

# LANDSCAPE TRAINING MANUAL FOR IRRIGATION TECHNICIANS



NATIONAL  
ASSOCIATION OF  
**LANDSCAPE  
PROFESSIONALS**



# IRRIGATION

**Hunter**<sup>®</sup>



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## LANDSCAPE TRAINING MANUAL FOR IRRIGATION TECHNICIANS

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# First Aid & Safety

## What You Will Learn

**After reading this chapter, you will be able to:**

- Explain the importance of prevention and describe preventive measures that can reduce the chances of accidents or injuries on the job for at least eight situations.
- Discuss the importance of preparation and name at least five daily preparation measures that will aid in the event of a medical emergency.
- Name at least 10 possible emergency situations you could encounter on the job.
- Describe possible symptoms of medical conditions and what actions to take and to avoid for at least 10 medical emergency situations that could occur.
- Find training in first aid, CPR (cardiopulmonary resuscitation), and use of an AED (automated external defibrillator).

## Chapter

# 1

## Preview

### Prevention

- Barricades
- Product use
- Clothing and PPE
- Driving safely and vehicle safety
- Electricity
- Footwear
- Lifting
- Training

### Preparation

- Communications
- Emergency contacts
- First-aid kit
- First aid and CPR training
- Known allergies

### Situations and Responses

- Multiple health and related issues

## Overview

If a medical emergency occurs on the job, the injured or sick person needs to get immediate help. However, the care given to the victim before emergency medical personnel arrive can make the difference between a full or partial recovery, or even life and death. This chapter details how to be prepared to assess and deal with an emergency situation until medical help is available.

Three important sections are covered in this chapter:

1. **Prevention** — Steps to prevent accidents and medical emergencies from occurring.
2. **Preparation** — Ways to be prepared for emergencies.
3. **Situations and Responses** — How to identify different emergency medical situations, and how to help or respond appropriately until medical professionals arrive.

## Prevention

**P**revention is the best way to minimize the risks of being injured. Many accidents are easily preventable when you identify potential hazards. The table that follows lists several situations that may be encountered on the job in the landscape industry, as well as some preventive measures that can reduce the number and severity of mishaps.



### IMPORTANT!




Familiarity with this information does not qualify you to give emergency medical care. However, proper training in first aid, CPR (cardiopulmonary resuscitation), and AED (automated external defibrillator) may qualify you to perform certain procedures during an emergency.

This information is intended to provide an introduction to topics about which people working in the landscape industry should know. The Red Cross, St. John's Ambulance (Canada) and other resources can provide more comprehensive information, as well as qualified instruction in first aid and safety.

## Preventive Measures

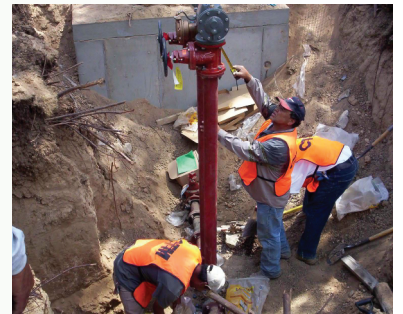
Situation	Preventive Measures
Barricading/ Securing Work Area	If hazards such as holes, trenches, falling limbs, etc., are present in your work area, set up barricades to keep people well away from the danger areas.
Product Use	<p>Before working with pesticides, fertilizers or other products, read the label and material safety data sheets (MSDS) carefully! Remember, the “label is the law.” Take proper precautions by wearing protective clothing and equipment and using other safety devices (such as a respirator), as recommended on the label for pesticides and other products. Also see the next section, “Clothing and Personal Protective Equipment.”</p> <p>Most states require specific training and/or certification or licensure for those who use and apply products. In Canada, ensure that you have the applicable provincial pesticide applicator’s license.</p>
Clothing and Personal Protective Equipment (PPE)	<p>Wear clothing and safety equipment appropriate for the job being performed. A task analysis or job site analysis completed prior to beginning work helps determine the potential hazards and the PPE required.</p> <p>Protective gear might include gloves, hardhat, goggles or safety glasses, earplugs, safety vests, etc. When working with pesticides or other products, a respirator may be necessary. Pesticide labels include information on the proper protective equipment to use/wear. Be sure to read the label. See also Product Use above.</p>
Driving Safely and Vehicle Safety	<p>Before backing up a vehicle, always look in all directions. Use a spotter whenever one is available.</p> <p>When driving a vehicle with a trailer in tow, use special care. The recommended maximum speed for a truck hauling a trailer is 55 mph (90 km/hr). When operating a tractor designed for one person, do not allow a passenger to ride along.</p> <p>Special care must be taken when transporting products in a vehicle. Hazardous materials (hazmat) training is required in most areas when transporting products. Additional training, licensing or permits may be required by employers and employees when transporting specific products and/or when transporting large volumes of products, or other liquid cargo, including water. Also, be aware of and up-to-date on local and state/provincial regulations for transporting products across state/provincial borders.</p> <p><i>Note: If talking on the phone when driving, always use a hands-free device. This is the law in many states and provinces. The best safety precaution is to avoid talking on the phone while driving and never text while driving!</i></p>

