In this issue of the Environmental Health and Safety (EHS) Listserv, May 10, 2018

---

1. Avoid Mosquito and Tick Bites

It is that time of year when there is alternating wet weather and hot weather in the transition from spring to summer. That weather pattern creates standing water that is the perfect breeding ground for mosquitoes, ticks, fleas and other insects. With an increase in ticks and flying insect populations comes an increased risk of exposure to the diseases that these insects can carry.

Mosquitos or tick bites can transmit vector-borne diseases such as West Nile Virus (mosquitos), Lyme Disease (ticks) and Rocky Mountain Spotted Fever (ticks). These diseases are called "Vector-Borne Diseases" because they are transmitted through an insect or "vector." Vectors are living organisms that can transmit infectious diseases between humans or from animals to humans.

Many of these vectors are bloodsucking insects, which ingest disease-producing microorganisms during a blood meal from an infected host (human or animal) and later inject it into a new host during a subsequent blood meal. According to the Centers for Disease Control, vector-borne diseases have increased threefold in the United States between 2004 and 2016.

Zika virus has been prominently in the news in recent years as it has become more prevalent in this hemisphere. The Zika virus spreads primarily through the bite of an infected *Aedes* species mosquito. To date, there have been 224 cases of Zika virus infection acquired through presumed local mosquito-borne transmission in the US. These cases have been isolated to Florida and Texas[1]. Other reported cases of infection have been travel-associated[1]. The Centers for Disease Control (CDC) has issued travel notices for Brownsville, TX, Southeastern Florida (Miami), all Caribbean nations, Central and South America, Mexico parts of Africa and Asia and some Pacific Islands[2]. Check the CDC webpages for advice if you are planning to travel to any of these areas[3,4]. More information about Zika is available on the CDC website[5].

Problems associated with vector-borne diseases:

- They are hard to predict, prevent or control.
- Only a few have vaccines.

- Some vectors are notoriously hard to kill and develop resistance to insecticides.
- Almost all vector-borne viruses and bacteria are zoonotic, meaning they can cause disease in animals as well as in humans.

To avoid "getting bit," follow these prevention tips:

- Wear insect repellent. Yes, it is safe when used as directed. Insect repellent is the BEST way to protect against insect bites—even children and pregnant women should protect themselves. Higher percentages of active ingredient provide longer lasting protection.
  - DEET. Products containing DEET include Cutter, OFF!, Skintastic.
  - Picaridin (also known as KBR 3023, Bayrepel, and icaridin). Products containing picaridin include Cutter Advanced, Skin So Soft Bug Guard Plus, and Autan (outside the United States).
  - Oil of lemon eucalyptus (OLE) or para-menthane-diol (PMD). Products containing OLE include Repel and Off! Botanicals. Do not use these products on children under 3 years old.
  - IR3535. Products containing IR3535 include Skin So Soft Bug Guard Plus Expedition and SkinSmart.
- Cover up. When weather permits, wear long-sleeved shirts and pants. Thoroughly check skin and clothing daily for ticks.
- Keep mosquitoes outside. Use air conditioning or make sure that you repair and use window/door screens.
- Avoid areas prone to insect infestation and take action to eliminate or treat potential breeding grounds.

Researchers traveling to other countries/parts of the United States to conduct research activities should review the prevalence of vector-borne diseases as they review other local safety considerations.

Resources

- Nebraska Department of Health & Human Services (NeDHHS) (phone: 402-471-2937)
- Centers for Disease Control (CDC) – Division of Vector-Borne Diseases (email: dvbd@cdc.gov or phone: 970-221-6400)
- CDC Prevent Mosquito Bites http://www.cdc.gov/features/StopMosquitoes/
- CDC Insect Repellent Use & Safety http://www.cdc.gov/westnile/faq/repellent.html
- CDC Lyme Disease Prevention http://www.cdc.gov/Features/LymeDisease/
- Rocky Mountain Spotted Fever http://www.cdc.gov/rmsf/
- Nebraska Department of Health and Human Services WNV (West Nile Virus) Surveillance http://dhhs.ne.gov/publichealth/Pages/wnv.aspx
- Nebraska Department of Health and Human Services General Information on WNV http://dhhs.ne.gov/publichealth/Pages/puh_epi_wnv_general.aspx

- CDC Zika Virus Information:
  (1) https://www.cdc.gov/zika/geo/united-states.html
  (2) https://wwwnc.cdc.gov/travel/page/zika-travel-information
  (3) https://www.cdc.gov/zika/pdfs/zpk_poster.pdf
  (4) https://www.cdc.gov/zika/geo/domestic-guidance.html
  (5) https://www.cdc.gov/zika/index.html

2. Prepare for Severe Weather

Whether you work on campus or in the field, do you know what to do in the event of severe weather? Unless you recently have taken the EHS web-based ***Emergency Preparedness*** training now would be a good time to review that online module and related resources including UNL's Emergency Planning and Preparedness website.

