



What is the Purpose of Personal Protective Equipment (PPE)?

It's really not a simple answer and requires an understanding of general biosafety. The World Health Organization (WHO) defines biosafety as principles, practices, and strategies aimed at minimizing the unintentional release of a biological agent. Biosafety is achieved by utilizing the four primary controls – engineering, PPE, standard operating procedures (SOPs), and administration. These controls work together to protect people, animals, and plants inside and outside the laboratory environment. Laboratories are seen as containment facilities, places where biological agents are worked with and the risks associated with that work are “contained”.

Millions of dollars are spent on engineering controls – the purchasing of biosafety cabinets, autoclaves, self-closing doors, hands free sinks, directional airflow, and HEPA filters. Thousands of dollars are spent on PPE which includes gloves, booties, lab coats, and respirators. Hundreds of hours are spent writing SOPs which aim to produce consistent behavioral practices among different individuals, with different educational backgrounds and levels of expertise surrounding biological risks within specific environments. However, one individual can negate all these controls in an instant with poor practices. The focus of the fourth primary control (administration) is people and includes training, SOP compliance programs, medical and incident surveillance, and performance verification of laboratory staff skills and abilities.

No control is more important than the other. Each control offers a level of redundancy, allowing for failures to occur while still offering protection to those working in the laboratory environment. For example, a spill which occurs outside the biosafety cabinet is an engineering failure. However, wearing eye protection, gloves, responding appropriately according to the SOP, having the proper training for cleaning the spill, and learning from the incident ensures the safety of the laboratory worker. Together the four primary controls protect you.

So the original question was – what is the purpose of PPE? There are two purposes for PPE. First, you wear PPE to protect all portals of entry from biological risks. Typically, laboratory staff is working with something which could make you or others sick. PPE serves as the barrier between your body (a viable host) and the biological agent. This is why you may be asked to wear gloves, eye protection, lab coats, and respirators. Each one of these protects portals of entry from biological risks.

The second reason we wear PPE is because we want to keep what we are working with in the laboratory. If you leave the laboratory, remove your PPE – especially your gloves. If you have to carry something from one place to another, put what you are carrying in secondary container (cooler or zip lock bag. It is socially irresponsible to leave a laboratory wearing one glove, while carrying a biological risk (which could make others sick) to another place. PPE removal is also a CDC and NIH requirement for BSL2 laboratories. Personnel must remove gloves prior to exiting the laboratory environment (page 37-4b, 5th Edition of the CDC/NIH BMBL). In addition, potentially infectious materials must be placed in a durable, leak proof container during transport within a facility (page 35 – 6, 5th Edition of the CDC/NIH BMBL).

The biologist, Thomas Huxley, once said, “It is not who is right, but what is right, that is of importance.” Laboratory staff have a responsibility to keep what they work within the laboratory. PPE is not just protection for laboratory staff (by protecting all portals of entry). PPE is protection for everyone outside the laboratory, too. PPE protects non-laboratory personnel ONLY WHEN all PPE is removed before exiting the facility.

This article was contributed by Sean Kaufman, Sr. Associate of EHSO. If you have any questions or comments, please send them to sgkaufm@emory.edu.

Training

Most of EHSO's Trainings are available online. ehso.emory.edu

Rad Safety Training

2nd Tuesdays at
10:00am (monthly)

Lab Safety Training

3rd Thursdays at
10:00am (monthly)

Chemical/ Radioactive Waste

[Full Schedule here...](#)

All **chemical** waste pick up should be requested by emailing

chemwaste@emory.edu

All **radioactive** waste pick up should be requested via EHS Assist pick-up.

Chemical waste disposal inventory form and/or **radioactive** waste inventory form should accompany all waste containers at the time of pick-up.

PPE

Choice to be based on potential exposures involved:

Eye: Glasses, goggles & face shields

Gloves: Appropriate for the type of procedure

Clothing: Gowns, lab coats, aprons, coveralls

Respirators: Appropriate for the type of procedure

Updates and Changes to the Laser Safety Program

Do you occasionally borrow or plan to borrow Class 3B or Class 4 laser equipment to use in your studies? If so, there is a new document that must be completed by both parties (borrower and lender) prior to the exchange of equipment. The Procedure for Access to Laser Equipment document outlines the responsibilities of both the borrower and lender of the equipment, information about the equipment, as well as an acknowledgement of responsibility. Upon completion, the form must be sent to resaw@emory.edu, or faxed to Rodrick Esaw at 404-727-5904. Each party should also keep a copy of the record. The document is now available on the EHSO website (www.ehso.emory.edu).

Laser pointers, in the past, were not considered very hazardous due to their wide availability and practical uses. However, with the production of higher powered laser pointers, the hazards have increased dramatically. Some laser pointers can have an output power of greater than 1 watt, which can cause severe eye injury. If you have purchased laser pointers from online sites such as www.wickedlasers.com, www.dragonlasers.com, www.amazon.com, www.ebay.com, etc., be sure to check the laser classification. If the laser pointer is classified as Class 3B or Class 4, it must be registered with the EHSO and added to the laser inventory. The laser registration form is available on the EHSO website (www.ehso.emory.edu).

Biological Safety Cabinet Certification Reminder

Biological Safety Cabinets (BSCs) on campus at Emory must be certified every year by the vendor of your choice. One of the three vendors, Safety Plus, ENV, or Environments of Care (EOC) {formally Air Gas} must be selected in Emory Express at the designated time for your research building. Below, is the biological certification schedule for the campus:

Biological Safety Cabinet Certification Month	Building Names
April 2014	Whitehead, N. Decatur Human Genetics, Hope Clinic, Ponce Clinic, Biochemistry Connector, Cherry L. Emerson Center
June 2014	Woodruff Memorial Building, Winship Clinic C, Woodruff Extension Building, Yerkes—Lawrenceville Campus, Oxford Campus
September 2014	Rollins Research Center, Emory Children’s Center, Wesley Woods, Claudia Nance Rollins, HSRB
December 2014	Atwood Bldg., Clinic B (Winship and Eye Center), Dental Bldg., Yerkes Primate Center

Please Read—

Signature indicates: I have read and I understand the information in this issue of Lab Rat Newsletter. Use an additional sheet of paper for more signatures, if needed and attach to this document.

- This newsletter is a tool to help fulfill a legal requirement for ongoing safety training.
- Supervisors are responsible for ensuring that individuals in their area have read and understood the information that applies to their area.
- The signed newsletter should be placed into the PIs EHSO Lab Safety Binder.

Signature Here

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____

Eye Wash Testing

Eyewash Stations should be tested and documented once a month by lab personnel

Certifications

Biosafety Cabinets, Geiger Meters and Chemical Fume Hoods:

Certifications are required annually.

Fire Extinguishers

Visual fire extinguisher inspections must be conducted monthly:

- A. Is it present and mounted in its proper location?
- B. Is it readily accessible?
- C. Initial and date attached tag.

If it appears to need servicing contact the Maintenance HELP line at 7-7463

Tell us how we are doing!

The newsletter has a new home. Every individual article is now hosted online at blogs.emory.edu/labratnews/

Got something to share? [Tell us!](#) Post comments, related articles/links, and safety concerns.

Feel free to also send your comments to bi-ospace@emory.edu. We look forward to reading your ideas and comments!

Building Liaisons

[Click here](#) to find your building's Radiation and Research liaisons.