

# First Aid



Even when everyone works to prevent emergencies, injuries and illnesses do occur at aquatic facilities. Every facility needs a first aid area or room where an injured or ill person can be provided first aid and can rest. First aid supplies should also be kept here (**Fig. 9-1**). Some facilities may staff the first aid area or room with personnel that have more advanced training, such as an emergency medical technician (EMT). Know where first aid areas are, what first aid equipment and supplies are there,

what additional staff resources are available and how to provide first aid correctly.

Remember to follow the general procedures for injury or sudden illness on land: size up the scene, perform an initial assessment, summon emergency medical services (EMS) personnel by calling 9-1-1 or the local emergency number and perform a secondary assessment. Use appropriate personal protective equipment, such as disposable gloves and breathing barriers. Carry a few first aid supplies in a hip pack (**Fig. 9-2**).



- **Allergies**—Do you have any allergies to medications, food, etc.? If so, what type of reactions have you experienced when you were exposed?
- **Medications**—Do you have any medical conditions or are you taking any medications? If so, what conditions do you have or what medications are you taking? Have you taken any medications in the past 12 hours?
- **Pertinent past medical history**—Have you experienced any recent falls, accidents or blows to the head? Have you ever been in any medical, surgical or trauma incidents?
- **Last oral intake**—When did you last eat or drink? What did you last eat or drink?
- **Events leading up to the incident**—What were you doing before the incident occurred? What were you doing when the incident occurred?

### Checking a Conscious Adult

After taking a brief history, check the victim by performing a head-to-toe examination. Before beginning the examination, tell the victim what you are going to do. Visually inspect the victim's body looking carefully for any bleeding, cuts, bruises and obvious deformities (Fig. 9-4). Look for a medical identification necklace or bracelet on

the victim's wrist, neck or ankle (Fig. 9-5). A necklace or bracelet will provide medical information about the person, explain how to care for certain conditions and list whom to call for help. Do not ask the victim to move any areas in which he or she has discomfort or pain or if head, neck or back injury is suspected. The lifeguard then performs the examination by checking—

- The head (Fig. 9-6).
  - Look at the scalp, face, ears, eyes, nose and mouth for cuts, bumps, bruises and depressions.
  - Note if the victim has any changes in the level of consciousness, such as dizziness, or feels light-headed.
- Skin appearance and temperature (Fig. 9-7).
  - Feel the victim's forehead with the back of the hand and note if the skin is cold or hot.
  - Look at the coloring of the victim's face and lips.
  - Look at the victim's skin and note if it is moist or dry; or if it is red, pale, flushed or ashen.
- The neck (Fig. 9-8).
  - Ask the victim to move his or her head from side-to-side if there is no discomfort and if an injury to the neck is not suspected.
  - Note pain, discomfort or inability to move.

Fig. 9-3



Fig. 9-4



Fig. 9-5



Fig. 9-6



Fig. 9-7

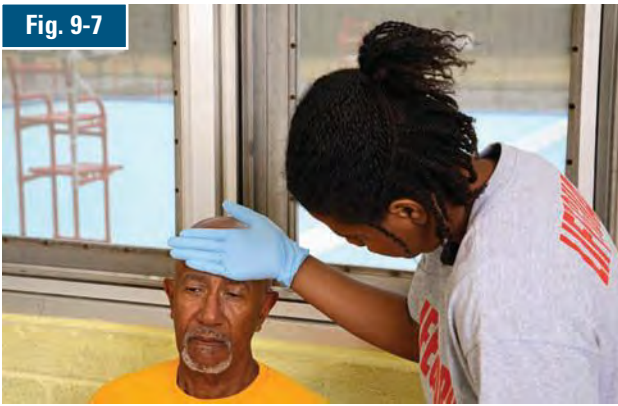


Fig. 9-8



Fig. 9-9



Fig. 9-10



Fig. 9-11



Fig. 9-12



- The shoulders (**Fig. 9-9**).
  - Ask the victim to shrug his or her shoulders.
- The chest and abdomen (**Fig. 9-10**).
  - Ask the victim to take a deep breath and blow air out.
  - Listen for difficulty or changes in breathing.
  - Ask the victim if he or she is experiencing pain during breathing.
- The arms (**Fig. 9-11**).
  - Check one arm at a time.
  - Ask the victim to move his or her hand and fingers and to bend the arm.

- The legs (**Fig. 9-12**).
  - Check one leg at a time.
  - Ask the victim to move his or her foot and toes and to bend the leg.

After completing the check, care for any conditions found. Have the victim rest in a comfortable position if he or she can move all body parts without pain or discomfort and has no other apparent signs or symptoms of injury or illness. Continue to watch for changes in consciousness and breathing.

If the victim is unable to move a body part or is experiencing dizziness or pain on movement—

  - Help the victim rest in a comfortable position.

- Keep the victim from getting chilled or overheated.
- Reassure the victim.
- Determine whether to summon EMS personnel.
- Continue to watch for changes in the level of consciousness and breathing.

### Checking a Conscious Child or Infant

When checking a child or infant for nonlife-threatening conditions, observe the child or infant before touching him or her. Look for signs and symptoms that indicate changes in the level of consciousness, trouble breathing and any apparent injuries or conditions. When beginning the check, start the examination at the toes so the child or infant can become familiar with the process and see what is happening. Look and check for the same things that would be examined for an adult or unconscious child or infant.

