Eye protection for research with recombinant biological agents
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**Background.** Some biological agents are readily transmitted through eye exposure, including some bacteria and viruses. The following policy provides an overview of the **minimal expectations** of the Duke Institutional Biosafety Committee (IBC) for eye protection for Duke research covered by the NIH Guidelines for Research involving Recombinant or Synthetic Nucleic Acid Molecules. Individual PIs may require more stringent precautions than those described here. As an example, some Duke PIs require eye protection at entry to the laboratory for all work with human samples. The IBC will conduct an individual risk assessment for each registration, and may require more stringent precautions for specific projects.

**Approaches to eye protection:** Eye protection can be provided by the sash of a biological safety cabinet (BSC), or by a splash shield installed on the laboratory bench. In each case, the worker must be positioned such that the sash or shield is located between the worker’s face and the hazardous material. Eye protection is also provided by personal protective equipment including safety glasses with side shields, masks with integrated splash shields, face shields, and hoods used with personal air-powered respirators (PAPRs).

**Standard BSL2 containment:** BSL2 containment is required for agents that pose moderate hazards to personnel and for research with human samples. Under standard BSL2 containment, **all procedures in which aerosols or splashes may be created are conducted inside BSCs or other physical containment equipment.** Eye protection is required whenever these procedures cannot be conducted in a BSC or other containment device.

**Enhancements to standard BSL2 containment for specific pathogens:** For the following agents, the Duke IBC will normally require researchers to use eye protection for **all open container work outside a BSC:**

- Recombinant adenovirus or adenoviral vectors
- HIV or SIV cultures derived from recombinant materials
- High-risk lentiviral/retroviral vectors as indicated by a black-box warning
- Recombinant orthopoxviruses (e.g. vaccinia WR, cowpox) with the exception of modified vaccinia Ankara (MVA)
- Recombinant bacteria commonly associated with eye infections, including *Chlamydia trachomatis*, *Neisseria gonorrhoea*, *Pseudomonas aeruginosa*, and *Streptococcus pneumonia*

Please contact the Biological Safety Division at 919 684 8822 for questions on eye protection, including appropriate containment for biological agents not listed here.