



# n o t e s

## ENVIRONMENTAL HEALTH AND SAFETY

### **Back Injury Prevention**



The **bad news** is that back injuries are an all too common and painful fact of life for people from all walks of life. Information provided by the MU office of Insurance and Risk Management indicates that the University of Missouri – Columbia (excluding University of Missouri Health Care) experienced 174 lost time claims and 515 total injuries/illness claims in FY 2001. Of those, the most frequent injury types were caused by lifting. The most severe injury types were lifting and slips/falls on ice or snow. The **good news** is just as you can protect yourself from other health hazards, you can do a lot to protect your back by developing some simple habits. This article provides details on the right way to prepare for, execute, and complete a lift. With a little effort, the entire process should become automatic.

**No. 1: Warming Up** - Just like an athlete who is vigilant about doing stretching and bending exercises to warm up their muscles and protect against injuries, you should too. Warming up is critical whether the activity is recreational or work-related. Many simple warm up exercises can be done in limited space and take only a few minutes.

**No. 2: Check the Path** – Answer the following questions while conducting a quick check of the area while getting ready to lift. How far do you have to carry the load? Is the path clear and what walking surfaces will you encounter? Is the destination site clear?

**No. 3: Size Up the Load** – Check the load to be sure you can carry it without blocking your vision. Estimate the load's weight by sliding or pushing it. If it is too heavy, get others to help or use a dolly, cart, or

forklift. Check the shape for irregularities that could affect balance and grip. If the load is too awkward, ask for help. If you decide to carry a load with another person, keep the load level and designate one person to direct and call signals.

**No. 4: Get Set** – Get close to the load. Get a firm footing and create a stable base with your feet about one shoulder width apart and one foot slightly in front of the other. Keep your body in a straight line from head to seat. If you have to bend to lift the load, **bend at the knees - not at the waist**. Get a firm grip on the load using the strength of the full hand, not just the fingers. Just before performing the lift tighten your stomach muscles and inflate your lungs to help stabilize your back.

**No. 5: The Lift** – Lift using your legs – not your back. Lift the load no higher than chest high and keep it close to your body. Avoid overhead lifting. Do not twist your body. Move at a comfortable pace.

**No. 6: Put the Load Down** – Keep a straight line from head to seat and bend your knees. Keep your hands and fingers from being pinched.

If something feels wrong while lifting, **STOP!** Determine what's wrong. Pay attention to any warning signal.

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## *Director's Desk*

### *Changes*



How often do you feel that you are just beginning to settle down to consistent routines in your life, when something happens to change everything? If you're like me, it happens all too frequently. Certainly, the events of September 11 changed all our lives. But little things also throw us off kilter, too. In this column, I will address several changes that have happened or are anticipated by EHS.

The most obvious change is the look of this newsletter. We like the new look and hope you will, too.

Speaking of September 11, security issues have risen to the top of everyone's agenda—including regulatory agencies. EHS has received inquiries from the Nuclear Regulatory Commission, the U.S. Department of Agriculture, and the Missouri Department of Natural Resources about University practices for securing radioactive, biological, and hazardous materials. Congress passed the USA PATRIOT (yes, it's an acronym) Act last fall, which places significant restrictions on who can work with select agents. EHS staff and the Office of Research are working to get this information out to the campus community. The bigger issue for all of us is that these security concerns may very possibly bring about a fundamental change, by restricting the open access to buildings and laboratories the university community has enjoyed for so many years. Political calls for greater restrictions can be mitigated if the university community is seen as showing responsibility for securing materials of concern. Please give security issues adequate attention in your work area.

Finally, there is the Environmental Protection Agency (EPA). The EPA feels that universities in general have not done a very good job of

environmental compliance. In fact, the EPA has launched a well-publicized national initiative to target academia for enforcement efforts. EPA has indicated that they will begin such activities in our region of the country beginning this April. EHS believes that MU is in good shape for regulatory reviews; however, we do not want to become complacent. Please continue to give adequate attention to good housekeeping, and proper labeling, storage, and disposal of hazardous materials. Should you be approached by an EPA inspector, or any other regulatory inspector, please treat the inspector courteously, but also contact EHS for assistance immediately.

**Peter Ashbrook**  
*Director*

## *Back Injury Prevention (Cont.)*

Keeping your body strong and healthy improves appearance and reduces the risk of injury during lifting or other physical activity. You should: Exercise regularly (choose an activity you enjoy so you will stick with it), reduce stress on your back by losing excess weight, practice good posture while walking or sitting, and sleep on a good firm mattress.

In conclusion, at worst, back injuries are disabling, causing permanent pain and inconvenience. Even the most minor back injury causes pain and restricts movement. If you stay in shape, develop good habits, and lift correctly, your back can carry you comfortably through your lifetime. If you are injured on-the-job, report it immediately. Prompt reporting lets the University ensure that you get the medical care you need and that certain hazards are eliminated.

If you have any questions or desire additional information or training on this topic, please contact David Dorth at 882-7018.

