



Case Department of Occupational and Environmental Safety

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“Safety Comes First”

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Proper Fire Alarm Response



All Case Western Reserve University buildings have fire alarm systems in place which signal to Security when they are activated. When Security receives an alarm from any building they immediately summon the Cleveland Fire Department. If an alarm goes off, the Fire Department will come.

During several recent responses to campus alarms, firefighters have found uncooperative people in the area of the alarm. This is unacceptable: when firefighters arrive at the scene they expect the building or area under alarm to be evacuated; they do not expect to see people entering a building that has an active alarm situation in progress. This behavior by members of the campus community can never be tolerated by the responding firefighters because it hinders their primary purpose—to discern the cause of the alarm and to protect life and property if necessary.

The University can be cited by the Fire Department for the kind of behavior which has been exhibited in the past. For example, the buildings under alarm and
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Proper Fire Alarm Response (continued from page 1)

the surrounding area have remained occupied with people standing around, going about their business, and complaining about the noise being made by the alarm system. People have also entered buildings or areas where an alarm is still active, further compromising the activity of the Fire Department.

Remember that university policy states that an alarm activation in any building shall be considered an *order* to evacuate; everyone must respond by leaving the buildings or areas under alarm and must not reenter until the alarm is silenced and the “all-clear” issued.

We realize that evacuating during alarms, especially when they frequently go off, can frustrate ongoing work; however, the alternative—being trapped in a fire—is much worse. If everyone follows proper procedures and cooperates with responding Security officers and firefighters, the inconvenience and disruption will be minimal, and no one is likely to be injured or killed by fire.

If you have any questions please contact Dick Harley of Safety Services at 368-5865.

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Controlling Laboratory Ergonomic Risk Factors

Ergonomics is a means of adapting the work environment to human capacities and needs—in common terms, it’s a way of fitting the task to the person. In our daily lives in the workplace, we use principles of ergonomics to find positions and tools that minimize stress on the body while working.

All manual and repetitive work done for long periods of time places stress on certain areas of the body. This includes many laboratory tasks that require painstaking and lengthy procedures—pipetting, labeling small jars or test tubes, sitting at the microscope, and using the computer. These tasks can contribute to poor posture, repetitive stress injury, and other ailments.

Beginning with this month’s article on pipetting, over the coming months the newsletter will provide suggestions for reducing ergonomic risk factors common to the laboratory: awkward posture, high repetition, excessive force, contact stresses, and vibration. By learning how to (continued on page 3)

Controlling Laboratory Ergonomic Risk Factors (continued from Page 2)

control laboratory ergonomic risk factors, you can improve employee comfort and productivity while lowering chances for occupational injuries.

Pipetting

Pipetting is one of the most common activities in the laboratory to which repetitive strain injuries (RSIs) can be traced. These tips can help reduce those factors of force, position, and repetitiveness which contribute to the stress this activity places on the body.

To Control Awkward Postures:

- Work with wrists in straight, neutral positions to minimize strain. For example, incline the sample holder or solution flask, for example, to help keep wrists straight.
- Reduce reaching—use short pipettes, use conveniently-sized solution containers, and properly position waste containers for used tips.
- Keep items in use as close to you as possible by positioning them to minimize twisting of the neck and torso.
- Work with elbows as close to your sides as possible.
- Make sure that your chair provides proper lower back and thigh support and that feet are supported.

To Control High Repetition:

- Automate pipetting tasks.
- Use multi-pipettors whenever practical.
- Share workload between right and left sides.
- Vary pipetter types having different activation motions; for example, switch from using a thumb-controlled to a finger-controlled pipetter.
- Take adequate breaks away from pipetting activity—even short, several-second “micro-breaks” help.
- Rotate pipetting among several employees.
- Evaluate work processes to identify high-risk tasks (such as repetitive pipetting). These tasks can then be spread throughout the day and provide the worker with some rest from the strain of repetition.
- Add personnel for peak periods.

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Controlling Laboratory Ergonomic Risk Factors (continued from page 3)

To Control Excessive Force:

- Choose pipetters requiring less finger or thumb motion to activate.
- Choose pipetters requiring less force to activate.
- Use only the force necessary to activate.

To Control Contact Stresses:

- Choose pipetters that best fit your hand.
- Do not rest forearms on sharp work surface edges; pad edge or forearm if necessary.

