

Personnel Protective Equipment (PPE)

1. PPE Defined

- Personal Protective Equipment (PPE) is specialized clothing or equipment worn by an employee for protection against a hazard. General work clothes (e.g., uniforms, pants, shirts or blouses) are not intended to function as protection against a hazard are not considered to be PPE ([OSHA, 1910.1030\(b\)](#)). The employer shall assess the workplace to determine if hazards are present, or likely to be present, which necessitate the use of PPE.

Personal Protection Codes

<u>Code</u>	<u>Equipment/Supplies</u>
VH	Chemical fume hood
SG	Safety Goggles
G	Gloves
LC	Laboratory Coat
FS	Face Shield

2. PPE Guidelines

- Personal protective equipment, which includes protective equipment for the face, eyes, head, hands, feet, etc, must be provided for the employee as a safety aid to protect the worker from potential hazards in the workplace.

3. Exposure Control Plan (ECP)

Specific laboratory activities require the use of different types of personal protective equipment as specified by each individual laboratory's Exposure Control Plan (ECP). Click on the laboratory name below to view its respective UCI.

Adult Blood Gas	Autopsy	Blood Bank
Central Distribution	Chemistry	Cytogenetics
Cytology	Hematology	Histocompatibility
Histology	Immunology	Microbiology/Virology
Molecular Diagnostics	MMGL	PDS
Phlebotomy	Peds Pulmonary and Blood Gas	

4. Lab coats/Gowns/Aprons

- The Department of Pathology and UMHHC supply laboratory coats, gowns, and/or aprons to employees.
- Use protective gowns, aprons, or lab coats appropriate to the level of risk. Lab coats must be completely buttoned/snapped to protect scrubs

and/or street clothing from splattering of reagents or blood and body fluids.

- Lab coats worn as PPE when working with potentially infectious material or chemicals must NOT be worn into areas designated as “clean” such as staff lounges, restrooms, office areas, or institutional common areas (i.e cafeteria, hallways, etc.).
- When leaving the laboratory, lab coats must be removed. If a lab coat is needed to be worn outside the laboratory area, a clean coat not exposed to blood and body fluids must be worn. Discretion may be used if an employee is transporting specimens or chemicals from one room to another via a non-laboratory hallway.
- Laundering of lab coats is provided by Continental Linen Service or UMHS Laundry Services. Lab coats must NOT be taken home to be cleaned.
- Lab coats should be changed at regular intervals (weekly or bi-weekly) to ensure cleanliness.
- In the laboratory areas, an area must be provided and designated for the handling of “clean” and “dirty” lab coats. This is only necessary if staff choose to remove the PPE and wear a clean coat outside the laboratory.
- All disposable PPE must be disposed of appropriately in the trash. Disposable PPE that is visibly grossly contaminated must be disposed of in a biohazard receptacle.
- If an employee’s personal clothing is contaminated with blood or body fluids, the clothing must be removed. The hospital linen service will provide scrubs for the employee. The contaminated clothing must be placed in a plastic bag with the employee’s name and department and taken to hospital linen service to be cleaned.

5. Eye/Face Protection

- Laboratory employees are required to wear the proper eye and face protection meeting ANSI Z87.1 for tasks that expose them to potential biological or chemical hazards.
 - Prescription eyeglasses DO NOT meet this requirement unless they are made of shatterproof safety-glass or plastic and are equipped with side shields.
 - Contact lenses DO NOT provide eye protection! Contact lenses will absorb certain solvents and may trap material against the cornea and prevent tears from washing caustic substances away.

- Eye/mucous membrane protection against biological hazard (e.g. face shield or mask/visor combination) must be worn when splatter or droplet formation of blood or body fluids is likely.
 - A bench shield may be substituted for a biohazard face shield.
- Safety goggles/glasses must be worn when:
 - Heating test tubes or flasks.
 - Using an apparatus where the contents are under pressure.
 - Using certain chemicals.
- Ultraviolet (UV) specified goggles must be worn when:
 - UV viewing box or Wood's Lamp is in use. Eye exposure to UV light may result in painful inflammation of the conjunctiva, cornea, and iris.
 - Work must be done in or about a biological safety cabinet while the UV light is on. This practice is strongly discouraged and prior approval from the area supervisor is required.

