
# Farm First Aid

Southwest Center
FOR AGRICULTURAL HEALTH, INJURY PREVENTION, AND EDUCATION

Participants will be able to:

- Demonstrate ability to identify and assist persons experiencing common medical emergencies and injuries.

Safety & General Precautions

- Always monitor the scene for safety.
- Protect yourself with PPE (gloves, mask, eye protection as needed.)
- When activating 911, stay with the person until EMS arrives and stay on the line with the 911 operator.

Lessons were written by Celeste Fisher, MPH, RN, NE-BC and adapted from:

- Stroke Symptoms | American Stroke Association
- First Aid Basics - Lesson One - Save a Life Certifications (nhcps.com)

- Heat Stress- First Aid for Heat Illness | CDC, NIOSH

Additional content adapted from:

- *First Aid for Rural Medical Emergencies (F.A.R.M.E)* by Dr. Ann Carruth, SW Ag Center & Southeastern Louisiana University School of Nursing Healthy Family Initiative

- Seizures
- Stroke

# Introduction

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## Why First Aid?

Farming is a hazardous occupation that poses health and safety risks for ag workers and their families. Oftentimes, family and community members are the first responders to agricultural injuries.

Educational preparation is needed to provide the knowledge and skills to respond effectively and efficiently.

CARE stands for:

**C- Call 911** is not always easy to do while working in the field because accessing a phone may be impractical. Therefore, it is important to regularly check on workers in the field or to keep in contact by two-way radio.

In the event of an emergency, a network of friends and family should be available to be called upon to help EMS find the exact location of the injured person. Ag workers should know who to call before an emergency occurs. For example, they should know which neighbors can be contacted throughout the day in case someone is needed to stand at

the end of the road to direct EMA to the appropriate location. When a medical emergency occurs while operating large machinery, someone who knows how to use the machine will be needed. This becomes imperative when the victim is trapped neat or beneath equipment and rescue requires turning off the engine to avoid life-threatening consequences to the rescuer as well as to the victim.

**A- Assess and stabilize the situation** emphasizes the need to assess and stabilize the situation before evaluating the condition of the victim and taking action. Without this step, either the victim could be injured further or the rescuer could become a victim as well. Typically hazards on a farm include uncontrolled movement of machinery, fire, and explosions, spills of jot liquids or chemicals, exposed electrical current, and toxic fumes (First on the Scene, 1989). The victim may have to be moved to safety if the scene is unsafe or if she/he cannot be stabilized. (Never move a victim with a suspected head or spinal cord injury unless there is imminent danger of further injury).

**R- Render first aid** details the steps necessary for providing first aid care to prevent further injury and/or sustain life until EMS arrives. The ability to make the right decisions under extreme duress can be critical. Each section of this training manual outlines factors that may lead to the injury, medical emergency, signs and symptoms, first aid treatment, and safety considerations. Instructors should focus on the rescuer's need for protection from blood and body fluids at all times, even if the injury involves a family member. This means having gloves

or other impervious materials and protective eye wear readily available.

**E- Eliminate risk factors** uses a situation requiring medical attention as the means for emphasizing the need to reduce risk factors and promoting safe farm practices. Awareness of the need for safety precautions is heightened when someone experiences a life-threatening event.

To reinforce the C.A.R.E. model and to facilitate discussion, each chapter presents several case studies. The case studies can be used to ask participants to work individually or in small groups to apply the C.A.R.E. model. These case studies were developed by nurses, EMTs, certified first aid instructors, AgScience teachers, and members of FFA. This training manual addresses safety considerations so that the instructions can direct participants to examine safe practices as part of any first aid training. the application of the C.A.R.E. model is intended to allow for open discussion of needed safety practices. This, in turn, may help eliminate risk and/or prevent injuries and medical emergencies.

## First Aid Kit

Another goal of this training is to demonstrate first aid using available supplies found in the home. We recognize that not everyone has an established first aid kit on the premises at the time of injury.

Make sure to keep a first aid kit in more than one place on the property. For example, a first aid kit may be found in the barn, on the tractor, and in the truck.

### Suggested Supplies

| **Sturdy Waterproof Container or Toolbox with Handle** | |
|---|---|
| | |
| **Tools** | **Miscellaneous** |
| Scissors- heavy duty to cut clothing | Cotton swabs |
| Wire cutter | Instant cold compress |
| Flashlight- extra batteries (change every 6 months) | 4-5 large heavy duty zipper bags or gargage bags to keep kit organized or to serve as emercany water, ice, or limb container |
| | Gloves- various sizes |
| **Cleansing Materials** | Safety eyeglasses/goggles |
| Eyewash kit | Sugar packets |
| Liquid soap | Flares and waterproof matches |
| Povidone-iodine solution (i.e., Betadine) | Tongue depressors |
| 1 large towel or 2 small towels | |
| | |
| **Dressing for wounds** | **Possible Additions** |
| Elasticized gauze bandage 4"x5yds | Anaphylaxis kit (injectable epinephrine) in case of known, severe insect allergy |
| Nonstick sterile pads | Spare blanket |
| Surgipads 6-8 | Pocket mask for resuscitation |
| Bandaids | Air inflatable splints |
| Self-adhesive wrap | Activated Charcoal |
| 1" adhesive tape | First Aid manual |
| Polysporin ointment 15 gram tube | |
| Butterfly closures - to hold wound edges together | **Emergency Numbers** |
| | Printed on a card, preferably enclosed in plastic, with phone numbers of ambulance, poison control, and doctors |
| | |
| | **Directions to farm, homestyead, field, or work areas** |

# Allergic Reactions

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## Common Causes

- Bug bites and stings
- Foods (especially nuts, eggs, and fruits)
- Medications
- Chemical fumes
- Pollens and dust

## Common Signs

- Itching/hives
- Facial swelling (especially lips or tongue)
- Airway construction (gasping, whistling, wheezing may occur)
- Weakness
- Dizziness
- Collapse
- Nausea/vomiting
- Wheezing
- Sweating

# How To Help

**Call 911**

Call immediately if the worker has trouble breathing or passes out.

