



Department of Occupational and Environmental Safety NEWSLETTER

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CASE WESTERN RESERVE UNIVERSITY

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Spring Cleaning for Safety's Sake



The end of the school year is a good time to put your laboratory in order, especially since the students have left and the lab is less chaotic. If this hasn't already been done, take care of these few "housekeeping" tasks that will put your lab into good shape for summer.

1) Clean out chemical stocks. Go through your laboratory shelves and properly dispose of any chemicals that are no longer used or needed. We strongly recommend that this kind of sorting be done often for many reasons:

- it keeps disposal costs down since there are smaller amounts to dispose of;
- it reduces the possibility of these chemicals becoming potentially-dangerous "unknowns," which can happen if labels fall off or get defaced;
- it reduces hazards in the lab -- the fewer chemicals around the better, especially if the identities of some of the compounds are uncertain.

A new chemical inventory should be submitted to DOES after disposal of any chemicals. If some of the chemicals are transferred to a co-worker's lab, that person must also submit an updated inventory list reflecting the changes.

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TB: A Re-emerging Problem



Tuberculosis is the most widespread disease on the planet, but it has not been a common problem here in the U.S. But recently, TB cases in America have been steadily on the rise. Here at CWRU Health Services has treated three active cases over the last five years and administers to hundreds of patients who exhibit positive skin tests but do not have active TB. With some recent cases, it is a good time to clear up some of the many misconceptions of this disease and the dangers it poses especially for the CWRU population.

Last month, a University employee exhibited a positive skin test for TB with a normal chest x-ray. This is not an uncommon occurrence as hundreds of students present positive skin tests every year. Dr. Robert Wallis of the CWRU Medical School stresses the following:

- If you have a positive skin test (as this worker did), it does not mean you have active

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What a WASTE!

Biohazardous Waste Disposal

In disposing of biohazardous waste, remember to begin the process by classifying the waste according to the following categories:

- Sharps
- Biohazardous or Infectious Wastes
- Uncontaminated Lab Waste
- Ordinary Trash
- Chemical Waste

Then dispose of as per the guidelines in your Chemical Safety Manual.

But remember that wastes which contain **both** chemical **and** another type of waste (e.g. animal parts stored in formalin) must be separated and disposed of according to **each pertinent waste policy**. In the example above, the animal waste would be treated as biohazardous waste and the formalin is disposed of as chemical waste. Don't assume compatibility of disposal procedures. Refer to your Safety Manual for specific details or call Safety Services.

Standard operating procedure dictates that all biowaste is to be autoclaved before being removed from the lab. However, sometimes material cannot be autoclaved, usually because of size or composition. Autoclaving such biowaste does make it safer to handle, but it still should be treated and labeled accordingly.

Remember that the labs are accountable for biowaste, so if you have non-autoclaved, un-sanitary waste, it is your responsibility to not only prep biowaste for disposal and removal, but also to label and handle it as such. Someone else might not be as informed as you about what dangers these hazardous materials might pose, so keep all lab personnel notified.

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2) Dispose of trash promptly — especially hazardous and radioactive waste. Call DOES (x2906) to arrange disposal (with the appropriate accompanying paperwork completed) as early as possible in the day so we can process the request.

3) Go over training materials so that they reflect any changes to the laboratory's safety procedures and protocols. New students beginning work in the summer (and especially next fall) will then have the most up-to-date set of materials and guidelines to follow.

Happy cleaning!



Upcoming Training Sessions

Radiation (x2906)

- New Training:** May 24, June 8, June 23 (call for times)
- Retraining:** June 14, June 29 (call for times)
- X-ray Training:** call office to set up training

Chemical (x2907)

- OSHA Lab Standard:** Mondays 1-3 (Service Building Conference Room)

Bloodborne Pathogen (x2907)

- New Training:** Mondays 3-4 (Service Building Conference Room)
- Retraining:** May 26, June 8, June 20, July 6 (call for times; Service Building Conference Room)

Don't forget: rad re-training is now also **ONLINE**

As always, call us for upcoming dates and times.

