US National Poultry Research Center's
Safety & Health Newsletter

We are working to keep you better informed and protected!

Volume 3, May 2016

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On The Horizon...

May 30th
Memorial Day

May 31th & June 7th
Science, Technology, Engineering & Math Adventurers (STEM) Visit USNPRC

June 22nd
Blood Drive
9AM-3PM RRC Cafeteria
To schedule an appointment contact: Nicole.crenshaw@ars.usda.gov

June 23rd
LGBT Program
1PM in the Auditorium

July 21st
FERS Retirement & Benefits Training Sessions
8:30-Noon & 1:00-4:30
See Amanda Cravens in LSO for Registration

Visit Our Safety Website For:

- **RRC SOP**
- **Active Shooter Response Plan**
- **Safety Newsletter Library**
- **SHEM Manual 160.0M**
- **Autoclave Log Sheet**
- **Emergency Procedures**
- **Spill Response Plan**

www.ars.usda.gov/SAA/RRC/Safety

visit our website

How Well Are You Managing Laboratory Hazards and Risks?

As we move into the summer months we tend to see a large influx of students entering many of our labs. While this is exciting for the future of scientific research, it should also be a cause for added concern for laboratory managers and personnel. Many of us know that running a research lab is a challenge, with the hustle of loading the autosampler, pipetting, pouring, and mixing media for research experiments, not to mention the time needed to crunch the data and write the research reports. However, in all this important activity worker training and safety can be put on the back burner, short changed, or inadvertently pushed aside and forgotten. In this overview of some of the most common hazards encountered in a typical research lab I hope to strike a nerve and motivate you to dig deeper to ensure that your lab is as safe as possible and that you are ready to respond should an accident happen.

Most hazards encountered in our labs will fall into three main categories: chemical, biological, or physical. Cleaning agents and disinfectants, drugs, solvents, paints, and compressed gases are examples of chemical hazards. Less recognized chemical hazards can be found in isolation and enrichment media. For example, Sodium Azide is often found in small quantities in some media. While usually at less than 1%, it may have a low toxicity rating, but some individuals have enhanced sensitivity to azide and may react to accidental exposure to the product. Sodium Biselenite (Sodium hydrogen selenite) is sometimes used in select enrichment of Salmonella. This compound can be corrosive on contact with skin and can produce toxic effects if inhaled or ingested. Potential exposure to chemical hazards can occur both during use and with poor storage. Sodium Biselenite is also believed to produce teratogenic effects.

Biological hazards may include bacteria, viruses, fungi, other microorganisms and their associated toxins. Additionally, allergens are one of the most frequently reported health hazards that can be found in labs, yet they are frequently overlooked.

Less recognized, yet readily present in our labs are physical hazards. These hazards include electrical safety hazards, ergonomic hazards associated with manual handling and equipment use, equipment pinch-points or hot spots, UV exposure , handling sharps, and basic housekeeping issues. Many operations in our labs can result in lab workers assuming sustained or repetitive awkward postures. For example, working for extended periods in a biosafety cabinet, or looking at slides on a microscope for extended periods. What is often acceptable for short occasional periods may become problematic if performed for longer periods or very frequently. Pain is a good indicator that something is wrong. You should always strive to conduct work with a neutral, balanced posture.

Sharps containers and broken glass containers can often lead to injury. Be sure to use only puncture-proof and leak-proof containers that are clearly labeled and make sure that these containers get replaced when three-fourths full to prevent overfilling.

Lab specific safety training must be taken seriously. Students and new employees do not usually have a great deal of experience so how well you train them will have a tremendous impact on the level of safety in your lab. Additionally, occasional "what if" drills will help lab personnel react more effectively should an incident occur.

Heat Stress Awareness

Did you know that it does not have to be 100°F outside for individuals to suffer a heat related injury? With the combination of heat and humidity, Georgia summers can turn outdoor activities into serious health threats. Whether your job calls for long days in the sun or your household chores require moderately intensive work like cutting your lawn, it is vital that you take precautions to avoid heat-related illness.