6. Hand Protection

- Gloves must be worn for blood and body fluid precautions and when working with heat sources, subzero cold sources, and hazardous chemicals. Gloves must be removed when outside the technical area.
- There are different types of gloves for different hand exposures. Proper glove selection for each circumstance is very important. Be sure to wear gloves that provide a close fit: loose fitting gloves or gloves with fingers which are too long for the users do not provide a safe grip.
- Employees who experience glove allergies or dermatitis involving the hands must complete an incident report and be evaluated by Employee Health.
- Blood and Body Fluids
 - Approved latex or nitrile gloves must be worn at all times when:
 1. Handling blood or body fluids
 2. Performing cleaning operations of equipment
 3. Performing venipuncture
 4. Touching patient's non-intact skin
 5. Cleaning up spills of blood or body fluids
 - Gloves must be replaced whenever torn or appreciably soiled with blood or body fluids. Gloves must be changed and hand hygiene performed between patients. Hands must be washed immediately after removing gloves if gloves are not to be worn again in the immediate future. When removing gloves, grasp the cuff of the

glove and pull the glove off inside out. Avoid touching the skin. Never wash and reuse disposable gloves.

- Disposal – if not visibly contaminated dispose in regular trash. If visibly grossly contaminated dispose in biohazard receptacle.
- Heat/Cold Sources
 - Insulated gloves made from various materials are available and required for handling hot and cold (subzero) substances.
 1. The correct choice of glove is important: for example Zetex (synthetic material resembling asbestos) and woven terry gloves provide insulation, but are permeable to steam and liquids. Therefore, non-permeable insulated gloves are required when working with hot liquids and liquid nitrogen or working with an autoclave or with materials recently removed from an autoclave.
- Hazardous Chemicals
 - Several types (latex, nitrile, butyl rubber, neoprene) and weights of chemical resistant gloves are available for use with specific chemicals.
 - NO SINGLE GLOVE TYPE IS RESISTANT TO ALL CHEMICALS FOUND IN THE LABORATORIES. Selection of the appropriate type and weight of glove must be done in accordance with the hazardous assessment for the chemical in use.
- Utility and Disposable Vinyl Gloves
 - Utility and disposable vinyl gloves may be worn for general cleaning duties where there is limited risk to exposure to infectious agents, and where only ordinary household chemicals are in use.
 1. Utility gloves may be contaminated and reused unless they are cracked, peeling, torn, punctured, or no longer provide barrier protection.
 2. Disposable vinyl gloves are never washed or reused.

7. Foot Protection

- Shoes should be comfortable and must provide the appropriate protection for the job. It is recommended that they have rubber or crepe soles to prevent slipping.
- Open toed shoes, sandals, and footwear with holes on the top are NOT allowed.

8. Hazard Assessments

- OSHA Regulation [29 CFR 1910.132](#) (General Requirements: Personal Protective Equipment) requires that the employer shall assess the

workplace to determine if hazards are present. The Department of Pathology laboratories shall perform such workplace assessments:

- Whenever a new procedure or hazardous chemical is introduced that does not fall under a previously performed assessment.
- Whenever there is a change in previously assessed procedures or move or physical renovation of the workplace that reduces the level of engineering control in the procedure.
- Upon request.
- Departmental Safety Representatives are not always aware of all changes being made within the laboratories; therefore, it is the laboratories' responsibility to contact their laboratories respective safety representative when a hazard assessment is needed for any of the above reasons.

9. Training

- The Laboratories will provide training to each employee who is required to use PPE. Training will address at least the following:
 - When PPE is necessary
 - What PPE is necessary
 - How to properly don, doff, adjust, and wear PPE
 - The limitations of the PPE, and
 - The proper care, maintenance, useful life and disposal of the PPE
- Retraining will take place if:
 - There is reason to believe that any employee who has already been trained does not have the required understanding or skill
 - Whenever there are changes in the workplace which render previous training obsolete, or
 - Whenever there are changes in the types of PPE to be used
- Certification of training will be maintained with each employee's respective Chief Technologist/Supervisor.


References

McLendon Clinical Laboratories III.B Personal Protective Equipment and Workplace Hazard Assessment

CLSI. *Protection of Laboratory Workers From Occupationally Acquired Infections* (3rd ed.). Document M29-A3 (ISBN 1-56238-567-4).

College of American Pathologists (2006, April 6). *Laboratory General Checklist*.

Gile, T. J. (2007, April). *Complete Guide to Laboratory Safety* (2nd ed.). Marblehead, MA: HCPPro, Inc.

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