Moving Animal Violations



The movement of animal products -- as live animals, tissue culture, tumors, or biological samples -- between laboratories poses a safety hazard if these animals have been infected with a human pathogen or exposed to a hazardous material. This practice should be avoided because it also represents a significant means for introducing disease into another animal colony, which could wipe out your entire store of laboratory animals.

All animals (and products of animal origin) should be certified free of undesirable micro-biologic agents prior to arriving at your laboratory (if using a non-standard vendor, use the form here: <http://mediswww.meds.cwru.edu/researchoffice/arc/forms.html>). This practice applies equally for tumors arriving in the intact animal, in tissue culture, or in the frozen state. When establishing guidelines and policy for introducing tissues and tumors, the problem of introducing tissue cultures into the laboratory but **not** into the animals must also be addressed. Those responsible for the laboratory animals and researchers alike must recognize the possibility that tissue designated for the laboratory may later be placed into animals and thereby introduce pathogens into the animal colony or (even worse) a human researcher.

The most recent outbreak of mouse pox in the U.S. was caused by injections of mouse serum into mice. The serum, which contained mouse pox virus, was not intended for use in live animals. It would be prudent not to put you, your animals, and those of other researchers at risk, so be sure that all of your animals are certified disease-free. As a precaution, animals and materials acquired from colleagues should be considered high risk until proved otherwise. If you have questions, feel free to contact Dr. Nanette Kleinman at 368-3490.



HOT TIPS



Using 35S at High Temperatures

Although nucleotides that contain 35S in solution do not release volatile radioactivity at room temperatures, higher temperatures can cause the release of volatile products. These products can lead to contamination from airborne isotope releases during common procedures such as PCR cycle sequencing used to synthesize nucleic acid polymers that contain 35S. Therefore, investigators should **run these procedures in a fume hood** or a closed chamber with a charcoal trap in order to prevent the spread of radioactive material. Similar precautions should be taken when inhaling cells with 35S or 3H labeled methionine. In these cases, cells release SO₂ by-product which can contaminate surrounding surfaces.

Keeping Records

Remember to keep your records up-to-date in case of inspection by University, State, or Federal Regulatory Authorities. Your records should always include:

- receipt and disposition of radioactive material in your possession.
- records of waste disposal
- records for storage and transfers, incl. rad survey results for both.
- surveys of rooms and equipment
- records of all packages received
- all incident reports.

Procedural records such as:

- Inventory - must detail date, radionuclide, chemical/physical form, supplier, method, and date of disposal.
- Contamination surveys - Maintain all radiation survey results in accordance with the Laboratory/Contamination Survey Section of the Rad Safety Manual.
- Incident Reports - All reports or surveys from spills or accidents.

tuberculosis. Your risk of developing active TB is very small (less than 10%) and can be reduced to near-zero by preventive therapy.

- Any individual with a positive skin test but no active disease is **not infectious** to other people.
- The fact that this exposure was identified indicates the success of appropriate surveillance programs for those working with infectious organisms.

In the most recent case of active tuberculosis on campus, active TB was diagnosed on x-ray in a University worker. As soon as the individual was identified as carrying active TB, the worker's close associates were notified and immediate skin testing was made available to any and all individuals who felt they were at a risk of exposure.

Dr. Anita Redahan of the CWRU TB Unit wants to reiterate that even in the case of active TB, **the risk of spread of infection is very small and should not be cause for alarm.** In fact, Dr. Redahan hopes that through better education, this disease can be more easily understood and more students and workers will feel safer coming forth for voluntary PPD skin testing. She stresses: "our goal is to identify anyone with active TB so they can be started on medication as early as possible and get back to their normal studies and duties."

The wider concern of TB is that improper antibiotic usage often leads to the development of resistant strains of not only TB but other microbacterial diseases. For this reason, certain groups such as homeless people and drug users often provide fertile ground for these drug-resistant mutant strains to develop. As the world becomes smaller and these groups rise in population, instances of TB have risen commensurately.

Although TB is entirely curable and preventable, it will kill more people in the year 2000 than when the bacillus was first discovered in 1884. The National Tuberculosis Center and the World Health Organization estimate that eight million people get TB every year, of whom 95% live in developing countries such as Africa, Asia, and Latin America. An estimated three million die from TB each year.