**LIFEGUARDING TIP: If any life-threatening conditions develop when performing the secondary assessment, stop the assessment and provide appropriate care immediately.**

## SUDDEN ILLNESS

Sudden illness can happen to anyone, anywhere. A life-guard may not know what the illness is, but he or she can still provide care. Victims of sudden illness usually look and feel ill. If something is suspected to be wrong, check the victim and look for a medical identification necklace or bracelet on the person's wrist, neck or ankle (Fig. 9-13). A tag will provide medical information about the person, explain how to care for certain conditions and list whom to call for help. The victim may try to say nothing is seriously wrong, but the victim's condition can worsen rapidly. Do not be afraid to ask the victim questions.

Fig. 9-13



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- There are many types of sudden illness, such as—
- A diabetic emergency.
  - Fainting.
  - A seizure.
  - A stroke.
  - An allergic reaction.
  - Poisoning.

### Signs and Symptoms of Sudden Illness

Many different sudden illnesses have similar signs and symptoms. These include—

- Changes in the level of consciousness, such as feeling light-headed, dizzy or becoming unconscious.
- Nausea or vomiting.
- Difficulty speaking or slurred speech.
- Numbness or weakness.
- Loss of vision or blurred vision.
- Changes in breathing; the person may have trouble breathing or may not be breathing normally.
- Changes in skin color (pale, ashen or flushed skin).
- Sweating.
- Persistent pressure or pain.
- Diarrhea.
- Seizures.
- Paralysis or an inability to move.
- Severe headache.

### General Care Steps for Sudden Illness

When providing care for sudden illness, follow the general procedures for injury or sudden illness on land and—

- Care for any life-threatening conditions first.
- Monitor the victim's airway, breathing and circulation (ABCs).
- Watch for changes in the level of consciousness.
- Keep the victim comfortable and reassure him or her.
- Keep the victim from getting chilled or overheated.
- Do not give the victim anything to eat or drink unless the victim is fully conscious and is not in shock.
- Care for any other problems that develop, such as vomiting.
- Administer emergency oxygen, if available and trained to do so.

### Diabetic Emergency

Victims who are diabetic sometimes become ill because there is too much or too little sugar in their blood. Many diabetics use diet, exercise or medication to control their diabetes. The victim may disclose that he or she is diabetic or it may be learned from the information on a medical identification tag or from a bystander. Often, diabetics know what is wrong and will ask for something with sugar in it or may carry some form of sugar with them.

If the diabetic victim is conscious and can safely swallow food or fluids, give him or her sugar, preferably in liquid

form. Most fruit juices and nondiet soft drinks have enough sugar to be effective. A lifeguard can also give table sugar dissolved in a glass of water. If the victim's problem is low blood sugar, sugar will help quickly. If the problem is too much sugar, the sugar will not cause any further harm.

Always summon EMS personnel if—

- The victim is unconscious or about to lose consciousness.
- The victim is conscious and unable to swallow.
- The victim does not feel better within about 5 minutes after taking sugar.
- Sugar cannot be found immediately. Do not spend time looking for it.

### Fainting

When a victim suddenly loses consciousness and then reawakens, he or she may simply have fainted. Fainting is not usually harmful and the victim will usually quickly recover. Lower the victim to the ground or other flat surface and position the victim on his or her back. If possible, raise the victim's legs 8 to 12 inches. Loosen any tight clothing, such as a tie or collar. Make sure the victim is breathing. Do not give the victim anything to eat or drink. If the victim vomits, position the victim on his or her side.

### Seizures

Provide care to a person who has had a seizure in the same manner as for any unconscious victim. To protect the victim from being injured, remove any nearby objects that might cause injury. Protect the victim's head by placing a thin cushion under it. Folded clothing makes an adequate cushion. If there is fluid in the victim's mouth, such as saliva, blood or vomit, roll him or her on one side so that the fluid drains from the mouth.

When the seizure is over, the victim will usually begin to breathe normally. He or she may be drowsy and disoriented or unresponsive for a period of time. Check to see if the victim was injured during the seizure. Be reassuring and comforting. If the seizure occurred in public, the victim may be embarrassed and self-conscious. Ask bystanders not to crowd around the victim. He or she will be tired and want to rest. Stay with the victim until he or she is fully conscious and aware of his or her surroundings.

If the victim is known to have periodic seizures, there is no need to summon EMS personnel. He or she will usually recover from a seizure in a few minutes. However, summon EMS personnel if—

- The seizure lasts more than 5 minutes.
- The victim has multiple seizures.
- The victim appears to be injured.
- The victim is pregnant.
- The victim is a diabetic.
- The victim fails to regain consciousness.
- The seizure occurs in the water.

Fig. 9-14



### Seizures in the Water

If the victim has a seizure in the water—

1. Summon or have someone else summon EMS personnel.
2. Support the victim with his or her head above water until the seizure ends (**Fig. 9-14**).
3. Remove the victim from the water as soon as possible after the seizure (since he or she may have inhaled or swallowed water).
4. Place the victim face-up on the deck and perform an initial assessment. Perform rescue breathing or cardiopulmonary resuscitation (CPR) if needed. If the victim vomits, turn the victim on his or her side to drain fluids from the mouth. Sweep out the mouth (or suction out the mouth if trained to do so).