**Assess and Stabilize**

Before rendering first aid, move the victim to a safe location away from the allergen source.

**Render First Aid**

1. Evaluate and provide CPR if needed. If CPR is not needed, have the victim lie flat on the ground and raise legs to prevent shock. Put a blanket on them for warmth.
2. If the anaphylactic reaction is suspected, ask them if they have an epi-pen. The dispatcher at 911 may give instructions to administer the medication.
3. If an epi-pen is not available, have the person take an antihistamine or their medicine for asthma if that has it.
4. Anaphylaxis from a bee or wasp sting has entered the bloodstream so removing the stinger will not stop the reaction.

**Eliminate Risk Factors**

- Wear a bracelet that includes known allergies
- Carry an epi-pen

# Bites & Stings

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## Bees & Wasps | Common Symptoms

- Painful Sting
- Multiples stings (bees)
- Stings left in skin (bees)

## Black Widow | Common Symptoms

- Pinprick bite
- Tingling sensation
- Muscle & abdominal cramping
- Low-grade fever
- Symptoms develop within 1-6 hours

## Brown Recluse | Common Symptoms

- Initial bite is painless
- Painful bite site after 6-8 hours

- Pale circle with red spot
- Tissue damage occurs due to lack of blood supply

## Scorpian | Common Symptoms

- Multiple stings
- Local burning
- Swelling
- Numbness
- Nausea & vomiting
- Irregular heart beat
- Blood pressure change
- Blurred vision
- Difficulty swallowing

## Snakes | Common Symptoms

- **Mild Envenomation**
  - Fang marks, usually paired but not always
  - Mild to severe pain
  - Mild inflammation and swelling
  - No systemic symptoms

- **Moderate Envenomation**

  - Fang marks with swelling

- Immediate pain at bite site & spreading to surrounding tissue
- Blood and/serum may ooze from fang punctures
- Vomiting, metallic taste in mouth
- Muscle twitches or tremors

- **Severe Envenomation**
  - Immediate, severe pain at bite site
  - Oozing of serum & blood from fang punctures
  - Rapid swelling, some bruising
  - Metallic taste, numb lips, nose, or tongue
  - Blurred vision, altered mental state
  - Shock, diffuse, or life-threatening internal bleeding
  - Respiratory difficulty
  - Kidney failure

## Bees | How To Help

1. Remove stinger by scraping with fingernail or credit card
2. Wash wound
3. Apply topical cream containing antihistamines, corticosteroids, benzocaine, or menthol
4. Or, apply baking soda paste
5. Watch the victim closely for allergic reaction

## Wasps | How To Help

1. Wash wound

2. Apply topical cream containing antihistamines, corticosteroids, benzocaine, or menthol
3. Apply baking soda paste
4. Watch the victim closely for allergic reaction

## Brown Recluse | How To Help

1. Apply cool packs
2. Seek medical attention immediately

## Black Widow | How To Help

1. Benadryl by mouth
2. Seek medical attention immediately

## Scorpian | How To Help

1. Apply cool packs
2. Topical medication
3. Benadryl by mouth
4. Seek medical attention immediately for face numbness or a metallic taste in the mouth.

## Snakes | How To Help

1. Seek medical attention.
2. Remove any rings or constricting items because the affected area may swell.
3. If possible, wash the bite with soap and water and cover with a clean cloth or dressing.
4. Immobilize the bitten area.
5. Keep the bitten limb level with the heart.
6. NEVER cut the skin.
7. NEVER attempt to suck the venom out.
8. NEVER use ice.
9. NEVER use a tourniquet.
10. NEVER use aspirin, anti-inflammatory drugs or alcohol.
11. NEVER use electric shock.
12. NEVER try to capture the snake.

# Bone & Joint Injuries

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## Common Signs

- Pain when touched
- Inability to move affected part
- Discoloration, bruising, or swelling
- Abnormal lumps, ridges, or hollow area
- Shortening of an extremity compared to others
- Bone fragment sticking out of the wound
- deformity
- Numbness and tingling
- Grating sensation (two bones rubbing together)

## How to Help

**Call 911**

In the case of an open or closed fracture, call 911. Closed fractures are more common, but open fractures are more dangerous. Severe blood loss and a high risk of infection are associated with open fractures. Excessive blessing may lead to injury-related shock and cessation of breathing; this can be life-threatening.

A report of a "cracking" sound as the injury occurs is a good indication of a fracture. Arms and legs should be compared to each other to determine if a deformity exists.

**Asses and Stabilize the Situation**

Quickly determine the cause of injury and make sure further danger does not exist for the rescuer or victim. This may include moving the victim away from an angry or excited animal, turning off the engine of nearby equipment, or removing fallen debris from the vicinity.

