University of California
Environmental Health and Safety Update
San Francisco

UCSF RESEARCH NEWS SEPTEMBER / OCTOBER 1997 VOLUME 97, NUMBER 5

UCSF CONTROLLED SUBSTANCES REGISTRATION PROGRAM

UCSF's Controlled Substances are subject to Federal and State regulations. These regulations set specific requirements and restrictions on registration, acquisition, usage, record keeping, transfer, storage, and disposal. The University uses several "umbrella" registrations that cover general campus usage for research, teaching instruction, analytical laboratory, inpatient and outpatient usage.

There are two programs overseeing the management of Controlled Substances at the university. The Medical Center program is detailed in the Hospital Formulary and covers inpatient and outpatient usage. The Campus program is managed by the Office of Environmental Health and Safety (EH&S) and Materiel Management, and is detailed in the UCSF Controlled Substances Program Manual. The program covers all university laboratory activities and non-medical support facilities, including those under contracts and grants.

Registration in the campus program involves completion and submission of a Use Authorization Form, a Controlled Substance Release Signature Card, and a beginning inventory sheet showing "0" balance records to EH&S. EH&S will review and determine the need for other agency registrations such as the Drug Enforcement Agency (DEA) or the California Research Advisory Panel (C-RAP). You should be receiving your application package and a copy of the manual shortly. Contact your Department Safety Advisor (DSA) or call EH&S at 476-1300 for a copy.

Materiel Management handles all acquisition of Controlled Substances. They can be ordered from the Medical Center pharmacy on a pharmacy order form, or from an outside vendor on a UCSF purchase requisition. Specific storage is required to obstruct theft or diversion.

Record keeping is mandatory and records of receipt, usage, and inventory must be kept at each usage site for five years.

For disposal, Controlled Substances are not allowed to be disintegrated, crushed into powder and dissolved in water. They must be delivered to an Environmental Protection Agency (EPA) approved incinerator or sent to a DEA registered disposal firm for destruction. EH&S coordinates and makes arrangements with the designated disposal site.

Audit of Controlled Substances users will be done to evaluate the effectiveness of the program. The audit will be part of the on-going EH&S Comprehensive Laboratory Audit System. Each department's DSA will review the administrative requirements, as well as audit the laboratories, for the use of Controlled Substances.

THERMOMETER CONSIDERATIONS

The EH&S Emergency Response Team has responded to 25 calls over the past six months to clean up and dispose of mercury from broken thermometers. All calls originated in UCSF laboratories, in contrast to the situation several years ago where most calls for collection of mercury from broken thermometers or manometers originated in the Medical Center. Over the past few years the Medical Center has instituted the use of electronic sensing thermometers and blood pressure units which has drastically reduced the number of emergency response calls from the Medical Center.

EH&S recommends that laboratories consider purchasing non-toxic red-dye alcohol thermometers or double-contained mercury thermometers (coated to resist shattering of glass, and to contain the mercury should breakage occur). These thermometers are available from Fisher Scientific and other vendors at a price to UCSF ranging from $8.00 - $18.00 per thermometer (refer to Fisher Scientific Catalog numbers 15-041 and 14-983).

The cost for EH&S to respond to a mercury thermometer spill is approximately $100.00. This represents the Responder's time and the disposal cost of the mercury and debris. The time required to arrive at a lab, conduct the clean up, return to the EH&S waste facility, package the waste for off site disposal, and prepare the required reports is a minimum of 1.5 hours. The disposal cost of the mercury and associated debris is $35.00 per pound. The mercury is recovered and recycled by our waste vendor. Consider replacing your old mercury thermometer with a new and improved type.

PREVENTING ERGONOMIC INJURIES

Most of us have heard about injuries resulting from improper computer usage and poor lifting techniques. These types of injuries are preventable by making a habit of safe work practices.

Computer Workstation Users

To reduce eye strain, position monitor properly. While screen is off, angle it so that you can not see the reflection of any lights on the front surface of the screen. Fluorescent lights tend to be very white and harsh on the eyes. If your workstation has a bright light above it, place a cardboard hood over the monitor to provide shade across the screen surface; be sure not to block the ventilation openings. Rearrange mobile light sources to reduce monitor glare.

To reduce eye and body fatigue, take micro, mini, and macro breaks. Computer users should take a micro break which lasts only for about ten seconds, every ten minutes. It's simple to take such a break: Focus your eyes on something away from your terminal (at least 20 feet) and breathe and blink to re-energize your eyes, mind, and body.

Holy mini breaks last about five minutes. Stand up and stretch. You can do eye exercises during this break so your eyes can flex and be used in different seeing situations. Focus on something close up and then 20 feet away. Repeat this exercise at least ten times. Re-moisturize your eyes by closing them for 30 seconds or so. Roll your shoulders, touch your toes, get a drink of water. Seek out other quick exercises that help you feel good.

