



Dogs

All employees and students working with animals should be aware that laboratory animals may bite or scratch. In addition, handling of cages, pens and other equipment could cause cuts or scratches. Cuts, bites and scratches could potentially expose the employees to viral, bacterial, parasitic or allergic agents; which are transmissible from animals to humans. All dogs at UT Southwestern Medical Center are vaccinated for rabies infection. Rabies vaccination is maintained for the life of the dog. However, personnel who work with dogs are offered rabies vaccination through the Worker Protection Program. Although the risk of bites and scratches is species dependent; there are a few simple guidelines, which if followed, will significantly reduce the potential risks of such incidents. These include:

- Always wear appropriate personal protective equipment, especially hand and face/eye protection.
- If moving large contaminated items (e.g. non-human primate cages), wear heavy gloves.
- When available and appropriate, use mechanical restrainers according to IACUC guidelines when performing procedures on unanesthetized animals.
- All bites and scratches that result in bleeding should be immediately and thoroughly scrubbed and cleansed with soap and running water for at least 15 minutes. Notify supervisor and seek medical attention immediately
- There are some potential hazards inherent in any work environment. These include poor ergonomics, slips and falls, electrical safety hazards, etc. UT Southwestern Medical Center has developed a wide range of environmental health and safety guidelines to address these potential hazards.

INFECTIOUS DISEASE HAZARDS

- **Rabies:** Rabies virus (rhabdovirus) can infect almost any mammal; however it is very rare in the research environment because dogs are purchased from high quality sources with excellent vaccination and disease control programs.
 - **Reservoir/source of infection:** The source of infection to people is an infected animal. Dogs shed virus in their saliva 1-14 days before developing clinical signs. Any random-source (animal with an unknown clinical history) or wild animal exhibiting central nervous system signs that are progressive should be considered suspect for rabies.
 - **Transmission:** Contact with saliva, mucus membranes, or blood (e.g. bite, or saliva on an open wound).
 - **Disease in people:** Never reported in a research facility. Contracted from wild or unvaccinated animals; rabies in unvaccinated people is almost invariably fatal. causes swelling, regional lymphadenitis, pain. More severe disease (bacillary angiomatosis) in immuno-compromised people.

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- **Brucellosis:** associated with infected bites and scratches, this bacterial organism, *Brucella canis*, is found in dogs.
 - **Reservoir/source of infection to people:** Can infect dog colonies where it will be manifested by abortions, infertility, testicular abnormalities and poor semen quality.
 - **Transmission:** The mode of transmission of *B. canis* to people is not clear but is probably oral or transcutaneous contact with organism-infected blood or other tissues.
 - **Disease in people:** Flu-like symptoms that may recur are seen in humans.
- **Pasteurella multocida:** Has been associated with bites and scratches sustained from infected dogs.
- **Capnocytophaga canimorsus:** Also has been associated with dog bites. It can cause serious systemic illness.
- **Cryptosporidia:** Cryptosporidiosis (a protozoan infection) associated with many mammals.
 - **Reservoir/source of infection:** Many mammals, including dogs and pigs;
 - **Transmission:** Fecal/oral;
 - **Disease in people:** Self-limiting diarrhea except in immune compromised people where it can be quite severe. No treatment.
- **Giardia:**
 - **Reservoir/source:** Dogs, non-human primates, other mammals.
 - **Transmission:** Fecal/oral.
 - **Disease in people:** Diarrhea +/- other systemic signs. Usually responds to treatment.
- **Bacteria:** There are several bacterial pathogens, including *Salmonella* spp., and *Campylobacter* spp., that are frequently associated with diarrhea in dogs and may also cause disease in people.
 - **Reservoir/source to people:** Symptomatic or asymptomatic animals.
 - **Transmission:** Oral/fecal.
 - **Disease in people:** Diarrhea, dysentery. Most bacterial pathogens are responsive to symptomatic and /or antimicrobial therapy.
- **Enteric Helminths:** (such as Roundworms, Tapeworms)
 - **Ringworm:** This dermatophyte infection (most commonly *Microsporum* spp. and *Trichophyton* spp.) is commonly known as ringworm because of the characteristic circular lesion often associated with it. Dermatophytes are classified as fungi.
 - **Reservoir/source to people:** Many species of lab animals may be unapparent.
 - **Transmission:** Direct contact with infected animal.
 - **Disease in people:** Ringworm is usually self-limiting, often circular with reddened rough skin. Responsive to prescription topical therapy.
- **Leptospirosis:** *Leptospira* spp. are bacteria found in many animals but are most commonly associated with livestock and dogs. Transmission from laboratory rodents to people has been reported.
 - **Reservoir/source of infection to people:** Rats, mice, voles, hedgehogs, gerbils, squirrels, rabbits, hamsters, reptiles, dogs, sheep, goats, horses, standing water.
 - **Transmission:** Leptospire are shed in the urine of infected animals. Direct contact with urine or tissues via skin abrasions or contact with mucous membranes has been reported. Transmission can also occur through inhalation of infectious droplet aerosols and by ingestion.