A number of areas have established Emergency Action Plans. Does your building have one? If not, now might be a good time to set one up. You can download a template from UNL's Emergency Preparedness website. Assistance/consultation regarding completion is only an email away, by contacting preparedness@unl.edu. If your area does have an Emergency Action Plan, review it now to be sure you are familiar with the components.

The EHS Safe Operating Procedure ***Communication of Work Area Safety Information*** contains a checklist with various items including a section on "Emergency Preparedness." The checklist assists both workers and supervisors by identifying relevant action items for new/current workers.

The National Oceanic and Atmospheric Administration, the National Weather Service, and Occupational Safety and Health Administration have a number of useful resources covering a variety of weather hazards.

Resources

- EHS web-based ***Emergency Preparedness*** training
  http://ehs.unl.edu/web-based-training#EP
- UNL Emergency Planning and Preparedness website
  http://emergency.unl.edu/
- National Weather Service Lightning Safety Tips
  http://www.lightningsafety.noaa.gov/
- OSHA Factsheet "*Lightning Safety When Working Outdoors*"
  https://www.osha.gov/Publications/OSHA3863.pdf
- NOAA "*The Online Tornado FAQ*" http://www.spc.noaa.gov/faq/tornado/
- UNL Emergency Preparedness *"Really Obvious" Preparedness Facts*
  https://www.youtube.com/playlist?list=PLh0k4GzppsqEyNcNx-fxPRIdpC-hERTQH

- EHS Safe Operating Procedure ***Communication of Work Area Safety Information*** http://ehs.unl.edu/sop/s-workareasafety.pdf

3. Safely Working in the Heat

We often associate heat-related illness with outdoor operations such as farm work, landscaping, and research "in the field." However, EHS routinely reviews injury reports from employees working INSIDE an unconditioned building (e.g., warehouse, storeroom) or areas of a building prone to heat build-up (e.g., kitchens, laundry, autoclave rooms, etc.).

National Heat Awareness Day occurs each year on the last Friday in May. Nationally, heat kills more people annually than all other weather conditions combined. While this article primarily references outdoor conditions, the principles and practices presented also apply to indoor work in hot environments.

Working in the heat stresses the body and can lead to illness or even death in severe cases. Exposure to heat can also increase the risk of other injuries because of sweaty hands, fogged-up safety glasses, dizziness, and burns from hot surfaces. Most heat-related health problems can be prevented or the risk of developing them can be reduced.

Following are two main categories of risk factors the worker should evaluate when contemplating outdoor work:

- **Weather Conditions.** The risk of heat stress is relative to temperature, humidity, sunlight, and wind speed. High temperature, high humidity, direct sunlight and low wind speed make the worst combination. If possible, schedule strenuous work for the cooler parts of the day.
- **Personal Factors and Physical Demands**. The risk of heat stress increases with physical demands. For example, a worker who is walking is at higher risk than a worker who is riding in a vehicle. Older workers, obese workers, and persons taking certain types of medication, such as antihistamines, are at a greater risk for heat illness.

It may not always be possible to work only in cooler parts of the day. The risk of heat-related illness can be reduced by:

- **Acclimation.** Build up tolerance to heat by short exposures before undertaking longer periods of work in a hot environment.
- **Appropriate clothing.** Light, loose clothing and a hat are the clothing of choice.
- **Hydration.** Drink 8-16 ounces of water *before* working in the heat. Drink 4-8 ounces of water or electrolytes every 15-20 minutes while working in the

heat. AVOID alcohol, coffee, tea, or soda pop, which further dehydrate the body.

- **Adequate Rest Periods.** Work at a steady pace. Take breaks when your body signals you need one, preferably in shaded or cool areas.
- **Education.** Heat stress can manifest as a number of conditions, all to be taken seriously, and some requiring medical assistance to avoid permanent aftereffects. Workers should know the signs and symptoms of these conditions so they can take proper action if they or their co-workers are affected.

