

Farmer's First Aid!



What's in Your Toolbox?

The Farmer's First Aid Guide was designed by medical professionals as an education and pre-planning guide for farmers and ranchers in preparation for potentially life-threatening situations. Due to the remote location of many farms and ranches, professional medical help may be a significant distance away, requiring bystanders or the patient to manage the situation until help arrives. The aim of the Farmer's First Aid Guide is to provide a list of practical items to have on hand, and to give guidance for lifesaving techniques that can be used until professional help arrives. This guide, while not covering all the incidents that may occur, highlights those that are more likely to be encountered by agricultural workers.

Topics covered include:

- Hemorrhage following a trauma
- Cardiac issues
 - » Cardiac arrest
 - » Heart attack (MI)
- Airway compromises
 - » Asthma attack
 - » Anaphylaxis
- Stroke
- Burns
- Foreign body/chemical burns – eyes

FARMER'S FIRST AID KIT

Bleeding Control:

- » 4" Israeli Bandage
- » CAT Tourniquet
<https://redcrosstourniquet.com>
- » Stop the Bleed Education (see **BLOOD LOSS** tab)

Cardiac Issues:

- » Heart Attack (MI) – Bottle of 81 mg Non-coated Aspirin
- » Cardiac Arrest – AHA Hands-only CPR Education
(see **CARDIAC ARREST** & **HEART ATTACK** tab)

Airway Compromises:

- » Asthma – Albuterol Rescue Inhaler (prescription)
- » Anaphylaxis – Epinephrine Autoinjector (prescription)
- » Recognition of Asthma and Anaphylaxis Education
(see **ASTHMA ATTACK** & **ALLERGIC REACTION** tab)
- » Stroke Management Education (see **STROKE** tab)

Burn Management:

- » 12"x30" Trauma Dressing or Sterile Dressing with Telfa Rolled Gauze
- » Burn Management Education (see **BURNS** tab)

Ocular Foreign Body/Ocular Chemical Burn:

- » Sterile Saline/Clean Water for Eye Flush
- » Cotton Q-tips
- » Eye Care Education (see **OBJECTS IN EYE** tab)

Accessory Items:

- » Flashlight/Headlamp
- » Trauma Shears
- » Rubber Gloves
- » Extra Batteries for Flashlight/Headlamp
- » First Aid Kit Storage: Small Dry Box or Dry Bag

MORE FIRST AID KIT INFORMATION:

Hemorrhage Control

- » Stop The Bleed
<https://nationalstopthebleeday.org>
- » You Are the Help Until Help Arrives (FEMA)
<https://community.fema.gov/until-help-arrives>

Cardiac Arrest – Hands-only CPR

- » American Heart Association
<https://cpr.heart.org/en/cpr-courses-and-kits/hands-only-cpr/hands-only-cpr-resources>

Asthma – Administration of Metered and Spaced Inhalers

- » CDC, English and Spanish
https://www.cdc.gov/asthma/inhaler_video/default

Recognition of Anaphylaxis and Proper Administration of Auto Injectors

- » AllergyReady.com Food Allergy Research & Education
<https://www.allergyready.com>
- » American Red Cross
<https://www.redcross.org/take-a-class/preview-kits/anaphylaxis-epinephrine-auto-injector>

Stroke Recognition

- » American Stroke Association
(A division of the American Heart Association)
<https://www.stroke.org>

Burns

- » Medline Plus
<https://medlineplus.gov/burns>

BLOOD LOSS

Primary Principles of Trauma Care Response

- » Ensure your own safety
- » If you become injured, you will not be able to help the victim.

The ABCs of Bleeding

- **A – Alert – call 9-1-1**
- **B – Bleeding – find the bleeding injury**
 - » Open or remove the clothing over the wound so you can see it clearly. Look for and identify “life-threatening bleeding.”
- **C – Compress – apply pressure to stop the bleeding by:**
 - » Covering the wound with a clean cloth and applying pressure by pushing directly on it with both hands,
OR
 - » Using a tourniquet, following the steps in diagram on page 4.
OR
 - » Packing (stuffing) the wound with gauze or a clean cloth and then applying pressure with both hands.

VIDEO REFERENCE

- » ***How to Stop the Bleed***
<https://www.youtube.com/watch?v=mhBe7Q6mH3U>
(UC San Diego Health, 2017)

ITEMS NEEDED TO STOP THE BLEED

- » Gloves (optional)
- » Israeli Bandage or Compression Dressing
- » CAT Tourniquet
<https://redcrosstourniquet.com>

STOP THE BLEED

SAVE A LIFE



AMERICAN COLLEGE OF SURGEONS
Improving Quality.
Highest Standards. Better Outcomes.