**Render First Aid**

1. It is important that the victim receive medical attention if a broken bone or dislocation is suspected. First aid is similar for both sprains and fractures.
2. **Inspect the injured area**. An open fracture should be suspected if the skin is torn or damaged. The bone may or may not be protruding through the skin, If the bone is visible or if there is an open wound, cover it with a clean or sterile cloth or handkerchief. In case of excessive bleeding, use gentle pressure to stop bleeding. A closed fracture should be suspected if the skin is intact. In either situation, do not ask the victim to move or to place weight on the extremity.
3. **Stabilize the injured extremity by splitting it**; the is done to prevent pain and further damage associated with movement of the injured area.
4. After affixing the splint, **apply ice for 15-20 minutes.** Instead of placing ice directly on the skin, use a piece of cloth or plastic to protect the skin. Do not apply ice on open wounds. Ice should be removed after 20 minutes or the person complains of numbness. Repeat every 2-3 hours during the first 24-48 hours. although ice is used to prevent swelling, if it is left on the injury too long, it may reduce circulation and cause contamination of an open wound.

**Eliminate Risk Factors**

Many factors contribute to fractures or dislocations, including slips and falls. Working with cattle and other large animals contributes to the likelihood of injury. Familiarize yourself and your workers with how to handle livestock safely.

## Incident Report:

John is in the hayloft is stacking hang at 6:00 PM one October evening.  Mary yells out that it is time for supper. John answers "I'll be there in a few minutes." While John is climbing down a ladder from the lost, he misses a step and falls 5 feet to the ground, landing with his knee in horse manure and his arms out in front of his body. John tries to break his fall with his hands and here's a loud pop.  When John doesn't come into the house for dinner, Mary walks out of the barn to find john on the ground holding his left arm. Blood is oozing between his fingers, and the skin appears to be torn.

## Activity

Use the C.A.R.E. model to outline first aid and prevention strategies.

# Breathing Problems

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## Common Causes:

- Asthma
- Allergic Reactions
- Emphysema
- Pneumonia
- Heart disease
- Neurologic disease

## Common Signs

- Coughing
- Wheezing or whistling sounds while breathing in or out
- Very fast or very slow breathing rates

## How To Help

**Call 911**

Calling EMS is an important first step when someone is experiencing a medical emergency. An unsafe environment may exist if the victim was working with equipment or chemicals at the time of onset.

**Assess and Stabilize**

The safety of the rescuer must be established before first aid is rendered. An unsafe environment may exist if the victim was working with equipment or chemicals at the time of onset.

**Render First Aid**

For an asthma attack-

1. Help the person sit in a comfortable upright position.
2. Ask the person if they have an inhaler for asthma. Find the medication and assist with administration.
3. Shake the inhaler and the insert to the mouthpiece in their mouth.
4. Discharge a puff of medication as the person inhales slowly and deeply.
5. Instruct the person to hold their breath for 4 seconds, then wait for them to take 4 normal breaths. (www.aaai.org). Repeat this until 4 puffs have been given.
6. If the person becomes unconscious, check breathing and signs of circulation often. Begin CPR if needed. The dispatcher will guide the rescuer on what to do if they do not know CPR.

**Eliminate Risk Factors**

Avoid asthma triggers like pollen and mold. Clean moldy areas with a bleach solution. Make sure to wear respiratory protection when around these particulates and with animals in confined spaces. Avoid sawdust as bedding.

# Burn & Electrical Injuries

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## Common Causes

Burns can be caused by contact with any heat source, electrical charge, or certain chemicals.

## How to Help | Electrocution

**Call 911**

If electrocution has occurred, call 911.

**Assess and Stabilize**

1. Before administering first aid to someone that has been electrocuted, turn on the power source.
2. Never touch a person until they have been separated from the source of the current.
3. Do not go near a high-tension line. Call the electric company immediately.
4. Be aware when approaching the victim that the ground may be energized. This is confirmed by a tingling sensation in the legs and lower body. In this case, turn around and hop on one foot to a safe area and wait for EMS to respond.

**Render First Aid**

1. When it is safe, check for breathing and circulation.

2. If the victim has sins of shock, elevate the legs 8 to 12 inches unless a spinal cord injury is suspected and keep the victim warm. Do not let them drink any fluids.
3. Treat burns by covering them with a sterile dressing and elevate the affected part if possible. Wait with the victim until help arrives.

## How to Help | Burns

**Call 911**

All burns not considered minor should be treated immediately by a health care professional.

**Assess and Stabilize**

1. If flames are present, have the person stop, drop, and roll. If the person is incapable of following verbal directions, throw a blanket over them to put out the flames.
2. If possible, have the victim move away from the source of the burn.
3. Before assisting with electrical burns, the power source must be turned off.
4. Do not force the removal of clothing from burns.

**Render First Aid**

- Superficial burns – rinse with cool or cold water (NO ICE) and apply antibiotic ointment or burn cream. Instruct the person to follow up with a healthcare provider.
- Severe burns- cover with a dry, sterile, non-sticking dressing or clean cloth. Keep limbs elevated to prevent swelling. Wait with the person until EMS arrives. If a person stops breathing, administer CPR until EMS arrives.

**Eliminate Risk Factors**

- Understand the types of exposure that lead to various types of burns and electrocution.
- If hot work is being done, the environment should be inspected to ensure the work area is safe.

