

THE UNIVERSITY OF CENTRAL ARKANSAS OCCUPATIONAL HEALTH FOR ANIMAL CARE PERSONNEL

The Public Health Service of the U.S. Department of Health and Human Services has directed research/training institutions to develop programs to promote the health and safety of employees who have substantial animal contact and are therefore, "at risk". The program at the University of Central Arkansas has two components.

- *Education:* This document contains informational material about several specific conditions or practices with which animal personnel should be familiar. All personnel with animal contact are asked to read this material, complete the Documentation Form, by visiting Student Health Services, detach it, and return it to the Grants & Compliance Coordinator. You should keep the rest of the material for future reference.
- *Health Care Program:* Before working with animals, personnel should visit Student Health Services for an assessment of health and allergy history and, if necessary, immunization against tetanus.

Reporting Injury or Illness

Every person working with animals should be aware of the potential danger from animal bites or other injuries that occur in animal facilities. In addition to the danger of tetanus, there are relatively rare diseases such as rat bite fever which are transmitted from animals to humans. Although an animal scratch or bite might not seem serious, its occurrence should be reported to one's supervisor immediately so that proper measures may be taken.

Personal Hygiene

There are a number of personal hygiene issues which apply to all personnel who are exposed to animals.

- There should be no eating, drinking, smoking, or applying of cosmetics in areas where animals are housed or used.
- No animals should be kept overnight anywhere except in the animal room designated for that animal. There will be exceptions to this only where specific permission has been obtained for the retention of these animals.
- All contaminated or infected substances should be handled in such a way as to minimize aerosols (for example, dust from bedding).

- Laboratory coats should be worn over street clothes when working with animals. This will decrease contamination of street clothing. These laboratory clothes should be left in the laboratory and should not be worn while eating.
- All work surfaces should be decontaminated daily and after any spill of animal related material.
- Careful hand washing should be done after handling of animals and prior to leaving the laboratory for any reason.
- Certain infections are transmitted from animals to humans primarily by the animals' feces or urine entering a human body by mouth. 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.

Zoonoses

Zoonoses are diseases that can be transmitted from animals to humans. These may be acquired through animal bites and scratches, contact with animal tissues, cultures, body fluids, and excreta, or exposure to aerosols produced as a result of activities such as cleaning cages. Personnel who work with laboratory rats and mice should be familiar with the zoonoses listed below.

Tetanus

Tetanus, commonly called lockjaw, is a bacterial disease that affects the nervous system. The organism that is responsible for tetanus is found everywhere, usually in soil, dust, and excreta. If tetanus bacteria get into a wound that receives little oxygen (for example, a puncture wound), they can multiply and produce a toxin that affects the central nervous system, leading to muscle spasms and possibly death. The incubation period is usually eight days but may range from three days to three weeks. Shorter incubation periods are associated with more heavily contaminated wounds. The first signs of tetanus infection are usually a headache and spasms of the jaw muscles. The victim may become irritable. As the poison spreads, it causes muscle spasms in the neck, arms, legs, and stomach. People with tetanus may have to spend several weeks in the hospital under intensive care. In the United States, three of every 10 persons who get tetanus die from it. Due to widespread immunization, tetanus is now a rare disease. 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 person where more than five years has elapsed since the last immunization.

Ringworm

Many species of animals are susceptible to fungi that cause the condition known as ringworm. The skin lesion usually spreads in a circular manner from the original point of infection, giving rise to the term ringworm. In humans, the disease usually consists of small, scaly, semi-bald, grayish patches with broken, lusterless hairs, with itching. Transmission of the disease is by direct contact with an infected animal. Personal hygiene is the best method of prevention and one should obtain medical assistance if the lesions are noted.

Rabies

Rabies is a relatively rare and devastating viral disease which can result in severe neurological problems and death. Most cases of rabies occur in wild animals although any mammal can contract the disease. The disease is virtually unheard of in laboratory mice and rats. Nonetheless, bites of any type should be reported immediately to one's supervisor.

Human Allergies to Animals

Allergies to animals are common and therefore one of the most important occupational problems occurring in workers exposed to animals. Allergies can be manifest 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). Allergies to animals are particularly common in workers exposed to animals such as cats, rabbits, mice, rats, gerbils, and guinea pigs. There is still some controversy regarding exactly what substance causes the allergy in a certain individual. Previously it had been thought that most allergies were caused by dander and debris from the skin and fur of an animal. More recent studies seem to suggest that exposure to animal urine, saliva, and fecal matter may be equally or more important. Exposure to animal urine may occur either through direct urine contact with skin or more commonly by inhaling dust from the bottom of a cage which has been contaminated with urine or fecal material.

Various studies show that between 15 and 20% of personnel exposed to animals will develop some symptoms of an allergy. This percentage may be even higher since some people are forced to leave their jobs because of the severity of the allergies that develop. Most of these reactions are of the allergic rhinitis and allergic conjunctivitis type. Fewer than half of these will actually be asthma. People who have a prior personal history or family history of asthma, hay fever, or eczema are more likely to develop rhinitis and conjunctivitis than people without such a personal or family history. Because of this, it is necessary that everyone exercise certain precautions to attempt to prevent an 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 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 an animal allergy. Animals should be worked with in extremely well ventilated areas to prevent build up of various particles in the air. Workers should always wear 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.

Despite the best preventive techniques, some individuals will develop allergies after contact with laboratory animals. Rarely this will be so severe that a person is forced to change his line of work. More commonly this 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. Certainly anyone with significant symptoms related to animal exposure should obtain medical advice.

Other Hazardous Materials

Animal care personnel may come into contact with materials other than animal tissue that could produce health risks. For example, personnel could be exposed to hazardous inhalants used for anesthesia (e.g., halothane gas). Precautions should be taken (e.g., fume hoods, gas scavenger equipment, masks), to minimize risks associated with such inhalants. Personnel who work with radioactive materials should take precautions that are specified by UCA's Radiation Safety Committee. Pregnant women or women who could be pregnant should be especially cautious when working with potentially hazardous materials.