

## **In this issue of the Environmental Health and Safety (EHS) Listserv – May 5, 2021**

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### **1. Infectious Biological Materials Research – New Info**

Do you work with infectious biological materials? Might you plan to receive any materials infectious to humans from outside the United States or transfer permitted material to other researchers/entities? A few highlights of this updated Safe Operating Procedure are:

- Terminology changed from “etiologic agents” to “infectious biological materials,” a broader and simpler term
- Changes in CDC guidance related to the Import Permit Program
- Addition of a section on import and transfer of SARS-CoV-2.

Due to the extensive changes, please review this revised Safe Operating Procedure (SOP), **Import and Transfer of Infectious Biological Materials and other CDC Regulated Agents** ([https://ehs.unl.edu/sop/ship\\_etiologic\\_agents.pdf](https://ehs.unl.edu/sop/ship_etiologic_agents.pdf)), if it is relevant to your research.

### **2. Situational Preparedness - National Bicycle Safety, National Motorcycle Safety Month**

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 while driving, bicycling or walking.

Motorcyclists and bicyclists are more vulnerable to crashes than others on the road. Per mile travelled, motorcyclists are 27 times more likely than people in passenger cars to die in a traffic crash. The number of bicycle incidents has increased 29% over a recent eight-year period.

With more riders on the roads as weather improves, the need for additional precautions arises. The National Highway Traffic Safety Administration (NHTSA) has designated May as Motorcycle Safety Awareness Month, and the League of American Bicyclists recognizes May as National Bicyclist Safety Month. The National Safety Council (NSC) supports both of these efforts.

Remember that both motorcycles and bicycles are relatively small, and thus drivers often do not see them. Some safety tips that apply to both motorcycle and bicycle riders are:

- Be sure your bicycle or motorcycle is “ride ready”: check tire pressure, brakes, etc.
- Know and follow the rules of the road.
- Wear bright or reflective clothing that is durable with arms and legs covered, sturdy shoes or boots, and a helmet that conforms to the appropriate design standards.
- Assume you are invisible to other motorists and position yourself to be seen.
- Signal every turn or lane change.
- Drive defensively in the same direction as traffic. Pay special attention at intersections where half of all collisions occur. Always look out for cars turning or backing out of driveways.
- Don’t weave in and out of lanes, or ride on the shoulder or between lanes.
- Watch for hazards like potholes, manhole covers, oil slicks, puddles, debris, railroad tracks and gravel.

The best way to reduce your odds of dying or being severely injured in a crash is to get educated:

- The Motorcycle Safety Foundation (<https://www.msf-usa.org/library.aspx#ridercourse-materials-link>) offers safety booklets, downloadable Rider Course handbooks, videos, quick tips, white papers and more. They can also help you find a motorcycle safety course near you.
- RideApart (<https://www.rideapart.com/features/254912/10-common-motorcycle-accidents-and-how-to-avoid-them/>) publishes a list of the 10 most common causes for motorcycle accidents and how to avoid them, complete with videos. Many of the tips at this site apply equally to bicyclists.
- A core activity of the League of American Bicyclists is education. Find smart (bi)cycling tips and videos at <https://bikeleague.org/ridesmart>

Get educated and ride safely so you do not become a statistic!

## Resources

- MAY IS BIKE MONTH, The League of American Bicyclists <https://bikeleague.org/bikemonth>
- Bike Safely and Enjoy Your Ride, NSC <https://www.nsc.org/home-safety/tools-resources/seasonal-safety/summer/bicycles>

- Motorcycle Safety is a Two-way Street, NSC <https://www.nsc.org/road-safety/safety-topics/motorcycle-safety>
- Bicycle Safety, NHTSA <https://www.nhtsa.gov/road-safety/bicycle-safety>
- Motorcycle Safety, NHTSA <https://www.nhtsa.gov/road-safety/motorcycle-safety>
- Walter, L. (2012, May 15). 6 Tips for Motorcycle Safety Awareness Month. Retrieved April 27, 2021, from <https://www.ehstoday.com/safety/article/21915121/6-tips-for-motorcycle-safety-awareness-month>
- CPSC (Consumer Product Safety Commission) Which Helmet for Which Activity? (reference chart on helmet standards) <https://www.cpsc.gov/safety-education/safety-guides/sports-fitness-and-recreation-bicycles/which-helmet-which-activity/>

### 3. Avoid Insect Bite Diseases

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 contracting 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.