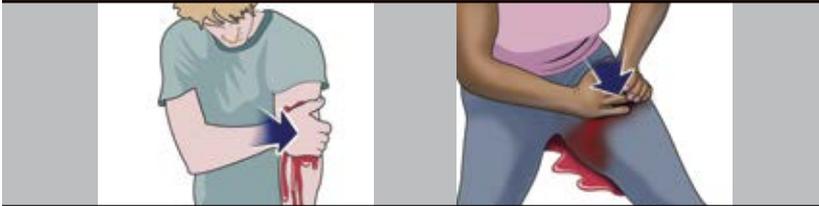


THE COMMITTEE ON TRAUMA

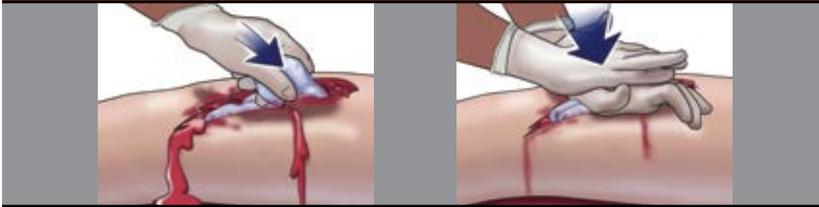


BLEEDINGCONTROL.ORG

1 APPLY PRESSURE WITH HANDS



2 APPLY DRESSING AND PRESS



3 APPLY TOURNIQUET



WRAP

WIND

SECURE

TIME

CALL 911

The Stop the Bleed campaign was initiated by a federal emergency working group convened by the National Security Council Staff, The White House. The purpose of the campaign is to help reduce civilian deaths by better preparing the public to take steps by taking immediate action to stop the bleeding following bleeding injuries, emergencies and other mass and natural disasters. Advances made by military, veterans and research in hemorrhage control during the wars in Afghanistan and Iraq have informed the work of the Institute which operates a national network of hemorrhage centers. The treatment is the benefit of the general public. Stop the Bleed is a registered service mark of the Department of the Defense. Use of the equipment and the training does not guarantee that all bleeding will be stopped or that all lives will be saved.

© 2017 American College of Surgeons

CARDIAC ARREST

Cardiac arrest is a malfunction in the normal electrical impulse generated by the heart. Quick action can save a life. Therefore it is important to know the signs of a person in cardiac arrest.

These can include:

1. The person becomes unresponsive.
2. The person is not breathing.
3. The person is only gasping.

What YOU can do to assist:

- » Call 911 if you see someone suddenly collapse.
- » Push hard and fast in the center of the chest to the beat of a familiar song that has 100 to 120 beats per minute, such as, "Stayin' Alive."



Hands-Only CPR

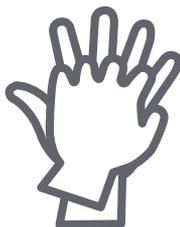
CPR CAN DOUBLE OR EVEN TRIPLE A PERSON'S CHANCE OF SURVIVAL

Learn the two simple steps:

1 Call 911



2 Push hard & fast in the center of the chest



To learn, watch the 90-second Hands-Only CPR video at heart.org/handsonlycpr

Do You Know the Difference?

HEART ATTACK vs. CARDIAC ARREST



CIRCULATION

A blockage or narrowing of the coronary artery, cuts off or reduces blood flow to the heart, causing damage due to lack of oxygen.



ELECTRICAL

The heart stops beating abruptly, either from a malfunction in the heart's electrical system or another sudden change in the circulatory system.



SYMPTOMS



MAY OCCUR
HOURS OR DAYS BEFORE
SYMPTOMS ARE RECOGNIZED

- Chest Pain
- Fatigue
- Weakness
- Nausea
- Difficulty Breathing

MAY OCCUR
MOMENTS BEFORE
LOSS OF CONSCIOUSNESS & COLLAPSE

- Collapse
- Unconscious
- Not Breathing
- No Pulse



TAKE ACTION



UNTIL HELP ARRIVES

Every minute matters! Whether you suspect it's cardiac arrest or a heart attack, The first step is always to call 911 or another emergency number.

WHAT TO DO WHEN YOU SUSPECT A
HEART ATTACK

Call 911
or another emergency number.

Chew & Swallow Aspirin
unless allergic or told not to by a doctor.

Take Nitroglycerin
If you think you're having a heart attack, take it as prescribed. If you're *not prescribed* nitroglycerin, do *not* take someone else's.

WHAT TO DO WHEN YOU SUSPECT
CARDIAC ARREST

Call 911
or another emergency number.

