



STANFORD UNIVERSITY

ENVIRONMENTAL HEALTH & SAFETY

UNIVERSAL PRECAUTIONS

INTRODUCTION:

Human or non-human primate primary cells, cell lines, organ cultures and body fluids may contain adventitious viruses and/or other opportunistic pathogens or zoonotic agents. Since it is extremely difficult to screen for every pathogen, **all** of the above materials must be handled with **Universal Precautions** and treated as though they are contaminated with HIV, HBV, HCV, or other bloodborne pathogens by utilizing Biosafety Level 2 (BSL-2) practices and procedures.

TRAINING REQUIREMENTS:

The following training programs must be completed in order to work with materials listed above:

- Biosafety (EHS-1500 or as part of EHS-4875 – Life Sciences Research Laboratory Safety Training)
- Bloodborne pathogens (EHS-1600) and the annual refresher (EHS-1601)
- [Exposure Control Plan](#) – Tier III training in conjunction with your PI

See [the Stanford University Training Advisor](#) for information on additional required trainings for working in your area.

PRACTICES AND PROCEDURES:

To minimize potential exposure to pathogens, use a combination of engineering controls, work practice controls and personal protective equipment (PPE):

Engineering Controls

- Use a Biosafety Cabinet when possible for all aerosol-generating procedures
- Use additional physical containment devices during procedures with high potential to create aerosols (e.g. centrifugation, blending, homogenization etc.)
- Use a needleless system or engineered sharps
- Use HEPA filtered vacuum lines

Work Practice Controls

- Post biohazard universal precautions signs on doors and equipment



- Limit lab access while work is being conducted
- Properly dispose of biohazardous/medical waste into appropriate waste containers

- Wash hands after completion of work and before leaving laboratory
- Decontaminate equipment daily and following any spill
- Eating, drinking, applying lip balm or contact lenses only permitted in approved non-research areas
- No mouth pipetting

Personal Protective Equipment (PPE)

- Wear appropriate street clothing - long pants and closed toed shoes
- Wear lab coat, gloves (nitrile or latex), safety glasses (or goggles) and face shield where splash potential exists

SHARPS:

- Engineered sharps: commonly used sharps (e.g. scalpels, syringes, needles, glass pipets) that have physical attributes or mechanisms that decrease the risk of injury
- Cal/OSHA requires any laboratory using human or primate blood, blood products, cell lines, tissues or other potentially infectious materials to use needleless systems and/or engineered sharps
- If a PI/supervisor decides that a non-compliant sharp is necessary for a certain procedure, **the reason must be documented**; additional information can be found in the BBP exposure control plan

RESOURCES:

These requirements are based on the Division of Occupational Safety and Health (Cal/OSHA) [Bloodborne Pathogens Standard](#) (T8 CCR 5193) and the CDC publication, [Biosafety in Microbiological and Biomedical Laboratories \(BMBL\) 5th Edition](#).

For information on the types and use of Biosafety cabinets, including what not to do, see [Biosafety Cabinet Use and Safety](#).

Additional information, including videos on how to work in a Biosafety cabinet, can be found on the [Biosafety web page](#) under Equipment, Biosafety Cabinets.

Contact Biosafety at Stanford University EH&S with questions (723-0448)