



# Case Department of Occupational and Environmental Safety

*“SAFETY COMES FIRST”*

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## *Ergonomics Series (Part III): Lifting Precautions at Work*

**Go back to the lifting basics**

“Oh, my aching back!” If you are like most people, you have moaned out that refrain more than once in your life. Backaches and back injuries occur for a wide variety of reasons. One of those reasons is poor lifting techniques. Unfortunately, the muscles attached to the bones in the spinal column are not built to handle the heavy stress of lifting, so if you do not use proper lifting techniques, you can damage your back muscles and cause painful injuries. Here are some tips for lifting safely:

- Plan the lift before you begin — Ask yourself if you will grip the object. Where do you have to move it? How will you get there? How will you put it down when it reaches its destination?
- Lift just an edge of the object — This will help you get an idea of the weight. If it's too heavy, get help or find a hand truck to move it.
- Stand correctly — You should be close to the object to be lifted, and your feet should be planted firmly on the floor, somewhat apart with toes pointing out.
- Squat down — Keep your back straight, your knees bent, and your stomach muscles tightened to support the spine during the lift.
- Grasp the object firmly — Test to be sure you can lift the object successfully before you move with it. Keep the object close to your body — The closer it is, the less force it exerts on your spine.

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## *Ergonomics: Lifting Precautions at Work (continued from front page)*

- Move slowly into an upright position — Lift with your leg muscles, and keep your back straight as you stand up.
- Be sure you can see where you are going — Take small steps and move slowly and cautiously.
- Don't twist your body during a lift — Twisting your torso while you are carrying a heavy object can cause injury.
- Bend your knees to unload — Once you get to the destination, keep your back straight, your feet firmly in place, and the weight of the object close to your body as you bend at the knees to lower the object into position.
- Watch your fingers — Be sure you have allowed room for your fingers and toes when you place an object down.
- Slide the load — If you have to position the object into a relatively tight space, slide it rather than try to maneuver its whole weight. If the destination is a bench or table, rest the object on the edge of the structure and slide it forward.

If you use these basic lifting techniques, you will help protect your back from injury. If you would like an ergonomic assessment of your area, call Shirley Mele, DOES Ergonomic Coordinator, @ 368-3149.

## *An Important Reminder: Department of Homeland Security Regulations for the Secur- ing Chemicals*

On November 19, 2007 The Department of Homeland Security issued a final regulation regarding the security of chemicals that could be diverted for illicit use. This regulation requires the University to perform an inventory of the campus for chemicals that Homeland Security lists as Chemicals of Interest (COI). The information collected will be used by Homeland Security to assign the university a Security Tier. The University will then be required to implement security measures for those chemical of interest identified on campus. The Department of Occupational and Environmental Safety has been charged by Homeland Security and the Office of the Provost to collect the required information.

You are required to inventory the chemicals in your laboratory according to the Homeland Security chemicals of interest list and report the results to DOES before January 31, 2008. An Excel spreadsheet listing the chemicals of interest has been assembled for your use to report your results. The instructions and the spreadsheet can be found on the following DOES webpage <http://case.edu/finadmin/does/DHSLIST/>. If you are in UH, VA, Metro, or other non CWRU campus areas, please contact your locations Safety office for instructions.

# *Winter Driving—Some Important Safety Reminders*

## **Winter driving carries unique risks**

Winter driving carries several unique risks. Two of the greatest risks are the loss of visibility and the loss of traction due to weather and road conditions.

### **Lack of visibility**

The lack of visibility is possibly the most dangerous single risk involved in winter driving. If a driver is not willing to slow down to maintain the correct sight distance, the risk of being involved in an accident increases exponentially.

To safely operate a large vehicle the driver needs 12 to 15 seconds of visibility to be able to see, decide, and act in time. This is especially true on slippery winter roads. If the driver is driving through snow or winter fog at a speed that only allows one to two seconds of visibility, what is the driver going to do if he/she comes across a stopped or slow moving vehicle? By the time the driver realizes the vehicle is stopped or going slow, he/she will not have enough time and distance left to decide on how to avoid it and act.