- A multipurpose fire extinguisher with an ABC rating should be mounted on ag machinery.
- Follow safety precautions when handling chemicals and working around electricity.

# External & Internal Bleeding

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## Common Signs | Internal Bleeding

- Blood or bloody fluid in the ears, nose, rectum, urethra, or vagina
- Coffee ground emesis or sputum
- Wounds or bruises on the neck, chest, or abdomen
- Abdominal tenderness, spasms, hardness

## Common Signs |Shock

- Restlessness
- Thirst
- Nausea or vomiting
- Cold and clammy skin
- Rapid, weak pulse

## How to Help

**Call 911**

When external bleeding is obvious or internal bleeding is suspected.

**Assess and Stabilize**

To help a victim of an accident involving heavy machinery, the rescuer must be able to prevent further injury to the victim or him/herself. If the rescuer is very familiar with the equipment and can safely reach ignition/gauges, he or she should turn off the diesel or gasoline-powered engine in the electrical system, disconnect the battery, and ensure that the spilled gas, motor oil, or hydraulic fluids do not create a fire hazard.

If the victim is trapped under the equipment, the situation is much more dangerous for the rescuer and the victim. Always approach an overturned tractor from the uphill side this allows the best chance of eliminating fire hazards in turning off the engine if the rescuer can safely reach the victim, he or she should assess the type of bleeding and render appropriate first aid (First on the Scene, 1989). The rescuer must determine his / her own safety before attempting to provide first aid to the victim.

**Render First Aid**

- Gloves should be worn when dealing with blood and body fluids. If gloves are not available, use waterproof material, such as plastic wrap or a ziplock bag to place over a cloth or towel.
- Another way rescuer can prevent exposure is to have the victim hold direct pressure over the site of the injury.
- Wash hands with soap and water immediately after providing care.

**External bleeding:**

1. Lay the victim flat preferably with the head slightly lower than the heart. To help prevent shock, elevate the legs unless spinal cord injury is suspected (bleeding from nose or mouth might be suspected head or spinal cord injury)
2. In most cases, direct pressure over the site of injury is all that is needed to control the bleeding. Cover the injury site with the sterile pad, clean cloth, handkerchief, or other

suitable material and apply direct pressure. DO NOT attempt to clean or remove anything from the wound, this can be done later by EMS.

3. If a fracture is suspected in the injured extremity, elevate the injured extremity above the level of the heart while holding pressure on the wound.

4. Maintain pressure over the injury site for at least 10 minutes. DO NOT remove a blood-soaked pad or cloth instead apply another bandage on top of the soaked ones and continue to hold pressure a bandage can be held in place by tying it with the strip of cloth or a belt. A bandage that is too tight can result in poor circulation loosen the bandage of this occurs.

5. If bleeding is not controlled after 10 minutes, apply pressure over the surrounding area for another 10 minutes (Heartsaver Facts, 1999). If bleeding continues, apply pressure over the appropriate pressure points along the site of injury pressure points are located where the blood flow can be controlled by pressing the artery against an underlying bone do you not apply pressure to arteries leading to the neck or head.

6. A tourniquet should only be used as a last resort to control severe bleeding that does not respond to direct pressure. Bleeding from external wounds may cause shock.

**Impalement:**

1. If the puncture wound contains an impaled object, DO NOT remove the object (Bergeron, Bizjak, 1999). Instead, expose the impaled object by cutting away clothing if necessary.

2. Be careful not to disturb the impaled object, as additional movement may cause further bleeding and tissue damage (Heartsaver Facts, 1999).

3. If the wound is bleeding, apply direct pressure to the surrounding tissue using a protective barrier.

4. Spread hands around the object to apply pressure.

5. Stabilize the object by placing dressing or handkerchiefs on either side of the impaled object to secure it (Bergeron, Bizjak, 1999).

6. DO NOT elevate an extremity impaled with an object.

**Amputations:**

1. If a body part is amputated, immediate action is needed to make sure the part has a chance of being reattached: tissue left without blood supply loses viability within four to six hours (Heartsaver Facts, 1999).
2. Protecting from blood exposure, apply direct pressure, firm pressure to this severed area while using bulky cloth or bandages. Tourniquets should be avoided.
3. If there are no broken bones, raise the limb higher than the victim's heart. If broken bones are suspected do not move the limb. If bleeding does not stop, apply direct pressure over the artery that supplies that area.
4. When bleeding is controlled, apply a bandage and wrap it firmly with dressing or clothing.
5. To secure to treat the victim for shock, keep him/her lying flat. Supply a blanket or other material to provide warmth, and elevate legs on a pillow or folded blanket so they are slightly higher than the victim's head (www.external.aomc.org). DO NOT raise legs if broken bones or lower extremities or head, neck, or spinal cord injuries are suspected.
6. Rinse but do not scrub the amputated body part if possible. Wrap the amputated body part with dry dressings or clean cloths and place them in a plastic bag or other waterproof container.
7. Place the bag/container on a bed of ice. To avoid the risk of frostbite, do not place the body part directly on ice.
8. If the severed body part cannot be found at the time of transport, ask others to rescue it and have it taken to the hospital as soon as possible.
9. If the injured extremity is partially attached, place it in a normal position, apply dry dressing, and situate ice pack over the extremity.