### Stroke

As with other sudden illnesses, the signs and symptoms of a stroke or mini-stroke are a sudden change in how the body is working or feeling. This may include sudden weakness or numbness of the face, arm or leg. Usually, weakness or numbness occurs only on one side of the body. In addition, the victim may—

- Have difficulty talking or being understood when speaking.
- Have blurred or dimmed vision.
- Experience a sudden, severe headache; dizziness; or confusion.

To care for a victim of stroke, think **FAST**—

- **Face**—Weakness on one side of the face.
  - Ask the victim to smile. This will show if there is drooping or weakness in the muscles on one side of the face.
- **Arm**—Weakness or numbness in one arm.
  - Ask the victim to raise both arms to find out if there is weakness in the limbs.
- **Speech**—Slurred speech or trouble speaking.
  - Ask the victim to speak a simple sentence to listen for slurred or distorted speech. Example: "I have the lunch orders ready."

- Time—Time to summon EMS personnel if any of these signs or symptoms is seen.
  - Note the time that the signs and symptoms began and summon EMS personnel immediately.

## BITES AND STINGS

### Spider Bites/Scorpion Stings

Only two spiders in the United States are poisonous—the black widow and the brown recluse. Their bite can make a person very sick or can be fatal. Spider bites at aquatic facilities usually occur on the hands and arms when people reach or rummage in dark areas, such as lockers or storage areas. In addition, some scorpion stings can cause death.

If someone has been bitten by a black widow or brown recluse or stung by a scorpion—

- Summon EMS personnel.
- Wash the wound.
- Apply a cold pack to the site.
- If it is available, give the victim anti-venom—a medication that blocks the effects of the spider's poisonous venom.
- Care for life-threatening conditions.
- Monitor the victim's ABCs.
- Keep the victim comfortable.

### Snakebites

Snakebites kill very few people in the United States. Of the 7000 people bitten each year in the United States, less than five die.

To care for someone bitten by a pit viper, such as a rattlesnake, copperhead or cotton mouth—

- Summon EMS personnel.
- Wash the wound. Keep the injured area still and lower than the heart.

To care for someone bitten by an *elapid snake*, such as a coral snake (**Fig. 9-15**)—

- Summon EMS personnel.
- Wash the wound.
- Apply an elastic roller bandage. Use a narrow bandage to wrap a hand or wrist, a medium-width bandage to wrap an arm or ankle and a wide bandage to wrap a leg.
  - Check the circulation of the limb beyond where the bandage will be placed by noting changes in skin color and temperature.
  - Place the end of the bandage against the skin and use overlapping turns.
  - Gently stretch the bandage while wrapping. The wrap should cover a long body section, such as an arm or a calf, beginning at the point farthest from

Fig. 9-15



the heart. For a joint like a knee or ankle, use figure-eight turns to support the joint.

- Always check the area above and below the injury site for warmth and color, especially fingers and toes, after applying an elastic roller bandage. By checking before and after bandaging, any tingling or numbness that is noticed can be determined to be from the bandaging or the injury.
- Check the snugness of the bandage—a finger should easily, but not loosely, pass under the bandage.
- Keep the injured area still and lower than the heart.

For any snakebite, **DO NOT**—

- Apply ice.
- Cut the wound.
- Apply suction.
- Apply a tourniquet.
- Use electric shock.

### Stings

Insect stings are painful. They can be fatal for people who have severe allergic reactions. This allergic reaction may result in a breathing emergency. If someone is having a breathing emergency, summon EMS personnel.

To care for an insect sting—

- Examine the sting site to see if the stinger is in the skin (if there is one). If it is, scrape the stinger away from the skin with a fingernail or a plastic card, such as a credit card.
- Wash the wound with soap and water.
- Cover the site and keep it clean.
- Apply a cold pack to the site to reduce pain and swelling.
- Watch the victim for signals of an allergic reaction.
- Care for life-threatening conditions.
- Monitor the victim's ABCs.
- Keep the victim comfortable.

### Marine Life

Many marine creatures, including spiny urchins, stingrays and some types of coral and jellyfish, can sting people in the water. The supervisor of the aquatic facility should inform lifeguards about the kinds of marine life around the facility with which facility staff should be concerned.

If someone has been stung by marine life—

- Summon EMS personnel if the victim does not know what stung him or her, was stung on the face or neck, is known to be allergic to marine life or starts to have trouble breathing.
- Wash the wound with soap and water.
- For a jellyfish, sea anemone or Portuguese man-of-war sting, soak the area with household vinegar, baking soda mixed in water or rubbing alcohol as soon as possible. Do not rub the wound or apply fresh water or ammonia because this increases pain.
- For a stingray, sea urchin or spiny fish sting, flush the wound with tap water. Ocean water also may be used. Immobilize the injured area and soak it in non-scalding hot water, as hot as the victim can stand, for about 30 minutes or until the pain goes away. If hot water is not available, packing the area in hot sand may have a similar effect if the sand is hot enough. Then carefully clean the wound and apply a bandage.
- Care for life-threatening conditions.
- Monitor the victim's ABCs.
- Keep the victim comfortable.

