

Occupational Health and Safety Program for Animal Workers Northern Illinois University

In accordance with the Public Health Service Policy on Humane Care and Use of Laboratory Animals, which requires awardee institutions to establish an Occupational Health and Safety Program for all personnel who work in laboratory animal facilities or have frequent contact with animals, NIU has established the following guidelines and policies with which all personnel who work around animals should be familiar.

This Occupational Health and Safety program is administered by the Department of Environmental Health and Safety (EHS) under the guidance of the Institutional Animal Care and Use Committee (IACUC).

Personnel covered

Individuals who handle animals at Northern Illinois University (NIU), through coursework, research or as part of their job duties are covered under this program. This includes, but is not limited to researchers, instructors, students and NIU employees full or part-time.

Animals currently under IACUC protocols include non-feral rodents, rabbits from approved sources, cold blooded vertebrates, birds. No dogs, cats, or nonhuman primates are currently involved in research at NIU.

Occupational Health and Safety Training

Training will be provided to students and employees on all aspects of this program, as well as facility specific information and emergency response upon initial assignment to working with animals and annually thereafter. Training may be provided by a member of the IACUC, principal investigator or by EHS staff. Documentation of training will be forwarded to the Office of Research Compliance.

Preventive medicine program

Annual physicals are suggested but not required by this program. NIU Health Services is available to students. If conditions arise in which a current employee needs additional health evaluation, please contact EHS for initiation and coordination of Occupational Health Services. The Department of Environmental Health and Safety will also provide hazards assessment information. Kishwaukee Corporate Health Services provides Occupational Health services.

Vaccinations

Although there are no required vaccinations, immunization against tetanus is recommended every ten years, or if a particularly tetanus-prone injury occurs in an employee where more than five years has elapsed since the last immunization. Tetanus

immunizations for students are available through Health Services. For employees of NIU vaccinations are available through the DeKalb County Health Department. Please notify EHS to set up an appointment.

Special precautions for pregnancy, illness, immune suppression

Any condition which may put the worker at additional risk such as pregnancy, illness or immune compromised should be discussed with their attending physician. Information about the type of work performed and the animals in use should be shared. Any suggested accommodations should be forwarded to the supervisor/ principal investigator for implementation. Additional assistance is available through EHS if necessary.

Hazard and Risk Identification and Assessment

The fundamental principle of a Health and Safety Program is to reduce injury and disease to employees. One of the most important aspects of a health and safety program is hazard assessment. Hazard identification is crucial in the workplace.

Steps to Conducting a Hazard Assessment:

1. Determine the hazards associated with the job. Each hazard is determined as if there are no controls in place. For example: chemical splash without safety goggles.
2. Rank the exposure
 - 1 = unlikely: a person is exposed to the hazard 1x per job or project
 - 2 = occasionally: a person is exposed to the hazard 2x per job or project
 - 3 = often: a person is exposed to the hazard more than 3x to 5x per job or project
 - 4 = frequently: a person is exposed to the hazard 5 or more times per job or project
 - 5 = continuous: a person is exposed to the hazard continually
3. What is the probability of the occurrence
 - 1 = unlikely to occur
 - 2 = some chance
 - 3 = could occur
 - 4 = good chance
 - 5 = will occur if not attended to
4. What are the consequences
 - 1 = insignificant: a person receives a very minor injury, no damage to property
 - 2 = first aid or minor property damage: a person administers first aid to self
 - 3 = injury results in lost time, seeking medical help or significant property damage
 - 4 = injury results in permanent disability, serious health effects or property damage
 - 5 = injury results in a fatality or there is major property damage

5. Add the numbers to reach a total risk rating. A risk rating of **Serious (11-15)** means the hazard must be attended to immediately, prior to the commencement of the job. Controls must be put into place. A safe job procedure must be in place prior to the commencement of the job. **Moderate (6-10)** means the hazard requires attention. Controls should be put into place. A safe work procedure should be in place prior to the commencement of the job, but could be attended to once the job has commenced. Employees must be aware of the hazard. The safe work procedure must be in place prior to the completion of the job. **Low (3-5)** means the hazard requires monitoring. Controls are recommended. A safe work procedure is recommended.