**Abdominal wounds:**

1. Position the victim flat.
2. If internal organs are not protruding, cover the wound with a sterile gauze pad from a first aid kit or a clean cloth and apply pressure.
3. Tape or buying the bandage in place.
4. If internal organs are exposed to cover the wound with a moist dressing but avoid touching or repositioning them. Only gentle pressure should be applied to control bleeding.

**Internal bleeding:**

1. Internal bleeding may be occurring even when blood is not visible. The presence of internal bleeding is life-threatening. If severe internal bleeding or shock is suspected call Emergency Medical Services.
2. While you are waiting monitor breathing and circulation, have the victim lie down in a comfortable position maintain body temperature by placing a blanket or large clothing over the victim, and do not offer anything to eat or drink.
3. Elevate the legs 8 to 12 inches unless a head neck or spinal cord injury or leg fracture is suspect (Heartsaver Facts, 1999).
4. If vomiting occurs,  turn the victim to the side to prevent aspiration into the lungs.
5. If the victim is pregnant in the third trimester they should also turn to their sides in the recovery position until emergency medical care arrives (Heartsaver Facts, 1999).

**Eliminate Risk Factors**

Recognizing factors that contribute to injury is a major step in the process of avoidance.

## Incident Report:

Mark is brush-hogging the field. He is in a hurry to finish before dark. A large tree branch falls in his path, so he gets down from the tractor to roll the branch closer to the fence. He approaches a tractor from the rear but instead of mounting from the side, he decides to take a shortcut by hopping over the unshielded live PTO. The left leg of his pants briefly touches the PTO and entangles his leg. The gasoline engine stalls shortly after dark, Mark's 16-year-old daughter, Jill, becomes concerned and takes the truck to locate her father. At the scene, Jill uses the lights of the truck so that she can locate Mark and the tractor. She finds him barely conscious, lying on the ground with his leg entangled in the PTO asking for something to drink. He repeatedly says "I'm so thirsty". As she looks down, she notices his leg is bleeding profusely. Jill remembers that her mom placed a first aid kit at the rear of the tractor a little over a month ago. Since her father had not taught her how to operate a tractor, she is relieved to know that the engine is dead. Her first inclination is to free him from the PTO, get him into the back of the truck, and take him to the hospital. However, she remembers the truck does have a cell phone.

## Activity

Use the C.A.R.E. model to outline appreciate first aid and prevention strategies.

# Fainting

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## Common Causes

- Emotional distress
- Fear
- Abnormal heart rhythms
- Dehydration
- Working in the heat
- Standing too suddenly
- Blood loss

## Common Signs

- Feeling weak, dizzy or “woozy”

## How To Help

1. Ensure scene safety.
2. Assist the person to lie down if able to do so safely.

Elevate the person’s legs if possible.

3. If no rapid improvement, call 911.
4. Initiate CPR if breathing or heart rate stops if you know how to.

# Head & Spinal Cord Injuries

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## Common Signs | Head Injury

- Changes in level of responsiveness
- Seizure activity
- Changes in personality (i.e. more combative or argumentative than usual)
- Vomiting or nausea
- Headache
- Double vision or other visual disturbances
- Change in pupal size
- Cerebral spinal fluid your blood leaking from ear

## Common Signs | Spinal Cord Injury

- Tingling feeling or loss of feeling in the fingers, legs, or toes
- Inability to move body parts
- Painful movements of body parts
- Loss of control over bowel or bladder function
- Impair breathing or loss of vision as a result of the injury
- Abnormal (looking/seeming) angle of head and neck

# How to Help

**Call 911**

Suspected header spinal cord injuries are considered medical emergencies. Although the victim may be speaking at the time of injury, he or she may lose consciousness or stop reading spontaneously. Improper care of spinal cord injuries can impair breathing and lead to paralysis and death.

**Assess and Stabilize**

There is a risk for head and spinal cord injury when operating large machinery. After a tractor rollover, the rescuer must be very careful when approaching the scene because of the possible instability of the tractor. When a victim is trapped by a tractor, the situation should be assessed carefully to avoid harm to the person rendering first aid. The rescuer should say uphill of any equipment such as a large tractor suspected of being unstable if the tractor or any other equipment involved in the accident is stable, turn off the engine electrical systems before rendering first aid. Turn off the engine even if it is not running because of rear wheel movement of a stalled tractor which is and gear may inadvertently restart the engine. to prevent movement the tractor or engagement lovers that cause movement of equipment do not climb on any part of the tractor.

Be aware that leaking fuel combined with sparking from an electrical source may cause a fire. To eliminate sparking, turn off the engine, turn off fuel control on the control panel or near the fuel tank, or disconnect the battering. In the case of fire, use a class BC fire extinguisher. Do not attempt to provide first aid if fire dangers anyone on the scene, including the rescuer.

**Render First Aid**

Spinal Cord Injuries-

If the spinal column is injured, the risk of damage to the spinal cord becomes a significant concern. For a suspected spinal cord injury, it is important to keep the victim from moving. Always assume an unconscious person has spinal cord injuries.

If a spinal cord injury is suspected do not elevate the head or move the victim unless he or she is in life-threatening danger. Any movement further the spinal cord and result in paralysis or death.

Do not move or elevate the spine are neck- stabilize sides of the head with anything that would keep the head stable. If the head is not aligned with shoulders on found do not attend to move into any other position.