## POISONING

### Ingested Poison

A *poison* is any substance that can cause injury, illness or death when introduced into the body. If a person is showing signals of poisoning, call the Poison Control Center at 1-800-222-1222. If the person is unconscious, if there is a change in the level of consciousness or if another life-threatening condition is present, summon EMS personnel.

### Inhaled Poison

Poisonous fumes can come from a variety of sources. They may or may not have an odor. Common inhaled poisons include—

- Carbon monoxide (car exhaust, fires, charcoal grills).
- Chlorine gas (highly toxic, requires training on how to recognize and deal with it).

If someone has inhaled poisonous fumes—

- Size up the scene to be sure it is safe to help the victim.

- Summon EMS personnel.
- Move the victim to fresh air.
- Care for life-threatening conditions.
- Monitor the victim's ABCs.
- If conscious, keep the victim comfortable.

### Poisonous Plants

Poison ivy, poison oak and poison sumac are the most common poisonous plants (**Fig. 9-16, A-C**). Some people are allergic to these plants and have life-threatening reactions after contact, while others may not even get a rash.

Fig. 9-16





If someone has come in contact with a poisonous plant—

- Remove exposed clothing and wash the exposed area thoroughly with soap and water as soon as possible after contact.
- If rash or wet blisters develop, advise the victim to see his or her health-care professional.
- If the condition spreads to large areas of the body or face, have the victim seek medical attention.

## WOUNDS

Soft tissues are the layers of skin and the fat and muscle beneath the skin's outer layer. A physical injury to the body's soft tissue, such as the skin, fat and muscles, is called a *wound*. Any time the soft tissues are damaged or torn, the body is threatened. Injuries may damage the soft tissues at or near the skin's surface or deep in the body. Germs can get into the body through a scrape, cut, puncture or burn and cause infection. Severe bleeding can occur at the skin's surface and under it, where it is harder to detect. Burns are a special kind of soft tissue injury. Like other types of soft tissue injury, burns can damage the top layer of skin or the skin and the layers of fat, muscle and bone beneath. Soft tissue injuries are typically classified as either closed or open wounds.

### Closed Wounds

Closed wounds occur beneath the surface of the skin. Internal bleeding may occur when the skin's surface is not broken and damage to soft tissue and blood vessels happens below the surface. Most closed wounds, such as a bruise (contusion), do not require special medical care. However, a significant violent force can cause injuries involving larger blood vessels and the deeper layers of muscle tissue. These injuries can result in severe bleeding beneath the skin. In this case, medical care is needed quickly.

### Caring for Internal Bleeding

Summon EMS personnel immediately if—

- The victim complains of severe pain or cannot move a body part without pain.
- The force that caused the injury was great enough to cause serious damage.
- An injured extremity is blue or extremely pale.
- The victim has excessive thirst, becomes confused, faint, drowsy or unconscious.
- The victim is vomiting blood or coughing up blood.
- The victim has skin that feels cool or moist or looks pale or bluish.
- The victim has a rapid, weak pulse.

- The victim has tender, swollen, bruised or hard areas of the body, such as the abdomen.

While waiting for EMS personnel to arrive—

1. Care for any life-threatening conditions first.
2. Monitor the victim's ABCs.
3. Watch for changes in the level of consciousness.
4. Keep the victim comfortable and reassure the victim.
5. Keep the victim from getting chilled or overheated.
6. Care for any other problems that develop, such as vomiting.

If the closed wound is not serious—

1. Apply direct pressure on the area to decrease bleeding under the skin.
2. Elevate the injured part to reduce swelling if a muscle, bone or joint injury is not suspected and it does not cause more pain.
3. Apply ice or a cold pack on the area to help control swelling and pain.
  - When applying ice or a chemical cold pack, place a gauze pad, towel or other cloth between the source of cold and the victim's skin.
  - Leave the ice or cold pack on for no more than 20 minutes. If continued icing is needed, remove the pack for 20 minutes and then replace it.

### Open Wounds

In an open wound, the break in the skin can be as minor as a scrape of the surface layers or as severe as a deep penetration. The amount of bleeding depends on the location and severity of the injury.

The following are the four main types of open wounds:

- **Abrasion (Fig. 9-17)**
  - Skin has been rubbed or scraped away (e.g., scrape, road rash, rug burn). The area usually is painful.
  - Dirt and other matter can enter the wound. Cleaning the wound is important to prevent infection.



- **Laceration (Fig. 9-18)**
  - Cuts bleed freely, and deep cuts can bleed severely.
  - Deep cuts can damage nerves, large blood vessels and other soft tissues.
- **Avulsion (Fig. 9-19)**
  - A cut in which a piece of soft tissue or even part of the body, such as a finger, is torn loose or is torn off entirely (e.g., amputation).
  - Often, deeper tissues are damaged, causing significant bleeding.
- **Puncture (Fig. 9-20)**
  - Puncture wounds often do not bleed a lot and can easily become infected.

Fig. 9-18



Fig. 9-19



Fig. 9-20



- Bleeding can be severe with damage to major blood vessels or internal organs.
- An embedded object in the wound should be removed only by EMS personnel.