Start CPR
Learn how in under 90 seconds:
PennMedicine.org/CPR.

Use an AED
(Automated External Defibrillator)
if there is one nearby.

Share the Knowledge & You Could Save a Life.



Penn Medicine

CARDIAC ARREST

HEART ATTACK

A heart attack is a circulation problem in the blood vessels that supply the heart with oxygen.

Symptoms include:

- » Chest pain or discomfort that does not go away after a few minutes.
- » Pain or discomfort in the jaw, neck or back.
- » Pain or discomfort in your arms or shoulders.
- » Shortness of breath.
- » Weakness, light-headedness, nausea (feeling sick to your stomach), or a cold sweat.

VIDEO REFERENCES

- » **Heart Attack Warning Signs**
<https://www.youtube.com/watch?v=Es-Cr9uRXgQ>
(AHA, 2011)
- » **Heart Attack Symptoms**
<https://www.youtube.com/watch?v=1i58QD5aWRo>
(AHA, 2020)
- » **Kids Heart Challenge Facts**
https://www.youtube.com/watch?v=2PFWpd_pxm8&t=146s
(AHA, 2018)

What YOU can do to assist:

- » Call 911 and explain the symptoms to the operator.
- » Have the person chew a non-enteric coated aspirin (162 to 325 mg). This will help reduce the chance of blood clots. Blood clots may lead to further heart damage.
- » Keep the person calm and follow instructions from the 911 operator regarding the best method of transporting to the nearest hospital.
- » If the person has stopped breathing, perform hands only CPR. See **CARDIAC ARREST** page 5



American
Heart
Association®

life is why™

Common Heart Attack Warning Signs



Pain or discomfort
in chest



Lightheadedness,
nausea, or vomiting



Jaw, neck or
back pain



Discomfort or pain in
arm or shoulder



Shortness of breath



Learn more at [Heart.org/HeartAttack](https://www.heart.org/HeartAttack).

©2016 American Heart Association, Inc. All rights reserved. Unauthorized use prohibited.

ASTHMA ATTACK

Asthma is a chronic inflammation of the lungs that can lead to respiratory distress. Chemical fumes, dust, pollen, and animal dander can trigger asthma attacks in farmers and ranchers. Severe asthma attacks can be fatal.

Signs and symptoms of an asthma attack include:

- » Wheezing
- » Lack of air movement in the lungs
- » Shortness of breath
- » Coughing
- » Trouble sleeping due to shortness of breath, coughing or wheezing
- » Coughing or wheezing attacks that are worsened by a respiratory virus, such as a cold or flu
- » Difficulty talking or concentrating
- » Hunched shoulders
- » Gray or bluish tint to skin, beginning around the mouth

What YOU can do to assist:

- » Ensure that everyone who has asthma on your farm or ranch carries a rescue inhaler in his or her vehicle and with him or her while on farm equipment.
- » Call 911 and follow the operator's instructions.
- » Educate yourself and those working with you about the symptoms of an asthma attack and information on how to assist with an inhaler. Using an inhaler can become surprisingly difficult if a person is struggling to breathe. Being able to quickly access the rescue inhaler and administer it properly save a life.

VIDEO REFERENCES

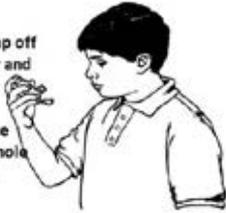
- » *How to use a metered-dose inhaler with a spacer*
<https://www.youtube.com/watch?v=A8WT5moNJ0I>
(American Lung Association)

Know How to Use Your Asthma Inhaler

Using a metered dose inhaler with a spacer

1

Take the cap off the inhaler and make sure the mouthpiece and spray hole are clean.



6

Put the mouthpiece of the spacer in your mouth and above your tongue.



2

Shake the inhaler 10-15 times.



7

Close your lips around the spacer.



3

Put the inhaler mouthpiece into the end of the spacer.



8

Tilt your head back slightly toward the ceiling. Press the top of the inhaler to spray one dose of medicine. Slowly breathe in all the air you can and hold for 5-10 seconds.



4

Inhale a deep breath and breathe out all the way.



9

Open your mouth...



5

Hold the inhaler and spacer between your index finger and thumb.



10

...and breathe out slowly.



ALLERGIC REACTION

Anaphylaxis is a type of severe allergic reaction, often to food items or insect stings that can cause a person's airway to swell making it difficult to breath.