- Keep the victim's entire body immobilized
- Maintain in the open airway
- Check the breathing of the victim
- Check for signs of circulation
- Check the level of consciousness of the victim
- Control any external bleeding

Head Injuries-

Do not remove the embedded objects from the head. Stabilize any such object by wrapping it with gauze or other available materials. Such as a pants leg or shirtsleeve.

Do not clean and open the wound to the head. If the scalp wound is bleeding, cover it with a sterile dressing to protect against infection. To avoid increased pressure inside the school, do not attend to stop bleeding.

Do not elevate the legs because the victim may also have a spinal cord injury. If the victim has been thrown, do not allow him/her to stand up.

If the victim is not experiencing symptoms at the time of injury, it is important to watch her or him closely for 48 hours after the injury. Medical attention should be sought immediately if the victim experiences any of the following symptoms:

- Headache that intensifies
- Nausea that lasts for more than 2 hours
- Vomiting that occurs once or twice after head injury
- Drowsiness or disorientation
- Any changes in visual status
- Loss of movement in arms or legs
- Seizure activity of any kind

**Eliminate Risk Factors**

Slips and falls are responsible for many farm injuries. A slip or can result in being thrown into equipment or fast-moving machinery parts or landing in the path of operating equipment. Falls can result in broken bones, loss of workdays, or death. However, most falls can be prevented. In addition to using caution while working around the animals, precautions should be taken to avoid slips and falls.

## Incident Report:

Madison and Preston have finished their farm chores for the day and are on their way into the nearby pond to go swimming. They meet up with Clair, Jessie, and Mike. The five friends happily make their way to the pond for a swim. It has been very hot lately, and they have not had any rain in two weeks. When they arrive, they all lay out their belongings on the ground. They run for the pond and dive headfirst into the water. Mike pops out of the water and begins to laugh and yell, “I won!” Preston on the other hand is motionless. What has happened, and what factors contributed to this situation?

## Activity

Use the C.A.R.E. model to outline appropriate first aid and prevention strategies.

# Heart Attack/Chest Pain

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## Common Signs

- A sensation of ache, pressure, squeezing, and/or crushing in the chest
- Bluish or pale skin color
- Nausea
- Fainting
- Unexplained nausea
- Unexplained fatigue
- Shortness of breath
- Chest pain radiating to the neck, jaw, or arm

## How To Help

**Call 911**

Calling EMS is an important first step when someone is experiencing a medical emergency. An unsafe environment may exist if the victim was working with equipment or chemicals at the time of onset.

**Assess and Stabilize**

The safety of the rescuer must be established before first aid is rendered. An unsafe environment may exist if the victim was working with equipment or chemicals at the time of onset.

**Render First Aid**

1. Avoid taking a person experiencing a heart attack to the hospital in your own vehicle. EMS can begin life-saving treatment as soon as they arrive. Only take them by car if no means are available to call EMS.
2. Keep the person calm, and have them sit upright.
3. If the person has a medication for heart disease, assist them with taking the medicine or have them take 1 (325mg) aspirin or 3-4 baby aspirins.
4. Watch for signs that the heart has stopped beating, which will require CPR. The dispatcher can give directions on the phone.

**Eliminate Risk Factors**

Some ways to reduce the risk of a heart attack include but are not limited to: Eating a healthy diet, avoid tobacco products and exposure to smoke, and maintain a desirable weight, and reduce stress.

# Heat Illness

SW Ag Center

## Common Causes

- Working in the heat
- Working in high humidity
- Strenuous physical activity

## Common early Signs

- Heat Rash
    - Red cluster of pimples or small blisters, usually on neck, upper chest, groin, under breasts, and in elbow creases
    - Extensive areas of skin that do not sweat on heat exposure, but present gooseflesh appearance that subsides with cool environments
- Heat Cramps
    - Muscle cramps, pain, or spasms in the abdomen, arms, or legs
- Heat Fainting
    - Fainting, dizziness, or lightheadedness after standing or suddenly rising from a sitting/ lying position

- Heat Exhaustion
    - "Flu-like" symptoms
    - Headache
    - Pale skin
    - Nausea
    - Dizziness, weakness
    - Irritability
    - Thirst, heavy sweating
    - Decreased urine output
- Heat Stroke
    - Confusion, altered mental state, slurred speech, loss of consciousness
    - Hot, dry skin or profuse sweating
    - Rapid, shallow breathing and weak pulse
    - Seizures
    - Elevated body temperatures
    - Fatal if treatment delayed

## Heat Rash | How To Help:

1. When possible, a cooler, less humid work environment is the best treatment
2. Keep rash area dry
3. Powder can be applied to increase comfort
4. Do not use ointments or creams, as they may impair cooling—warm, moist skin can make the rash worse

## Heat Cramps | How To Help:

1. Drink fluids every 15 to 20 minutes and eat a snack or sports drink
2. Avoid salt tablets
3. Get medical help if the person has heart problems, is on a low sodium diet, or if cramps do not subside within 1 hour

## Heat Fainting | How To Help:

1. Sit or lie down in a cool place when beginning to feel faint or dizzy
2. Slowly drink water or clear juice

## Heat Exhaustion & Stroke | How To Help:

**Call 911**

This is an emergency! Call for emergency care immediately!

**Assess and Stabilize**

For both heat exhaustion and heat stroke, move the victim out of the sun or heat source to a cooler place and remove outer or restrictive clothing. Give first aid while waiting for medical personnel to arrive.