## Preventive Measures

Situation	Preventive Measures
<p><b>Electricity</b></p>	<p>If a power line is down, immediately contact the electric company and ensure that no one enters the surrounding area until the site is secured by the service provider.</p> <p>Before working on any electrical equipment, ensure that the electricity has been turned off and remains off while working. If working on a controller or wiring, make sure the electricity is turned off and disconnected from the power source.</p>  <p><i>Mountain High Tree, Lawn &amp; Landscape Company</i></p>
<p><b>Footwear</b></p>	<p>Wear proper, safety-approved work boots while performing landscape work. In the United States, the Occupational Safety and Health Administration (OSHA) designates standards for footwear. In Canada, work boots must be labeled with the Canadian Standards Association (CSA) green triangle.</p>
<p><b>Lifting</b></p>	<p>Face the object being lifted to avoid twisting your back. Bend at the knees with a straight back when lifting. Lift with your legs.</p> <p>Do not strain to lift a heavy object. If the object is too heavy, get help.</p> <p>Take extra care when carrying something over an uneven or slippery surface.</p>  <p><i>Swingle Lawn, Tree &amp; Landscape Care</i></p>
<p><b>Tools and Equipment</b></p>	<p>Ensure that all tools and equipment are properly maintained and functioning correctly. All guards should be in place and guards should not be altered or removed.</p> <p>When transporting tools and equipment, be sure the correct safety procedures are followed for securing them in the vehicle or trailer.</p>  <p><i>Jocelyn Chilvers Design</i></p>
<p><b>Training</b></p>	<p>All personnel must receive proper training in the tasks they will perform. Make sure that there is a documentation process in place that tracks when each individual received training and also when updated training or certification is required.</p> <p>Only those who have had adequate instruction and supervision are allowed to operate trenchers, mowers, chainsaws, or any other power equipment. Some power equipment requires certification (for example, forklifts).</p>

## Preventive Measures

Situation	Preventive Measures
<p>Training (cont'd)</p>	<p>Hazmat (hazardous materials) training is a requirement in most areas. In Canada, the equivalent training requirement is through WHMIS (Workplace Hazardous Materials Information System).</p>
<p>Utility Locates and Trench Shoring</p>	<p>Before digging or trenching, check for underground utility lines by calling the utility. In 2007, the Common Ground Alliance (CGA) launched 811 as the U.S. national “call before you dig” number. Calling 811 will connect you directly to the local one-call number. In Canada, each province has its own “one-call” number to call before digging.</p> <p>Be cautious as even this information has its limitations and can be incorrect. The one-call services will typically only locate public utility lines, not private lines such as 110 power to parking lot lights, signage or sprinkler controllers. Keep in mind that it is always the contractor’s responsibility to call the utility notification service, pot-hole marks by hand-digging to determine the depth of lines, stay 18" away from marks with machinery, and to make sure marks remain visible. It is common to call for re-marking several times during a project.</p> <p>Typically, during landscape construction projects, trench shoring becomes necessary to prevent collapse of soil, which can cause injury or death to workers. Specific training and certification are available and required in most areas for any excavation where a worker’s head or shoulders will be below the native soil level. Various shoring systems are available and shoring design must meet federally regulated standards.</p>
<p>Weather</p>	<p><b>Hot weather</b> — Drink lots of water before being thirsty — at least 16 ounces (500 ml) every hour. Wear lightweight clothing and a hat. Apply sunscreen. Schedule frequent rest periods in the shade and drink water.</p> <p>Use good judgment. If someone collapses from heat stress, help by responding as indicated below under Heat Cramps and Heat Exhaustion, but also use it as a sign to be sure all workers are sufficiently hydrated.</p> <p><b>Cold weather</b> — Dress warmly and stay dry. Choose materials that hold body heat — wool is a better choice than cotton. If the temperature is likely to change, dress in layers. Remove clothing during the day as temperatures warm and add layers as the temperatures cool. Keep waterproof clothing handy in case it rains or snows while working. Hypothermia danger increases with wind, time of exposure and wetness.</p> <p><b>Lightning storm</b> — If possible, get indoors or into a vehicle. If you cannot get indoors, go to a low spot and crouch down. Do not seek shelter under a tree.</p>



