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**Animal Safety Guidelines**  
**Hebrew University of Jerusalem**  
(translated by Dr. Ora Grafstein, Biological Safety Officer)

I. Hebrew University Biological Safety Guide, Chapter B Section b, Laboratory Animal Safety, 2001, pp. 12-14 - translation attached.

II. Institutional Animal Care and Use Committee Guidebook - 2005, pp. 105 - 109 - translation attached.

III. Additional sources:

1. Hebrew University regulations and guidelines regarding biological, chemical and radiation safety, and hazardous waste disposal.

2. Hebrew University ABL3 Unit Operating Procedures - December 2005, including chapters on:

1. Worker training.
  2. Ordering animals.
  3. Animal intake.
  4. Equipment intake.
  5. Entrance and exit of personnel from the ABL3 unit.
  6. ABL3 log and incident report.
  7. Routine animal facility procedures for ABL3 workers.
  8. Morning inspection.
  9. Procedures for changing and working with filter cages.
  10. Autoclave use.
  11. Drinking water treatment.
  12. Removing equipment from the ABL3.
- Appendix: Animal inspection (in cage).

3. Regulations and guidelines issued by the Israeli Ministry of Health, Ministry of Agriculture, Labor Inspectorate and other relevant agencies.
4. Occupational Health and Safety in the Care and Use of Research Animals, National Research Council, National Academy Press, Washington 1997.
5. NIH Guidelines for Research Involving Recombinant DNA Molecules, National Institutes of Health, US Department of Health and Human Services.
6. Biosafety in Microbiological and Biomedical Laboratories (BMBL), 5 edition, CDC, PHS, US Department of Health and Human Services, 2007.

#### IV. Recent safety-related activities in the animal facilities:

1. Training session in biological, chemical and fire safety - September 25, 2007 (attendance of all animal facility staff).
2. Walk-through survey of animal facilities including written report of observed hazards and recommendations for remediation - July 2007.
3. Routine inspections and preventive maintenance of safety equipment, including: firefighting equipment, first aid kits, eyewash and shower stations, fume hoods and autoclaves.
4. Review of all IACUC proposals by the Biological Safety Officer.
5. Safety consultations with the animal facility veterinarians and researchers, including providing written material regarding specific hazards and site visits to the animal facilities and laboratories where animals are used.

# **I. Hebrew University Biological Safety Guide**

## **Chapter B Section b, Laboratory Animal Safety, 2001, pp. 12-14**

1. Animal use requires safety, proper housing and humane treatment of laboratory animals.
2. The responsible investigator must complete the Safety section on the IACUC application, including a commitment to work according to the animal facility rules.
3. The animal facility rules are detailed in the booklet "Experimental Use of Laboratory Animals in the Hebrew University of Jerusalem".
4. Every worker who enters the animal facility will receive safety training from the responsible investigator.
5. Unaccompanied outsiders are not permitted to enter the animal facility.
6. Animal facility workers will be supplied with all personal protective equipment that is necessary for safe work, and will be assisted, as needed, while maintaining the facility and conducting experiments.
7. Injection of animals will be performed under the following conditions:
  - 7.1 The worker will use appropriate personal protective equipment.
  - 7.2 Use only syringes with securely-attached needles.
  - 7.3 Air bubbles or excessive material will be ejected from a syringe directly into cotton which has been wetted with 70% ethanol.
  - 7.4 Used syringes will be disposed of into sharps containers, prior to autoclave treatment.
8. A Biohazard sign will be posted outside of all rooms in which a biosafety hazard is used. A room in which radioactive materials are used in experiments will be identified by a radiation symbol.
9. Animals infected with a pathogenic agent will be performed in special rooms, which are labeled with biohazard signs and contain appropriate equipment to prevent accidental release of the pathogenic agent.
  - 9.1 Before the operation, the animal must be treated. Aerosol production should be minimized.

9.2 Operating instruments must be sterilized in an autoclave.

9.3 Operating surfaces must be sterilized in an autoclave, or immersed in disinfectant for a sufficient time.

10. Animal carcasses must be wrapped in special plastic bags, and stored in the freezer until incineration.

11. Every cage must have a clear and complete label - especially in the presence of a biological or chemical hazard.

12. Any injury must be immediately reported and promptly treated. All injuries, however minor, should be washed with soap and water, and then treated with a disinfectant.

13. Anyone working with dogs and cats must receive a rabies vaccination. Repeat vaccinations will be scheduled as required by Ministry of Health guidelines.