**Render First Aid**

1. If the victim is experiencing heat exhaustion, give fluids if he or she is conscious. Do not give fluids containing caffeine or alcohol. Note that giving large amounts of fluids to

someone with an extremely high body temperature may contribute to further dehydration by causing vomiting and loss of fluids.

2. Have the victim rest with legs elevated.
3. Cool the person with water, cold compresses, an ice bath, or fans.
4. Circulate air around the person to speed cooling.
5. If heat stroke is suspected, place ice bags against the head, neck, armpits, and groin.
6. Stay with the person until emergency medical services arrive.

**Eliminate Risk Factors**

Heat stress is a preventable injury; proper measures should be known and taken to avoid any heat-related injury. Do not wait to drink water until you are thirsty. Wear light-colored and loose-fitted clothing.

## Incident Report:

On the Strawberry Farm, there are many workers picking strawberries from early in the morning until dark. The temperatures outside are very hot, so the workers rotate by taking turns picking strawberries and loading the trucks to Strawberry crates. The crew leader cautions the workers to drink plenty of water, wear loose, cool, cotton clothing, and wear wide-brimmed hats to protect themselves from the heat. Most workers follow these suggestions. There are a few, however, who insist that wearing dark-colored, long-sleeve shirts and pants will increase their sweating and make them cooler. While working one day, one of these workers complained of feeling dizzy, weak, nauseated, and his skin is cool, moist, and pale.

## Activity

Use the C.A.R.E model to outline appropriate first aid and prevention strategies.

# Low Blood Sugar

SW Ag Center

## Common Causes

- Illness
- Stress
- Skipping meals
- Taking too much diabetic medication

## Common Signs

- Feeling shaky, irritable, confused, and/or anxious
- Feeling dizzy and/or lightheaded
- Sweats, chills, and/or clammy skin
- Rapid heart rate
- Nausea
- Blurred vision
- Headache
- Excessive hunger
- Feeling sleepy and/or weak

# How To Help

**Call 911**

Calling EMS is an important first step when someone is experiencing a medical emergency. An unsafe environment may exist if the victim was working with equipment or chemicals at the time of onset.

**Assess and Stabilize**

The safety of the rescuer must be established before first aid is rendered. An unsafe environment may exist if the victim was working with equipment or chemicals at the time of onset.

**Render First Aid**

1. Do not give anything to eat or drink if the person is unconscious and do not give insulin.
2. If the person with diabetes uses insulin on a regular basis, they should carry a prescription glucagon syringe with them. Give this injection if instructed by the dispatcher, since it will raise blood sugar.
3. Check breathing and signs of circulation often. Start CPR if needed.
4. If the person is conscious, give them fruit juice or another sugary beverage ONLY if the person is able to sit upright and swallow without choking. Alternatives include glucose gel or tablets, sugar, honey, or jelly.
5. Wait for 10-15 minutes to reassess symptoms.
6. If the person still does not feel better, let the dispatcher know. EMS will be sent if symptoms do not resolve quickly.
7. If symptoms don't improve, follow up with a snack (milk, cheese, or crackers) with instructions to not skip the next scheduled meal.

**Eliminate Risk Factors**

When working in the fields, blood sugar should be closely monitored to avoid fluctuations.

# Pesticide/Chemical Overexposure

SW Ag Center

## Common Signs

- Sudden change in behavior such as drowsiness, stomach pain, drooling, irritability, or signs of fear.*
- Unusual odor or breath*
- Unusual stains or orders on clothes or skin*
- Nausea
- Vomiting
- Diarrhea
- Confusion
- Hallucinations
- Muscle weakness
- Paralysis
- Seizures
- Coma

***Children may not be able to describe their symptoms but you can look out for these things if you suspect poisoning.***

## What To Do

**Call 911**

If a poisoning is suspected in the victim is conscious, call the nearest poison control center. If a person is unconscious, call 911 immediately. Consider the environment for any possible danger of continued exposure for the victim or to anyone assisting in the situation. Exposure to some chemicals is potentially deadly if not treated immediately. Bring the label or labels of the chemical to the phone if you can. Be prepared to identify yourself; describe the victim by name (if known), weight, age, sex; and provide information on when and how the exposure occurred (if known).

**Assess and Stabilize the Situation**

Before approaching the victim, assess the scene. Do not enter enclosed areas for the risk of exposure to pesticides exist the air is considered centered contaminated, and the person finding the victim will be exposed as well if not wearing appropriate personal protective equipment such as a respirator mask or self-contained breathing apparatus. Examples of closed areas include grain bins, controlled atmosphere storage, in garages.

If the victim is experiencing symptoms of poisoning, assess this environment for the Tyson exposure. The person fighting the victim should avoid contact with the poison or poisoning agent. Remove the victim from the source of exposure without harm to anyone else. Use rubber, nitrile, or Vitron gloves to protect hands from potential exposure. Latex may not provide adequate protection.

**Render First Aid**

**If the victim has ingested poison:**

Poisons may cause symptoms immediately or within several hours as soon as poisoning is suspected, seek medical attention. The poison control center can give instructions over the phone for first aid procedures. Do not give milk or water if the poison is unknown or if the poison is in pill, powder, or dry form.

Do not induce vomiting unless the emergency dispatcher or pour is in a control recommends it. To prevent systematic effects, vomiting must be induced within 30 minutes of swallowing poison. If instructed to do so, syrup of ipecac can be given to induce vomiting. However, if the pesticide or chemical is caustic, the induction of vomiting will not be recommended because it may result in further burning, possibly causing respiratory dysfunction.