More in-depth information can be found within the EHS Safe Operating Procedure (SOP), ***Heat Stress***.

The Occupational Safety and Health Administration (OSHA) in collaboration with the Centers for Disease Control and Prevention (CDC) and National Institute for Occupational Safety and Health (NIOSH) developed a free smartphone **Heat Safety Tool** that calculates a heat index, identifies the associated risk level and provides reminders about protective measures that should be taken to protect workers from heat-related illness. The app is available for either Android or iPhone.

Further recommendations from the National Institute for Occupational Safety and Health (NIOSH) for those working in hot environments include:

- Limit time in the heat and/or increase recovery time in a cool environment.
- Use a buddy system where workers observe each other for signs of heat intolerance.
- Have adequate amounts of cool, potable water near the work area and encourage each other to drink frequently.

Here are a few examples of heat-related incidents at UNL. These are provided to show a diversity of worker-type to dispel the myth that heat-related illnesses only afflict those working outdoors.

- A worker reported heat exhaustion while working in a non-air conditioned warehouse on a very hot day. Mitigation strategies to prevent future illness included increased hydration by the employee and installation of a ceiling fan to improve circulation.
- An employee reported heat exhaustion while working outdoors on a very hot day. Mitigation strategies to prevent future illness included the employee wearing light-colored clothing, and the department providing Gatorade. Agricultural workers should consider starting work earlier in the day and taking frequent breaks in a cool/shaded environment during, the hottest part of the day.
- An older concession worker at a football game reported heat exhaustion on a very hot day. Older workers may be more susceptible to the effects

of heat. Mitigation strategies included drinking more water to remain hydrated and taking frequent breaks in a cooler/shaded area.

Resources:

- OSHA Health and Safety Topics: Occupational Heat Exposure http://www.osha.gov/SLTC/heatstress/
- OSHA Heat Safety Tool (phone app-English & Spanish) https://www.osha.gov/SLTC/heatillness/heat_index/heat_app.html
- OSHA Health and Safety Topics: Using the Heat Index http://www.osha.gov/SLTC/heatillness/heat_index/index.html
- EHS ***Heat Stress*** SOP http://ehs.unl.edu/sop/s-heatstress.pdf
- National Institute for Health & Safety (NIOSH) Safety & Health Topics: *Heat Stress* http://www.cdc.gov/niosh/topics/heatstress/
- Heat Safety Tips and Resources https://www.weather.gov/safety/heat
- United States Department of Labor/Occupational Safety and Health Administration "Occupational Heat Exposure" https://www.osha.gov/SLTC/heatstress/

4. "Laboratory Ventilation" Colloquium Online

The spring safety colloquium, co-sponsored by EHS and the Office of Research and Economic Development, held on Wednesday, March 28, 2018, is now online. There were two components, both covered in the video available online:

- *Laboratory Ventilation* with an emphasis on chemical fume hoods presented by Labconco
- *UNL Laboratory Ventilation and Controls* presented by UNL Facilities focusing on UNL-specific fume hood and room ventilation controls, including recommendations for energy conservation

If you missed this safety event or would like to review the contents of this or previous colloquia go to https://ehs.unl.edu/training/Colloquium.

5. Situational Preparedness – Heads Up!

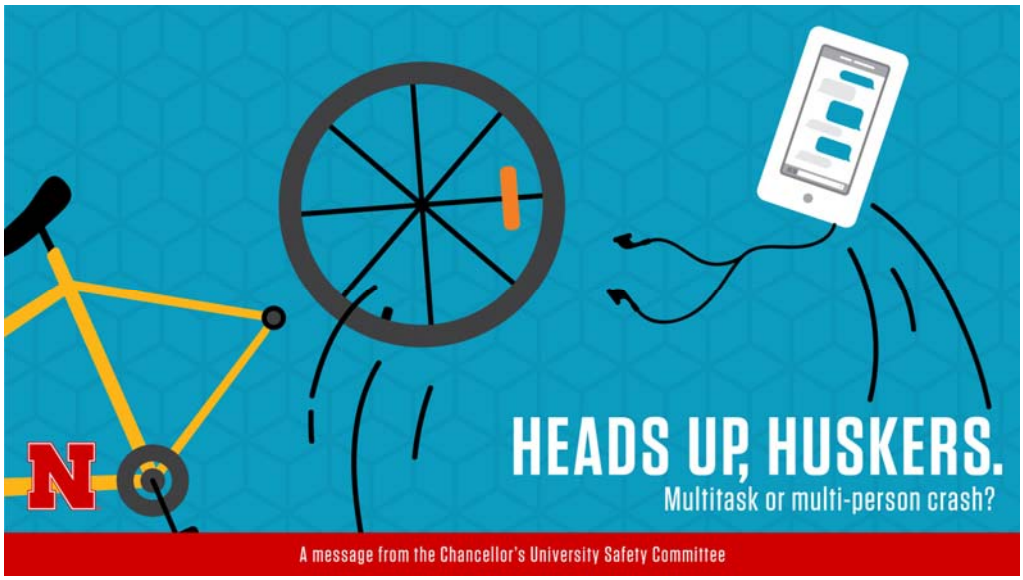
Situational preparedness is so important that we will be looking at various aspects over time, as well as providing resources to assist you to "be prepared" for whatever situations you may encounter at UNL.

