



Environmental Injury and Illness



Continuing Education
Second Quarter 2024



PARTNERSHIP



Purpose

Discuss the identification, prevention, and treatment of the following environmental injuries and illnesses.

- Heat Injury
- Poisonous Vegetation
- Bacterial and Viral



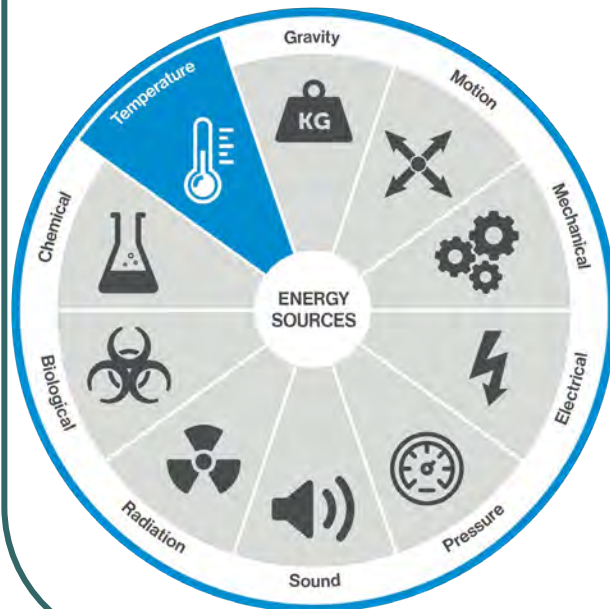
Learning Objectives

- Understand various types of environmental injuries
- Identify the signs and symptoms of these injuries
- Discuss preventative strategies and tools
- Discuss Recognition and Treatment





HEAT INJURIES





Heat Injuries - General Concepts

- Heat injuries are preventable; hazard recognition and appropriate control measures are critical.
- Heat injuries are progressive; if conditions do not change, injuries get worse and can progress to death.



Know the Symptoms

- Headache
- Muscle cramps
- Nausea
- Vomiting
- Weakness
- Dizziness
- Accelerated heart rate
- Heavy sweating
- Confusion
- Seizures
- Red, hot & dry skin
- Body temperature over 103° F
- Loss of consciousness
- Fast, strong pulse



Types of Heat Injuries

- Heat Stroke
- Heat Exhaustion
- Rhabdomyolysis
- Heat Syncope
- Heat Cramps
- Heat Rash



Dehydration contributes to heat injuries but is also an injury itself!



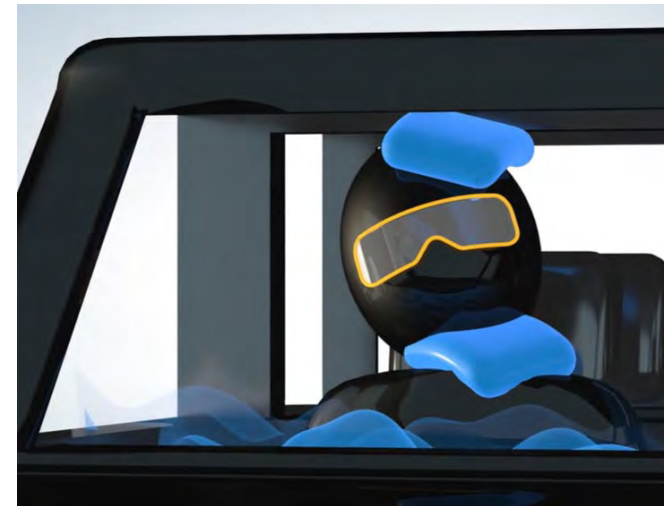
Risk Factors

- Environment
 - High Temps
 - High Humidity
 - Lack of shade or breeze
 - Proximity to hot equipment
- Health Conditions
 - Diabetes
 - Heart Disease
 - Obesity
 - Short-Term Illness
 - Poor physical fitness
- Dehydration
- Prior Heat Illness
- Medications
- No Acclimatization
 - Sudden shifts in work intensity or sudden increases in environmental temp can increase the risk for heat illness even for acclimatized workers



Heat Stroke Response

- Call 911
- Move to a cool location
- Remove excess clothing
- Apply ice packs to the neck, armpits and groin





Heat Injury Prevention

- Hydration and acclimatization are critical to preventing heat illness



Hydrate

- Before Work
- During Work
- After Work



Heat Injury Prevention

- Appropriate clothing
 - Encourage workers to wear clothes that are breathable, light-colored, and loose-fitting
 - Cotton clothing can be soaked in water to aid cooling
 - Keep in mind that personal protective equipment may increase the risk of heat stress
- Identify a crew member as the assigned hydration monitor
- Implement work/rest and hydration schedules

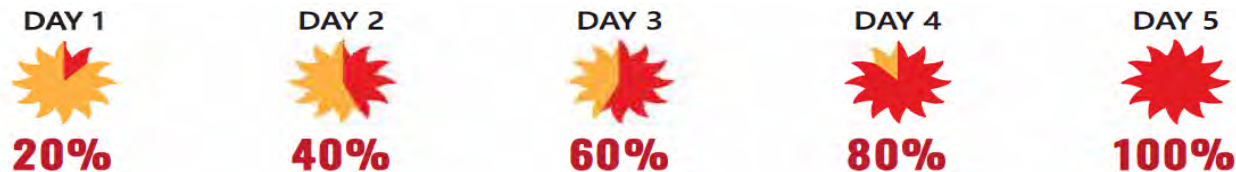


Heat Acclimatization

- Employees should be allowed to adapt and adjust gradually to working in hot environments.
- This should take place over a period of 5 to 7 days.