Frequently Asked Questions About Tuberculosis

1. What is TB? It is a bacterial infection which usually affects the lungs.
 2. How would I get TB? TB is spread by breathing in the *Mycobacterium Tuberculosis* bacteria which has been coughed or sneezed out by someone with active TB. This can happen anywhere. You may never know from whom you get the disease.
 3. How would I know if I have TB? You may not know until you get a TB skin test or until you feel sick.
 4. What is a Tuberculin Test? It is a skin test placed on your left forearm. 48-72 hours after it is put on your arm, it is read by a healthcare provider.
 5. What is BCG? BCG is a vaccine which has been widely used in many countries to help modify the initial infection with TB. It is often given to babies and repeated at five to ten year intervals.
 6. I had BCG. Why do I need to be tested? Studies have shown that the vaccine **is often not effective in preventing TB infection.** Also, many who receive BCG as infants do not get the 5-year booster and thus are not effectively vaccinated. In countries where BCG is given, the most common cause of a positive TB test is not previous BCG vaccination but actual exposure to TB.
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The Gloves Are Off!



"Don't worry, my gloves are clean!" Have you ever heard that when you ask someone why they're wearing laboratory gloves outside of the laboratory? You might be tempted to say: "If they are clean, then why are you wearing them? To protect yourself from germs on doorknobs?"

Sure, it takes a little time and effort to pull off your gloves when you leave the bench, but think of the message you are sending to everyone else when you don't: "I'm wearing gloves because I've been working with chemicals/infectious agents/radioactive materials and I need to protect myself, but the heck with the rest of you who have to use the phone, turn the doorknob, or push the elevator button after me!"

Signs around your entrance/exits can usually help this. But good training is more important, and speaking up also helps. Principal investigators and supervisors need to reinforce the message for their staff and students: don't wear gloves outside of the lab.

So don't be afraid to speak up when you see someone about to grab that doorknob with their gloved hand. Remember your mother's words: you don't know where that hand has been!

The Safety News?!?!

Check out these true-life strange newspaper headlines, all with a safety twist:

Safety Experts Say School Bus Passengers Should Be Belted

Man Struck By Lightning Faces Battery Charge

Red Tape Holds Up Bridges

Enraged Cow Injures Farmer With Ax

This Stinks



When you open your chemical storage refrigerator or freezer, are you confronted by an odor that makes you fall to your knees and beg for mercy? This is a common occurrence. In some cases, lab workers want help identifying the offenders and cleaning the refrigerator, while in others, the unit no longer works and must be decontaminated before sending it out for disposal.

Refrigerators that are used to store chemicals are notorious for becoming so infiltrated with offensive odors that they just about induce the gag reflex when opened. Because refrigerators are commonly used to store volatile, noxious, and air-sensitive material, it is not uncommon for the atmosphere inside the unit to be saturated with chemical vapors. Over time, these vapors can penetrate porous surfaces and lead to odor problems. Similarly, material from spills or leaking containers can impregnate surfaces that then give off odors long after the original material is cleaned up. If you smell something funny, **assume that there is a leak somewhere and fix it ASAP.**

Follow these guidelines to reduce the offensive odors in your chemical storage refrigerator or freezer:

- Use secondary, removable trays or containers to store all materials (this way, when spills occur, the storage container can be removed for easy cleaning).
- Promptly clean up any spilled material.
- Do not store flammables in regular refrigerators.
- Wrap caps of volatile materials in parafilm.
- Place volatile materials in ziplock bags.
- Regularly inspect container integrity (no cracked caps, no leaking containers, no excess pressure, no blurred labels, etc.).
- Do not overfill the refrigerator or freezer.
- Dispose of old materials in the proper way.

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and Environmental Safety****Staff**

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REMINDER: Commencement takes place Sunday,
May 21, 2000 at 9:30 a.m. in the Veale Center. Call
368-3836 for more details. Support your students and
colleagues by attending.

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Safety News For the Campus Community