Do not follow the home remedy to give saltwater or mustard solutions. These may cause more harm than good. Vomiting should never be induced on any victim that is drowsy, unconscious, or having seizures: it could cause aspiration of the pesticide/chemical into the lungs.

**If the victim has dermal (skin) overexposure:**

If pesticide exposure to skin is suspected, all contaminated clothing and shoes should be removed, and any excess contaminants should be removed from the skin. Dry chemicals should be lightly brushed off clothing prior to removal or flushing. Liquid chemicals should be washed off the skin, taking care not to rub the chemical into the skin. The rescuer should assist with the removal of clothing only if he or she is wearing unlined rubber gloves. Flush contaminated skin areas with cool water for a minimum of 15 to 30 minutes.

Tried to avoid rinsing pesticides onto or over uncontaminated skin. If the rescuer gets pesticides on his or her own skin, rinse with water immediately.

If you believe the victim has been exposed to anhydrous ammonia, keep in mind first aid will be different than another chemical. A splash of this chemical can freeze clothing to the victim's skin almost instantly. Do not remove the victim’s clothing immediately, instead soak the clothing with water until the freezing effect has been eliminated. Flush the clothing for a minimum of 15 minutes. Only then may contaminated clothing or shoe be removed. If the victim is conscious, the victim can flush the clothing while the rescuer contacts EMS (First on the Scene, 1989).

**If the victim has ocular (eye) overexposure:**

If exposure to anhydrous ammonia is suspected, flush the eyes of lukewarm water. Eyes may be forced open because of the painful nature of the exposure. Pour or squeeze water into the eyes for a minimum of 15 minutes and continue irrigating until EMS arrives (First on the Scene, 1989). Rinse eyes from the inside to the outside to avoid contaminating the other eye while tilting face downward so contaminated fluid does not enter the ear canal. In the event the victim has both eye and skin exposure, flushing the eyes is a priority due to the risk of blindness. If the victim has suspected eye exposures to other pesticides, flood the eye with lukewarm water poured from a large glass 2 to 3 inches from the eye. Flush the eye for 15 minutes and encourage the victim to blink often. The eyes should not be rubbed or forced open. If the glass is not available, use a gentle stream of water from a hose for at least 15 minutes.

**If the victim has inhalation overexposure:**

Inhalation overexposure can happen when someone handles pesticides in inadequately ventilated areas. Inhalation of an unexpected release of pesticide dust can also cause overexposure. If the victim has been overexposed through inhalation, move the victim to fresh air or open windows and doors and turn on fans (First on the Scene, 1989). Call 911. Assess breathing in circulation and remain with the victim until help arrives.

**Eliminate Risk Factors**

It is important to know what products are considered poisons. Any inability to read the label makes prevention of exposure and treatment especially problematic. Hispanic workers may have chemicals labels written in Spanish. Labels fated from the sun exposure dampness are another problem. All containers must be clearly labeled so that the medical personnel can be provided with information about the victim's exposure and how the pesticide was being used and should have the following information: product name, EPA registration number, active ingredients. All the first aid and medical information from the product's label should be available and reporting information.

## Incident Report:

Mr. Johnson has been a farmer his whole life.  He was raised on a farm and began working at an early age, as did his father and grandfather.  He now has his own son, Jacob, his 16, and enjoys working with his father on the farm.  In an effort to give Jacob more responsibility, Mr. Johnson allows his son to prepare the concentrated organophosphate pesticides for application.  With this summer heat at its worst, Jacob decides to cover his mouth and nose with a bandanna instead of using the respirator that is heavy and hot.  As he prepares to pour the pesticide Jacob accidentally splashes some on his shirt and pants, he continues to mix the solution and prepares to apply it. A little later, Jacob begins to feel dizzy and nauseated.

## Activity

Use the C.A.R.E. model to outline appropriate first aid and prevention strategies.

# Seizures

SW Ag Center

## Common Causes

- Blockage of blood vessel(s) in the brain
- Brain Hemorrhage

## Common Signs

- Blank stares
- Rhythmic jerking in one or both sides of the body
- Falling to the ground
- Biting the tongue
- Loss of bowel and bladder control
- Unresponsiveness

## How To Help

1. Assist the person safely to the ground.
2. Protect the person from injury during the seizure, especially the head.

3. DO NOT try to restrain the person or place anything in the mouth.
4. After the seizure, place the person on their side if able to avoid choking on vomit or saliva.
5. Call 911.
6. Initiate CPR if breathing or heart rate stops if you know how to.

# Stroke

SW Ag Center

## Common Causes

- Blockage of blood vessel(s) in the brain
- Brain Hemorrhage

RAPID ACTION IS ESSENTIAL FOR SURVIVAL!

## Common Signs

- USE THE ACRONYM "FAST":
  - Face: Facial drooping, facial numbness,
  - Arm: Arm weakness, weakness on one side of the body, loss of balance
  - Speech: Speech difficulty, slurred speech
  - Time: Call 911 ASAP
  - Other symptoms – headache, loss of consciousness, vision changes

## How To Help

1. USE THE ACRONYM "FAST": Time – Call 911 ASAP

2. Help the person sit or lie down.

3. Record the time symptoms started.

4. Initiate CPR if breathing or heart rate stops if you know how to.