## Preparation

**A**lthough preventive measures, such as those outlined above, can reduce the likelihood of injury or accidents, emergency situations may still occur. When someone is in need of urgent care, and time is critical, the resources should be readily available. Be prepared! The following table lists several ways to be prepared for emergencies.

### Preparation Measures

Category	Preparation Measures
<p>Communications Emergency Contacts</p>	<p><i>Cellular phones</i> — Be sure to have a charged and functioning cellular phone on hand. Some landscape contractors require all vehicles to have a mobile charger for all communication devices.</p> <p><i>Two-way radios</i> — Since cellular phones do not operate in all locations, be sure to have two-way radios on hand as well for communication during emergencies.</p> <p>Keep a list of emergency phone numbers on hand. While 911 should be your first call in an emergency, other important phone numbers include:</p> <ul style="list-style-type: none"> <li>• Poison control center</li> <li>• Electric company</li> <li>• Other utilities</li> </ul>
<p>Level One or Two First Aid Kit</p>	<p>Keep a first aid kit handy and make sure it is fully stocked.</p> <p>Ensure that the kit has disposable latex and non-latex gloves. Wear them to prevent contact with blood and fluids, and potential exposure to blood-transmitted diseases.</p>
<p>First Aid/CPR/AED Training</p>	<p>Training in first aid, CPR (cardiopulmonary resuscitation) and AED (automated external defibrillator) can make a difference between life and death in emergency situations. This training is available from the Red Cross and a variety of other sources.</p> <p>To find a course in your area visit <a href="http://www.redcross.org">www.redcross.org</a> and in Canada, <a href="http://www.redcross.ca">www.redcross.ca</a>.</p>
<p>Known Allergies</p>	<p>Be sure to know whether anyone on the work crew has allergies. If someone with severe allergies carries specific medication or an anaphylaxis kit, be sure to know where it is and how to use it. Anaphylaxis is a rapid and severe allergic reaction that can be life threatening if not treated immediately.</p> <p>Be sure that the medications are not expired, since many booster shots have a shelf life of only one year, after which time they may not be effective.</p>



## Emergency Situations & Effective Responses

**E**ven when reasonable precautions are taken, medical emergencies may still arise. If an injury or other medical emergency occurs, it is important to stay calm and think clearly before acting.

### GET HELP—Call 911 immediately

When possible, have one person call for help while the most qualified individual attends to the injured or sick person. Below is a list of emergency medical situations (in alphabetical order) that may occur. For each situation, there is a list of:

- **What to Look For** — Descriptions of common symptoms to help identify the cause of the problem
- **DOs** — Actions to take while waiting for emergency medical personnel to arrive
- **DON'Ts** — Actions to avoid



Keep first-aid kits in vehicles and in the shop.

**Note:** Recommended actions to take during emergencies are updated over time. Be sure to keep up to date on training.

### Complete paperwork

When the emergency has passed, remember to complete appropriate paperwork, such as company accident reports related to insurance and workers compensation claims.

## Allergic Reactions

Some people experience allergic reactions when exposed to substances that most people tolerate without a problem. These substances can include venom from spiders, bee stings, certain foods, pollen or medications. Some allergic reactions can be severe or even life threatening.

### What to look for

- Hives
- Wheezing or labored breathing
- Swollen eyes, face or tongue
- Weakness or dizziness
- Cramps or abdominal pain
- Nausea or vomiting

### Do

- Ensure victim has an open airway and is breathing.
- If the victim carries emergency allergy medication, help him/her take it.
- If the reaction is from a bee sting, try to remove the stinger. Scrape it away but don't squeeze it (don't use tweezers). Squeezing could release more venom.
- If a bee sting does NOT cause a visible allergic reaction, remove stinger and treat with alcohol.