It is important to recognize quickly the symptoms of anaphylaxis, which may include:

- » Wheezing
- » Hives or rashes
- » Swelling of the lips and eyes
- » Diarrhea

What YOU can do to assist:

- » Call 911 and follow the operator's instructions.
- » Assist the person with administering their prescribed epinephrine injection. Follow the 911 operator's instructions regarding giving additional doses. This may be necessary if EMS is delayed.
- » Ensure that everyone on your farm or ranch who have known food or insect allergies carries prescription epinephrine in their truck or tractor.
- » Ensure that everyone has been trained on how to use the epinephrine injector.

VIDEO REFERENCES

- » ***What is Anaphylaxis? Learn How to Identify Severe Allergic Reactions***
https://www.youtube.com/watch?v=4gtaFiy_RHY
(Kids With Food Allergies – Division of Asthma and Allergy Foundation of America, 2017)

SYMPTOMS OF ANAPHYLAXIS

Symptoms can occur **well after** initial exposure:



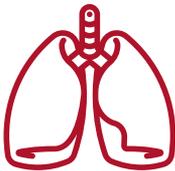
Heart

- » Abnormal heart rhythm
- » Dizziness, light-headedness
- » Loss of consciousness
- » Low blood pressure
- » Shock
- » Weak, rapid pulse



Brain

- » Anxiety
- » Confusion
- » Feeling of impending doom
- » Headache
- » Slurred speech
- » Weakness



Lungs

- » Chest pain
- » Cough
- » Difficulty breathing
- » Fluid in the lungs
- » Tightness in chest and throat
- » Trouble Swallowing
- » Wheezing



Stomach

- » Abdominal pain
- » Diarrhea
- » Nausea
- » Vomiting



Skin

- » A feeling of warmth
- » Flushed or pale skin
- » Hives or rash
- » Itching, redness and/or swelling of face, eyes, lips, tongue & throat

STROKE

Strokes are one of the most common causes of death in the United States. Strokes may be caused by a blocked artery that provides blood to the brain, or by a ruptured blood vessel in the brain. One of the best steps farmers and ranchers can take against stroke is to focus on preventing them in the first place.

According to the American Stroke Association there are several steps a person can take to dramatically reduce the risk of stroke, these include:

- » Maintaining a healthy weight or losing weight if necessary
- » Not smoking
- » Controlling high blood pressure (the most common controllable risk factor for stroke), diabetes, and cholesterol
- » Staying physically active

It is important to recognize the symptoms of stroke, as early detection may improve the outcome of a stroke.

Stroke recognition and when to call 911.

The American Stroke Association uses the mnemonic “F-A-S-T.” This easy to remember mnemonic stands for:

- 1. F = Face Drooping**
- 2. A = Arm Weakness**
- 3. S = Speech Difficulties**
- 4. T = Time to Call 911!**

VIDEO REFERENCES

- » ***Spot a Stroke F.A.S.T.***
<https://www.youtube.com/watch?v=z6N3fHJch20&list=PLF6908EB89BB24ECD&index=2&t=10s>
(American Stroke Association, 2020)

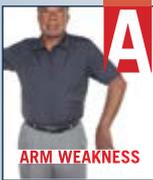
SPOT A STROKE F.A.S.T.

F.A.S.T. is an easy way to remember the sudden signs of a stroke.



Face Drooping

Does one side of the face droop or is it numb? Ask the person to smile.



Arm Weakness

Is one arm weak or numb? Ask the person to raise both arms. Does one arm drift downward?



Speech Difficulty

Is speech slurred, are they unable to speak, or are they hard to understand? Ask the person to repeat a simple sentence, like "the sky is blue." Is the sentence repeated correctly?



Time to call 9-1-1

If the person shows any of these symptoms, even if the symptoms go away, call 9-1-1 and get them to the hospital immediately.

Beyond F.A.S.T. – Other Symptoms you should know

- Sudden numbness or weakness of the leg
- Sudden confusion or trouble understanding
- Sudden trouble seeing in one or both eyes
- Sudden trouble walking, dizziness, loss of balance or coordination
- Sudden severe headache with no known cause



Together to End Stroke™

StrokeAssociation.org/warningsigns

BURNS

One of the more painful and potentially debilitating farm and ranch injuries are burns. Burns can be either thermal burns (caused by a heat source like an open flame), chemical burns (typically caused by an acidic or alkali chemical that is caustic to skin), or electrical burns (caused by either AC or DC currents).

