

EASTERN ILLINOIS UNIVERSITY

OCCUPATIONAL HEALTH FOR STUDENTS

The Public Health Service of the U.S. Department of Health and Human Services has directed research/teaching institutions to develop programs to promote the health and safety of individuals who have substantial contact with animals. The program at the Eastern Illinois University consists of informational material about several specific conditions or practices that students should understand.

This information is intended for students who have contact with animals in courses that do not involve research. If you have contact with animals as part of research for credit or a thesis, you need the other document, titled "Occupational Health for Animal Workers."

Please **read this material, complete the last page of this packet (entitled "Certification of Receipt and Understanding of *Occupational Health for Students*"), detach it, and return it to your instructor.** You should keep the rest of the material for future reference.

References:

1. *Public Health Service Policy on Humane Care and Use of Laboratory Animals*, National Institutes of Health, Office for Protection from Research Risks, March 1996.
2. *Guide for the Care and Use of Laboratory Animals*, Institute of Laboratory Animal Resources, Commission on Life Sciences, National Research Council, 1996, National Academy Press, Washington, D.C.
3. *Occupational Health and Safety in the Care and Use of Research Animals*, Institute of Laboratory Animal Resources, Commission on Life Sciences, National Research Council, 1997, National Academy Press, Washington, D.C.

Reporting Injury or Illness

Any injury or hazardous exposure arising out of and in the course of employment must be reported at once to the immediate supervisor for instructions on procedures for obtaining medical treatment. Reporting of all accidents to the supervisor is necessary and must be prompt and accurate in order to assure proper handling of claims...”

Personal Hygiene¹

There are a number of personal hygiene issues which apply to all workers 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. There will be exceptions to this only where specific permission has been obtained from the IACUC for the retention of these animals.
3. Gloves should be worn at all times for the handling of animals, their fluids, tissues, or excreta. All contaminated or infected substances should be handled in such a way as to minimize aerosols.
4. There are numerous special requirements for the handling of large animals. Please contact the attending veterinarians for details.
5. Laboratory coats should be worn over street clothes when working with animals. This will decrease the contamination of street clothing. These laboratory clothes should not be worn during eating.
6. Additional precautions are necessary for a number of specific hazardous agents. If infected material is being used in a laboratory, then specific guidelines should be followed for the handling of these biologically sensitive materials.
7. All work surfaces should be decontaminated daily and after any spill of animal-related material.
8. Careful hand washing should be done after handling of animals and prior to leaving the laboratory for any reason.
9. Certain infections are transmitted from animals to humans primarily by the animals' feces or urine entering a human's body by mouth. Examples of this usual means of transmission are *Salmonella*, *Shigella* and *Entamoeba*. It cannot be stressed too much that every precaution should be taken to avoid this mode of transmission by alertness and very careful personal hygiene.

¹Adapted from *Biosafety in Microbiological & Biomedical Laboratories*, 4th edition, US Department of Health & Human Services, Center for Disease Control, National Institutes of Health, 4th edition, May 1999, U.S. Govt. Printing Office.

Animal Bites, Scratches, Kicks

Bites, scratches, and kicks are potential hazards associated with research animal contact. They may be prevented or minimized through proper training in animal-handling technique. Personnel working with large domestic animals might sustain crushing injuries when the animals kick, fall, or simply shift their body weight.

Several factors need to be considered in work with animals. Animals respond to sounds and smells in the same manner as people. They also hear, smell, and react to things that people might not detect. These reactions can produce injury to an animal handler. Many animals have a “flight zone;” approaches by another animal or a person cause an attempt to escape. Being aware of an animal’s flight zone will help avoid injuries. Many animals are social and show visible signs of distress if isolated from others of their kind. Knowledge of species-specific animal behavior is important in reducing risks.

Animal bites, especially those by rodents that inflict little tissue damage, are sometimes considered inconsequential by personnel who are unfamiliar with the host of diseases that can spread by this mechanism. Serious complications can result from wound contamination by the normal oral flora of the animals involved. Personnel should maintain current tetanus immunizations, seek prompt medical review of wounds, and initiate veterinary evaluation of the animal involved, if warranted. Rabies, B-virus infection, hantavirus infection, cat-scratch fever, tularemia, rat-bite fever, and orf are among the specific diseases that can be transmitted by animal bites.