A maxi break could be a coffee break or lunch. This maxi break is a "get-up-and-move" type of break that allows your blood to start flowing again and get you more energized. The National Institute of Occupational Safety and Health recommends a fifteen minute break for every two hours of intense computer activity.

Learn how to position your body properly at the computer workstation. It's easy. Free software called ErgoSmart is available from the Office of Environmental Health & Safety (contact your Department Safety Advisor). Once you know how to position your body, you can put personal knowledge into action at any computer workstation.

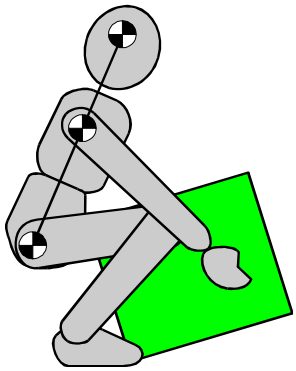
Here are some basics:

- Position your chair seat so that your feet are flat on the floor and your knee and elbow angles are approximately 90° (use a foot rest if necessary).
- Position your monitor between 18" - 26" in front of your body and at a height where the top of the screen is level with your eyes (bifocal wearers may prefer the top of the screen slightly below eye level).
- Position the copy holder at the same plane and height as the monitor.
- Position the mouse on the same plane as the keyboard.
- Move the mouse using the entire hand/wrist fixed in a straight line.
- Maintain a straight line through the wrist and avoid unnecessary flexing in the wrist during keying activities (adjust your keyboard tray as necessary).
- Strike keys lightly when typing.
- Keep your work area clutter free with frequently used items close by to avoid overreaching and repetitive stretching.
- Allow adequate leg room under your workstation for stretching and periodic position changes.

People Who Lift

Many people assume that a back injury can result from lifting too heavy an object just once. However, experts agree that most back pain is usually the result of lifting improperly over many years. To avoid a back injury, you must learn how to properly lift. Here are some lifting basics. Think first and get help, if needed, before lifting anything. Ask yourself:

- Can I lift it alone?
- Should I ask a co-worker for help?
- Do I need mechanical help, such as a cart or dolly?



Hug the load. Before you lift a load from a table or cart, bring the load as close to your body as possible and hold it close while you're lifting or lowering the load.

Lift with your legs. Place your feet about 18" apart. Keep your head up and back straight. Contract your stomach muscles. Lift by bending and straightening your legs. This helps you to keep your center of balance and

(Continued on Page 3, See Ergonomics)

*The **EH&S Safety Update***
is distributed by the
Office of Environmental Health and Safety.

Please direct all responses, letters, comments to:
EH&S Safety Update
UCSF-EH&S
Box 0942
476-1300
email:
EHS%rec@ccmail.ucsf.edu

Printed by UCSF Reprographics 476-5900
Printed on 100% recycled paper.

(Ergonomics, Continued)

use your leg muscles to lift. Avoid lifting heavy loads above your waist. If you must do so, stop halfway to set the load on a table and change your grip.

Avoid twisting. Make sure your feet, knees, and body are pointed in the same direction when you are lifting. Twisting can overload your spine and lead to serious injury.

Avoid overhead lifts. Use a step stool or ladder to lift objects stored above shoulder height.

Avoid repetitive carrying of loads, a situation that causes a variety of muscles to contract for an extended period of time. Repeated carrying tasks can often be assisted by mechanical means.

For Everyone

Learn to control stress in your life. Most researchers identify stress as a major factor contributing to workplace health problems. Tension causes muscles to contract. In a contracted state, back muscles become weak and spasmodic. Develop relaxation techniques that you can employ during the day. Workers at UCSF have access to many free or low cost programs that teach relaxation techniques. Millberry Union offers classes in stress management.

Maintain proper body weight. Excessive fat around the middle stretches and weakens abdominal muscles, putting unnecessary pressure on your back leading to poor posture, pain, and other life threatening health problems.

Exercise regularly. Working out will strengthen your back muscles, improve your flexibility, and make your body more resistant to injury and illness. But consult your doctor before you embark on an exercise program.

SAFE USE OF CHEMICALS IN THE LABORATORY

In an institution which is dedicated to biomedical research, it is easy to lose site of some of the risks associated with the chemicals we use. Research, by its very nature, can be a high risk business. One area where risk can be tremendously reduced is the risk of laboratory accidents. One way to do this is to keep everyone in the laboratory informed of the hazards associated with the specific chemicals, biologicals, equipment, and processes used in the laboratory.