Hazard Controls

Depending on the risk rating, if the hazard cannot be eliminated, the controls must be implemented to reduce the risk. There are three types of controls: engineering, administrative and personal protective equipment (PPE). Some examples of the controls are:

Engineering controls

- Design of workplace
- Automation/material handling devices
- Machine guard, interlocks, lockouts, warning devices
- Isolation/enclosure
- Limitation (safety valves)
- Ventilation (general dilution/local exhaust)
- Storage
- Air monitoring devices
- Communication devices

Administrative controls

- Substitution of a less toxic product
- Purchasing criteria (tools, equipment, chairs, etc.)
- Policies and procedures
- Training
- Organizing and planning work
- Rotation of workers
- Safety plan/procedure

Personal Protective Equipment (PPE)

- Hard hat
- Goggles
- Hearing protectors
- Safety boots
- T-shirts with 4 inch sleeves
- Respiratory protective equipment
- Fall protection

Field Studies

Field studies pose a wide variety of hazards many of which are not found in the typical animal facility. For this reason, all field studies will be reviewed as to their specific hazards on a case by case basis by the IACUC during the review process.

Allergy to animals

Allergy to animals is common and therefore one of the most important occupational problems occurring in workers exposed to animals. Allergies can be manifested in a number of ways, including allergic rhinitis (a condition characterized by runny nose and sneezing similar to hay fever); by allergic conjunctivitis (irritation and tearing of the eyes); by asthma, or by atopic dermatitis (a skin condition which is caused by contact with a substance to which an individual is allergic). Allergy to animals is particularly common in workers exposed to animals such as cats, rabbits, mice, rats, gerbils, and guinea pigs. Allergies are mainly caused by dander and debris from the skin and fur of an animal. Exposure to animal urine, saliva and fecal matter may also elicit a response. Exposure to animal urine can occur either through direct urine contact with skin, or more commonly, by inhalation of dust from the bottom of a cage which has been contaminated with urine or fecal material.

People who have a prior family or personal history of asthma, hay fever, or eczema will be more likely to develop asthma after contact with animals, but these people do not seem any more likely to develop rhinitis or conjunctivitis than do people without such history. Because of this, it is necessary that everyone exercise certain precautions to attempt to prevent animal allergy. Symptoms can develop anywhere from months to years after a person begins working with animals. A majority of the individuals who are going to develop symptoms will do so within the first year. It is extremely unusual to develop symptoms after more than two years of animal contact.

Certain procedures should be routinely followed in order to prevent the development of animal allergy. Animals should be worked with only in extremely well ventilated areas to prevent buildup of various particles in the air. Workers should always wear gloves and laboratory coats to prevent direct exposure to the animals. In order to prevent inhaling contaminated material, cages should be changed frequently and masks should be worn during the changing of cages.

If allergy does develop, it will rarely be so severe that the human is forced to change his or her line of work. More commonly the condition can be controlled with the increased use of masks while working with animals and the possible use of antihistamine medications. Desensitization therapy has been done for some individuals but this is not as effective for animal allergies as it is for some other types of allergies. **Anyone with significant symptoms related to animal exposure should obtain medical advice.**

Zoonosis

Rat-bite Fever

Every person working or in contact with animals should be aware of the potential danger from animal bites. In addition to the danger of tetanus there are relatively rare diseases such as "rat bite fever" which are transmitted from animals to

humans. Sometimes infection can result from handling infected rats, with no reported bite or scratch.

Rat-bite fever refers to an infection which *usually* develops after having been bitten or scratched by an infected rat. Other rodents (such as mice and gerbils) may also spread the infection to humans. Rat-bite fever (RBF) is an infectious disease caused by two different organisms, *Streptobacillus moniliformis* and *Spirillum minus*. In the United States, Rat-bite fever is primarily due to infection with *S. moniliformis*.

Symptoms usually occur 2-10 days after exposure to an infected animal. Common symptoms include an abrupt onset of chills and fever, vomiting, pain in the back and joints, headache and muscle pain. By this time, the wound itself has usually already healed. Within 2-4 days after the onset of fever, a rash appears on the hands and feet. One or more large joints may then become swollen, red, and painful.