Sharps

Sharps are ubiquitous in animal care. Needles, broken glass, syringes, pipette, scalpels --all are commonly used in animal facilities and laboratories. Puncture-resistant and leakproof containers for sharps should be available at critical locations in the facilities. Improper disposal of sharps with regular trash may expose humans to the risk of wounds and potentially infectious agents and hazardous chemicals. State and municipal regulations are specific in the requirements for proper disposal of “sharps.”

Basic rules to remember:

- Never recap needles after use - have a “sharps” container nearby.
- Dispose of syringes, needles, glass, vials, and scalpels in a “sharps” container only.
- If you cut yourself, perform first aid immediately. Report the incident to your supervisor. If you can safely identify the source of your injury, do so.

Human Allergies to Animals

Allergic reactions to animals are among the most common conditions that adversely affect the health of workers involved in the care and use of animals in research. One survey demonstrated that three-fourths of all institutions with laboratory animals had animal care workers with allergic symptoms. The estimated prevalence of allergic symptoms in the population of regularly exposed animal care workers ranges from 10% to 44%. An estimated 10% of laboratory workers eventually develop occupation-related asthma.

Allergies can be manifested in a number of ways, including allergic rhinitis (a condition characterized by runny nose and sneezing similar to hay fever), allergic conjunctivitis (irritation and tearing of the eyes), asthma, and contact urticaria (“hives,” a skin condition which is caused by contact with a substance to which an individual is allergic). In rare instances, a person who has become sensitized to an animal protein in the saliva of the animal experiences a generalized allergic reaction (anaphylaxis) when bitten by an animal. Anaphylactic reactions vary from mild generalized urticarial reactions to profound life-threatening reactions. Allergy to animals is particularly common in workers exposed to animals such as cats, rabbits, mice, rats, gerbils and guinea pigs.

Most of the reactions are of the allergic rhinitis and allergic conjunctivitis type. Less than half of these will actually be asthma. People who have a prior personal history or family 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 and conjunctivitis than do people without such personal or family history. Because of this, it is necessary that everyone exercise certain precautions to attempt to prevent animal allergy. These attempts should not be focused only on people with atopic history.

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 housed, as well as manipulated and/or handled, in extremely well ventilated areas to prevent build-up of animal allergens. Workers should always wear gloves and laboratory coats to prevent direct exposure to the animals, animal urine, and animal dander. Frequent handwashing is important. In order to prevent the inhalation of contaminated material, cages should be changed frequently, and masks should be worn during the changing of cages.

Despite adherence to preventive techniques, some individuals will develop allergies after contact with laboratory animals. Rarely will this be so severe that people are forced to change their line of work. More commonly, this can be controlled with the use of personal protective equipment (PPE) while working with animals. The use of gloves, laboratory coats, masks, eyewear, and other types of protective clothing that are worn only in animal rooms is encouraged. Once a person develops allergic symptoms, disposable surgical masks are usually ineffective. Some commercial dust respirators can exclude up to 98% of mouse urinary allergens. High-efficiency respirators are most likely to be of value, but they are cumbersome, and often are not used appropriately. Employees using effective respiratory protection (respirators) will need respiratory fit-testing and medical clearance. Certainly, any one with symptoms related to animal exposure should seek medical diagnosis and treatment.

Tetanus

Tetanus (lockjaw) is an acute, often fatal disease caused by the toxin of the tetanus bacillus. The bacterium usually enters the body in spore form, often through a puncture wound contaminated with soil, street dust, or animal feces, or through lacerations, burns, and trivial or unnoticed wounds. The Public Health Service Advisory Committee on Immunization Practices recommends immunization against tetanus every 10 years. An immunization is also recommended if a particularly tetanus-prone injury occurs in an employee where more than five years has elapsed since the last immunization. Every employee should have up-to-date tetanus immunizations. If you need a tetanus immunization or have questions regarding this issue, please contact your supervisor.

**Certification of Receipt and Understanding of
*Occupational Health for Students***

I have read and understood the Eastern Illinois University *Occupational Health for Students* document, including the articles on “Reporting Injury or Illness,” “Personal Hygiene,” “Animal Bites, Scratches, Kicks,” “Sharps,” “Human Allergies to Animals,” and “Tetanus.”

Signature

Date

Name Typed or Printed

Animal Care & Use Protocol #(s)

Department

PLEASE DETACH THIS PAGE AND RETURN IT TO YOUR INSTRUCTOR.