### External Bleeding

External bleeding occurs when there is a break in the skin's surface. Most externally bleeding injuries a lifeguard will encounter will be minor, such as a small cut that can be cared for by applying an adhesive bandage. Minor bleeding, such as a small cut, usually stops by itself within 10 minutes when the blood clots. However, sometimes the cut is too large or the blood is under too much pressure for effective clotting to occur. In these cases, recognition and care needs to happen quickly.

**Caring for External Bleeding.** To care for a minor wound, follow these general guidelines:

- Cover the wound with a dressing, such as a sterile gauze pad.
- Apply direct pressure firmly against the wound for a few minutes to control any bleeding (Fig. 9-21).
- Wash the wound thoroughly with soap and water. If possible, irrigate an abrasion for about 5 minutes with clean, running tap water.
- Apply triple-antibiotic ointment or cream to a minor wound if the person has no known allergies or sensitivities to the medication.
- Cover the wound with a sterile dressing and bandage (or with an adhesive bandage) if it is still bleeding slightly or if the area of the wound is likely to come into contact with dirt or germs (Fig. 9-22).

To care for a major wound, follow the general procedures for injury or sudden illness on land and—

- Cover the wound with a dressing, such as a sterile gauze pad.
- Apply direct pressure firmly against the wound until bleeding stops.
- Cover the dressing with a roller bandage and tie the knot directly over the wound.

Fig. 9-21



Fig. 9-22



Fig. 9-23



- If the bleeding does not stop—
  - Apply additional dressings and bandages on top of the first ones (Fig. 9-23).
  - Take steps to minimize shock.
  - Summon, or have someone else summon, EMS personnel if not already done.
- Wash hands immediately after providing care.

### Shock

Any serious injury or illness can cause the condition known as *shock*. Shock is a natural reaction by the body. It usually means the victim's condition is very serious.

Signs and symptoms of shock include—

- Restlessness or irritability.
- Altered level of consciousness.
- Pale or ashen, cool, moist skin.
- Nausea or vomiting.
- Rapid breathing and pulse.
- Excessive thirst.

To minimize the effects of shock—

- Make sure that EMS personnel have been summoned.
- Monitor the victim's ABCs.
- Control any external bleeding.
- Keep the victim from getting chilled or overheated.
- Have the victim lie down and elevate the legs about 12 inches if a head, neck or back injury or if broken bones in the hips or legs are not suspected.

- Comfort and reassure the victim until EMS personnel arrive and take over.
- Administer emergency oxygen, if available and trained to do so.

**LIFEGUARDING TIP: DO NOT GIVE FOOD OR DRINK TO A VICTIM OF SHOCK.**

### Care for Wounds—Special Situations

Many kinds of wounds can occur at aquatic facilities, such as severed body parts, embedded objects or injuries to the mouth. In such situations, remain calm and follow the general procedures for injury or sudden illness on land.

#### Eye Injury

Care for open or close wounds around the eyeball as for any soft tissue injury. Never put direct pressure on the eyeball. For embedded objects in the eye—

- Summon EMS personnel.
- Help the victim into a comfortable position.
- Do not try to remove any object from the eye.
- Bandage loosely and do not put pressure on the injured eyeball.
- Stabilize the object as best as possible. A paper cup can be placed around the object to stabilize it (Fig. 9-24).

For small foreign bodies in the eye, such as sand or other small debris—

- Tell the victim to blink several times to try to remove the object.
- Gently flush the eye with water.
- Seek medical attention if the object remains.

For chemicals in the eye—

- Flush the eye continuously with water for 10 minutes or until EMS personnel arrive. Always flush away from the uninjured eye.

#### Injuries to the Mouth and Teeth

If a head, neck or back injury is not suspected—

- Rinse out the mouth with cold tap water, if available.

Fig. 9-24



Fig. 9-25



- Have the victim lean slightly forward or place the victim on his or her side.
- Try to prevent the victim from swallowing the blood, which may cause nausea or vomiting.
- Apply a dressing.
  - For inside the cheek, place folded sterile dressings inside the mouth against the wound.
  - For outside of the cheek, apply direct pressure using a sterile dressing (**Fig. 9-25**).
  - For the tongue or lips, apply direct pressure using a sterile dressing. Apply cold to reduce swelling and ease pain.
- If a tooth is knocked out—
  - Rinse out the mouth with cold tap water, if available.
  - Have the victim bite down on a rolled sterile dressing in the space left by the tooth (or teeth).
  - Save any displaced teeth.
    - Carefully pick up the tooth by the crown (white part), not the root.
    - Rinse off the root of the tooth in water if it is dirty. Do not scrub it or remove any attached tissue fragments.
    - Place the tooth in milk, if possible, or water and keep it with the victim.
  - Advise the victim to get to a dentist with the tooth as soon as possible.

### Injuries to the Abdomen

- Summon EMS personnel.
- Wounds through the abdomen can cause internal organs to push out.
- Carefully remove clothing from around the wound.
- Do not attempt to put the organs back into the abdomen.
- Cover the organs with a moist, sterile dressing and cover the dressing with plastic wrap.
- Place a folded towel or cloth over the dressing to keep the organs warm.
- Care for shock.