When working outdoors you are exposed to two forms of heat stress: internal metabolic (body) heat generated by exertion (physical labor) and environmental heat arising from working conditions. The National Institute for Occupational Safety and Health warn that "Moderate to high air temperature, particularly with high humidity; direct sun exposure; heavy or vapor-barrier clothing; and lack of adequate water, rest periods, or cooling off conditions all contribute to environmental heat stress and can make exertional heat stress worse." Everyone, regardless of age, is susceptible.

Acclimatization (getting use to local weather conditions) helps some by reducing the heat stress effects on your body, but it does not guarantee protection. Over time your body changes, your diet may change, your consumption of water varies, the amount of work you perform varies, and the clothing you wear varies. Any one of these factors can increase your risk of heat-related illness. If you are taking medication you should consult your doctor about whether that medication may affect your tolerance of heat.

Your body tries to reduce the strain of excessive heat by increasing blood flow to the skin and through sweating. As the sweat evaporates your skin and the underlying blood are both cooled; however, if you do not adequately replenish those fluids and the salts they take with them your body's defenses become impaired. Hydration is the most important tool you can use to reduce your chances of a heat-related illness. Unfortunately, many individuals are already partially dehydrated when they start their work activities because they fail to drink enough water throughout the day. In addition, drinking the wrong drinks can also impact your level of hydration. Caffeinated drinks and alcoholic beverages can act as diuretics and increase fluid loss.

Symptoms to watch for:

Warning Signs: Dark urine color; Heat rash on neck, upper chest, groin and/or elbow creases; Heat cramps, which are muscle pains caused by loss of body salts and water.

Danger Signs: Heat exhaustion signs and symptoms include headache, nausea, dizziness, weakness, irritability, confusion, thirst, heavy sweating and body temperature greater than 100,4°F. Heat Stroke signs include confusion, loss of consciousness and seizures. Anyone showing signs of heat stroke needs medical help immediately, call 911!

On a related note, the National Highway Traffic Safety Administration reports that heatstroke in vehicles is the leading cause of all non-crash-related fatalities involving children 14 and younger. It is vital that we remember that children's bodies overheat easily, and infants and children under the age of 3 are at greatest risk for heat-related illness. No matter how convenient it may be at the time, children (and animals) should never be left in vehicles on warm days. On an 80 degree day internal temperatures in a vehicle can reach deadly levels in just 10 minutes and danger signs can start even quicker.

For more information visit: http://www.cdc.gov/niosh/docs/wp-solutions/2013-143/ and http://www.gahighwaysafety.org/campaigns/child-passenger-safety/heatstroke/

In The Spot Light!

Celebrate Memorial Day Carefully!

Memorial Day is a federal holiday in the United States set aside for remembering the people who died while serving in our country's armed forced. It is often celebrated with family & friends at barbeques and cookouts at one of the many parks around north Georgia. If this is your plan go prepared with sunblock, insect repellent, and an awareness of the many hazards that may want to share your fun; things like ticks, poison ivy, snakes, and potentially rabid animals. If a normally nocturnal animal is out during the day there is usually a good reason and it is not because it wants to be your friend! Be safe and have a great summer!




Responding to a Biological Exposure

Let's face it, while we work very hard to prevent them, accidents will happen. Effective lab specific safety training, good supervision, and consistent compliance with procedures will reduce the occurrence of accidents tremendously, but they can never eliminate the possibility. With that in mind, how well do you know how to respond to a potential biological exposure incident?

A "*biological exposure incident*" occurs when biological materials enter the body through:

- A puncture, cut or abrasion of the skin involving a biologically-contaminated object (including animal bites/scratches);
- Contact of biological contamination with compromised skin;
- Contact of biological contamination with mucus membranes of eyes, nose or mouth.

If this occurs you should take these actions immediately:

1. For a **percutaneous exposure (through the skin)** proceed to the closest sink. Remove potentially contaminated PPE and clothing, place in biohazard bag and flush the exposed site thoroughly with soap and water for at least 5 minutes. **Do not use bleach or other harsh chemicals that can degrade tissues.** Cover the wound with a bandage (if applicable).

   For exposures to the eyes, use the eyewash keeping eyelids open. Flush for 15 minutes.

2. Report the incident immediately to your lab supervisor and biosafety officer (BSO) at 706-614-4275 or Safety officer at 706-296-5221.

3. Seek medical attention as directed.

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