### Don't

- Don't place a pillow under the victim's head if he is having difficulty breathing.
- Don't squeeze the wound area of a bee sting to remove the stinger.

## Amputation

If a body part becomes severed due to an accident, it can sometimes be re-attached by physicians at a trauma center.

### What to look for

- Body part that has been cut off
- Bleeding

### Do

- Control bleeding at the amputated site using firm, direct pressure with clean, dry dressing or cloth. Elevate the injured area over the heart level, or if lying, elevate the feet.
- Gently rinse the severed body part with water only.
- Wrap the severed body part in gauze or a clean cloth or towel. Place it in a plastic bag. Keep cool and dry but do not allow to freeze. If possible, put the wrapped part in water with a small amount of ice.
- Call 911 or transport person to a hospital as quickly as possible.

### Don't

- Don't place the severed body part directly on ice.

## Bleeding

The loss of a small amount of blood is usually not serious. However, losing two or more pints of blood (one or more litres) can be life threatening. Be cautious when exposed to another person's blood. There is a risk of infection from blood-borne pathogens. Consider seeking medical attention if direct contact with another person's blood occurs.

### What to look for

All sources of bleeding

### Do

**First:** Apply direct pressure to the wound using a sterile dressing or clean cloth.

**If you do not believe a bone is broken:** Elevate the wounded area above the level of the heart.

**If bleeding continues:** Apply pressure to a pressure point. There are 26 pressure points located along main arteries. This will not be effective unless a pressure point is located. In either case, continue direct pressure to the wound.

**If bleeding still does not stop:** As a last resort, apply a tourniquet. Since this can cut off the blood supply to tissues that need it, apply a tourniquet only in a life-threatening situation.

### Don't

- Don't move the person unless he/she is in immediate danger.
- Don't try to clean a large wound.
- Don't remove a dressing if it becomes blood soaked. Put a new one on top.
- Don't remove any object stuck in the wound as it may cause more severe bleeding.

## Burns Caused by Heat

Burns are classified by their degree of severity. While minor burns are not serious, severe burns can be life threatening and/or cause permanent disfigurement.

**1st-degree burns** Least severe. Only the top layer of skin, the epidermis, is injured. Sunburn is considered a 1st-degree burn.

**2nd-degree burns** Injures the first layer of skin and the one below it, the dermis. Hot liquids can cause 2nd-degree burns.

**3rd-degree burns** Most severe. Destroys all skin layers. Muscle and bone can also be damaged. Fire and prolonged contact with hot objects are among the most common causes of 3rd-degree burns.

What to look for	Do	Don't
<p><b>1st-degree burns:</b></p> <ul style="list-style-type: none"> <li>• Pain</li> <li>• Red skin</li> <li>• Slight swelling</li> </ul>	<p><b>1st-degree burns:</b></p> <ul style="list-style-type: none"> <li>• Submerge the burned area (1st and 2nd-degree burns only) in cold water or hold under cold running water.</li> <li>• Apply cloth or towels soaked in cool water.</li> </ul>	
<p><b>2nd-degree burns:</b></p> <ul style="list-style-type: none"> <li>• Pain (can be severe)</li> <li>• Red or mottled skin</li> <li>• Blisters</li> <li>• Swelling</li> <li>• Wetness</li> </ul>	<p><b>2nd-degree burns:</b></p> <ul style="list-style-type: none"> <li>• Submerge the burned area in cold water (1st and 2nd-degree burns only).</li> <li>• Apply cloth or towels soaked in cool water.</li> <li>• Gently blot the burn dry and apply a sterile dressing or clean cloth.</li> <li>• If arms or legs are burned, elevate them.</li> </ul>	<p><b>2nd-degree burns:</b></p> <ul style="list-style-type: none"> <li>• Don't break blisters.</li> </ul>
<p><b>3rd-degree burns:</b></p> <ul style="list-style-type: none"> <li>• White or charred skin</li> <li>• Little or no pain</li> </ul>	<p><b>3rd-degree burns:</b></p> <ul style="list-style-type: none"> <li>• Cover the burned area with a thick sterile dressing or clean cloth.</li> <li>• If arms or legs are burned, elevate them.</li> <li>• Call 911</li> </ul>	<p><b>3rd-degree burns:</b></p> <ul style="list-style-type: none"> <li>• Don't apply ice or water to severe burns.</li> <li>• Don't put ointments, creams or other substances on severe burns.</li> <li>• Don't remove charred clothing that is sticking to burns.</li> </ul>

