

Good Microbiological Laboratory Practices



Protect Yourself

- **Always wear appropriate Personal Protective Equipment (PPE).** WCM requires laboratory workers to protect themselves from contamination by wearing appropriate PPE when working in laboratories (i.e., gloves and lab coats). Additional/specialized PPE may be required for specific work activities (e.g., face shield, goggles, splash shield). **If you are not sure what type of PPE is appropriate for your work, contact EHS for assistance.**
- **Wash your hands:**
 - After removing masks, gloves, and other PPE.
 - After handling potentially infectious agents or materials.
 - Before exiting the laboratory.
- **Avoid hand to mouth or hand to eye contact.** Never eat, drink, apply lip balm or other cosmetics, or take medications in the laboratory.
- **Never mouth pipette.** Use a pipette bulb, aspirator, or other tools.
- **Don't hesitate to report an issue.** Report all accidents, occurrences, and unexplained illnesses to your work supervisor as well as to Workforce Health and Safety or Student Health Services, as appropriate.

Protect Your Lab and Colleagues

- **Perform a risk assessment to determine the pathogenesis of infectious agents and how to handle them.** Ask your supervisor or EHS for guidance if needed.
- **Review the [Research Biosafety Plan](#).** Follow the manual's procedures for the infectious materials you are working with, and use the most suitable decontamination methods for those materials.
- **Post Health and Safety Door Signs (HSDS) at the entrance of all laboratories working –with infectious agents.** HSDS signage includes universal biohazard symbols and biosafety level, entry requirements (e.g., PPE), and emergency contact information. **Contact EHS to request HSDS if needed.**
- **Ensure proper engineering controls (such as biosafety cabinets, eyewash units, sinks, safety showers) are functional, adequately maintained, and inspected.**
- **Use disinfectant traps and in-line filters on vacuum lines to protect vacuum lines from potential contamination.** Please refer to the [Tissue Culture Waste Guide](#) for additional information.
- **Always handle airborne, aerosol, and droplet transmissible infectious agents in a certified Biosafety Cabinet (BSC).** Use a BSC appropriate to the biosafety level (BSL) and risks associated with that specific agent. Never leave materials or contaminated labware open to the environment outside the BSC.
- **Avoid using aerosol-generating procedures when working with infectious materials.** Needle clipping, pipetting, mixing, sonication, and centrifugation can produce substantial amounts of aerosols. If you must perform an aerosol-generating procedure:
 - Utilize proper containment devices and practice controls to mitigate potential exposures.
 - Tightly cap tubes prior to centrifuging or vortexing.
 - Allow aerosols to settle prior to opening tubes or other equipment.
 - Open tubes or equipment inside a containment device whenever feasible.
 - Shield instruments or activities that may cause splash or splatter.
- **When using sharps, follow [Bloodborne Pathogens Exposure Control Plan](#) requirements.** Limit the use of needles, syringes, and other sharps, if possible. When sharps are needed, consider using safety sharp devices or plastic rather than glassware. Dispose of syringe-needle assemblies in EHS-approved, appropriately labeled, puncture-resistant [sharps containers](#). **Never recap a used needle.**
- **Store all biohazardous materials securely according to EHS guidelines.** Materials should be stored in clearly labeled, sealed containers. Storage units, incubators, freezers, or refrigerators should be labeled with the Universal Biohazard sign when they house infectious material. Avoid clutter in lab surfaces.
- **Follow appropriate decontamination procedures.** Refer to section 7.0 of the [Waste Disposal Procedures](#) manual and EHS updates on [Tissue Culture Waste Disposal](#) and [Autoclave Safety](#) for information on decontamination procedures and waste management. **Never allow contaminated waste materials to leave the laboratory or be placed in the sanitary sewer without being decontaminated** (e.g., autoclave or chemical disinfection).
- **Complete the Biological Material And Dry Ice Shipment Training before sending biological materials.** [Before shipping biological materials, ensure you meet training and shipping requirements.](#) When shipping or moving infectious materials to another laboratory, always use Department of Transportation (DOT)- approved, leak-proof sealed and properly packed containers (primary and secondary containers). Avoid contaminating the outside of the container and be sure the lid is closed tightly. Decontaminate the outside of the container before transporting. Refer to the [Biological Material and Dry Ice Shipments](#) manual for details on federal and international regulations.

Be Prepared for Spills:

- Always keep a spill kit in the lab
- Review the [Biological Spill & Planning Response](#)
- Post & Follow [Biological Spill Response Flowchart](#)

Questions or Assistance? Contact EHS:

- ehs@med.cornell.edu
- 646-962-7233
- www.ehs.weill.cornell.edu

Reference: [Principles of Good Microbiological Practices Fact Sheet](#). OSHA Alliance Program – Occupational Health and Safety (OSHA) & American Biological Safety Association (ABSA).



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