Rat-bite fever can be treated with antibiotics, treatment is highly effective. Without treatment, Rat-bite fever due to *S. moniliformis*, which is found in the United States, can result in extremely serious and potentially fatal complications. **Therefore all animal bites should be taken seriously.**

Measures to alleviate identified risks

The Standard Operating Procedures for each of the Animal Facilities include use of personal protective equipment, safety procedures and emergency protocols. In addition, the following basic laboratory safety procedures are recommended to all personnel who are exposed to animals:

1. There should be no eating, drinking, smoking or applying of cosmetics in areas where animals are housed or used.
2. No animals should be kept overnight anywhere except in the designated animal rooms without specific permission from the IACUC and advance notice to the appropriate animal caretaker(s).
3. Gloves should be worn at all times for the handling of animals if there is a risk of bites, the transmission of disease, etc. All contaminated or infected substances should be handled in such a way as to minimize aerosols.
4. Laboratory coats should be worn over street clothes when animals are being worked with. This will decrease the contamination of street clothing. These laboratory clothes should be left in the lab and should not be worn during eating.

5. No jewelry should be worn that can be caught in equipment or carry infectious materials.
6. All work surfaces should be appropriately decontaminated daily and after any spill of animal related materials. A freshly prepared dilution of 1:10 bleach in water is recommended and proven effective. Other EPA approved disinfectants may also be used.
7. Careful hand washing should be done before and after handling of animals and prior to leaving the laboratory for any reason.
8. In areas such as the chicken room where dust and dander are a respiratory hazard an N95 respirator should be used. Please see the NIU Respiratory Protection Program for more information on medical requirements, training and fit testing specific for respirator use.

Handling Hazardous Agents

Appropriate husbandry of animals assigned to protocols in which hazardous agent will be used is the responsibility of the principal investigator and his/her research staff.

All use of biohazardous materials, is referred to the Institutional Biosafety Committee for review and approval.

All use of radioactive materials is reviewed, approved and monitored by the Radiation Safety Committee.

Additional training and monitoring may be necessary when working with biohazardous or radioactive materials. Please contact the appropriate committee for further information in this regard.

Reporting and treating injuries

Although an animal scratch or bite might not seem serious, its occurrence should be reported to one's supervisor and/ or principle investigator.

In case of minor injury Health Services is available during regular business hours. Kishwaukee Community Hospital Emergency Room is available 24 hours everyday.

In the event of a serious injury medical assistance should be sought immediately. In the case of a medical emergency, call 911. Do not take the patient to University Health Services.

Students: Student Health Insurance should be utilized for related expenses.

Employees: Workman's compensation program should be utilized for related expenses.

Injuries requiring medical treatment need to be reported to EHS. See attached form. All medical information is kept confidential.

Reference:

Guide for the Care and Use of Laboratory Animals, Institute of Laboratory Animal Resources, commission of Life Sciences, National Research Council, National Academy Press, 1996.

Occupational Health and Safety in the care and Use of Research Animals, Committee on Occupational Safety and Health in Research Animal Facilities, National Research Council, National Academy Press, 1997.

**Occupational Health and Safety Program for Animal Workers
Northern Illinois University**

Accident / Incident Report

Location of occurrence:

Date: _____ **Time:** _____

Name of injured person:

Contact information:

Student Faculty Staff visitor

Description of accident including location:

Describe the response and medical treatment if any:

Follow-up and corrective action:

Signature:

Date:

**Please send completed form to Environmental Health and Safety, Dorland Building,
815-753-0404.**

Occupational Health and Safety Program for Animal Workers

I certify that I have received a copy of the Northern Illinois University Occupational Health Policy for Animal Workers.

I have read and understand the appropriate information. I understand that additional information is available upon request from the Department of Environmental Health and Safety and the Office of Research Compliance in the Graduate School.

Name: _____ Department: _____
(please print)

For work on a research project:

Supervisor/Principal Investigator:

(Return signed form to the Office of Research Compliance, the Graduate School)

OR

For the animal contact in instruction

Course & Instructor:

(Return signed form to course instructor)

Signature _____

Date _____