

## Appendix D: Physical and Environmental Hazards

Many general physical and environmental hazards exist in nearly every location worldwide. All field team members, regardless of the work location, should read through table 1 to learn more about some general and physical and environmental hazards. If your work is in North America, please read table D-2. If your work will take you out of North America, please read table D-3 about international hazards.

<b>Table D-1: Physical and Environmental Hazards Found Worldwide</b>					
<i>Hazard</i>	<i>Location</i>	<i>Cause</i>	<i>Symptoms</i>	<i>First Aid</i>	<i>Prevention</i>
Dehydration	Worldwide	Not enough water intake	Dark urine, Lethargy Constipation, Light-headedness	Drink plenty of fluids, take frequent rest breaks, and minimize intake of beverages containing caffeine.	Drink plenty of water (at least 2 quarts of water per day). Drink more if working strenuously or in a warm climate.
Impure Water	Worldwide	Harmful organisms and pathogens living in “natural” water sources	Gastrointestinal illness, Flu-like symptoms	Drink clear liquids. Slowly introduce mild foods, such as rice, toast, crackers, bananas, or applesauce. See a doctor if there is no improvement.	Carry your own water. Treat water before use with tablets, purifiers, or by boiling for more than 3 minutes.
Sunburn	Worldwide	Excessive exposure to the sun	Irritated skin, pink or red in color	Apply cool water, aloe, or other cooling lotion to affected area.	Wear long sleeved clothing and a hat. Apply sun protection factor (SPF) of 30.
Heat Exhaustion	Worldwide: hot climates	Prolonged physical exertion in a hot environment	Fatigue, Excessive thirst, Heavy sweating, Cool and clammy skin	Cool the victim, treat for shock, and slowly give water or electrolyte replacer.	Acclimate to heat gradually. Drink plenty of liquids. Take frequent rest breaks.

**Table D-1: Physical and Environmental Hazards Found Worldwide**

<i>Hazard</i>	<i>Location</i>	<i>Cause</i>	<i>Symptoms</i>	<i>First Aid</i>	<i>Prevention</i>
Heat Stroke	Worldwide: hot climates	Prolonged physical exertion in a hot environment	Exhaustion Light - headedness Bright red skin which is warm to the touch	Cool the victim at once, replenish fluids, and seek medical attention immediately.	Acclimate to heat gradually. Drink plenty of liquids. Take frequent rest breaks.
Frostbite	Worldwide: cold climates	Exposure to cold temperatures	Waxy, whitish numb skin, Swelling, itching, burning, and deep pain as the skin warms	Slowly warm the affected areas (do NOT rub area) and seek medical attention as soon as possible.	Dress in layers. Cover your extremities with warm hats, face mask, gloves, socks, and shoes.
Hypothermia	Worldwide: cold climates	Prolonged exposure to cold temperatures	Shivering, Numbness, Slurred speech, Excessive fatigue	Remove cold, wet clothes. Put on dry clothes or use a blanket or skin-to-skin contact to warm up. Drink warm liquids and seek medical attention as soon as possible.	Dress in layers. Wear appropriate clothing. Avoid getting damp from perspiration.
Carbon Monoxide	Worldwide	Running a vehicle or burning a fuel stove in an enclosed space	Severe headaches, Disorientation, Agitation, Lethargy, Stupor, Coma	Remove the victim to fresh air immediately and perform CPR if needed.	Keep areas adequately ventilated when burning fuel. Ensure that vehicle tailpipe is not covered by snow.