Fig. 9-26



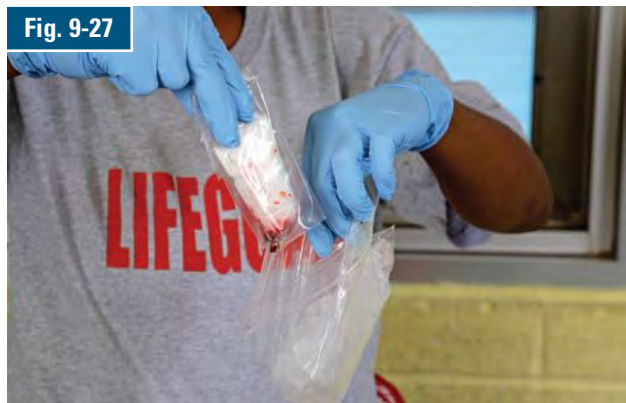
### Nosebleed

- Have the victim sit leaning slightly forward (**Fig. 9-26**).
- Pinch the nostrils together for about 10 minutes or until bleeding stops.
  - Other methods of controlling bleeding include applying an ice pack to the bridge of the nose or putting pressure on the upper lip just beneath the nose.
- After the bleeding stops, have the victim avoid rubbing, blowing or picking the nose, which could restart the bleeding.
- Medical attention is needed if the bleeding persists or recurs or if the victim says it results from high blood pressure.
- If the victim loses consciousness, place the victim on his or her side to allow blood to drain from the nose. Summon EMS personnel immediately.

### Severed Body Parts

- Summon EMS personnel.
- Control the bleeding.
- Wrap and bandage the wound to prevent infection.
- Wrap the severed body part(s) in sterile gauze (or clean material) (**Fig. 9-27**).

Fig. 9-27



- Place the severed body part(s) in a plastic bag.
- Put the plastic bag on ice (but do not freeze it).
- Care for shock.
- Be sure the body part is taken to the hospital with the victim immediately.

### Animal and Human Bites

An animal or human bite may be serious because of the wound and the risk of infection.

- Summon EMS personnel if the wound bleeds severely or if the animal is suspected to have rabies.
- For severe bleeding, control the bleeding first. Do not clean the wound. It will be properly cleaned at the hospital.

If the bleeding is minor—

- Wash the wound with soap and water.
- Control the bleeding.
- Cover with a sterile bandage.

### Emergency Childbirth

If a pregnant woman is about to give birth, summon EMS personnel. Important information to give to the dispatcher includes—

- The pregnant woman's name, age and expected due date.
- How long she has been having labor pains.
- If this is her first child.

The lifeguard should also—

- Talk with the woman to help her remain calm.
- Place layers of newspaper or other absorbent material covered with layers of towels or blankets on a flat surface for the woman to lie on.
- Control the scene so that the woman will have privacy.
- Position the woman on her back with her knees bent, feet flat and legs spread apart.

Remember, the woman delivers the baby, so be patient and let it happen naturally. The baby will be slippery, so take care to avoid dropping the newborn. After delivery, wrap the newborn in a clean, warm blanket or towel and place the newborn next to the mother.

### LIFEGUARDING TIPS:

- **Do not let the woman get up or leave to find a restroom (most women at this moment feel a desire to use the restroom).**
- **Do not hold the woman's knees together, this will not slow the birth process and may complicate the birth or harm the baby.**

- **Do not place fingers in the vagina for any reason.**
- **Do not pull on the baby.**

Continue to meet the needs of the newborn while caring for the mother. Help the mother to begin nursing the newborn, if possible. This will stimulate the uterus to contract and help slow bleeding. The placenta will still be in the uterus, attached to the newborn by the umbilical cord. Contractions of the uterus will usually expel the placenta within 30 minutes. Do not pull on the umbilical cord. Catch the placenta in a clean towel or container. It is not necessary to separate the placenta from the newborn.

### Scalp Injuries

Scalp injuries often bleed heavily. Putting pressure on the area around the wound can control the bleeding.

- Apply gentle pressure at first because there may be a skull fracture (**Fig. 9-28**). If a depression, spongy areas or bone fragments are felt, do not put direct pressure on the wound.
- Summon EMS personnel if the seriousness of the scalp injury is unknown.
- For an open wound with no sign of a fracture, control the bleeding with several dressings secured with a bandage.

### Embedded Objects

An object that remains in an open wound is called an *embedded object*. Take the following steps to care for an embedded object:

- Summon EMS personnel.
- Place several dressings around the object to keep it from moving.
- Bandage the dressings in place around the object (**Fig. 9-29**).
- Do not remove the object.



**Fig. 9-28**

Fig. 9-29



### Burns

There are four sources of burns: heat, radiation, chemical and electrical. Burns can be superficial (first degree), partial thickness (second degree) or full thickness (third degree) (Fig 9-30, A-C). How severe a burn is depends on—

- The temperature or strength of the heat or other source.
- The length of exposure to the burn source.
- The location of the burn.
- The area and size of the burn.
- The victim's age and general medical condition.

The following burns can lead to shock and need immediate medical attention:

- Burns that cause a victim to have difficulty breathing
- Burns covering more than one body part or a large surface area
- Burns to the head, neck, hands, feet or genitals
- Burns to the airway (burns to the mouth and nose may be a signal of this)
- Burns (other than a very minor one) to a child younger than age 5 or an elderly person older than age 60
- Burns from chemicals, explosions or electricity

### Caring for Burns

To care for burns, follow the general procedures for a land emergency. If the scene is safe, check the victim for life-threatening conditions. Summon EMS personnel if the condition is life threatening.