## Chemical Burns/Chemicals in Eyes

Some products can cause serious burns to the skin or eyes. Quick action will often reduce injury from chemical contact. A Material Safety Data Sheet (MSDS) is required under the OSHA Hazard Communication Standard in the U.S. and WHMIS (Workplace Hazardous Materials Information System) in Canada. The MSDS provides detailed information prepared by the manufacturer of a hazardous product. It describes the physical and chemical properties of the product, as well as information such as toxicity, procedures for spills and leaks, and storage guidelines.

The MSDS also indicates the potential health and physical hazards of a chemical and describes how to respond effectively to exposure situations. Refer to the sample MSDS in the Appendix.

### What to look for

- Red, irritated skin
- Rash
- Blisters
- Pain

### Do

- Have the MSDS immediately available.
- If possible, identify the chemical involved. Save the packaging from the product that caused the burn.
- Call 911 and a poison control center.
- Wash the product off of skin as quickly as possible with a shower or hose. Flush with lots of water for 20 minutes.
- If a product gets in the eye, flush the eye with water for 20 minutes. Tilt the head sideways, hold the eyelid open, then flush from the inner corner (by the nose) outward.
- If the person has contacted dry lime, brush it away before flushing with water.

### Don't

- Don't rub if a product is in an eye.
- Don't apply ointments to a product burn.



*Wear safety glasses to protect eyes.*

## Electrical Injury

Contact with electrical current is potentially fatal as it can stop the heart and damage internal organs. The degree of injury depends on the strength of the current and how long the victim is exposed to it.

**CAUTION:** Keep people and equipment the proper distance from power lines to avoid arcing. Arcing is bright luminous discharge of current that is formed when a strong current jumps a gap in a circuit. Arcing can cause burns and in some cases explosions.

What to look for	Do	Don't
<ul style="list-style-type: none"> <li>• Charred skin</li> <li>• Blisters</li> <li>• Irregular or no heartbeat</li> <li>• Rapid or no breathing</li> <li>• Rapid or no pulse</li> <li>• Muscular pain</li> <li>• Fatigue</li> <li>• Headache</li> </ul>	<ul style="list-style-type: none"> <li>• If the victim is in contact with electrical current, turn off the electricity at the source.</li> <li>• If the victim is in contact with electrical current and it cannot be turned off, use a dry rake handle, broomstick, rope or other non-conductive object to separate the victim from the current.</li> <li>• Monitor victim for pulse and breathing.</li> <li>• Treat electrical burns as severe 3rd-degree burns (see Burns on page 9).</li> </ul>	<ul style="list-style-type: none"> <li>• Don't approach the victim until you are sure the area is secure.</li> <li>• Don't touch someone who is in contact with electrical current.</li> <li>• Don't move a victim of electrical injury unless he or she is in immediate danger.</li> </ul>

## Eye Injury — Dust and Small Particles

Wear the eye protection appropriate for the tasks. Make sure the eye protection fits properly, stays in place and is in good condition. If dust or small particles get in the eye, which can happen even when wearing eye protection, use the following guidelines.

What to look for	Do	Don't
<ul style="list-style-type: none"> <li>• Eye redness that may be corneal abrasion</li> <li>• Eye scratches/ lacerations</li> </ul>	<ul style="list-style-type: none"> <li>• Use eyewash to flush the eye with generous amounts of liquid.</li> <li>• Cover for protection if needed, even to prevent rubbing.</li> <li>• Seek medical attention if a particle doesn't wash out or if redness or pain persists.</li> </ul>	<ul style="list-style-type: none"> <li>• Don't rub the eye as that can cause additional scratching or embed a particle more deeply, causing further damage.</li> </ul>

## Fractured Bones

A fracture is when a bone cracks or breaks. Bone fractures are often obvious, but not always. If you are not sure of the severity of the injury, assume there is a fracture.