**Table D-1: Physical and Environmental Hazards Found Worldwide**

<i>Hazard</i>	<i>Location</i>	<i>Cause</i>	<i>Symptoms</i>	<i>First Aid</i>	<i>Prevention</i>
Extreme Weather	Worldwide	Snow squalls, blizzards, lightning, tornadoes, hurricanes, monsoon rains, floods	Severe weather can result in physical injury and/or death.	Seek shelter immediately.	Be aware of special weather concerns. Bring appropriate equipment to deal with severe weather.
High Altitude Illness	Worldwide: high altitudes	Decreased oxygen and increased breathing rate	Headache Nausea Weakness	Use supplemental oxygen and decrease altitude.	Allow your body to acclimatize by gaining elevation slowly.
Hazardous terrain	Worldwide	Walking or hiking in steep or rocky areas	Physical injury or death	Perform CPR and/or seek medical attention if needed.	Wear appropriate shoes. Carry needed items in a well- balanced pack. Use rappelling equipment for climbing. Use hiking poles if needed.
Drowning	Worldwide	Inhalation of water leading to respiratory impairment	Apnea (suspension of breathing) Death	Take victim out of water. Turn head to side to allow water to drain out. Perform CPR if needed. Seek medical attention as soon as possible.	Know how to swim before performing field activities in water or on boats. Be aware of water safety recommendations for swimming in strong currents if necessary. Have life preservers and rescue equipment available.

<b>Table D-1: Physical and Environmental Hazards Found Worldwide</b>					
<i>Hazard</i>	<i>Location</i>	<i>Cause</i>	<i>Symptoms</i>	<i>First Aid</i>	<i>Prevention</i>
Travel-related accidents	Worldwide	Injury associated with vehicle, boat, aircraft, or other means of travel	Physical injury and/or death	Perform CPR if needed. Seek medical attention as soon as possible.	Be familiar with safe operation of the vehicle or craft you will operate; use licensed pilots or drivers.
Assault	Worldwide	Criminal activity; robbery may be the motivation.	Physical injury	Remove victim to safe location if possible; seek medical attention if needed. (Also, report assault immediately to local authorities.)	Be aware of your surroundings. When possible, avoid being alone after dark, especially in high-crime areas. If assaulted, run away if possible, or make noise to attract help.
Electrical shock	Worldwide, particularly temporary structures, and in areas without strong building	Damaged electrical cords, improper electrical wiring, improper grounding	Cardiac arrest, muscle contraction/ shaking, numbness, paralysis, or other neurological symptoms, burns, other physical injuries	Provide burn first aid as needed. Go to the nearest emergency room for physical injuries, severe burns, or cardiac arrest.	Inspect cords for damage and replace damaged cords or have them repaired by a qualified person.

Table D-1: Physical and Environmental Hazards Found Worldwide

<i>Hazard</i>	<i>Location</i>	<i>Cause</i>	<i>Symptoms</i>	<i>First Aid</i>	<i>Prevention</i>
Burns	Worldwide, particularly if using thermal equipment or if working in very hot locations	Touching a hot surface of equipment or sun-warmed surface, especially metal; contact with flames.	Pain, redness, swelling, tissue damage, blisters (2nd degree), charring (3rd degree)	Cool the burn with cool water ( <i>not</i> ice); cover with sterile bandage, take pain-reliever. For large 2nd or 3rd degree burns, seek emergency medical treatment. Don't immerse burned areas in water. When possible, elevate the burned body part. Cover the area with a cool moist sterile bandage or cloth. Get a tetanus shot if your last shot was > 5 years ago.	Use gloves when handling hot objects.

<b>Table D-2: Physical and Environmental Hazards Found in North America</b>					
<i>Hazard</i>	<i>Location</i>	<i>Cause</i>	<i>Symptoms</i>	<i>First Aid</i>	<i>Prevention</i>
Hunting Season	United States	Local hunting seasons and regulations vary.	A hunting accident may result in serious injury or death.	Seek medical attention for serious injuries or wounds.	Wear appropriately colored safety clothing. Avoid animal like behavior (e.g., hiding in thickets).
Poison Plants	North America	Exposure to poison ivy, poison oak, or poison sumac plants	Itchy rash Red, swollen skin	Apply a wet compress with baking soda or vinegar or use a topical ointment. Avoid scratching the rash.	Avoid contact with poison plants. Wash clothes and skin with soap and water after exposure. If sensitive, use Tecnu or similar product to help remove rash-causing oil if exposure occurs.

<b>Table D-3: Physical and Environmental Hazards Found Outside of North America</b>			
<i>Hazard</i>	<i>Location</i>	<i>Defensive Action</i>	<i>Prevention</i>
Violence caused by political unrest or military conflict	International	Leave the area as soon as it is safe to do so.	Be aware of current travel advisories (see Section V).