DEGREE BURNS



First-degree Burn
(red without blisters)



Second-degree Burn
(blisters, very painful)



Third-degree Burn
(the burnt area is stiff)

What YOU can do to assist:

Thermal Burn

- » Call 911 and follow the operator's instructions.
- » Ensure that the source of the heat has been extinguished.
- » Remove the burn victim from the source of the heat.
Do not put yourself in a dangerous situation by doing this.
- » The burn may be cooled with plain water.
- » The burn can then be dressed with a dry, sterile dressing while awaiting EMS or transporting the victim to the hospital.

continued on pg 16

Chemical Burn

- » Call 911 and follow the operator's instructions.
- » While protecting yourself, with rubber gloves if possible, remove all clothing and jewelry from the affected site.
- » In the event of a chemical powder burn, brush excess powder off the skin with a broom or other object.
- » Rinse the affected area for 15-30 minutes with cool water.
- » Loosely wrap the burned area with dry, sterile dressing or a clean cloth.
- » Never try to neutralize an acid with a base or vice versa, as this can cause a chemical reaction and increased heat.

Electrical burns

- » Call 911 and follow the operator's instructions. Let the operator know the voltage if possible.
- » Cut off power to the electrical source. Do not approach the victim until this is done.
- » Electrical burns can be difficult to assess, as damage to the skin surface may appear minimal, yet there may be underlying tissue damage.
- » Electrical burns also have the potential to cause heart arrhythmias and respiratory arrest and should be treated as an emergency.
- » If the person is not breathing, start hands-only CPR.
See **CARDIAC ARREST** page 5

OBJECTS IN EYE

In agricultural work, debris may enter the eye when mowing, combining, and working in grain bins or grinding, causing corneal abrasions. These injuries are typically minor and are not life threatening, yet can be very painful; affecting the worker's ability to complete the workday, and the injury may have the potential to cause lasting damage to vision.

The simplest step is to protect eyes are to use ANSI certified, wrap-around safety glasses or a face shield, thereby preventing foreign bodies from entering the eye. If a foreign object enters the eye, taking quick action can reduce damage and pain.

What YOU can do to assist:

Foreign Bodies

- » The eye lid should be opened and the eye flushed with tap water or sterile saline for 15 minutes. Typically, this is enough to dislodge the foreign body and flush it from the eye.
- » If the foreign body can be seen, it is recommended that a damp cotton tip applicator (Q-tip) be gently rolled on the eye to pick up the offending agent.
- » If the foreign body is not removed after aggressive irrigation, the pain gets more severe, or there is a noticeable change in vision, the patient should go to the ER or call 911 immediately.

Chemical Burns

- » The eye should be aggressively flushed with tap water, sterile saline, or eye irrigation solution for at least 15 minutes, or until help arrives.
- » Anhydrous ammonia frequently causes burn-induced blindness. Ammonia reacts with the eye's moisture to form nitric acid and scars the cornea. These are especially dangerous injuries and the affected eye should not be covered with a bandage or cup, but should instead be continuously flushed with water or sterile saline until EMS arrives.
- » Contact lenses may trap residual chemical against the eye and should never be worn when working with anhydrous ammonia.

ACKNOWLEDGMENTS

This document was created by Neil Baggesen, PA-S,
Des Moines University, Des Moines, Iowa.

Funding for this project came from the Central States Center for
Agricultural Safety and Health at the University of Nebraska Medical
Center, Omaha, Nebraska, NIOSH AFF Grant (U54 OH010162).

REFERENCES

American Heart Association (2018, October 31).
Kid Heart Challenge Facts [Video]. *Youtube*.
https://www.youtube.com/watch?v=2PFWpd_pxm8&t=146s

American Heart Association (2020, March 5).
Heart attack symptoms: men vs. women [Video]. *Youtube*.
<https://www.youtube.com/watch?v=1i58QD5aWRo>

American Heart Association (2011, April 29).
Heart Attack Warning Signs [Video]. *Youtube*.
<https://www.youtube.com/watch?v=Es-Cr9uRXgQ>

American Heart Association (2020, March 11).
Spot a Stroke F.A.S.T [Video]. *Youtube*.
<https://www.youtube.com/watch?v=z6N3fHJch20&list=PLF6908EB89BB24ECD&index=2&t=10s>

American Lung Association (2020, May 4).
What is Asthma? [Video]. *Youtube*.
<https://www.youtube.com/watch?v=XohTFq14oX0&feature=youtu.be>

Kids With Food Allergies – A division of AAFA (2017, May 5).
What is anaphylaxis? Learn how to identify severe allergic reactions
[Video]. *Youtube*.
https://www.youtube.com/watch?v=4gtaFiy_RHY

UC San Diego Health (2017, November 1).
How to Stop the Bleed [Video]. *Youtube*.
<https://www.youtube.com/watch?v=mhBe7Q6mH3U>

WebMD (2020, May 4).
How to give first aid for eye problems [Video].
<https://www.webmd.com/first-aid/video/how-to-first-aid-eye>