What to look for	Do	Don't
<ul style="list-style-type: none"> <li>• Sound or feel of bone snapping</li> <li>• Bone piercing through the skin</li> <li>• Pain</li> <li>• Swelling</li> <li>• Deformed appearance of limb</li> </ul>	<ul style="list-style-type: none"> <li>• If the bone has pierced skin, cover with a clean dressing.</li> <li>• Immobilize the injured area. For an injured arm or leg, use a splint or sling to secure the limb in the position in which it was found.</li> <li>• Seek medical attention right away.</li> </ul>	<ul style="list-style-type: none"> <li>• Don't move the victim until the injured area is immobilized.</li> <li>• Don't apply pressure and get pressure off of affected area.</li> </ul>

## Frostbite

Frostbite is when the skin freezes from prolonged exposure to cold temperatures. Fingers, toes, ears, nose and cheeks are most often affected. Risk of frostbite is higher in conditions of cold temperature with high wind speed and if clothing or skin is wet. See also "hypothermia" on page 14.

What to look for	Do	Don't
<p><b>Mild frostbite:</b></p> <ul style="list-style-type: none"> <li>• Redness</li> <li>• Burning</li> <li>• Coldness</li> <li>• Numbness</li> </ul> <p><b>Severe frostbite:</b></p> <ul style="list-style-type: none"> <li>• Swelling</li> <li>• Blisters</li> <li>• Gray or blotchy white skin</li> <li>• Blackened skin</li> </ul>	<ul style="list-style-type: none"> <li>• Rewarm the frostbitten area by placing in warm (not hot) water for at least 30 minutes.</li> <li>• If warm water is not available, gently wrap the frostbitten area in wool or warm blankets.</li> <li>• Drink warm, decaffeinated beverages (caffeine can restrict circulation).</li> </ul>	<ul style="list-style-type: none"> <li>• Don't rewarm the frostbitten area too quickly.</li> <li>• Don't rub the frostbitten area.</li> <li>• Don't break blisters.</li> <li>• Don't walk if feet are frostbitten.</li> <li>• Don't warm the frostbitten area with dry heat from a heating pad, heat lamp, campfire, hair dryer, radiator or other source.</li> <li>• Don't drink caffeinated beverages, such as coffee or tea.</li> <li>• Don't have alcohol or tobacco.</li> </ul>

## Heart Attack

Fatalities from heart attacks can often be avoided if the victim receives prompt medical attention. An automated external defibrillator (AED) can check a person's heart rhythm, advise whether a shock is needed, and tell rescuers what steps to take. AEDs are becoming more common and may be located in sports arenas, office buildings and shopping malls. Some states and provinces require notification of local emergency communications (emergency medical services or EMS) of the location and type of AED. Keep your First Aid/CPR/AED certification current.

### What to look for

- Discomfort or pressure in chest
- Shortness of breath
- Irregular heartbeat
- Sweating
- Jaw pain
- Heartburn or indigestion
- Arm pain (usually in left arm)
- Upper back pain
- Nausea
- Anxiety

### Do

- Tell someone else what is going on and call or ask someone to call 911.
- If victim uses heart medicine (nitroglycerin), place a tablet under the tongue.
- Position the victim in a half-sitting position with the legs up and bent at the knees.
- Put a pillow or rolled towel under the knees. Support the back.
- Loosen any clothing around the victim's neck, chest and waist.
- Monitor for breathing and pulse.
- If trained in CPR, be prepared to begin chest compressions.

### Don't

- Don't wait to see if pain goes away.
- Don't allow victim to eat or drink anything.
- Don't allow victim to lie down if breathing is difficult.

## Heat Cramps and Heat Exhaustion

Heat illness occurs when the body's core temperature rises above safe levels. Heat-related illnesses should be treated immediately and aggressively, as consequences can be severe or even life threatening.

### What to look for

#### Heat cramps:

- Muscle cramps, usually in the legs or abdomen

#### Heat exhaustion:

- Cool, pale, moist skin
- Dilated (enlarged) pupils
- Heavy perspiration
- Extreme thirst
- Headache
- Nausea, vomiting
- Weakness or dizziness

### Do

- Seek medical attention.
- Move to a cooler place.
- Lie the victim down with legs elevated.
- Cool down with water, wet towels, a cold compress, a fan, etc.
- Drink water, sports drink or salt water (1 teaspoon salt to 1 quart water; 5 ml salt to 1 litre).

### Don't

- Don't drink beverages containing alcohol or caffeine.
- Don't drink more fluids if victim is vomiting.

