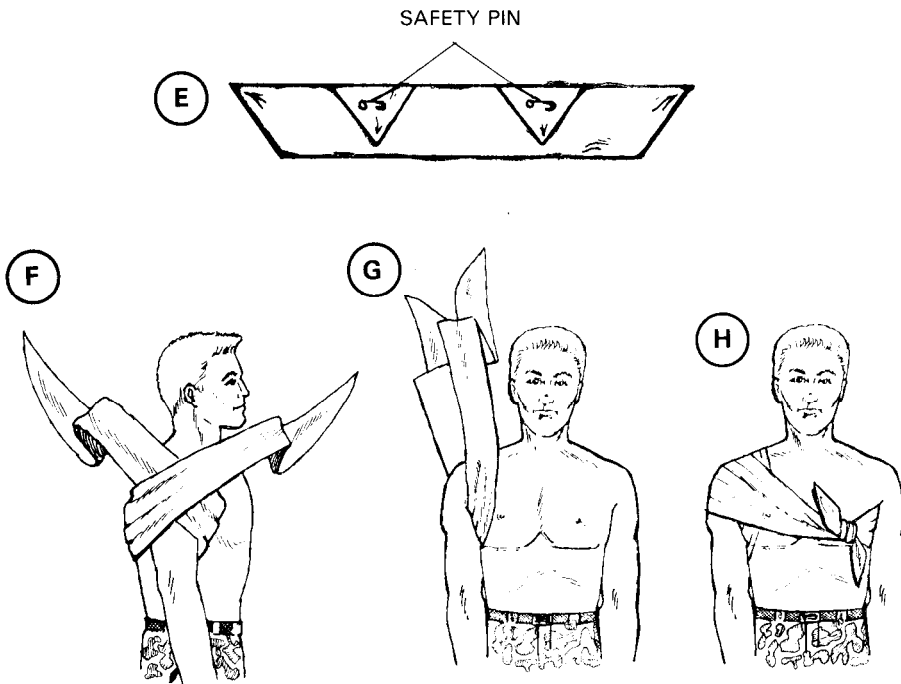


Figure 3-36. Continued.

Be sure to place sufficient wadding in the armpit. DO NOT tie the cravat bandage too tightly. Avoid compressing the major blood vessels in the armpit.

### 3-16. Elbow Bandage

To apply a cravat bandage to the elbow-

a. Bend the arm at the elbow and place the middle of the cravat bandage at the point of the elbow bringing the ends upward (Figure 3-37 A).

b. Bring the ends across, extending both downward (Figure 3-37 B).

c. Take both ends around the arm and tie them with a nonslip knot at the front of the elbow (Figure 3-37 C).

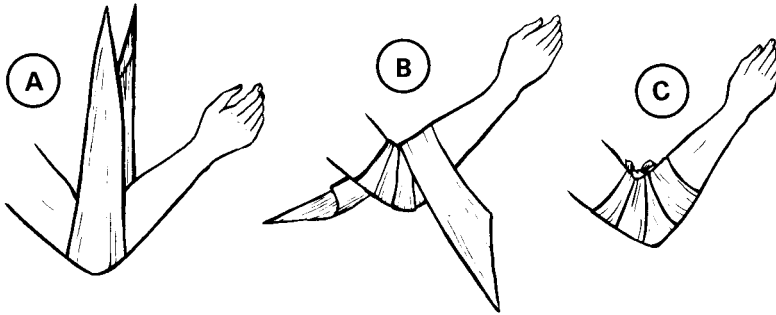


Figure 3-37. Elbow bandage (Illustrated A thru C).

**CAUTION**

If an elbow fracture is suspected, **DO NOT** bend the elbow; bandage it in an extended position.

**3-17. Hand Bandage**

a. To apply a triangular bandage to the hand-

(1) Place the hand in the middle of the triangular bandage with the wrist at the base of the bandage (Figure 3-38 A). Ensure that the fingers are separated with absorbent material to prevent chafing and irritation of the skin.