**David Dorth**  
*Safety Representative*

# ***Radioactive Material Security***



The Radiation Safety Office strongly urges all users to maintain a high level of alertness to radioactive material security matters. While this article deals specifically with radioactive materials, please use the same discretionary approach when dealing with hazardous materials and biohazards.

## **What do the regulations say?**

It is understandable that the regulatory agencies are very sensitive to this issue. The Nuclear Regulatory Commission (NRC) are the most watchful inspectors of licensees' compliance with NRC radioactive materials security requirements:

10CFR20.1801 "Security of stored material: The licensee shall secure from unauthorized removal or access licensed materials that are stored in controlled or unrestricted areas."

10CFR20.1802 "Control of material not in storage: The licensee shall control and maintain constant surveillance of licensed material that is in a controlled or unrestricted area and that is not in storage."

More information and definitions can be found in the Code of Federal Regulations or on the WEB at [www.nrc.gov](http://www.nrc.gov).

## **How do we do this at MU?**

We keep our radioactive materials locked up or overseen by a person who knows they are responsible for security of the material. For more information see MU Radiation Safety Manual: [http://www.missouri.edu/~muehs/draft/newrsm2/guidance\\_for\\_control\\_and\\_securit.htm](http://www.missouri.edu/~muehs/draft/newrsm2/guidance_for_control_and_securit.htm).

As an instrument of the material control and security, we maintain accurate radioactive material inventories. We keep detailed records of the isotopes and activities received, radwaste logs, and disposal records. [http://www.missouri.edu/~muehs/draft/newrsm2/how\\_to\\_inventory\\_your\\_material.htm](http://www.missouri.edu/~muehs/draft/newrsm2/how_to_inventory_your_material.htm)

## **Who's responsible for security?**

Every person who has a key to get to radioactive materials, or who is left alone with unsecured radioactive material must understand and accept their responsibility to keep the material from unauthorized access or removal.

## **How do we keep radioactive material secure?**

Assure that material is locked and secured at all times when the material is not in use. Take steps to prevent unauthorized people from gaining access to the material. Upon their entry, ask unauthorized people if you can help them (question individuals who do not work in your lab).

It's a continual effort that we all need to support to secure and control the radioactive material. As always, we appreciate your help and cooperation. If you have specific questions concerning security matters in any of your labs, please ask one of us in EHS.

**Lidia Litinski**  
*Radiation Safety Officer*

# ***Used Batteries and Aerosol Cans***



EHS frequently receives questions about how the campus community should dispose of batteries and aerosol cans. Please consider these acceptable options.

EHS manages batteries on campus per EPA and MoDNR regulations pertaining to "Universal Wastes," which encourages utilization of available recycling options in lieu of disposal. Batteries, including nickel-cadmium, lithium, silver and mercury button, and small, sealed lead-acid batteries must be properly collected by the user and picked up by EHS. After we accumulate and package them, they are routed to a permitted recycling facility. Alkaline batteries used to contain a small amount of mercury, so historically they were also collected. Battery manufacturers have since discontinued use of mercury in these batteries, and they are no longer considered a hazardous waste. Therefore, alkaline batteries do not need to be collected and may be discarded in the normal trash.

## Used Batteries (Cont.)

Lead acid batteries (e.g., car batteries) may also be considered Universal Wastes, though alternate regulations also provide other, similar recycling options. At MU, uncracked/non-leaking batteries are managed by Procurement/Materials Management – Surplus Property for eventual sale and recycling. Upon request, Surplus Property staff will pick up the unwanted batteries, or batteries may be delivered to them during regular office hours. Collected batteries are routed to a local battery recycler.

Empty aerosol cans may be disposed of in the normal trash. Cans still containing product (paint, propellant, pesticides, etc.) must be collected by EHS for proper

disposal per EPA/MoDNR regulations. EHS discourages the use of common collection areas for the purpose of consolidating used batteries and aerosol cans, or any other type of unwanted, hazardous material(s), instead preferring to deal with the individual user directly.

For specific information regarding procedures for the disposal of unwanted hazardous materials, please visit our webpage: <http://www.missouri.edu/~muehs> or telephone 882-3736. Please remember that MU generated hazardous wastes must be managed by EHS, and should never be delivered to the City of Columbia Household Hazardous Waste Facility nor directly to a commercial vendor.

**Roger J. Giles**

*Manager Hazardous Materials - Field Operations*



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### **Fast Fact:**

During Fiscal Year 2000-2001, the EHS Chemical Recycling Program was able to redistribute 1,297 containers to campus users, saving these users over \$56,000 in avoided purchase costs. Have you visited the Chemical Recycling Building lately?

*EHS appreciates campus support of environmental and safety issues. If you have any special needs regarding the format of this publication, or have any comments regarding newsletters, training programs or services, please direct your communications to Rebecca Bergfield, Editor at the above address.*

### **Battery Safety Tips:**

**Don't** mix old and new batteries, or mix different types or makes of batteries. This can cause rupture or leakage, resulting in personal injury or property damage.

**Don't** dispose of batteries in a fire—they may rupture or leak.

**Don't** use nickel metal hydride battery chargers to recharge alkaline batteries.

