

Safe Science: Be Protected!

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FIRST-RESPONDER: Don't Worry About Using The Tourniquet!

I. MAKING MEDICAL ROUNDS!

Think about it! If there were an accident in your school's science laboratory requiring application of first-aid procedures on an employee or student, would you know what to do? Is there someone with medical expertise that you could call? Do you have the means (telephone, intercom) to contact the individual from the laboratory? Can you legally without threat of lawsuit, provide first aid to the injured? Are first-aid supplies available? Do you really need a first-aid kit in the laboratory? Can you just wait until the school nurse or medical support person arrives? These are all very valid and real questions, which many science teachers and supervisors need to address.

To provide some answers and direction on the topic of first-aid, government and professional standards need to be researched and addressed.

II. IS THERE A DOCTOR IN THE HOUSE?

In the States, the Occupational Safety and Health Administration (OSHA) requires the employer to ensure the ready availability of medical personnel for advice and consultation. If a clinic, hospital or infirmary is not in proximity to the workplace for treatment of all injured employees, OSHA requires that someone on the job site must be adequately trained to render first aid. In addition, first-aid supplies must be made available. Furthermore, OSHA specifically notes that for situations where a person's eyes or body may be exposed to injurious corrosive materials, facilities for quick drenching or flushing of eyes and body must be available for immediate emergency use.

Science laboratories generally make use of injurious corrosive materials. Science teachers and supervisors must therefore have some first-aid training relative to the use of drenching or flushing equipment. Eyewash and acid shower use should be annually reviewed as part of the first-aid training of all science teachers and supervisors.

Given that the first few minutes following a laboratory safety incident are absolutely critical, there are some additional items for which science teachers and supervisors need first-aid training. By the time medical responders get to the laboratory site, it may be too late.

III. MEDICINE 101!

Safety incidents requiring first-aid training for science teachers working in school laboratories should include:

- A. Burns: Chances are good that someone will get burned in the laboratory from Bunsen burners, matches, hotplates, etc. Should that happen, immediately soak the burned area in cold water. Request immediate assistance from the school's health care provider.
- B. Chemical Exposure: With an increased emphasis on hands-on, process and inquiry-based science, chemical exposure has a heightened probability of happening. Be certain to have the Material Safety Data Sheet or MSDS available for each hazardous chemical used and review it prior to any laboratory work being done. Should there be an exposure, have the injured person immediately (within 10 seconds) use the eyewash or acid shower, as appropriate. Flush with copious amounts of tepid water for a minimum of 15 minutes. Request immediate assistance from the school's health care provider. Note that an eyewash and acid shower are usually required safety engineering equipment for science laboratories!
- C. Swallowed Poisons: Accidental swallowing of poisonous chemicals in the laboratory can happen. It is critical to review MSDS with students' prior to use of these chemicals so all are familiar with their potential harm to the body. If the person becomes unconscious or is convulsing, do not induce vomiting. The same is true should the person complain of a "burning feeling" in their throat. Provide plenty of water or milk if available. Request immediate assistance from the school's health care provider. It is also wise to contact a Poison Control Center or local hospital's emergency room if you know what poison has been accidentally taken.
- D. Penetrating Objects: Use of projectiles, walking in a laboratory with sharp hazards, etc., can be hazardous and cause body penetration. Do not remove the object. Try to keep the individual calm and still. Request immediate assistance from the school's health care provider.
- E. Lacerations: Broken glassware or other sharp objects can cause cuts in the skin. If bleeding occurs, try to have the injured person put on latex or plastic gloves and apply direct pressure to control bleeding. If that is not possible, use caution to keep a barrier (glove) between you and the injured person while trying to apply direct pressure. Request immediate assistance from the school's health care provider.

IV. FIRST-AID KITS: WHO NEEDS THEM?

First-aid kits should be considered for on site use by the medical responder. Suggestions for contents include large and small sterile bandages, adhesive tape, antibiotic cream, antiseptic solution, scissors, eyewash, cotton balls and swabs.

Additional items for consideration in workplace environments with unique needs can be considered by reviewing your facilities accident log. For example, if the log lists injuries with cuts and/or other sources of blood, your first-aid kit should provide personal protective equipment to be available; e.g. latex or other suitable gloves and eye protection.

V. THAT'S A WRAP!

Bottomline is as in other cases with safety standards, science teachers are special! Safety first-aid training for hazardous chemicals and blood borne pathogens is essential. Additional first-aid with training is also needed for other types of incidents in the laboratory such as chemical exposure, burns, swallowed poisons, penetrating objects and lacerations.

No matter where you live, there are numerous sources for first-aid information on the Internet, which can be easily accessed and explored.

LIVE LONG AND PROSPER SAFELY!

RESOURCES:

Occupational Safety and Health Administration: <http://www.osha.gov>

American National Standards Institute: <http://www.ansi.org>

American Red Cross: <http://www.redcross.org>

First Aid Action – BBC: http://www.bbc.co.uk/health/first_aid_action/

St John Ambulance – Australia: <http://www.stjohn.org.au/>

International Federation of Red Cross and Red Crescent Societies:
<http://www.ifrc.org/what/health/firstaid/index.asp>