Example of an acclimatization schedule developed by NIOSH:

For new workers, the schedule should be no more than 20% exposure to heat on day 1 and an increase of no more than 20% exposure on each additional day



For workers who have previous experience with the job, the acclimatization schedule should be no more than:





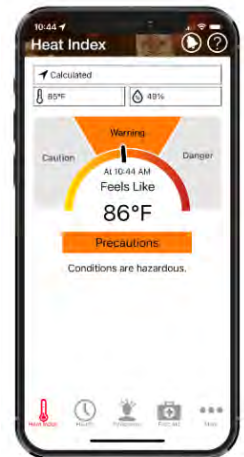
Heat Injury Prevention

- Designate a co-worker at the beginning of the shift to be your buddy and check in on each other throughout the shift.
- Make sure they:
 - Take consistent breaks - and hydrate!
 - Make use of available shade
 - Are not showing any heat illness-related symptoms



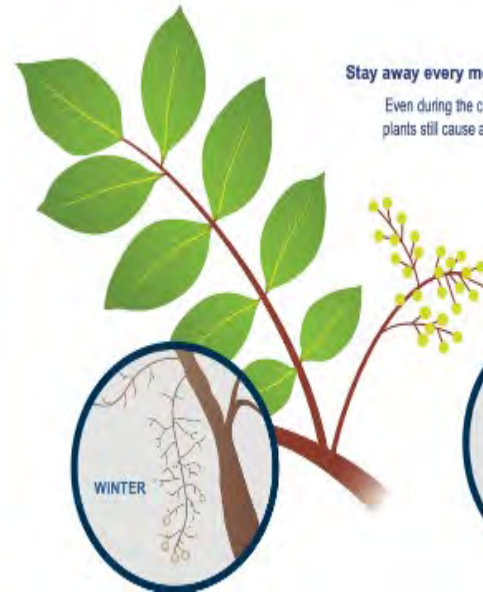
NIOSH Heat Safety Tool

- It has a real-time heat index and hourly forecasts specific to your location and provides occupational safety and health recommendations from OSHA and NIOSH.
- The OSHA-NIOSH Heat Safety Tool features:
 - A visual indicator of the current heat index and associated risk levels specific to your current geographical location
 - Precautionary recommendations specific to heat index-associated risk levels
 - An interactive, hourly forecast of heat index values, risk levels, and recommendations for planning outdoor work activities
 - Location, temperature, and humidity controls, which you can edit to calculate for different conditions
 - Signs and symptoms and first aid for heat-related illnesses



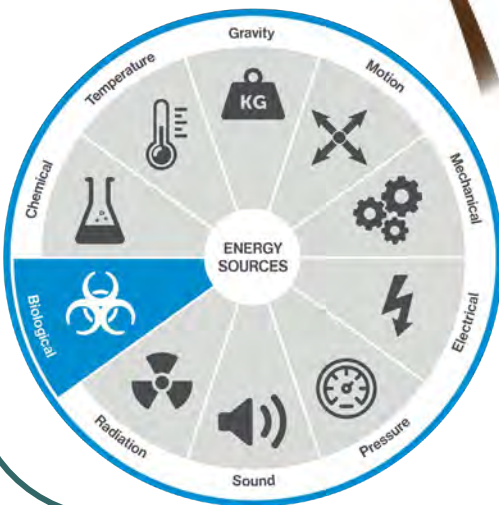


POISONOUS VEGETATION



Stay away every month of the year!

Even during the colder months,
plants still cause a toxic reaction.





Poison Oak

- Poison Oak
 - Is a plant found primarily in North America.
- Contact can cause the same allergic reaction as poison ivy, resulting in an itchy rash and blistering.
- Identification is essential, as its leaves resemble oak leaves, but it grows as a vine or shrub rather than a tree.





Poison Sumac

- Poison Sumac:
 - Is a highly toxic plant found in wetlands and swamps in the Eastern United States and Canada.
- The stems of the leaflets are always red. Yellow-green flowers are present during June and July.
- The small white or grey berries are visible in September.





Poison Ivy

- Poison Ivy:
 - It can grow as a vine or a shrub and is recognizable by its clusters of three leaflets.
- Remember the saying "Leaves of three, let them be" for identifying poison ivy and poison oak, which typically have clusters of three leaflets.





