



Biosafety Level Guide for Ascending Levels Agent Risk

Introduction

Biosafety levels (BSL) consider the combination of microbiological practices, safety equipment, and facility safeguards needed for the study agent(s) to be handled, to help protect the staff handling the study agent(s), non-study associated staff, the public, and the environment.

Each level **builds upon the previous levels** (BSL-1 through BSL-4) and becomes more stringent.

Standard Precautions

The primary strategy for prevention of transmission of infectious materials in the health care setting is how blood and bodily fluids are handled to protect health workers from unknown human pathogens.

See OSHA Bloodborne Pathogen Standard for additional details at <https://www.osha.gov/bloodborne-pathogens>

Standard precautions will be implemented during subject administration due to the potential for BBP exposure.

Suggested Minimal PPE: Disposable gown (preferred) or launderable lab coat, nitrile gloves, eye protection, face mask.

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BSL-1



Trained staff (microbiological, assigned duties, and emergencies)



Use hand hygiene



Current biosafety manual for work performed



Use required PPE



Decontaminate work area after work or spill(s)



Windows do not open (if present)



Proper medical waste management



Easily cleanable surfaces (non-porous)



Limit access



Sink(s) for handwashing available



Biohazard signage



Minimize aerosol creation



Closable doors



Effective insect/rodent control program



No eating, drinking in work area(s)



Suggested minimal PPE: Disposable gown (preferred) or launderable lab coat, nitrile gloves, eye protection (agent/study dependent).

Examples: Adeno-associated virus (AAV), plasmids, mRNA

BSL-2



Medical surveillance and immunizations as needed



Use of BSCs. In lieu of BSC use, additional PPE will be required



Extreme caution using sharps



Extra caution to minimize aerosol creation



Suggested minimal PPE: Suggested minimal PPE: Disposable gown (preferred) or launderable lab coat, nitrile gloves, eye protection, face mask.
This PPE may be reduced if a BSC is used for study agent(s) preparation.

Examples: Adenovirus, autologous T-cells, Respiratory syncytial virus (RSV), Vaccinia virus

*Adapted from Biosafety in Microbiological and Biomedical Laboratories (BMBL) and NIH Guidelines