#### **Problems associated with vector-borne diseases:**

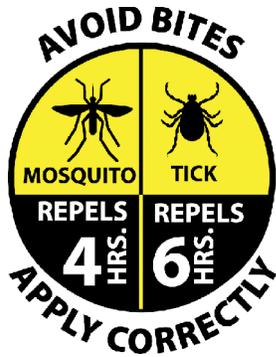
- They are hard to predict, prevent or control.
- Only a few have vaccines.
- Some vectors are notoriously hard to kill and develop resistance to insecticides.
- Almost all vector-borne viruses and bacteria are zoonotic, meaning they can cause disease in animals as well as in humans.

## To avoid “getting bit,” follow these prevention tips:

- Apply lotion, liquid, or spray repellent to exposed skin. 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. (CDC recommends products with  $\geq 20\%$  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. Wear long-sleeved shirts, socks 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.

## Optimizing protection against mosquito and tick bites:

- Always follow the product label instructions.
  - A new graphic appearing on the label of insect repellents applied to the skin helps consumers more easily identify how long the repellent is effective against mosquitoes and ticks. Use of this graphic by manufacturers is voluntary. Companies that apply to the EPA for permission to use the graphic must first provide data documenting their current testing protocols and standard evaluation practices.



- Treat clothing with permethrin or purchase pretreated clothing.
  - Permethrin-treated clothing will retain repellent activity through multiple washes. Permethrin sprays are available to treat clothing (Sawyer Clothing & Gear, Repel Clothing and Gear)
  - Repellents intended for use on skin can also be applied to clothing, but may provide a shorter duration of protection compared to permethrin-treated clothes and the repellent must be reapplied after laundering.
- Use repellent whenever outdoors (or indoors if mosquitoes can get inside); mosquitoes can bite any time of day or night.
- Check yourself during and after outdoor activity (your entire body); remove any attached ticks promptly. Check your pets as ticks can “hitchhike” on your pet so ticks are brought indoors on their fur.
- Reapply insect repellent as directed.
  - If you are also using sunscreen, apply sunscreen first and insect repellent second.
- Know the signs and symptoms of potential vector-borne diseases and seek prompt medical attention if experiencing symptoms.

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: 402-471-3121)
- Centers for Disease Control (CDC) – Division of Vector-Borne Diseases <https://www.cdc.gov/ncezid/dvbd/>
- CDC Symptoms of Tickborne Illness: <https://www.cdc.gov/ticks/symptoms.html>
- CDC Prevent Mosquito Bites <https://www.cdc.gov/zika/prevention/prevent-mosquito-bites.html>
- CDC Insect Repellent Use & Safety <http://www.cdc.gov/westnile/fag/repellent.html>
- CDC Lyme Disease <https://www.cdc.gov/lyme/index.html>

- Rocky Mountain Spotted Fever <https://www.cdc.gov/rmsf/index.html>
- 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>

#### 4. Prevent/Reduce the Risk of Heat-Related Illness

National Heat Awareness Day, sponsored by 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. On average, extreme heat has killed more people in the last ten years than any other weather phenomena.

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.).

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 dehydrates 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.

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) has 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 free 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 outdoors, sometimes temperatures in the spring or fall can reach dangerous levels as well. In addition, certain indoor work areas may be “hot” year-around. Remember to practice heat safety wherever you are and with whatever tasks you are doing. Heat-related illness and death are preventable.

#### **Resources:**

- OSHA Health and Safety Topics: Heat  
<http://www.osha.gov/SLTC/heatstress/>

- OSHA-NIOSH Heat Safety Tool (phone app-English & Spanish) <https://www.cdc.gov/niosh/topics/heatstress/heatapp.html>
- OSHA Health and Safety Topics: Using the Heat Index <https://www.osha.gov/heat/heat-index>
- 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>

## 5. Drinkable PPE: Health & Safety Protection from the Inside Out

Staying properly hydrated is as important as using personal protective equipment, not only when working in the heat indoors or out, but throughout the year. Hydration is a critical component to mental and physical fatigue, a leading cause of injury incidents. Slurred speech, irritability, lethargy, loss of appetite, mood swings all can be indicators of dehydration.