EH&S has presented ways to recognize the hazards associated with any given chemical - the Material Safety Data Sheet, the label on the container, and the like. The Centers for Disease Control and Prevention (CDC) and the National Institutes of Health (NIH) have categorized biologicals by Biosafety Level as an indicator of the hazards. Equipment has certifications (such as Underwriters Laboratories) and often warning stickers (such as Not Approved for Storage of Flammables). What about the processes and procedures used in the laboratory every day - has anyone ever taken a close look at them from a safety perspective? What factors should be considered when looking at hazards associated with the process? Let's examine a few of those factors.

Let's look first at our laboratory personnel. Does everyone in the laboratory take safety seriously? Does each person consider the safety of others in the laboratory? If everyone in the laboratory is committed to safety, the accident rate will likely be quite low. Has each person been properly trained in safe laboratory operations? Has the laboratory supervisor addressed the specific hazards each employee is likely to encounter? Have there been any barriers to employees understanding the hazard training - language, culture, other? Effective training (or lack thereof) is a key factor in reducing laboratory accident rates. A second key factor is planning an experiment ahead of time. Consider the risks associated with the chemicals to be used. Can smaller quantities be used? Is there a less hazardous chemical that can be substituted? What sorts of waste will be generated by the experiment? Can these wastes be recycled or recovered? Are the hazards of the waste mixtures known?

When will the experiment be performed? Will high risk steps be performed at night when there's no one to help if something goes wrong? Will it be necessary to leave the experiment unattended for long periods of time; if so, what safeguards are planned?

Where will the experiment be performed? Is there sufficient space on the lab bench? Are others planning to use that area at the same time? Is it necessary to transport hazardous materials from one room to another? Are fume hoods or biosafety cabinets needed? Available?

Who's going to perform the experiment? Does this person have a clear picture of what is to be done? Does the person routinely utilize the personal protective equipment appropriate for the process - at the very least, a lab coat, eyeguards, and gloves?

What things can go wrong? Which are most likely to go wrong? Are there ways to handle power failures, chemical spills, personal injuries, ...

It is unrealistic to expect the elimination of all hazards in a research setting. But the risk can be minimized by planning: look at the processes, identify the hazards, abate or mitigate as many as possible, train people in hazard recognition and consequences, and develop contingency plans.

717
Environmental Health and Safety
50 Medical Center Way
San Francisco, California 94143

In This Issue:
UCSF Controlled Substances Registration Program

Thermometer Considerations

Preventing Ergonomic Injuries

Safe Use of Chemicals in the Laboratory

Proper Syringe Disposal

What If?

PROPER SYRINGE DISPOSAL

During a recent thirty day period the Campus Biosafety Officer received three reports of loose syringes found on the UCSF campus. In two cases, syringes were found in the vicinity of the dumpsters at the base of the Animal Care Facility tower, and in one case on the corridor floor near S1000. These are not the first such reports - reports that are usually submitted by the campus custodial staff. A few of the reports, however, including one of the above, are made by Sunset Scavenger employees who collect solid waste under their contract with UCSF. These syringes pose a potential threat to the health and welfare of the contract employees as well as to members of the campus community.

Under the UCSF medical waste policy, contaminated syringes are considered to be sharps and require disposal in a sharps waste container. However, given the principle that medical waste includes anything that "looks like" medical waste, EH&S asks that all syringes, contaminated or uncontaminated, with or without needles, be treated as sharps waste and discarded in sharps waste containers. Not only will this contribute to the safety of the campus community, it will also improve our compliance with the California Medical Waste Management Act and help ensure that used syringes find their way to the incinerator, not the street.

WHAT IF ?

What if I'm in a hurry: it's 4:30 on Friday and I have to cleanup from my procedures, including disposal of biological and chemical waste? If I follow standard lab procedures, all will probably go well.

If I take a few short cuts, anything is possible. I'm disposing of chemical waste, but the proper bottle is full and I can't find an empty bottle to start a new one. The bottle for acid waste is only part full. No one will know that I poured my high pH waste in there, and besides, it'll neutralize the acid! I'll just dump the stuff in here and go!

It's Monday and back to work. Wait..What happened to the lab door? Why is the lab so messy? It looks like there was an explosion! The fire department thinks someone mixed incompatible chemicals together? No one would do that; that's just plain stupid. The explosion occurred Friday evening about 5:00? Uh-oh...

Our lab waste hadn't been picked up for disposal in a while and a full bottle of organic solvent waste was open in the waste collection area. The firemen theorize that someone mixed acid into the base waste bottle. It reacted and generated enough heat to ignite the open bottle of solvent waste, which ignited more things. The fire traveled to the office area; the lab, paper and computer records were all destroyed - almost seven years of research gone! What if...I'd still been in the lab?