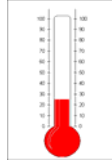


## HEAT STRESS



As Grounds employees, the majority of your time at work may be spent in hot environments, especially during summer months. Working in hot environments can induce heat stress in exposed individuals. When heat is combined with other stresses such as hard physical work, loss of fluids or some medical conditions, it may lead to heat related illness. It is important for supervisors and workers to recognize the conditions that can lead to heat stress and to ensure that appropriate controls are taken to minimize such effects.

Potential health problems associated with prolonged work in hot environments include:

### Heat Exhaustion:

- Heat exhaustion is a milder form of heat-related illness that can result after several days of exposure to high temperature, from loss of fluids through sweating when worker has failed to drink enough fluids or take in enough salt or both.
- Signs and symptoms include weakness, visual disturbances, dizziness, intense thirst, headaches, nausea, vomiting, diarrhea, breathlessness, muscle cramps, tingling and numbness of the hands and feet, and palpitations (feeling irregular heartbeats).
- The affected worker should rest in a cool place and drink cool water. Severe cases involving workers who vomit or lose consciousness may require longer treatment under medical supervision.
- If left untreated, heat exhaustion may progress into heat stroke (see next page).

### Heat Cramps:

- Sharp muscle pains that result from a failure to replace the body's salt that is released through the sweat.

### Heat Rashes:

- Tiny red spots on the skin that can cause a prickling feeling during heat exposure.
- Caused by humid environments where sweat is not easily removed from the skin, leaving it continuously wet.
- Can be prevented by resting in a cool place and allowing skin to dry.

### Heat Syncope:

- Brain does not receive enough oxygen because the blood pools in the extremities in an effort to cool the body.
- May be a problem for individuals not used to working in the heat who are immobile and standing.

- The skin may appear pale and sweaty but is generally moist and cool. The pulse may be weakened, and the heart rate is usually rapid. The body temperature is normal.

**Heat Stroke:**

- It is the most severe amongst heat-related syndromes. Heat stroke occurs when heat exhaustion is left untreated and the victim's core body temperature continues to rise as a result of failure of the body's internal mechanism to regulate its core temperature
- Signs include hot skin that is dry (due to failure of sweating); mental confusion, complete or partial loss of consciousness
- Can be fatal and requires immediate first aid and medical attention

Appropriate training will be scheduled by your supervisor in conjunction with the Office of Environmental Health and Safety.

**Prevention:**

In hot environments:

- Follow the standard operating procedures if available.
- Work at a reasonable pace and take frequent breaks.
- Thirst is a delayed response. By the time you feel thirsty, your body has already undergone some level of dehydration. Drink 1 cup of cool water every 20 minutes.

Report any conditions that may lead to heat stress (e.g. high heat, high humidity) to your supervisor.

**References:**

- 1) Occupational Health and Safety Act of Ontario
- 2) University of Toronto Control Program for Working in Hot Environments

## COLD ENVIRONMENTS



As Grounds employees, a large part of your work takes place outdoors. During the wintertime, you will be working in cold environments for possibly long periods of time. Two types of cold hazards are hypothermia and frostbite.

### ***Hypothermia:***

- Results from the cooling of the deep inner body to a temperature below 34.5°C because of prolonged exposure to the cold
- Can be fatal
- Victims lack energy, become confused, and make little effort to stay warm
- Victims should be immediately warmed; wrap them in blankets and move them to a warm room. Body heat (from cuddling) is the most effective way to warm a hypothermia victim.
- Severe cases of hypothermia may warrant immediate medical care
- \*\* Alcohol does not increase a person's tolerance to cold. Consuming alcohol *increases* the risk of hypothermia!

### **Frostbite**

- Results in freezing of the body from extremely cold temperatures, or contact with extremely cold metallic objects
- When the windchill temperature is -32°C or lower, the skin should not be exposed for more than a few minutes.

