

Cut and Puncture Prevention

Cuts and punctures are the most common type of injury that occurs in the labs, shops, and studios on campus. Injuries have occurred to laboratory researchers working with needles, scalpels, razor blades, tools, microtomes, glass pipettes, broken glassware, etc.

Tips for Using Sharps or Items That Could Generate Sharps:

- General Tips
 - Avoid the use of sharps whenever possible. Substitute blunt items for sharp items and use plasticware instead of glassware whenever possible.
 - Whenever using sharps or potentially sharp objects, minimize handling to reduce the likelihood of cuts. For example, whenever using a sharp tool on objects, use a vise or some other holding device instead of your hand to hold the object while manipulating the tool. If the tool slips, you will be far less likely to cut your hand if you are not holding the object.
 - Use shielding around sharp edges on equipment or tools to prevent accidental injury.
 - Store sharps properly. Do not leave sharps such as blades, needles, or broken glassware on bench-tops or in fume hoods. Sharps should be stored with the sharp edges protected (i.e., blades retracted or in a block of Styrofoam, needles in a closed puncture resistant container) or appropriately disposed of when not in use.
 - Wear cut resistant gloves whenever manipulating sharps or potentially sharp objects.
- Needles and Cannulas
 - Do not bend, break cut or recap needles. Do not remove needles from syringes.
 - Self-sheathing needles are preferred if possible.
 - Use blunt tip needles if possible.
 - Do not use syringes with needles or cannula for dispensing liquids when other appropriate means, such as pipets or graduated cylinders, will work.
- Razorblades and sharp tools
 - If possible, use a scalpel, X-ACTO knife or utility knife rather than a razor blade. The handle will help to minimize the possibilities for cuts. Use razor blades in protective holders when possible.
 - If possible, use scalpels that have a retractable blade and locking mechanism.
 - If using scalpels, use a hands-free scalpel blade removal product to change out blades.
 - Use tools appropriate to the task. Do not use sharp tools when unnecessary and do not use tools for task other than which they were designed to prevent injury.
- Microtomes
 - When installing or removing blades for microtomes, handle blades very carefully.
 - When applying the microtome brake, make sure that it is tight. When leaving the microtome, make sure that the blade guard is in place.
 - Use forceps or other hands-free techniques to remove moving parts, such as slices and ribbons, of the microtome.
- Glassware
 - Clean up broken glassware or other sharp debris using a broom/dustpan or tongs or forceps instead of your hands.



Source: <https://www.fishersci.com/shop/products/performance-fabrics-hexarmor-cut-resistant-gloves/19163510>

- Inspect glassware for cracks prior to use.
- Never force stuck joints on glassware. Use grease, Teflon tape or sleeves, or other coatings prior to assembly of joints to prevent seizing. If joints are stuck, gently heating the joint can sometimes free the glassware. Exercise care in this process to avoid burns and to avoid explosions or fires if flammable materials are present and the heat source is capable of serving as a source of ignition.
- Lubricate tubing before applying to glassware when possible, and cut tubing to remove it from glassware rather than using force to reduce likelihood of breakage.
- Never subject glassware to extreme temperature differences unless it is specifically designed for that purpose as this can cause container failure and breakage.

Personal Protective Equipment (PPE)

- Whenever possible, use cut-resistant gloves when handling sharps to reduce the risk of cuts or punctures. Please contact EH&S (email askehs@umass.edu or call 413-545-2682) if you need help with selecting cut-resistant gloves. Many varieties are available, including glove liners that can be worn under other gloves to impart protection from cuts and hazardous material exposure while maintaining dexterity.

Disposal:

- Do not throw loose sharps or broken glass in the trash.
- Laboratory glassware and empty glass bottles go into Glass Only box.
 - No liquids or solid residues.
 - Glass only boxes should have plastic liners.
 - Do not overfill the box.
 - Exercise caution when closing the box. Full boxes can lead to punctures from sharp objects like Pasteur pipets.
 - Glass only boxes can be ordered through CEMS (<https://cems.unh.edu/umass/CEMS/>).
- Sharps should be disposed into sharps containers.
 - Do not overfill the sharps container, and only dispose of sharps in the sharps waste container.
 - Never put your hand inside of a sharps waste container. If you need to retrieve an item, use tongs or other mechanical device.
 - Sharp containers can be ordered through CEMS (<https://cems.unh.edu/umass/CEMS/>).
 - Seal the container when it is 2/3 full at the “FULL” line on the container.
 - Place a hazardous waste pick-up request through CEMS (<https://cems.unh.edu/umass/CEMS/RequestRemoval>).



For any use of sharps related to bio-hazards, please also refer to the Sharp's Use (<https://ehs.umass.edu/sharps-use>), Disposal of sharps (<https://ehs.umass.edu/disposal-sharps>) and Sharps safety (<https://ehs.umass.edu/sharps-safety>) SOPs for more information.

What If I Get Cut?

Even seemingly minor injuries from glassware might require treatment to remove broken glass or a tetanus shot or other treatment to prevent infection. For cuts or punctures requiring more than a band aid, or anything involving potential exposures to hazardous materials, please go to UHS (413-545-5000) immediately to be seen or contact a healthcare provider if UHS is closed.

Notification must also be made to EH&S within 48 hours for any lab injury by filling out the [lab incident report form](#) and by calling 413-545-2682 to immediately report significant injuries. Injuries to university employees must also be reported to [human resources](#).