Remember to hydrate throughout the day, but particularly when you are working in a hot environment, indoors or out. Thirst is a signal to replace fluids, but you typically need hydration before you feel thirsty. Whether feeling thirsty or not, it is recommended that you drink one bottle of water per hour to avoid becoming dehydrated, especially when working or exercising outside. Fluid replacement plans need to consider factors such as sun exposure, temperature, humidity, job tasks and level of PPE being worn.

The January/February issue of Occupational Health & Safety states “Hydration, much like PPE, is a critical component of health and safety year-round.” Think and drink...water or a liquid designed especially for rehydration.

### Resources

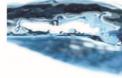
- Excessive Heat Awareness and Safety <https://www.weather.gov/rah/heat>
- Dillow, D. (2021, January/February). Drinkable PPE: Are You Protecting Your Workers from the Inside Out? Retrieved April 27, 2021, from [https://digital.1105media.com/OHS/2021/OHS\\_2021\\_01/OS\\_2101Q1\\_70\\_1922649.html?oly\\_enc\\_id=3093F0440478G2W#p=26](https://digital.1105media.com/OHS/2021/OHS_2021_01/OS_2101Q1_70_1922649.html?oly_enc_id=3093F0440478G2W#p=26)
- Centers for Disease Control and Prevention “Extreme Heat” <https://www.cdc.gov/disasters/extremeheat/index.html>

## 6. Poster/Digital Signage: Heat Stress

EHS has developed a graphic to help faculty, staff and students remember tips to avoid heat-related illness. This graphic is available as a free poster and also in a format suitable for digital signage.

## When It's **HOT...**

### Tips to Avoid **Heat-related Illness** Working Inside or Outside:



- **ACCLIMATE.** Increase exposure and workload gradually.
- **APPROPRIATE CLOTHING.** Light, loose clothing.
- **HYDRATION.** Drink 6-8 ounces water before working in heat and 8 ounces every 20 minutes.
- **ADEQUATE REST PERIODS.** Work at a steady pace. Take breaks in a cooler or shady area if possible.
- **JOB ROTATION.** When possible, rotate tasks between two or more employees.
- **EDUCATION.** Know how heat stress manifests and proper actions to take for each.



**Water Is Essential!**



Safe Operating Procedure (ehs.unl.edu):  
Heat Stress

UNIVERSITY of NEBRASKA-LINCOLN

Contact EHS for questions or comments:  
Environmental Health & Safety - (402) 472-4925

For a FREE poster(s) contact [ehs@unl.edu](mailto:ehs@unl.edu) or 402.472.4925 with your name, campus mailing address including Zip+4, and number of posters desired. To get a graphic suitable for digital signage display email or call EHS and we will send you the file.

### Resources

- Safety Posters <https://ehs.unl.edu/safety-posters>

## 7. Revised Safe Operating Procedures

- **Import and Movement of Animals, Animal Products and/or Organisms and Vectors Affecting Animals**  
[https://ehs.unl.edu/sop/s-import\\_animals.pdf](https://ehs.unl.edu/sop/s-import_animals.pdf)  
Updated to more broadly cover guidance about import and interstate movement of materials regulated by the Veterinary Services unit of the USDA Animal and Plant Health Inspection Service (USDA-APHIS). Guideline numbers were added to the Exclusions section to aid the user in finding new/updated guidance from APHIS. Weblinks to forms and USDA web pages were updated.
- **Import and Movement of Plants, Plant Products, Soil, Plant Pests and Pathogens**  
[https://ehs.unl.edu/sop/s-ship\\_aphis\\_permits.pdf](https://ehs.unl.edu/sop/s-ship_aphis_permits.pdf)

A new section was added covering transit permits for materials traveling through the United States on the way to their destination. Weblinks to the APHIS web pages were updated throughout.

- **Packaging and Shipping Hazardous Materials/Dangerous Goods**  
[https://ehs.unl.edu/sop/s-ship\\_hazmat\\_dangerousgoods\\_5.pdf](https://ehs.unl.edu/sop/s-ship_hazmat_dangerousgoods_5.pdf)  
Revised to add Class 7 “Radioactive” for users that transport radioactive material outside of UNL property (mainly gauge users).

**THINK SAFETY – DON'T LEARN BY ACCIDENT!**

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