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- **Disease in people:** Flu-like symptoms, mild to severe. Death has been reported.

HOW TO PROTECT YOURSELF

- Always wear appropriate personal protective equipment, especially hand and face/eye protection.
- If moving large contaminated items (e.g. cages), wear heavy gloves.
- All bites and scratches that result in bleeding should be immediately and thoroughly scrubbed and cleansed with soap and running water for at least 15 minutes.
- Avoid using sharps whenever possible; substitute manually operated pipettes for needles and syringes, and cannula for needles.
- Do not eat, drink or store food in research areas.
- Do not handle contact lenses in the laboratory.
- Wearing of gloves, lab coat or scrubs is required.
- Dispose of all waste materials into the appropriate waste stream.
- Use appropriate procedures and PPE for bagging, autoclaving, and washing of laboratory clothing.
- Restrict access to laboratories used in housing potentially infected animals

ALLERGY HAZARDS

Individuals who have been previously sensitized to dogs outside of the work place may be at greater risk of developing allergies to dogs. Exposure to dog allergens is via saliva, hair and skin. One of the most common health concerns in the laboratory animal setting is a work-associated allergy. The risk of developing an allergy depends on parameters such as species, facility, ventilation and the employee's "base-line" health status. There are also several individual risks which can be divided into four overlapping Risk Groups:

- **Normal:** No evidence of allergic disease;
- **Atopic:** Pre-existing allergic disease;
- **Asymptomatic:** Antibodies to animal allergens;
- **Symptomatic:** Clinical symptoms on exposure to allergenic animal proteins.
 - Symptoms of allergic reaction vary depending on the severity of the reaction and include:
 - **Contact urticaria** with symptoms such as: redness, itchiness of skin, welts and hives;
 - **Allergic conjunctivitis** with symptoms such as: sneezing, itchiness, clear nasal drainage, nasal congestion;
 - **Allergic rhinitis** with symptoms such as: sneezing, itchiness, clear nasal drainage, nasal congestion;
 - **Asthma** with symptoms such as: cough, wheezing, chest tightness, shortness of breath;
 - **Anaphylaxis** with symptoms such as: generalized itching, hives, throat tightness, eye or lip swelling, difficulty in swallowing, hoarseness, shortness of breath, dizziness, fainting, nausea, vomiting, abdominal cramps, and diarrhea.

HOW TO PROTECT YOURSELF

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- Wearing appropriate PPE and respiratory protection can help to limit the amount of animal dander exposure.
- Other personal protective equipment such as dust/mist masks or approved respirator masks (e.g., Type N95) are strongly recommended when working with animals.

PHYSICAL HAZARDS

- *Bites and scratches:* The potential for receiving a bite or scratch is an ever-present hazard that faces all employees working directly with laboratory animals and related equipment. Employees should be properly trained in handling and general restraint techniques of the species they are assigned to. Additionally, all staff should be familiar with first aid procedures specific to each species
- *Needlestick / Sharps injury*

HOW TO PROTECT YOURSELF

- Proper training and awareness of animal behavior are vitally important to avoid injuries.
- When available and appropriate, use mechanical restrainers when performing procedures on unanesthetized animals.
- Read and understand the protocol-related procedures before you start the experiment. If necessary, do a dry run.
- Do not recap needles; dispose of them in appropriate sharp containers.
- Use safety needles and sharp devices.
- Until you have washed your hands, keep them away from your mouth, nose and eyes.
- Please read and understand the special safety requirements for each work area or animal species.
- Clean all spills immediately.
- Report all incidents or equipment malfunctions to your supervisor immediately

PROTOCOL RELATED HAZARDS

Protocol-related hazards are defined as those specifically associated with either routine operational or experiment-specific protocols. Some general hazards also associated with protocols, such as the risk of fire in the use of bunsen burners or torches, or electrical hazards in the use of experiment-specific equipment, are not included in the category of protocol-related hazards. Protocol-related hazards are protocol-specific. For example:

- Hazards associated with the use of a specific viral vector carrying a transgene for toxin production or with a piece of prototype equipment to perform an experimental task.
- Experimental studies can involve any number of hazards such as the use of radioactive materials, infectious agents, toxins or toxic chemicals, flammable substances, etc.

HOW TO PROTECT YOURSELF

- Follow the steps in your approved safety plan.
- Educate yourself on the protocol specific hazards.

Additional information regarding various protocol-related hazards may be obtained from

www.utsouthwestern.edu/workerprotection

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