

Field Injury and Emergency Considerations

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Patient Assessment

If there are any life-threatening concerns, you need to handle them first. See below.

If something is not life-threatening move to “**Minor Injuries**” section on page six.

Life Threatening Concerns

Check the ABCs (Airway, Breathing and Circulation).

- Can they breathe?
- Is their airway open?
- Are they bleeding?

If ABCs are in good shape, identify other life-threatening concerns

- Are they showing signs of shock?
- Signs of heat illness?
- Signs of pre-existing medical issue (This could be medication related, cardiovascular system related, or other medical issues)?
- Was there obvious trauma? This could be a fall, car accident, or something similar that can cause serious injury.

Airway, Breathing, Circulation

If CPR is needed

	Adult	Child/Infant
Compression Rate	at least 100/min	at least 100/min
Compression Depth	at least 2 inches	1/3 chest diameter
Compression Ratio	30 chest compressions: 2 breaths	also 30:2

Serious wounds resulting in heavy bleeding

Stop the bleeding—this is your number one priority. Packing a wound with gauze, a towel, or wound-clotting material may be necessary.

A severed vein or artery might require a tourniquet—which should be placed 2-3 inches above the site of injury (meaning 2-3 inches closer to the body than the injury).

Spine Injuries

Signs that you should consider spinal cord injuries

- Falls from greater than three feet
- Car accident
- Significant hit to the head, neck, spine from hard objects

If you suspect a spinal cord injury, the person should not be moved, unless there is a risk to their life remaining in the same position (e.g. laying in a roadway, can't breathe properly).

Shock (identifying and treating it)

Signs of Shock

- Pale-Cool-Clammy skin and altered mental state
- Rapid pulse.
- Rapid breathing.
- Nausea or vomiting.
- Enlarged pupils.
- Weakness or fatigue

Treatment

- Lay the person down and don't move them
- Treat other ABC related injuries if necessary
- Acquire medical help

Heat Illness (heat exhaustion, dehydration, heat stroke)



Hydrate as much as possible to avoid these symptoms and limit exposure to heat and sun.

Initial Symptoms of Heat Stress: Headache, nausea, dizziness, weakness, irritability, thirst, heavy sweating, elevated body temperature, decreased urine output

Serious Symptoms of Heat Stroke: Confusion, altered mental status, slurred speech, heat syncope (dizziness, weakness and eventual fainting), hot, dry skin or profuse sweating, seizures, very high body temperature

Fatal if treatment delayed

Treatment—Cool or cold-water immersion or put water along face, neck, hands, feet, groin and armpits. Air-conditioning and shade are ideal if a vehicle is near.

Cold Injury (hypothermia, frostbite)

This isn't a major concern during summer in south Texas; however, if you get wet and the temperature is even moderately cool (50's and 60's), you could develop minor hypothermia symptoms. Water and wind exposure will increase the likelihood of this. Limit your exposure to these elements if temperatures cool. We can readdress this for the winter season, when temperatures do drop low enough for major hypothermia risk.

Snakebites



We have vipers (rattlesnakes) and elapids (coral snakes) in South Texas. It is extremely unlikely that you will be bitten by a coral snake unless you try to pick it up. Rattlesnakes have a longer strike range and have larger fangs, sometimes capable of penetrating through pants and shoes.

Bite Treatment:

Auerbach's Wilderness Medicine text (7th edition, Volume 2) recommends you avoid using tourniquets if bitten by any venomous snakes. There are heightened risks of pulmonary embolism after the tourniquet is removed and you might increase damage at the site of the bite.

The argument for tourniquets—You might lose a limb but save your life. This is possible in extremely remote settings, although it is debated. However, it is unlikely you will be more than a few hours from hospital care in our South Texas study. Therefore, it is not recommended you attempt to use a tourniquet.

Contact 911 and get emergency hospital care. Antivenom and hospital care are your best course of action.

Lightning (prevention)

Watch the weather—Avoid being out when there is a high chance of lightning.

Misconception #1—Lightning is attracted to metal. Lightning is actually attracted to height, it doesn't care if the object is metal. If you are near the highest objects during a lightning storm, you need to move out of the area immediately.

Allergic Reactions (anaphylaxis and EpiPen training)

e.g. bee stings, food allergies, etc.

Mild to moderate reactions: Pain, swelling, hives, itching, flushed or pale skin

Severe reactions: Difficulty breathing, swelling of the throat and tongue, weak, rapid pulse, nausea, vomiting, diarrhea, dizziness or fainting, loss of consciousness

Treatment: If the person is going into anaphylactic shock (can't breathe properly and potentially losing consciousness) you will need to use an Epinephrine pen to reverse effects.

If no EpiPen is available you might want to begin transport to hospital if you suspect allergic reaction will get worse.

Burns

1st, 2nd and 3rd degree burns are categories assigned depending on how deep the burn goes and which skin layers are impacted. 1st degree being the most minor and superficial.

2nd degree burns will typically be quite painful and show blistering.

3rd degree burns might result in charred skin, paleness in the skin, and loss of feeling.

3rd degree burns are always an emergency. All 1st and 2nd degree burns that impact more than 10% of the body, or are located on hands, feet, the face, neck, airway, genitals, armpits or groin, should be considered emergencies

Emergency and Evacuation Plans

When to stay put—If a person is stable and you have successfully contacted 911 and confirmed medical personnel are in route, you are better off waiting.

when to evacuate—If you are unable to contact medical emergency personnel (911) and believe a person is facing a life-threatening situation, you should evacuate and bring them directly to a hospital. If cell service is gained or contact with 911 dispatchers is obtained in-route, they might request you might in a location in between the hospital and the original event of injury.

Minor Injuries

Wilderness Wound Management

Infection Management: Small scrapes, cuts, and bites are minor, but should always be addressed.

- Clean any debris from wound (grass, pebbles, etc...) if necessary.
- Always irrigate small wounds with water and soap or some kind of skin-safe disinfectant solution that is designed for wound cleaning.
- Any water used to irrigate should be something you consider drinkable. If the water is not clean, it won't aid in infection mitigation.
- Cover the wound with a clean bandage after irrigation to keep it clean.

Musculoskeletal Injuries

Sprains, muscle tears, dislocations and broken bones are all examples of musculoskeletal injuries. There is a lot of variability in severity among these different injuries. In general, most sprains, muscle tears and dislocations are considered more minor, while bone breaks are more serious (other than fingers and toes).

Treatment: For minor musculoskeletal injuries, it is best to immobilize the injured limb and rest it. Pain medicine (Tylenol or Ibuprofen) might be suitable for pain management if the injured person is not allergic. You might treat the injury depending on doctor's recommendations after that.

Serious bone breaks: These require hospital care. Major breaks can be considered life-threatening injuries if they lead to shock, serious bleeding, or limit blood flow to an extremity.

Disclaimer: This information is based on practices recommended through current emergency training programs. Anyone who reads this should still obtain proper certification from an accredited source.