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Department of Occupationa and Environmental Safety NEWSLETTER

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Who Wants to Pass an OSHA Inspection?

In the spirit of the popular game show, D.O.E.S. presents its own version of high-stakes multiple-choice trivia. All of the questions here have to do with possible violations which **would** be spotted during a routine inspection of lab safety procedures. The answers are inside, but see how far you can get without them -- answer each question by visually inspecting your own lab! Use your co-workers as life-lines (you only get three) and try to do something almost as rewarding as winning a million dollars: become compliant, become safe. So...who wants to pass an OSHA Inspection? (Cue dramatic music) Let's play!

1. In front of your laboratory exits, there is:
   A. a sign. B. a bicycle.
   C. nothing. D. a sleeping professor.

2. You may eat in the laboratory area:
   A. during breaks. B. when hungry.
   C. when alone. D. never.

3. Hazardous waste containers must be labeled:
   A. hazardous waste. B. refuse.
   C. don't touch. D. lunch.

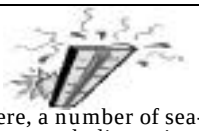
4. Your Chemical Hygiene Plan is:
   A. safe. B. visible.
   C. lost. D. in your car.

5. Your chemical fume hood has been inspected:
   A. in 1974. B. two years ago.
   C. this past year. D. huh?

6. Your chemical refrigerator should be:
   A. cold. B. used for snacks.
   C. locked. D. turned off at night.

7. You should have on-hand knowledge of:
   A. worthless trivia. B. MSDS.
   C. atomic numbers. D. Dave Burba's ERA.

Heat Stress: Know the Signs



With the summer finally here, a number of season-specific safety issues are worth discussing. Labs and buildings are mostly air-conditioned,but if the system goes down or you have work to do in a non-conditioned area, be aware of the risk of heat illness, which can be complicated by heavy PPE and heat-producing experiments.

High temperatures and humidity stress the body's ability to cool itself, and heat illness becomes a special concern during hot weather. There are three major forms of heat illnesses: heat cramps, heat exhaustion and heat stroke, with heat stroke being a life-threatening condition.

Heat Cramps

Heat cramps are muscle spasms which usually affect the arms, legs, or stomach. Although heat cramps can be quite painful, To prevent them, drink electrolyte solutions such as Gatorade during the day and try eating more fruits like bananas.

Heat Exhaustion

Heat exhaustion occurs when the body's internal air-conditioning system is overworked, but hasn't completely shut down. This happens when you don't drink enough fluids to replace what you're

(continued on pg. 2)

In This Issue:

What a WASTE!

Radiation (x2906)

- **New Training:** August 15, 30 (call for times)
- **Retraining:** August 8, 23 (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:** August 2, 17, 29 (call for times; Service Building Conference Room)


HOT TIPS

(continued from pg. 1)

8. In the event of a fire, immediately call:
   A. Safety Services. B. x3333.
   C. x9911. D. 911.

9. All injuries or spills of any magnitude should be:
   A. discussed. B. analyzed.
   C. ignored. D. reported to your P.I.

10. All lab personnel should be trained by:
   A. the P.I. B. your Department.
   C. Health Services. D. D.O.E.S.

11. Posted in your lab should be:
   A. a class list.

Pipetting Ergonomics

Did you know that pipetting can be a cause of serious injury? A recent study found that technicians who pipetted for over 300 hours a year were at very high risk of developing cumulative trauma disorders (CTDs) such as tendinitis, tenosynovitis, carpal tunnel sydrome, and generative arthritis. These injuries are not only very painful and incapacitating, but are expensive as well -- claims can easily exceed $25,000 for a single injury alone.

These types of injuries are also detrimental because they can cause small errors in pipetting which often result in major discrepancies in the final results of an experiment.

Pipetting injuries are caused by two factors: 1) force and 2) repetition. In a normal pipetting cycle, the "high hand" is called on to exert as much as 12 kilograms of cumulative force per cycle. If you are exerting this force repetitively over time, you increase your chance for injury. For a repetitive task such as this, ergonomists recommend a force exertion of only 3 kg for a male and 2.1 kg for a female -- levels well below so-called normal' exertions.

To prevent against injury, a traditional mechanical pipettor should not be used for more than 1-2 hours per day. If this is not feasible, the best way to address this problem is through technology. Since the major cause of injury in pipetting is the constant inward rotation of the thumb, one way to alleviate force is to choose a pipettor with a plunger that travels as short a distance as possible. These distances can sometimes vary up to .5 cm, so try to choose one with a short plunger distance.

Another way to alleviate pipetting stressors is to utilize even newer technology. The range of handheld electronic pipettors on the market such as the Biohit Proline range and the LTS LiteTouch line both use cylindrical tips to reduce tip ejection and require a minimum of force.

Now that ergonomics has proven to be a major, OSHA-addressed safety issue instead of just a vague set of theories, make sure that ergo-friendly pipetting is a part of your everyday laboratory routine.

Information in part from Mannonen and Ylatups, *Intl. Biotechnology Laboratory* Aug. 1998.

Bicycle Safety: Know the Facts

With summer here and gas prices soaring out of control, riding your bike to work can be a pleasant alternative to your gas-guzzling, four-door sedan. But there are some responsibilities to consider when taking your bike to the street.

Locking up

Lock your bike up to avoid theft, but **DO NOT** block any entrances to buildings and / or fire zones. If your bike is blocking **any** means of egress including a door or even a stairwell, Protective Services will come and take it. **FYI:** Kryptonite-style locks are **not** immune to their cutting tools.

Helmets

How large is the problem of bicycle-related head injury in the United States? Here are som facts:

- According to reports, 96% of bicyclists killed in 1997 were not wearing helmets. Each year, about 153,000 get treatment in hospital emergency departments for bicycle-related injuries.
- Bicycle helmets have been shown to reduce the risk for head injury by as much as 85% and the risk of brain injury by 88%.
- Universal use of bicycle helmets by children aged 4 through 15 years old would prevent between 135 and 155 deaths per year and between 18,000 and 55,000 scalp and face injuries annually.
- If all bicyclist wore helmets one life would be saved everyday, one head injury would be prevented **every four minutes**.

The facts speak for themselves. Bike safely!

Assault with a Deadly Isotope

Recently at the University of California at Irvine, a technician was found to have intentionally contaminated a fellow worker's chair with 15-30 mCi of 32P. The victim received about 400 mrem shallow dose from the exposure. The NRC limit is 50 rem / year. Once the poisoning was diagnosed, inspectors deduced the path of the contaminant and identified the culprit. Charges were then filed although the motive behind this act remains unknown. The perpetrator was charged with assault with a deadly weapon.

Reminder:

Department of Occupational and Environmental Safety

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