To care for burns—

- Stop the burning by removing the person from the source of the burn.
- Cool the burned area with cool, running water until pain is relieved.
- Cover the burned area loosely with a sterile dressing.
- Prevent infection.
- Take steps to minimize shock.
- Keep the victim from getting chilled or overheated.
- Comfort and reassure the victim.

Fig. 9-30



To care for electrical burns—

- Summon EMS personnel.
- Check the scene for safety, and check for life-threatening injuries. If a power line is down, wait for the fire department or the power company to disconnect the power source.
- Cool the burn.
- Be aware that electrocutions can cause cardiac and breathing emergencies. Be prepared to perform CPR or defibrillation.

- Cover the burn with a dry, sterile dressing.
- Take steps to minimize shock.

To care for chemical burns—

- Summon EMS personnel.
- Brush off dry chemicals with a gloved hand, being careful not to get the chemical on oneself or to brush it into the victim's eyes. Flush the affected area continuously with large amounts of water.
- Keep flushing the area for at least 20 minutes or until EMS personnel arrive.
- If a chemical gets into an eye, flush the eye with cool, clean running water until EMS personnel arrive. Always flush the affected eye from the nose outward and downward to prevent washing the chemical into the other eye.
- If possible, have the person remove contaminated clothes to prevent further contamination while continuing to flush the area.

To care for radiation (sun) burns—

- Care is the same as for any other burn.
- Cool the burned area and protect the area from further damage by keeping it out of the sun.

## INJURIES TO MUSCLES, BONES AND JOINTS

Injuries to muscles, bones and joints can happen from accidents, such as falls. There are four types of muscle, bone and joint injuries:

- **Fractures**—A complete break, a chip or a crack in a bone.
- **Dislocations**—The movement of a bone away from its normal position at a joint. They are usually more obvious than fractures.
- **Sprains**—The tearing of ligaments at a joint.
- **Strains**—The stretching and tearing of muscles or tendons.

It is difficult to know whether a muscle, bone or joint injury is a fracture, dislocation, sprain or strain, but it is not necessary to know what type of injury the victim has because the care that is provided is the same.

### Caring for Muscle, Bone and Joint Injuries

When caring for muscle, bone and joint injuries, use the general procedures for a land emergency and—

- Summon EMS personnel if the victim cannot move or use the injured area.
- Support the injured area above and below the site of the injury.
- Check for feeling, warmth and color below the injured area.
- Immobilize and secure the injured area if the victim must be moved and it does not cause further pain or injury.
- Recheck for feeling, warmth and color below the injured area.

### Immobilizing Muscle, Bone and Joint Injuries

Immobilizing a muscle, bone or joint injury helps keep the injured body part from moving. This may also help reduce any pain. Splinting is a method of immobilizing an injured extremity and should be used **ONLY** if moving or transporting a person to seek medical attention and if splinting does not cause more pain.

If splinting is necessary—

- Splint the injury in the position in which the injured area was found.
- Splint the injured area and the joints or bones above and below the injury site.
- Check for circulation (i.e., feeling, warmth and color) before and after splinting.

Following are ways to immobilize common muscle, bone and joint injuries:

- **Anatomic splints.** The person's body is the splint. For example, an arm can be splinted to the chest or an injured leg to the uninjured leg.
- **Soft splints.** Soft materials, such as a folded blanket, towel, pillow or folded triangular bandage, can be splint materials. A sling is a specific kind of soft splint that uses a triangular bandage tied to support an injured arm, wrist or hand.
- **Rigid splints.** Boards, folded magazines or newspapers or metal strips that do not have any sharp edges can serve as splints.
- **The ground.** An injured leg may be immobilized by being stretched out on the ground.

### Arm Injuries

To care for injuries to the arm—

- Leave the arm in the position in which it was found or in the position in which the victim is holding it (**Fig. 9-31**).



**Fig. 9-31**

Fig. 9-32



Fig. 9-35



Fig. 9-33



Fig. 9-36



Fig. 9-34



Fig. 9-37



- Place a triangular bandage under the injured arm and over the uninjured shoulder to form a sling (Fig. 9-32).
- Tie the ends of the sling at the side of the neck. Place gauze pads under the knots to make it more comfortable for the victim (Fig. 9-33).
- Secure the arm to the chest with a folded triangular bandage (Fig. 9-34).

### Leg Injuries

To care for injuries to the leg—

- Immobilize an injured leg by binding it to the uninjured leg:
  - Place several folded triangular bandages above and below the injured body area (Fig. 9-35).

- Place the uninjured body part next to the injured body area (Fig. 9-36).
- Tie triangular bandages securely with knots (Fig. 9-37).

### Foot Injuries

To care for injuries to the foot—

- Immobilize the ankle and foot using a soft splint, such as a pillow or folded blanket. Do not remove the victim's shoes.
  - Place several folded triangular bandages above and below the injured area (Fig. 9-38).
  - Gently wrap a soft object (pillow or folded blanket) around the injured area (Fig. 9-39).
  - Tie bandages securely with knots (Fig. 9-40).