### **Lack of traction**

At times the traction can get so bad that the driver cannot even get the truck to start moving. It may require the use of a traction aid (salt, snow, tire chains, etc.) to get the truck moving from a parking spot or stop sign. Generally, if a loaded truck can get to 10 miles per hour, from there on it gets easier. Careful use of the throttle and clutch are critical to being successful at getting moving. The bigger problem with traction is the opposite, trying to get the vehicle to stop!

The weight that can help provide traction for getting moving can quickly become the driver's worst enemy when braking. This is because the weight will resist slowing, and the poor traction with the roadway will cause the tires to lock and skid, rather than slow. This skidding can lead to major control problems.

To prevent skids and avoid losing control, the trick is to allow enough space in traffic and have the vehicle's speed reduced to the point where severe control actions (hard braking or hard steering) are not necessary.

Tire chains can increase traction by up to 500 percent, depending on the type of chains and the conditions. In many states the vehicle must be carrying chains during the winter months, and many states have "chain-up laws." These laws require that trucks have tire chains on their tires to continue (see previous Transport Idea of the Week dated 9/30/07 for details of chain laws).

### **Combination of no visibility and no traction**

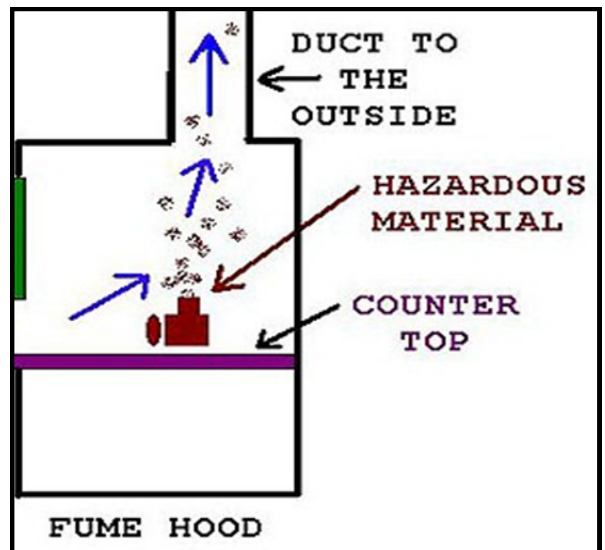
The absolute worst situation in winter driving is when the driver has little or no visibility, and little or no traction, even at a significantly reduced speed. Not only can the driver not see a hazard, the driver cannot act

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# Shut the Sash! A Program of Safety Awareness and Energy Savings: Part II

by Mary Ellen Scott and Linda Robson (This is the second article in a three-part series. The first article [Part I] appeared in the November/December 2007 Newsletter.)

In a joint project, the Sustainability Program, Facilities Services and the Department of Occupational Health and Safety (DOES) will launch our “Shut the Sash Campaign” February 1, 2008. Shut the Sash is a simple way to increase safety awareness and energy savings at the same time. Our flagship buildings will be Kent Hale Smith and Millis with over 200 fume hoods between them. We will also introduce Shut the Sash to Bingham, Wickenden and Wood bringing the total to 350. These buildings were chosen due to the prominence of fume hoods and monitoring capability. We will be able to monitor the energy usage of these buildings several different ways. The participating buildings will have link which displays a graph depicting the “real time” energy consumption ( <http://www.case.edu/finadmin/plantsrv/rpgraphs.htm>), and by comparing utility bills with the historic trends, we may note overall changes. Although the changes may not be as dramatic as \$3500 a year per hood due to our current energy saving devices like motion sensors already in place, the campaign hopes to serve as a call to action by increasing awareness for safe laboratory practices and saving energy.



Our green magnets “Shut the Sash” will be placed on the front side about 2” from the bottom to help remind our researchers to close the sash when leaving the front of the hood. While there are some fume hoods that may not save energy if their sashes are closed, many do so, and keeping it closed when not in use is always safest for the user.

The goal of the Shut the Sash program is to cover all the fume hoods on campus (some 1200 and counting). Volunteers will be needed initially to help walk the buildings to pass out magnets for each hood and in a follow up for continuous improvement (see Part III in the next DOES Newsletter). All are invited and anyone interested in helping out please contact either Linda Robson (5328) or Mary Ellen Scott (6077) for more details.

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## *The “ABCs” of Safer and More Efficient Fume Hoods*

**A**lways lower the sash as much as possible to protect the user and to minimize visual obstruction from sash board.

**B**ulky equipment should cover less than 50% of surface area, be elevated 2” to 3” above the counter top and 6”- 8” behind plane of sash.