### **Prevention**

- For temperatures below 0°C, metal bars and handles should be covered by thermal insulating material. In addition, employees should wear their gloves/mittens.
- Wearing layers of dry, lightweight, loose fitting clothing provides greater protection from the cold than simply wearing one thick layer of clothing.
- Wear waterproof clothing for working in wet conditions.
- Eye protection should not fog or frost from exhaled moisture. Separate your eye protection from your nose and mouth.
- Felt-lined, rubber-bottomed, leather-topped boots with removable felt insoles are the best choice for working in the cold.
- Almost 50% of our body heat is lost through the head when the rest of the body is covered. The head should be covered with a liner under a hard hat, or with a wool cap.

## SEVERE WEATHER

Grounds employees spend a large amount outdoors as part of their job. From time to time, weather conditions outside are severe enough to affect working conditions (e.g. tornado warnings, thunder/lightning storms, blizzards). During these severe weather conditions, extra precautions should be taken. Workers should openly discuss these concerns with their supervisors. Where necessary, supervisors and managers should consider alternate work until the weather improves.

### Examples of Work/Tasks that can be affected by Severe Weather Conditions:

Type of condition	Work / Task Affected or Hazard
Reduced visibility (e.g. snow, rain, fog, etc.)	Driving (cars, vans, tractors, etc.)
Thunder or lightning storms	Using metal objects /equipment Using electrical equipment
Slippery conditions (e.g. snow, ice, rain)	Slippery surfaces Reduce ground visible (slip/trip hazards)
Wind	Flying objects, debris Harder to control objects during materials handling, especially large or flat objects
Cold	Loss of dexterity, frostbite, hypothermia Also refer the Cold Environment section for more information
Heat	Skin burns, heat rash, heat syncope, eat exhaustion, heat stroke. Also refer the Heat Stress section for more information

### What to Do During a Lightning Storm?

- Stay away from trees and water as they attract lightning.
- If you are on a roof or ladder, get down to the ground.
- Get indoors as quickly as possible. Safely shutdown any electrical equipment you are working with and leave the workplace in a safe condition.
- Do NOT resume outdoor work until 30 minutes after the last audible thunder or visible flash of lightning.

## INSECT BITES AND STINGS

As Grounds employees, you may be exposed to various insects. These insects may bite or sting humans with varying consequences.

Two types of bites and stings exist -- non-venomous and venomous.



Non-venomous insects bite and normally inject anti-coagulant saliva in order to feed on your blood. Symptoms of non-venomous bites include:

- Itching
- Mild swelling or redness

Examples of non-venomous insects include:

- Mosquitoes (for more information about mosquitoes and West Nile Virus, see section on West Nile Virus)
- Fleas
- Lice
- Ticks (e.g. Lyme Disease – symptoms include fatigue, chills, fever, headache, muscle and joint pain, swollen lymph nodes)



Venomous insects sting as a defense mechanism, injecting toxic and painful venom through their stingers. Symptoms of venomous stings include:

- Itching
- Pain
- Allergic reactions are common
- Potentially severe swelling or redness

Examples of venomous insects include:

- Bees
- Wasps
- Yellow Jackets

### Prevention:

To reduce exposure to biting and stinging insects:

- Use insect repellent. In addition to protecting against mosquitoes, the application of an insect repellent will also protect against bites from black flies, deer flies and ticks. Insect repellents are effective and safe when used as directed. Read the entire label before applying repellent. Make sure to wash the insect repellent off skin when protection is no longer needed.
- Minimize the use of scented products that may attract insects to you.
- Wear appropriate protective clothing.
- Be aware of nests, and avoid disturbing them.

- Always consult a pest removal professional if a stinging insect's nest must be removed from a work area.

## WEST NILE VIRUS



### ***What is West Nile Virus?***

West Nile Virus (WNV) is a mosquito-borne virus that infects birds, some animals and humans. The risk of infection is low, and less than 1% of people infected become seriously ill.

### ***What are the symptoms?***

The majority of people infected with WNV show no symptoms. About one in five people infected with WNV have:

- fever
- headaches
- body aches
- skin rash
- swollen glands.