Preventive measures

- Wear Protective Clothing
- Be Cautious When Removing Plants
- Use Barriers



First aid

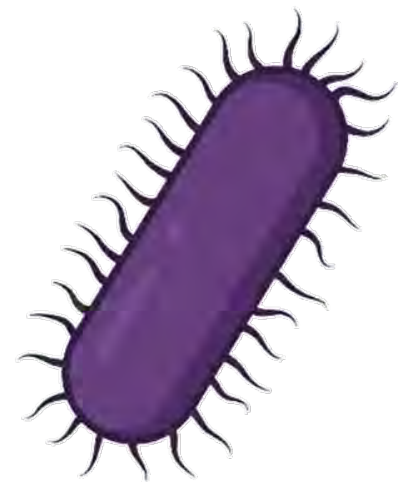
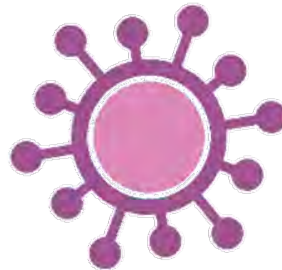
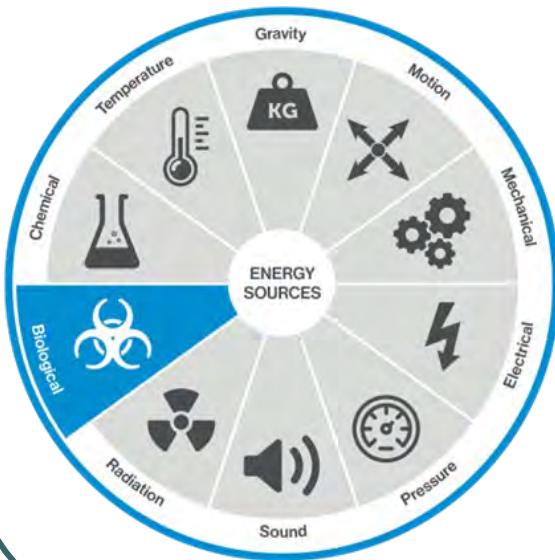
First aid for contact with poisonous plants primarily focuses on minimizing the spread of the irritating oils and soothing the affected skin.

1. Wash with Water
2. Apply Cold Compress
3. Avoid Scratching
4. Keep Clean and Dry
5. See Doctor if Needed





BACTERIA AND VIRUSES





Bacteria

- Bacteria are single-celled microorganisms that can be found in almost every habitat on Earth, including soil, water, and within living organisms.
- Common Bacterial Infections:
 - **Tuberculosis (TB):** Caused by *Mycobacterium tuberculosis*, TB primarily affects the lungs but can also impact other parts of the body. It is spread through the air when an infected person coughs or sneezes.
 - **Salmonellosis:** Often associated with contaminated food or water, *Salmonella* bacteria can cause gastrointestinal distress, fever, and diarrhea.
 - **Bacterial Pneumonia:** Various bacteria, including *Streptococcus pneumoniae*, can cause pneumonia, a serious lung infection.





Prevention & Control - Bacteria

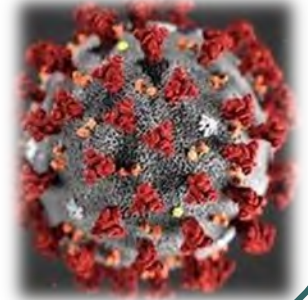
- **Hygiene Practices:** Regular handwashing with soap and water is one of the most effective ways to prevent the spread of bacterial infections.
- **Food Safety:** Proper food handling, cooking, and storage reduce the risk of foodborne bacterial illnesses.
- **Vaccination:** Vaccines are available for some bacterial diseases, such as TB and pneumococcal pneumonia, and are crucial in preventing these infections.





Viruses

- Viruses are even smaller than bacteria and require a living host to reproduce. They can infect all types of life forms, from animals and plants to microorganisms.
- Viruses are responsible for a wide range of diseases, some of which can lead to epidemics or pandemics.
- Common Viral Infections:
 - **Influenza (Flu):** A respiratory infection that can cause severe illness and complications, particularly in vulnerable populations.
 - **Hepatitis:** There are several types of hepatitis viruses that affect the liver, with varying modes of transmission, including contaminated food and water (hepatitis A) and bloodborne transmission (hepatitis B and C).
 - **COVID-19:** Caused by the novel coronavirus SARS-CoV-2, COVID-19 has had a profound global impact, highlighting the rapid transmission and potential severity of viral infections.





Prevention & Control – Viruses



- Vaccination: Vaccines are a cornerstone in the prevention of viral diseases, including influenza and COVID-19.
- Personal Protective Equipment (PPE): In healthcare settings and during outbreaks, PPE such as masks and gloves can reduce the risk of viral transmission.
- Quarantine and Isolation: During outbreaks of contagious viral illnesses, isolating the infected and quarantining those exposed can help prevent the spread of the virus.



Knowledge Test

A life-threatening condition where the internal temperatures are elevated, and the body is unable to cool itself.

Heat Stroke

The potential for Heat Related Injury or Illness fall under which segment of the Energy Wheel?

Temperature



Knowledge Test

Poisonous Vegetation is identified under which segment of the Energy Wheel?

Biological Hazards

The three primary plants notorious for causing skin irritation upon contact is....

Poison Oak, Ivy & Sumac



Knowledge Test

Controls for Viruses and Bacteria include

**Hygiene, Food Safety,
Vaccination**



Questions?