## Heatstroke

As with other heat-related illnesses described above, heatstroke should be treated immediately and aggressively, as consequences can be severe or even life threatening.

### What to look for

- Dry, hot, red skin
- Dilated (enlarged) pupils
- Rapid pulse
- Rapid breathing
- Weakness
- Muscle spasms
- Seizures
- Unconsciousness

### Do

- Lower the body temperature rapidly by immersing in cold water, applying cold packs or any other method available.
- Call 911.

### Don't

- Don't eat or drink anything.

## Hypothermia

Hypothermia occurs when the body's internal temperature drops below 95° F (35° C). Hypothermia danger increases with wind, time of exposure, and wetness. Be aware that hypothermia can occur even when land temperatures are above freezing and when water temperatures are near but below body temperature.

### What to look for

- Shivering
- Clumsiness
- Confusion
- Slurred speech
- Muscle stiffness
- Irregular heartbeat

### Do

- Move to a warm, dry location and rewarm.
- Replace wet clothes with dry clothes or blankets.
- If victim can swallow easily, offer warm, sweetened beverages.
- Seek medical attention.

### Don't

- Don't rewarm with dry heat from a heating pad, heat lamp, campfire, hair dryer, radiator or other source.
- Don't drink caffeinated beverages such as coffee or tea.
- Don't have alcohol or tobacco.





## Impaled Objects

Impaled objects have pierced some part of the body and remain in place. In most cases, it should be left in place to prevent further damage.

### What to look for

- An object that has pierced the body

### Do

- If object is in an eye, place pads around eye then place a cup or cover over the object to secure it. Cover the other eye to reduce eye movement.
- If the object has penetrated the cheek and is in the mouth, DO remove it. This will prevent choking if a piece breaks off. Place packs between teeth and cheek wall. Secure object with padding if it hasn't penetrated cheek.
- Seek medical attention.

### Don't

- Don't remove the object unless it has penetrated the cheek (see the "DO" column to the left).

## Nosebleed

Nosebleeds not resulting from injury are usually not serious.

### What to look for

- Blood running from the nose

### Do

- Sit up and pinch nostrils shut.
- If bleeding cannot be stopped, get medical assistance.

### Don't

- Don't tip head back. Blood can drain into the back of throat and cause choking.

## Snakebite

Bites from poisonous snakes are potentially deadly, though fatalities are preventable if antivenom is given within four hours. Poisonous snakes include pit vipers (rattlesnakes, cottonmouths and copperheads) and coral snakes.

### What to look for

- Pain and/or swelling
- Discoloration
- Dizziness
- Droopy eyelids
- Slurred speech
- Drowsiness
- Drooling and/or nausea
- Sweating
- Difficulty breathing
- Shock
- Delirium

### Do

- Lie still.
- Place the bitten area lower than the heart.
- Seek medical attention.

### Don't

- Don't cut into a snakebite.
- Don't apply a tourniquet.
- Don't apply a cold compress.



## Spinal Cord Damage

Injury to the spinal cord can result in loss of movement below the site of the injury. If someone is found unconscious and you are not sure if spinal cord damage has occurred, assume that it has.

### What to look for

- Pain in head, neck, back or abdomen
- Numbness or tingling in arms or legs
- Paralysis
- Loss of bladder control
- Anyone found lying down unconscious

### Do

- Keep the victim still.
- Call 911.
- Monitor for breathing and pulse.

### Don't

- Don't move the injured person unless there is a life-threatening danger.
- Don't twist the head, neck or back.

## Summary

A recurring theme throughout the chapters in all of the *Landscape Training Manuals* is the importance of prevention. Prevention includes assessing potential hazards and taking appropriate precautions to safeguard yourself and others, as well as to protect property (landscape and buildings) and equipment from damage.

Although prevention is a key factor, accidents and injuries may still occur. Preparation addresses readiness to respond to an accident or injury. This means having the appropriate training and tools available to respond, including first aid/CPR/AED training, charged cellular phones, a properly stocked first-aid kit, awareness of AED devices at the work site, etc.

Several common emergency situations have been described. For each, characteristics are listed to help identify what to look for. General guidelines about how to respond are given (actions to take and actions to be avoided) that can help someone who becomes hurt or incapacitated.

Appropriate training is important both for accident prevention and best response during emergency situations when accidents or medical situations occur.

Appropriate responses to emergency situations can help save lives.