The Chancellor's University Safety Committee some time ago initiated a "*Heads Up*!" campaign to address concerns with unsafe walking/driving/bicycling at UNL. Now available online are a variety of "marketing materials" to help promote safety in all aspects of walking/driving/bicycling, in particular on campus. There are:

- Reminders. Short statements individuals can share with their peers.

- Discussion Questions: Short insightful questions to share within the work area, department, safety committee, etc.
- Resources. Additional information on hazards of distracted walking/bicycling/driving and mitigation strategies. Included are videos, infographics and more.
- Graphics to print yourself or available upon request in in either JPG or PDF format to print/email within your sphere of influence.

Do you have other suggestions for reminders, discussion questions or resources? Contact Elizabeth (Betsy) Howe, ehowe2@unl.edu or 402-472-5488. Here is a sample graphic:



Resources

- Chancellor's University Safety Committee http://ehs.unl.edu/chancellors-university-safety-committee-cusc#cusc
- EHS Safety Resources "Heads Up! Marketing Materials" http://ehs.unl.edu/heads-up-marketing-materials'

6. Near Miss or Near Hit?

A campus-wide initiative, led by the Chancellor's University Safety Committee (CUSC) is underway to encourage all UNL employees to report unsafe practices and near misses. A near miss is an incident where no property was damaged and no personal injury sustained, but where, given a slight shift in time or position, damage and/or injury or illness easily could have occurred. This type of situation may be thought of as a "Close Call" or a "Near Hit!" The purpose of such reporting is to identify and abate contributing factors before they result in personal injury/illness or property damage.

By reporting these circumstances, you are contributing to a safer and healthier campus environment. Information reported is shared throughout the University for educational/awareness purposes. Specific identifying information (e.g., names, departments, etc.) is removed before reporting on an incident. We appreciate your participation and assure you that there is no risk of repercussions for reporting a situation or hazard.

To support this effort, the EHS "*Near Miss/Close Call Incident Reporting Form,"* which now can be used to report unsafe practices, is available through the EHS website. EHS also has available business-card size handouts containing the URL to report.

Please consider requesting a number of these Near Miss/Close Call reporting informational cards to share with those in your area. To request any quantity of these business-card size handouts contact EHS at 402-472-4925 or ehs@unl.edu.

Resources

- *Near Miss/Close Call Incident Reporting Form* https://ehs.unl.edu/near-missclose-call-incident-reporting-form

7. Revised Safe Operating Procedure - Training

Safe Operating Procedures:

- **Analytical X-ray Equipment and Other Common Radiation Generating Equipment** SOP https://ehs.unl.edu/sop/s-analytical_x-ray_equip.pdf
  Revised to more clearly define analytical x-ray equipment and include a discussion of non-healing arts x-ray applications.

Web-Based Training:

- **Bloodborne Pathogens for Custodial Services, Housing, and Nebraska Unions** https://ehs.unl.edu/web-based-training#BBP-CHU
  Corrected information regarding First Script program.

Remember...SAFETY IS AN ATTITUDE!

Environmental Health and Safety
University of Nebraska-Lincoln
3630 East Campus Loop
Lincoln, NE 68583-0824
(402) 472-4925
http://ehs.unl.edu

~To SUBSCRIBE and get your own copy if you received this from someone else or UNSUBSCRIBE, send an e-mail to LISTSERV@LISTSERV.UNL.EDU . In the Message (not Subject) field enter SUBSCRIBE EHSINFO or UNSUBSCRIBE EHSINFO