(2) Place the apex over the fingers and tuck any excess material into the pleats on each side of the hand (Figure 3-38 B).

(3) Cross the ends on top of the hand, take them around the wrist, and tie them (Figures 3-38 C, D, and E) with a nonslip knot.

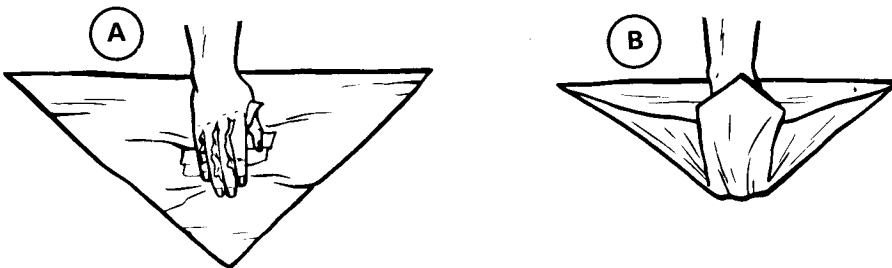


Figure 3-38. Triangular bandage applied to hand (Illustrated A thru E).



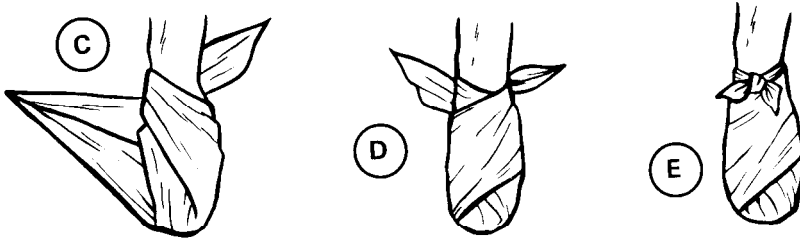


Figure 3-38. Continued.

b. To apply a cravat bandage to the palm of the hand—

(1) Lay the middle of the cravat over the palm of the hand with the ends hanging down on each side (Figure 3-39 A).

(2) Take the end of the cravat at the little finger across the back of the hand, extending it upward over the base of the thumb; then bring it downward across the palm (Figure 3-39 B).

(3) Take the thumb end across the back of the hand, over the palm, and through the hollow between the thumb and palm (Figure 3-39 C).

(4) Take the ends to the back of the hand and cross them; then bring them up over the wrist and cross them again (Figure 3-39 D).

(5) Bring both ends down and tie them with a nonslip knot on top of the wrist (Figure 3-39 E and F).

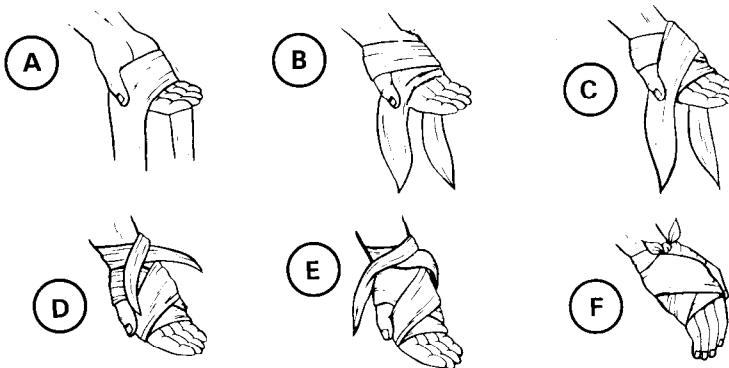


Figure 3-39. Cravat bandage applied to palm of hand (Illustrated A thru F).

### 3-18. Leg (Upper and Lower) Bandage

To apply a cravat bandage to the leg—

a. Place the center of the cravat over the dressing (Figure 3-40 A).

b. Take one end around and up the leg in a spiral motion and the other end around and down the leg in a spiral motion, overlapping part of each preceding turn (Figure 3-40 B).

c. Bring both ends together and tie them (Figure 3-40 C) with a nonslip knot.