**C**lose the sash when not working in front of the hood.

**Please keep these three simple steps in mind for safe and efficient use of the fume hoods.**

## *Winter Driving—Some Important Safety Reminders (continued from page 3)*

on it without risking a skid and loss of control. If conditions are this bad, the driver should have the ability to make the decision to call it a day and wait for conditions to improve.

### **Not the only one having trouble**

Drivers also need to be aware that if conditions have deteriorated to where they are having visibility and control problems, so is everyone else. Times like this are good times to keep the speed way down and stay away from everyone!

If another driver loses control, the driver will need to have enough visibility to see it in time, be traveling with enough space and at a speed that allows control actions (braking and steering) to be taken in such a way that the vehicle can be kept under control, no matter how bad the traction is.

## *Simple Reminders for Labs*

Laboratory workers certainly aren't school kids, but anyone can benefit from a review of basic safe practices. The following safety tips are adapted from a publication by the National Institute for Occupational Safety and Health (NIOSH): School Chemistry Laboratory Safety Guide:\*

- Check the label to verify a substance's identity before using it. If you transfer chemicals from their original containers, label chemical containers as to the contents, concentration, hazard, date, and your initials.
- Weigh out or remove only the amount of chemical you will need. Do not return the excess to its original container, but properly dispose of it in the appropriate waste container.
- Never touch, taste, or smell any reagents. Never place the container directly under your nose and inhale the vapors.
- Use the laboratory chemical hood, if available, when there is a possibility of release of toxic chemical vapors, dust, or gases. When using a hood, the sash opening should be kept at a minimum to protect the user and to ensure efficient operation of the hood. Keep your head and body outside of the hood face. Chemicals and equipment should be placed at least six inches within the hood to ensure proper air flow.
- Never fill a pipette using mouth suction. Always use a pipetting device.
- Add concentrated acid to water slowly. Never add water to a concentrated acid.
- Make sure no flammable solvents are in the surrounding area when lighting a flame.
- Use a hot water bath to heat flammable liquids. Never heat directly with a flame.
- Be careful when handling hot glassware and apparatus. Hot glassware looks just like cold glassware.
- Place chemical waste in appropriately labeled waste containers. Never pour chemical waste into the sink drains or wastebaskets.

\*A full guide is available on the NIOSH website at: [www.cdc.gov/niosh/docs/2007-107](http://www.cdc.gov/niosh/docs/2007-107)

## *Radioactive Material Ordering*

The RSOF has established the following procedures when ordering radioactive material.

For liability reasons, the RSOF requires that the old CASE requisition with the signature of the AU or the AU's approved designee be faxed to the RSOF (fax 368-2236) and must have the PeopleSoft requisition number referenced in the body of the requisition. Only the AU's or formally approved designee's signature will be accepted. Also, you must print the name below the signature. This information can be written on the main body of the requisition. The RSOF maintains a list of individuals authorized to sign isotope orders. If you want to add or delete anyone's name, fax an updated personnel form to the RSOF.

As of July 1, 2004, in addition to the paper requisition, the orders (including all replacement orders and no-charge samples) must now be submitted through the PeopleSoft system. The following items must appear on the PeopleSoft requisition:

- The vendor's name and address under "Suggested Vendor." (Be sure to choose the "radioactive category" and not glassware or chemicals)
- The number of stock vials to order should be placed under "Quantity."
- The activity to order should be placed under the "Unit." Activity should be expressed in units of millicuries (mCi) or microcuries ( $\mu$ Ci), not Becquerels (Bq).
- The catalog number should be under the "Catalog Number."
- The isotope and chemical form should be written under "Description."

Once all of the above steps are following correctly, the requisition will automatically appear in the RSOF approval **Worklist** via the computer for final approval.

There is a 2:00 p.m. cut-off time in the RSOF for processing radioactive material requisitions due the following business day. Requisitions received after 2:00 p.m. are not guaranteed for next day delivery.

**IMPORTANT:** *Radioactive materials cannot be purchased with a University P-Card.*

NOTE: Purchase requisitions for radioactive material to be ordered or delivered to MetroHealth Medical Center or the VA Medical Center do not require the approval of the CASE RSOF. Contact the RSOF at those locations for instruction.

