

Basic Rules for Biosafety

- Do not mouth pipette.
- Use biological safety cabinets for containment whenever procedures have the potential to generate aerosol droplets.
- Manipulate infectious fluids carefully to avoid spills and production of aerosols and droplets.
- Understand and apply universal safety precautions when working with biological agents and equipment contaminated with human/non-human primate blood, cells, unfixed tissue, and body fluids.
- Restrict the use of needles and syringes to those procedures for which there are no alternatives. Use needles, syringes, and other “sharps” carefully to avoid self-inoculation.
- Do not recap syringes or needles.
- Dispose of “sharps” in properly labeled leak- and puncture-resistant containers.
- Use protective laboratory coats, gloves, and eyewear as required.
- Do not wear laboratory coats outside of the laboratory. Wash laboratory coats often using WSU laundry facilities.
- Wash hands following all laboratory activities, following the removal of gloves and personal protective equipment, and immediately following contact with infectious materials.
- Do not eat, drink, store food, apply cosmetics, manipulate contact lenses, or smoke in the laboratory. Do not store any food items in the laboratory refrigerators or freezers. Do not heat or cook food in laboratory microwave ovens.
- Post the laboratory area with appropriate warning signs.
- Limit laboratory access to authorized personnel during periods of potential exposure to BSL2 or higher materials.
- The Principal Investigator (PI) must be trained for all proposed research. All personnel must complete applicable training under the supervision of the PI and demonstrate competency of laboratory procedures to the PI.
- Read and understand the content of all applicable protocols. The PI must have standard operating procedures (SOPs) for all procedures performed in his or her laboratory.
- Have a clear understanding and implement the use of Standard Microbiological Practices in daily work routines.
- Decontaminate work surfaces before and after use and immediately after spills. Clean spills according to the *Infectious Waste Management Guide* <http://www.wright.edu/admin/ehs/wastemgt.html>. All spills must be reported immediately to the Biosafety Officer.

- Dispose of generated biohazard waste in an approved manner as described in the *Infectious Waste Management Guide* <http://www.wright.edu/admin/ehs/wastemgt.html>.
- Follow basic principles of laboratory safety as described in the *University Chemical Hygiene Plan*. Each laboratory should have a printed version of this document. If not, please contact the Chemical Hygiene Officer at extension 2215 to request a copy.
- Become familiar with and utilize the information contained in the *Institutional Biosafety Manual*. <http://www.wright.edu/admin/ehs/safety/biological.html>
- Have a clear understanding of the contents of the *NIH Guidelines for Research Involving Recombinant DNA Molecules* found at http://oba.od.nih.gov/oba/rac/guidelines_02/NIH_Gdlnes_Ink_2002z.pdf
- Have a clear understanding of the contents of the USDHHS CDC/NIH *Biosafety in Microbiological and Biomedical Laboratories*, 5th edition found at http://www.cdc.gov/OD/OHS/biosfty/bmbl5/BMBL_5th_Edition.pdf

SUMMARY OF RECOMMENDED BIOSAFETY LEVELS FOR INFECTIOUS AGENTS

BSL	AGENTS	PRACTICES	PRIMARY BARRIERS AND SAFETY EQUIPMENT	FACILITIES (SECONDARY BARRIERS)
1	Not known to consistently cause diseases in healthy adults	Standard Microbiological Practices	None required	Laboratory bench and sink required
2	<ul style="list-style-type: none"> • Agents associated with human disease • Routes of transmission include percutaneous injury, ingestion, mucous membrane exposure 	BSL-1 practice plus: <ul style="list-style-type: none"> • Limited access • Biohazard warning signs • “Sharps” precautions • Biosafety manual defining any needed waste decontamination or medical surveillance policies 	Primary barriers: <ul style="list-style-type: none"> • Class I or II BSCs or other physical containment devices used for all manipulations of agents that cause splashes or aerosols of infectious materials PPEs: <ul style="list-style-type: none"> • Laboratory coats; gloves; face protection as needed 	BSL-1 plus: <ul style="list-style-type: none"> • Physical separation from access corridors • Self-closing, double-door access • Exhaust air not recirculated • Negative airflow into laboratory
3	<ul style="list-style-type: none"> • Indigenous or exotic agents with potential for aerosol transmission • Disease may have serious or lethal consequences 	BSL-2 practice plus: <ul style="list-style-type: none"> • Controlled access • Decontamination of all waste • Decontamination of laboratory clothing before laundering • Baseline serum 	Primary barriers: <ul style="list-style-type: none"> • Class I or II BSCs or other physical containment devices used for all open manipulation of agents PPEs: <ul style="list-style-type: none"> • Protective laboratory clothing; gloves; respiratory protection as needed 	BSL-2 plus: <ul style="list-style-type: none"> • Physical separation from access corridors • Self-closing, double-door access • Exhaust air not recirculated • Negative airflow into laboratory
4	No BSL-4 work allowed at WSU	NA	NA	NA

From: USDHH CDC, NIH. 2007. *Biosafety in microbiological and biomedical laboratories (BMBL)*. 5th edition. Washington, DC US Government Printing Office.

SUMMARY OF RECOMMENDED BIOSAFETY LEVELS FOR ACTIVITIES IN WHICH EXPERIMENTALLY OR NATURALLY INFECTED VERTBRATE ANIMALS ARE USED

ABSL	AGENTS	PRACTICES	PRIMARY BARRIERS AND SAFETY EQUIPMENT	PRIMARY FACILITIES (SECONDARY BARRIERS)
1	Not known to consistently cause diseases in healthy adults	Standard animal care and management practices, including appropriate medical surveillance Programs	As required for normal care of each species	Standard animal facility: <ul style="list-style-type: none"> • No recirculation of exhaust air • Directional air flow recommended • Hand washing sink is available
2	<ul style="list-style-type: none"> • Associated with human disease • Hazard: percutaneous exposure, ingestion, mucous membrane exposure. 	ABSL-1 practice plus: <ul style="list-style-type: none"> • Limited access • Biohazard warning signs • “Sharps” precautions • Biosafety manual • Decontamination of all infectious wastes and of animal cages prior to washing 	ABSL-1 equipment plus primary barriers: <ul style="list-style-type: none"> • Containment equipment appropriate for animal species PPEs: <ul style="list-style-type: none"> • Laboratory coats, gloves, face and respiratory protection as needed 	ABSL-1 plus: <ul style="list-style-type: none"> • Autoclave available • Hand washing sink available • Mechanical cage washer recommended
3 & 4	No ABSL-3 or ABSL-4 work allowed at WSU	NA	NA	NA

From: USDHH CDC, NIH. 2007. *Biosafety in microbiological and biomedical laboratories (BMBL)*. 5th edition. Washington, DC US Government Printing Office.