Symptoms usually occur 3 to 15 days after being bitten by an infected mosquito.

Those over the age of 55 and people with compromised immune systems are at higher risk of illness. Symptoms of severe infection include:

- stiff neck
- confusion
- severe headache
- sudden sensitivity to light

Anyone suffering extreme swelling or infection from a mosquito bite, or any of the above symptoms should seek medical attention.

### ***What is the University of Toronto doing about West Nile Virus?***

UofT participates in the City of Toronto West Nile Virus Program. If you find a dead bird, please do not touch it. Instead, immediately report the exact location of the dead bird sighting to your supervisor. They will notify the **City of Toronto West Nile Virus Hotline at 416-338-7600**.

### **Prevention**

- Protect yourself from mosquito bites
- Stay indoors at peak mosquito biting times (dawn, dusk, and early evening)
- Wear light colored, long-sleeved shirts and pants, shoes and socks when you are outdoors.
- Use insect repellents containing DEET on exposed skin if working in areas where mosquitoes are likely to be found (woody areas, near ravines, damp areas). Take care to wash your hands after applying the repellent.

## HANTAVIRUS



Deer Mouse

### ***What is Hantavirus?***

Hantavirus infection is caused by a virus that is found in certain rodents. The most common rodent that transmits the disease is the deer mouse. Other disease carriers include cotton rats, rice rats, and the white-footed mouse.

Although infected deer mice have been identified in both urban and rural areas across North America, the chances of humans contracting the disease under current conditions in Toronto are low (City of Toronto, 2003). Workers may come into contact with infected rodents in rural and remote areas such as Hart House Farm, but again, the chance of coming into contact with infected rodents on the main campuses is low.

### **How is it spread?**

According to the US Centers for Disease Control and Prevention, the rodents that carry the Hantavirus shed the virus in their urine, saliva, and droppings. Aerosolization occurs when infected urine, droppings, or saliva are stirred up, causing virus-containing droplets to be released into the air.

### **What are the symptoms?**

The Hantavirus infection is known as *Hantavirus pulmonary syndrome* (HPS). Early symptoms of HPS include fatigue, fever, and muscle aches. There may also be headaches, chills, dizziness, nausea, vomiting, diarrhea, and abdominal pain.

Late (within four to ten days after the initial phase of infection) symptoms may include coughing and shortness of breath.

### **Prevention**

- Wear PPE such as safety glasses, rubber gloves, rubber boots, and respiratory protection with HEPA filters
- Do not stir up dust by sweeping up or vacuuming up droppings, urine or nesting materials. Instead, thoroughly wet contaminated areas with detergent or liquid (1 and 1/2 cups of household bleach in 1 gallon of water) to deactivate the virus
- Once everything is wet, take up contaminated materials with a damp towel, then mop or sponge the area with disinfectant
- Spray dead rodents with disinfectant, then double-bag along with all cleaning materials and bury or burn—or throw out in appropriate waste disposal system. If burning or burying isn't feasible, contact your local health department about other disposal methods
- When going into cabins or outbuildings (or work areas) that have been closed for awhile, open them up and air out before cleaning



- Dispose of used equipment and gloves in the same manner as infectious waste is disposed
- Don't forget to wash your hands with soap and water

## **DEAD ANIMALS AND BIRDS**

Care should be taken when handling dead animals and birds to prevent the spread of disease.

### **Before handling a dead animal**

1. Inform your supervisor of the finding.
2. Confirm the animal is dead by prodding with a long-handled tool.
3. Injured or dying animals may show aggressive behaviours. Do NOT attempt to catch the animal. Call your supervisor, Campus Police and your local Animal Services Centre:
  - City of Toronto (St. George and Scarborough Campuses): 416-338-7297
  - City of Mississauga: 905-896-5858

### **Collecting dead animals**

If the animal is too large for you and your co-workers to reasonably handle while maintaining minimal contact, do NOT attempt to handle it. Contact your local Animal Centre (see above). If the animal is small and can be easily handled, use the following procedures:

1. Wear thick, gauntlet-style (covers your forearms) rubber gloves. If your clothes or other body parts are likely to contact the dead animal, wear disposable coveralls.
2. If possible, use a tool such as a shovel to pick up the dead animal or bird. Avoid directly touching the animal with your hands as much as possible. Do NOT allow contact with your bare skin.
3. Place the dead animal in a plastic garbage bag and double bag it. Label the bag.
4. Call your local Animal Centre (see above) to arrange for pick up.
5. Keep the dead animal in a safe place (unlikely to be disturbed by others) until it can be picked up by your local Animal Centre.