## *Safety Glasses: Keeping Them Clean*

(Originally Published on 09/05/2006 by J.J. Keller) Dirty safety glasses can be very irritating and can lead to the hazard of reduced visibility. Therefore, it's important that workers clean their safety glasses (and other personal protective equipment) periodically. However, there's more to cleaning than just wiping the lenses clean with a shirt.

### **How to Clean Your Safety Glasses**

Several methods for disinfecting eye-protective equipment are acceptable. The most effective method is to disassemble the goggles or spectacles and thoroughly clean all parts with soap and warm water.

- Carefully rinse all traces of soap and replace defective parts with new ones.
- Swab thoroughly or completely and immerse all parts for 10 minutes in a solution of germicidal deodorant fungicide.
- Remove parts from solution and suspend in a clean place for air drying at room temperature or with heated air.

Do not rinse after removing parts from the solution because this will remove the germicidal residue that retains its effectiveness after drying.

### **When to Clean Your Safety Glasses**

There are many situations where safety glasses should be cleaned:

- Eye and face protection equipment that has been previously used should be disinfected before being issued to another employee.
- When employees are assigned protective equipment for extended periods, the equipment should be cleaned and disinfected regularly.
- Atmospheric conditions and the restricted ventilation of the protector can cause lenses to fog. Frequent cleansing may be necessary.

## *Upcoming Training Sessions\**

**IMPORTANT NOTE:** While all laboratories must attend training at DOES, labs must hold specific training in the CHP and ECP as it pertains to the actual work they do. Labs will also need an outline of the CHP and ECP training and a sign in sheet to accompany. Store the sign-in sheet and outline with the CHP and ECP. IT will be asked for during lab inspections.

### **New Hazard Communication (Right-to-Know) Training**

Retraining is required annually.

DOES Small Meeting Room - Service Building 1st Floor

PREREGISTRATION IS REQUIRED! - Please call 368-2907

**\*As always, consult our website (<http://does.case.edu>) for a full schedule of training sessions**

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# Upcoming Training Sessions\*

## New Radiation Safety Training

Retraining is required annually.  
DOES conference room - Service Building 1st Floor  
PREREGISTRATION IS *REQUIRED* ! - Please call 368-2906

## New Laser Safety Training

Retraining is required annually.  
DOES conference room - Service Building 1st Floor  
PREREGISTRATION IS *REQUIRED* ! - Please call 368-2906

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## FOR THE FOLLOWING CLASSES:

- Laboratory Safety Retraining**
- Regulated Chemical Retraining**
- Hazard Communication (Right-to-Know) Retraining**
- Bloodborne Pathogen Retraining**
- Radiation Safety Retraining**
- Laser Safety Retraining**
- Respirator Safety Retraining**

Please retrain on the Internet at <<http://does.case.edu>> and click on Training.  
Print test and fax or mail it to the DOES office.  
If your training is more that one year overdue, then you must attend  
the training class in person and can not retrain online.

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## FOR THE FOLLOWING CLASSES:

- New Laboratory Safety Training**
- New Regulated Chemical Training (Formaldehyde, Benzene, Methylene Chloride, Vinyl Chloride, etc.)**
- New Bloodborne Pathogen Training**
- New Respirator Safety Training**
- New BSL-3 Safety Training**

Retraining is required annually.  
DOES Conference Room - Service Building 1st Floor  
PREREGISTRATION IS *REQUIRED*! - Please call 368-2907

**\*As always, consult our website (<http://does.case.edu>) for a full schedule of training sessions**

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**Chemical Safety (OSHA Lab Standard Training)**

Please call 368-2907 to preregister for this class.

Class Objective: To train all University personnel using hazardous chemicals in a laboratory setting in basic chemical safety principles and the requirements of the OSHA Laboratory Standard 1910.1450.

Class Frequency and Time: The class is offered every Tuesday from 1:00 to 3:00 pm. Also additional classes are available.

Location: The class is held in the DOES conference room in the Service Building First Floor unless otherwise specified in the calendar.

**X-Ray Safety Training**

DOES Conference Room-Service Building 1st Floor  
PREREGISTRATION IS REQUIRED! - Please call 368-2907

See website for training dates.

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**Again, for a complete listing, please  
consult the DOES website at...**

**<<http://does.case.edu/>>**

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