

# SHARPS SAFETY IN RESEARCH

SAFE WORK PRACTICES ARE ESSENTIAL TO PREVENT INJURIES WHEN WORKING WITH SHARP ITEMS.

## SHARPS USE IN RESEARCH

Sharps are items that are used to cut or puncture skin or body parts. They include needles, scalpels, lancets, and contaminated broken glass. Other sharp items can still cause injuries although they do not fit the regulatory definition of sharps waste. These items include broken glass, glass septum vials, glass pipets, and even the sharp teeth and nails of research animals. For detailed descriptions and definitions of sharps, see the [EH&S Sharps and Laboratory Glass webpage](#). Use the [Sharps and Lab Glass Waste poster](#) to help identify sharps.

Many types of sharps are commonly used in laboratory procedures. Sharps devices may be used to inject animals with biological or chemical agents, to perform blood draws, and to dissect tissues and specimens. Researchers commonly use glass pipets and septum vials during daily laboratory work. Because sharps have the potential to puncture human skin, safety precautions are necessary to prevent injury and exposure.

## PLAN AND PREPARE

### Substitute if possible

Identify all sharps devices to be used in your procedure. Think of alternative ways to administer an agent or perform the task without a sharp. Run your ideas by a colleague or contact EH&S for ideas. Substitute plastic for glass whenever possible. If you cannot eliminate the use of a sharp, consider options such as shatter-proof glass or safety sharps with safety features built into the device. [Safeneedle.org](#) has a list of safe needle devices. A safe sharps device can still present a similar hazard so it is crucial to research and practice first with a safe sharps device. Find out if a safer animal injection or blood draw technique will get the same results.

### Know the risks

Take the time to educate yourself on the biological or chemical agent you will use with a sharp. Review the Safety Data Sheet (SDS). If using sharps with infectious agents, human material, recombinant DNA, or biological toxins, review the risks and exposure response procedures. Familiarize yourself with the risks that different animal procedures present. Certain blood draw and injection techniques are more difficult to perform or have inherent risks.

### Get training and practice

Make sure you are trained by proficient personnel before using a sharp for the first time or for new procedures and techniques. If a standard operating procedure (SOP) does not exist for your procedure, work with your supervisor to prepare one. Become proficient by practicing with a less hazardous organism or chemical first. Complete the required [EH&S trainings](#): Biosafety training for use of biohazards and Bloodborne Pathogens (BBP) training for use of human source material. The Office of Animal Welfare's [Animal Use Training Program](#) offers training courses for animal handling and injections.

### Prepare for disposal



Keep multiple small sharps containers at each work station. Consider the size and shape of your sharps container. Sharps containers come in many sizes and with different style lids. If

you are working in a biosafety cabinet or fume hood, choose a shorter container that is easier to put the sharp into. If more than one person is working with sharps in the same area, have one sharps container for each person so that you both aren't reaching toward the container with a sharp at the same time.

Do not fill sharps containers more than 2/3 full. Overfilled sharps containers present a hazard to those handling the container for disposal. Know how to treat and dispose of sharps containers. Refer to the [Biohazardous Waste webpage](#) for detailed waste stream information. If you are using needles or sharps with chemotherapeutic or hazardous drugs, collect those sharps separately as [trace chemo sharps waste](#). Refer to the [Sharps Waste poster](#) for more information.

## STAY AWARE

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Once you have determined the need for sharps devices and completed training and reviewed the risks, it is crucial to stay aware. Extreme caution and awareness are needed when handling needles and syringes, to avoid autoinoculation and the generation of aerosols during use and disposal.

### Safe sharps handling techniques

- Avoid recapping needles whenever possible. If a needle must be recapped, use a needle holder.
- Never leave an uncapped needle on the workbench with the tip exposed. Use a holder.
- Uncap needles only when they are about to be used. Use a hemostat to loosen and remove the cap.
- Do not remove a needle from the syringe following use. If you need to change a needle after drawing up a dose, use a tool to remove.
- Ensure the needle is pointed away from the user, and maintain visual contact with the sharp at all times.
- Use disposable safety scalpels with a fixed blade when possible so that the need to remove and replace the blade is eliminated.



- Do not use blades without a handle. The handle serves as a barrier between your hand and the sharp.
- If working with a blade or razor, always cut away from yourself. Use forceps or a tool to hold the specimen.
- Do not leave reusable sharps out on the open lab bench. Use a labeled storage container such as a bucket, tray, or magnet to contain the sharp items.
- Dispose of sharps in sharps container as soon as possible after use.
- Properly restrain or anesthetize animals before animal procedures involving needles/sharps.



### Be aware of factors that contribute to injuries.

Avoid factors and conditions that can lead to a sharps injury such as hurrying or rushing or doing a complicated procedure when you are tired or not feeling well. An overcrowded work area or not keeping track of sharp items can also lead to accidents or injuries.

## EXPOSURE RESPONSE

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If an injury or exposure does occur, be ready to respond. If there is a life-threatening injury or emergency, call 911. Follow the instructions on the [Exposure Response Poster](#). Always perform first aid immediately and then call for medical help. Finally, [report the incident](#) to Environmental Health & Safety as soon as possible to help prevent future accidents.

**For questions about sharps safety, contact EH&S at [ehsbio@uw.edu](mailto:ehsbio@uw.edu) or 206.221.7770.**