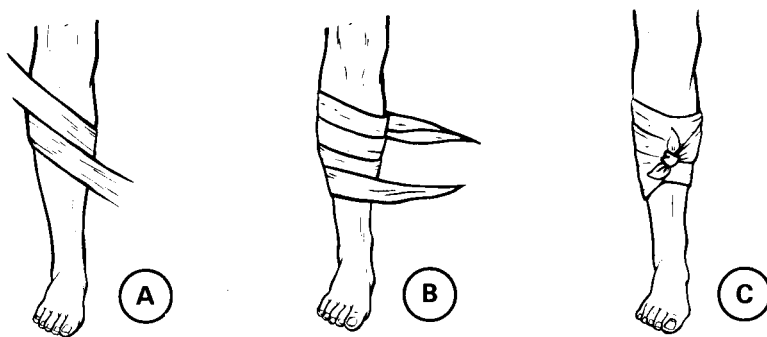


Figure 3-40. Cravat bandage applied to leg (Illustrated A thru C).

### 3-19. Knee Bandage

To apply a cravat bandage to the knee as illustrated in Figure 3-41, use the same technique applied in bandaging the elbow. The same caution for the elbow also applies to the knee.

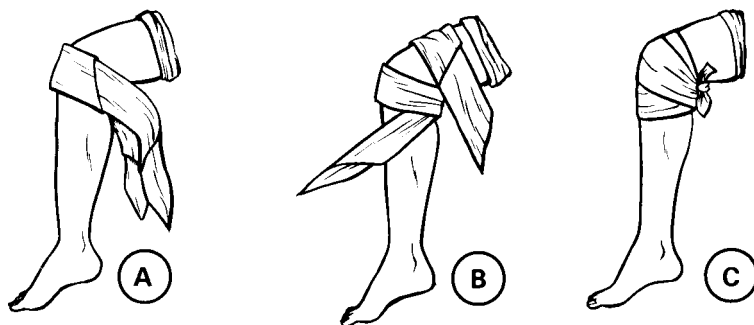


Figure 3-41. Cravat bandage applied to knee (Illustrated A thru C).

### 3-20. Foot Bandage

To apply a triangular bandage to the foot-

a. Place the foot in the middle of the triangular bandage with the heel well forward of the base (Figure 3-42 A). Ensure that the toes are separated with absorbent material to prevent chafing and irritation of the skin.

b. Place the apex over the top of the foot and tuck any excess material into the pleats on each side of the foot (Figure 3-42 B).

c. Cross the ends on top of the foot, take them around the ankle, and tie them at the front of the ankle (Figure 3-42 C, D, and E).

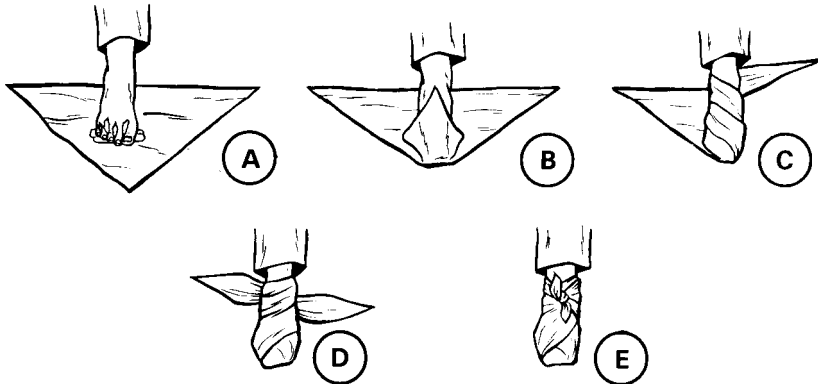


Figure 3-42. Triangular bandage applied to foot (Illustrated A thru E).

**NOTES**