In this issue of the Environmental Health and Safety (EHS) Listserv – May 23, 2019

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1. Don't Let Them Bite

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, which 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. There have not been any cases initiating in the United States since 2016 in Florida[1]. Check the CDC website for advice if you are planning to travel to any of the areas for which CDC has issued a travel notice[2]. More information about Zika is available on the CDC website[3].

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. It is best to use an EPA-registered insect repellent and the EPA has developed a web tool to help you select the right repellent for you (https://www.epa.gov/insect-repellents/find-repellent-right-you). Below are some of the common active ingredients in repellents and example products.
  - 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.
  - Para-menthane-diol (PMD) Product examples are Off!, Off! Botanicals
- 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.

Tips for applying insect repellent:

- Always follow the product label instructions.
- Reapply insect repellent as directed.
  - Do not spray repellent on the skin under clothing.
  - If you are also using sunscreen, apply sunscreen first and insect repellent second.

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/Pages/West-Nile-Virus-Data.aspx
- Nebraska Department of Health and Human Services General Information on WNV http://dhhs.ne.gov/Pages/West-Nile-Virus.aspx
- CDC Zika Virus Information:
  (1) https://www.cdc.gov/zika/geo/index.html
  (2) https://wwwnc.cdc.gov/travel/page/zika-travel-information
  (3) https://www.cdc.gov/zika/index.html

2. Heat Stress

National Heat Awareness Day, sponsored ty the National Weather Service, is observed each year on the last Friday in May. Resulting in numerous fatalities each year, heat exhaustion and dehydration due to heat are some of the leading weather-related killers in the United States.

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.

While we think of summer as the “hot” time of year, sometimes temperatures in the spring can reach dangerous levels as well. Remember to practice heat safety wherever you are and in whatever you are doing. Heat-related illness and death are preventable.

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 https://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
- Centers for Disease Control and Prevention “Extreme Heat” https://www.cdc.gov/disasters/extremeheat/index.html

3. NEW Safety Poster: Heat Stress

EHS has developed a number of safety posters of relevance to the campus community. The tips in this new poster are relevant whether working indoors or out, at work or at home.

Order your FREE poster(s) today. Contact ehs@unl.edu or 402-472-4925 with your name, campus mailing address, and quantity desired.

Resources

- Safety Posters http://ehs.unl.edu/safety-posters

4. Safety Shorts – Heat Stress

This series features links to short safety resource(s) each month. Provided this month are resources related to heat stress:

- **Mayo Clinic Minute: The dangers of heat-related illnesses** (Mayo Clinic 1:00 min.) https://www.youtube.com/watch?v=AtmTbJr_Oxs

- **Heat Awareness** (SafeWorkSA, 1:21 min.) https://www.youtube.com/watch?v=raLMyR8jJbA

- **7 Ways to Beat the Heat – Hot Weather Hazards – Preventing Illness and Deaths in Hot Environments** (Safety Memos, 3:28 min.) https://www.youtube.com/watch?v=WYnj1G94e6Y&t=102s

- **Extreme Heat** (Raul Flores, 1:32 min.) https://www.youtube.com/watch?v=KLlaGIiTEAI

NOTE: Resources are provided for informational purposes only. Publication does not in any way endorse a particular company or product or affect current UNL policies and procedures.

5. Please Help Improve Our Service

Environmental Health and Safety is committed to excellent customer service and offers a *Customer Satisfaction Survey* as an easy method for the campus community to provide feedback on our services and staff. By taking a few moments to complete the survey (http://ehs.unl.edu/survey), you will be helping us to identify areas where we might need to focus our attention.

In order to effectively evaluate potential areas for improvement, please provide specific information or examples and your name and contact information. The Director, Brenda Osthus, follows up on all submissions. We greatly appreciate your participation.

Please feel free to contact Brenda Osthus, EHS Director, at 402-472-4927 or bosthus1@unl.edu if you would rather communicate outside the parameters of this survey.

6. NEW Safe Operating Procedure

- ***NEW: General Laboratory Housekeeping***
  https://ehs.unl.edu/sop/s-lab_housekeeping.pdf
  This document outlines good housekeeping practices for all research, teaching, diagnostic and clinical laboratories at UNL. Good housekeeping can significantly reduce the risk of accidents, fires and exposure to hazardous materials.

Remember...SAFETY IS AN ATTITUDE!

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