14. Treatment of animal bites (especially from monkeys and dogs):

14.1 Let the wound bleed, while washing with soap and water.

14.2 Treat the wound with disinfectant and do not cover, if bleeding is controlled.

14.3 Immediately go to the nearest Emergency Room for consultation and medical care. In Jerusalem - go to the Hadassah Hospital at Ein Karem.

14.4 In case of a suspected rabies exposure, go to the nearest Ministry of Health District Office - Rabies Unit. The Ministry of Health physician will decide whether a rabies vaccination and/or quarantine of the animal is necessary.

14.5 If necessary, the worker will receive a tetanus vaccination. A booster is required every 10 years.

14.6 Report the case to the responsible investigator and to the Biosafety Officer as soon as possible.

15. B virus - Work with macaque monkeys (*Macaca mulatta*) requires special care, due to the risk of B virus (*Cercopithecine herpesvirus 1*).

15.1 Every macaque monkey is to be regarded as a potential source of B virus.

15.2 In addition to appropriate gloves and a coverall, a full-face shield should be worn over a pair of goggles.

15.3 In case of exposure of the eyes, mucous membranes or mouth to saliva (or any other body fluid) from a macaque monkey, rinse the exposed area(s)

for at least 15 minutes in clean water.

15.4 In case of any suspected exposure, immediately go to the nearest emergency room for consultation and medical treatment. Report to the responsible investigator and to the Campus Safety Officer.

## **II. Institutional Animal Care and Use Committee Guidebook - 2005, pp. 105 - 109**

### Occupational Safety

Ensuring the health and safety of people working with animals is in the interest and responsibility of the research institution. The purpose of a health assurance program is to prevent physical injuries and diseases caused by working with animals.

### Ethics Committee Responsibility

An effective health assurance program involves many institutional units, including those related to animal care, research, safety and management. A natural focus for all of these units is the Ethics Committee. Assurance of a safe workplace is one of the topics that the Ethics Committee must address when weighing an ethical request. Therefore, it is recommended that among the committee members be included also a person knowledgeable in safety or occupational health, or alternatively, there should be a permanent channel of communications between the Ethics Committee and the safety personnel of the institution, regarding all aspects of a request submitted to the committee. However, it should be emphasized that the Ethics Committee is not a substitute for the institutional Safety Committee.

The safety rules must be comprehensible for the different groups of workers who come into contact with animals (animal caretakers, researchers, laboratory workers, students, volunteers, cleaning staff, maintenance staff, security staff). The level of training which they receive will be consistent with their potential exposed to various hazards.

### Training and exercises

There are legal and ethical requirements that require informing people regarding the safety hazards, which may injure them, and regarding the safety measures which they are required to undertake. It is necessary to verify that the workers received adequate training by the relevant safety unit of the institution, regarding the hazards to which they are exposed during their work, and how to avoid injury. This training must include:

1. Zoonoses.
2. Chemical safety.
3. Microbiological and physical hazards (e.g., allergens, radiation)
4. Hazards related to research conducted in the animal facility
5. Treatment of waste

## 6. Personal hygiene

It is important to emphasize the hazards that are commonly found in animal facility, including:

1. Animal bites.
2. Sharp objects.
3. Steam system (autoclave).
4. Flammable/explosive materials.
5. Pressure vessels.
6. Electrical hazards in wet areas.
7. UV radiation.
8. Various types of equipment (cage washers).
9. Noise.

Allergic reactions to animals, which may be expressed as asthma, are among the most common health problems encountered by animal facility workers. It is estimated that up to 44% of animal workers develop various allergies during the course of their work. Proper design of the animal facility, appropriate procedures and suitable clothing can decrease the chance of developing an allergy.

Infectious diseases also are a risk, depending on the type of animal and their health. These diseases include:

1. Viral diseases such as Hepatitis and Herpes B.
2. Rickettsial diseases such as Q Fever and Cat Scratch Fever.
3. Bacterial diseases such as Tuberculosis, Salmonellosis, Shigellosis.
4. Protozoan diseases such as Toxoplasmosis and Cryptosporidiosis.
5. Fungal diseases such as Dermatomycosis.
6. Prion diseases.

Careful inspection of animals entering the facility (including verifying their source) is essential to prevent infection and spread of diseases.

Preventive measures taken by the staff include:

1. Tetanus vaccination.
2. TB testing and measles vaccine for monkey workers.
3. Hepatitis B vaccine for monkey workers.
4. Rabies vaccine for dog and cat workers.