Safety Services can also help by performing an ergonomic evaluation of your workstation and possibly making some recommendations to improve the situation. For further information, call Dick Harley (x5865) at Safety Services.

Future editions of the newsletter will discuss ergonomic solutions for handling test tubes and using microscopes.

Summer Cleaning for Safety's Sake

“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.”

The summer 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 that these chemicals will become 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.

Spring Cleaning for Safety's Sake (continued from page 4)

2) Dispose of trash promptly — especially hazardous and radioactive waste. Call DOES (x2906) to arrange disposal (with the appropriate accompanying paperwork completed) as early in the day 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 that 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!

Urban Legends of the Lab

There are MANY common laboratory practices that you may follow just because someone once cryptically told you *that's how it's ALWAYS been done*. However, that doesn't mean it's SAFE. Below, we have compiled some common “urban legends” of the laboratory. **ALL of the practices listed below are wrong and potentially dangerous.**

- Sodium bicarbonate is effective at destroying streptozotocin;
- Bleach is an effective agent to degrade ethidium bromide;
- Alkaline salt solutions can reduce nitrosoamide (MNU, MNNG, etc.) compounds;
- Unstable flammable chemicals must be refrigerated;
- Victims of fainting or lightheadedness are best revived with ammonia inhalants.

There is no evidence to support that ethidium bromide, streptozotocin, or nitrosoamide compounds are effectively degraded by any of the treatment methods listed above. In fact, evidence suggests that more mutagenic compounds may be generated. These materials generally require more vigorous approaches.

Unstable or reactive flammable chemicals such as dimethyldichlorosilane should be stored in an approved flammable storage cabinet.

Ammonia inhalants can be harmful because they can burn the nasal passages of those to whom they have been administered. Instead, have the person sit down and breathe fresh air for 15 minutes, then seek medical attention.

Dispel these laboratory myths! The truth is out there!

As always, when in doubt, contact DOES at ext. 2906 for suitable disposal.

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Upcoming Training Sessions

Radiation (x2906)

- **New Training:** *Wed. June 15 , 2005 2:00 p. m.*
Thurs. June 23 , 2005 9:00 a. m.
Thurs. July 14 , 2005 2:00 p. m.
Wed. July 20 , 2005 2:00 p. m.
Thurs. July 28 , 2005 9:00 a. m.
Thurs. August 11 , 2005 2:00 p. m.
- **Retraining:** PREREGISTRATION IS REQUIRED ! - Please call 368-2906
(Rad re-training is also available online at our website:
<http://does.case.edu>)
- **X-Ray Training:** PREREGISTRATION IS REQUIRED ! - Please call 368-4606
or email yxtl3@case.edu

Chemical (x2907)

- **OSHA Lab Standard:** PREREGISTRATION IS REQUIRED ! - Please call 368-2907
Held every Tuesday afternoon from 1:00 p.m. to 3:00 p.m.
Additional training classes schedule:
Thurs. July 14, 2005 9:00 a. m.

Bloodborne Pathogen (x2907)

- **New training:** PREREGISTRATION IS REQUIRED ! - Please call 368-2907
Held every Tuesday afternoon from 3:00 p.m. to 4:30 p.m.
- **Retraining:** PREREGISTRATION IS REQUIRED! Call 368-2907 or email vfl@case.edu for information and to register. Online retraining is available at the DOES website.

*****As always, check out our website for training dates.*****

Case Laser Safety Program Commits to ANSI Standards

The Case Laser Safety Program is now committed to the ANSI standards outlined in ANSI Z136.1-2000, Safe Use of Lasers. We also have the Laser Hazard Evaluator calculator program that will facilitate the determination of Maximum Permissible Exposure (MPE), Nominal Hazard Zone (NHZ), Nominal Ocular Hazard Distance (NOHD), and the required Optical Density (OD) for laser personal protective equipment (PPE) for most of the laser configurations found at CASE. Both of these items are copyright-protected documents; however, they are available for review and use at DOES. If you wish to purchase your own copies from the Laser Institute of America (LIA), go to <www.laserinstitute.org>. If you have questions or require additional information, please feel free to contact H. Wayne Justice at x4600 or email at <hwj@case.edu>.



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