Fig. 9-38



Fig. 9-39



Fig. 9-40



Fig. 9-41



Fig. 9-42



### Rib/Breastbone Injuries

- Place a pillow or folded towel between the victim's injured ribs and arm.
- Bind the arm to the body to help support the injured area.

### Hand and Finger Injuries

- For a hand injury, place a bulky dressing in the palm of the victim's hand and wrap with a roller bandage.
- For a possible fractured or dislocated finger, tape the injured finger to the finger next to it (Fig. 9-41).

### Caring for Open Fractures

An open fracture occurs when a broken bone tears through the skin and surrounding soft tissue (Fig. 9-42). To care for a victim with an open fracture—

- Summon EMS personnel.
- Place sterile dressings around the open fracture as would be done for an embedded object.
- Bandage the dressings in place around the fracture.
- Do not move the exposed bone and limb. This may cause the victim great pain and may worsen the injury.

## HEAT- AND COLD-RELATED EMERGENCIES

Exposure to extreme heat or cold can make a person ill. A person can develop a heat- or cold-related illness even when temperatures are not extreme. Whether such emergencies occur depends on the wind and humidity and the victim's physical activity, general working or living conditions, age and state of health.

Once the signs and symptoms of a heat- or cold-related illness appear, the victim's condition can quickly get worse and even lead to death.

### Heat-Related Emergencies

Heat-related emergencies are progressive conditions caused by overexposure to heat. If recognized in the early stages, heat-related emergencies can usually be

reversed. If not recognized early, they may progress to heat stroke, a life-threatening condition. There are three types of heat-related emergencies.

- *Heat cramps* are painful muscle spasms that usually occur in the legs and abdomen. Heat cramps are the least severe of the heat-related emergencies.
- *Heat exhaustion* (early stage) is an early indicator that the body's cooling system is becoming overwhelmed. Signs and symptoms of heat exhaustion include—
  - Cool, moist, pale, ashen or flushed skin.
  - Headache, nausea, dizziness.
  - Weakness, exhaustion.
  - Heavy sweating.
- *Heat stroke* (late stage) is when the body's systems are overwhelmed by heat and stop functioning. Heat stroke is a life-threatening condition. Signs and symptoms of heat stroke include—
  - Red, hot, dry skin.
  - Changes in the level of consciousness.
  - Vomiting.

### Caring for Heat-Related Emergencies

Take the following steps to care for someone suffering from a heat-related emergency:

- Move the victim to a cool place.
- Loosen tight clothing.
- Remove perspiration-soaked clothing.
- Apply cool, wet towels to the skin.
- Fan the victim.
- If the victim is conscious, give him or her small amounts of cool water to drink.

If the victim refuses water, vomits or starts to lose consciousness—

- Send someone to summon EMS personnel.
- Place the victim on his or her side.
- Continue to cool the victim by using ice or cold packs on his or her wrists, ankles, groin and neck and in the armpits.
- Continue to check for breathing and a pulse.

### Cold-Related Emergencies

It does not have to be extremely cold for someone to suffer a cold-related emergency, especially if the victim is wet or if it is windy.

#### Hypothermia

*Hypothermia* occurs when a victim's entire body cools because he or she is unable to keep warm. The victim will die if not provided care. The signs and symptoms of hypothermia include—

- Shivering, numbness or a glassy stare.
- Apathy, weakness or impaired judgment.
- Loss of consciousness.

To care for hypothermia—

- Gently move the victim to a warm place.
- Monitor the victim's ABCs.
- Give rescue breathing or CPR if needed.
- Remove any wet clothing and dry the victim.
- Warm the victim by wrapping him or her in blankets or by putting dry clothing on the victim (passive rewarming).
- If the victim is alert, give him or her warm liquids to drink that do not contain alcohol or caffeine.
- Hot water bottles and chemical hot packs may be used when first wrapped in a towel or blanket before applying.
  - Do not warm the victim too quickly, such as by immersing him or her in warm water. Rapid warming may cause dangerous heart rhythms.

#### Frostbite

*Frostbite* is the freezing of body parts exposed to the cold. Severity depends on the air temperature, length of exposure and the wind. Frostbite can cause the loss of fingers, hands, arms, toes, feet and legs. The signs and symptoms of frostbite include—

- A lack of feeling in an affected area.
- Skin that appears waxy, cold to the touch or discolored (flushed, white, yellow or blue).

To care for frostbite—

- Get the victim out of the cold.
- Do not attempt to rewarm the frostbitten area if there is a chance that it might refreeze or if close to a medical facility.
- Handle the area gently; never rub the affected area.
- Warm gently by soaking the affected area in warm water (100°–105° F or 37°–40° C) until normal color returns and the area feels warm.
- Loosely bandage the area with dry, sterile dressings.
- If the victim's fingers or toes are frostbitten, place dry, sterile gauze between them to keep them separated.
- Avoid breaking any blisters.
- Take precautions to prevent hypothermia.
- Summon EMS personnel to seek emergency medical care as soon as possible.

## PUTTING IT ALL TOGETHER

A variety of injuries and illnesses may be seen in an aquatic environment. People can be injured and become ill in many ways, and part of a lifeguard's job is to provide effective care. Follow general procedures for injury or sudden illness on land until EMS personnel arrive and take over. Remember that a lifeguard has a duty to respond, and this role is important for the safety and well-being of patrons.