### **After handling the dead animal**

1. Dispose of gloves and if applicable, coveralls. Double bag this waste.
2. Wash your hands with soap and water.
3. Disinfect any re-usable tools with a freshly made solution of bleach and water (9 parts bleach, 1 part water). NOTE: Bleach is corrosive and eye protection and gloves should be used during the cleaning.

### **Dead birds and West Nile Virus**

Birds may carry West Nile Virus and some Public Health offices will collect and test dead birds to track the spread of West Nile – see the West Nile Virus section for more information.

Contact your City's Public Health Department:

- The City of Toronto (St. George and Scarborough Campus) can be contacted at 416-338-7600 to collect the dead bird.
- However, Peel Region, for the City of Mississauga (UTM), stopped collecting dead birds in 2009. Use the procedures for Collecting Dead Animals to collect dead birds. Peel Region Public Health can be contacted at 905-799-7700 for more information.

## **BIRD, BAT AND RACCOON DROPPINGS**

Birds, bats, their feathers, droppings, nesting and roosting sites can host many diseases. Precautions should be taken to reduce the risk of disease transmission.

### **Health Hazard**

#### 1. Histoplasmosis

Histoplasmosis is an infectious disease caused by breathing in spores of a fungus called *Histoplasma capsulatum*, which are found in bird manure, bats and bat manure. Birds do not become infected and fresh bird droppings are at a low risk of the fungus; it is the older bird droppings which may become infected with the fungus.

Histoplasmosis affects the lungs. The majority of people do not have any symptoms but where symptoms occur, they include: fever, chest pain, dry cough, headache, loss of appetite, shortness of breath, joint or muscle ache and chills. These symptoms are similar to those for the flu and a chest X-ray is needed to differentiate this disease from the flu.

#### 2. Cryptococcus neoformans

This is a fungus that grows in dry bird manure that is NOT in direct sunlight. It is commonly associated with pigeons but can be found in droppings from other types of birds and from bats. If inhaled, this fungus can cause a respiratory infection called Cryptococcosis.

#### 3. Baylisascaris infection

Baylisascaris is an intestinal roundworm that develops in raccoon intestine. The roundworms release eggs that are passed in to raccoon feces. Eggs can infect animals and humans, becoming infectious 2-4 weeks after its released. The eggs are also very resilient and can survive for years in the feces. Symptoms in humans include nausea, tiredness, liver enlargement, loss of coordination, lack of attention to people and surrounds, loss of muscle control, coma and blindness.

### **Prevention**

The most effective method is to prevent birds, bats and raccoons from roosting and nesting in the area by sealing entry points into the area and eliminating sources of food. Other forms of pest control such as traps, ultrasonic devices and chemical repellants are available in the market. Consultation with a pest control specialist may also be helpful.

During clean up of areas contaminated with bird, bat or raccoon manure, use the following procedures to reduce exposure to dust and to minimize the risk of accidental ingestion:

1. Seal ventilation inlets and outlets to prevent contamination during clean up.
2. Wear disposable gloves, disposable coveralls with head covering, disposable boot covers, half-face respirator with HEPA (high efficiency particulate air) filters and eye goggles.
3. Wet droppings by spraying with a light mist of water. This will prevent spores from becoming airborne.
4. Shovel or scoop droppings into a plastic bag.
5. Double bag the droppings and disposable PPE.
6. Thorough wash any re-usable PPE, tools and equipment.
7. Wash hands thoroughly with soap and water.