



Guidelines: Potential Animal Allergies and Zoonoses

1.0 INTRODUCTION

Most employees working in animal facilities find it similar to any other work environment. However, some employees may experience allergy symptoms that can be directly related to their work with or proximity to animals. Allergies can develop and the symptoms are expressed even when there is no direct contact with animals.

There are several zoonotic diseases associated with care and handling of research animals. Some of those diseases may not produce easily observable signs of illness in the animals. In general, humans contract zoonotic disease through contamination of lacerated or abraded skin or mucosal exposure or through inhalation. An important feature of many of the disease-causing agents is their opportunistic nature. The development of disease in a human host often requires a preexisting state in which the immune system is compromised. If you have an immune-compromising medical condition (e.g., AIDS/HIV positive or have had the spleen removed) or you are taking medications that impair your immune system (e.g., steroids, immunosuppressive drugs, or chemotherapy), you are at risk for contracting a zoonotic disease and should consult your health care provider.

2.0 ANIMALS ALLERGIES

Proteins in animal dander and excrement (urine and feces) may cause allergic reactions. Proteins that cause allergies are called “allergens” and may exist as airborne particles in animal facilities.

Fish and Amphibians – Individuals working with aquatic animals can become sensitized to the proteins excreted by fish and amphibians.

Reptiles - Human sensitivity to reptile allergens in the laboratory setting is rare. However, it is reasonable to assume, like with amphibians and fish, some people may become sensitized to reptile proteins through inhalation or skin contact.

Rodents - By far the greatest occupational risk to working with rodents is allergic reaction or the development of allergies. Those workers who have other allergies are at greater risk. Animal or animal products such as dander, hair, scales, fur, saliva and body waste, and urine in particular, contain powerful allergens that can cause both respiratory symptoms and skin disorders. The primary symptoms of an allergic reaction are nasal or eye symptoms, skin disorders, and asthma.

Birds - Individuals with exposure to birds and avian environments may develop allergic reactions to avian proteins (allergens).

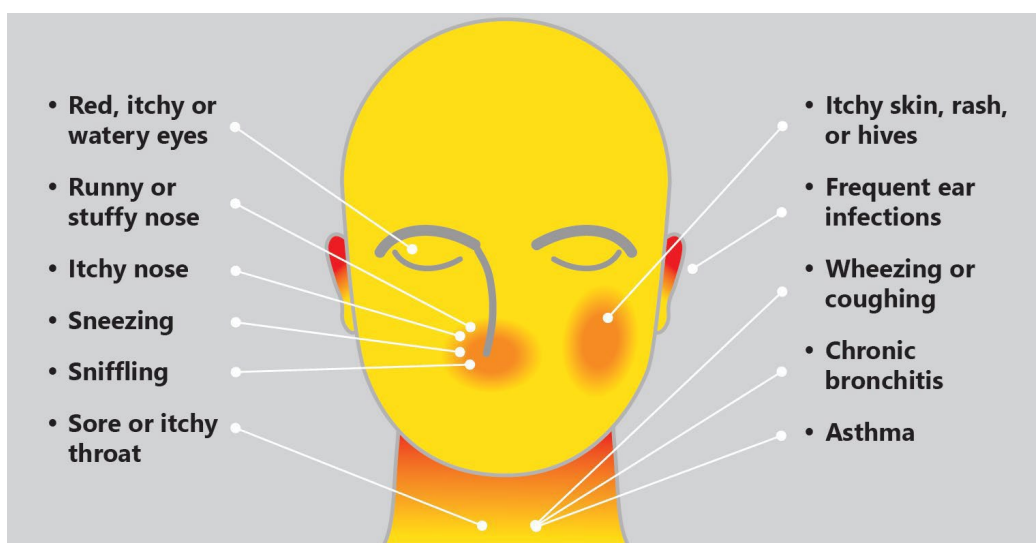
CAN ANYONE BECOME ALLERGIC TO LABORATORY ANIMALS?

Individuals that have existing allergies, a family history or susceptibility to allergens, or suppressed immune systems may be at a higher risk for developing allergies. Approximately 20-30 percent of individuals working with laboratory animals will develop an allergic reaction to animal proteins and 5-10 percent of individuals will develop asthma. Personnel may be exposed to allergens through inhalation and contact with skin, eyes and mucous membranes. Animal

allergens may be present in dander, feathers, skin, urine, saliva, serum and any contaminated feed or bedding materials. Risk factors for developing an allergic reaction include the history of previous allergies to animals.

WHAT ARE THE SYMPTOMS OF ANIMAL ALLERGIES?

The signs and symptoms of an allergic reaction are nasal discharge and congestion, conjunctivitis, tearing and eye itching, skin redness, rash or hives and lower airway symptoms (coughing, wheezing and shortness of breath). Individuals with symptoms suggestive of an allergic reaction related to a workplace allergen should report their concerns to their supervisor and consult a physician.



3.0 ZOONOTIC DISEASES

The RA-EHS program is designed to inform individuals who work with animals about potential zoonoses (diseases transmitted to humans from animals), personal hygiene to prevent zoonotic transmission, and other potential hazards associated with animal exposure. See Attachment 1 for a list of zoonoses diseases.

4.0 HOW DO I PROTECT MYSELF FROM ANIMAL ZOONOSSES & ALLERGENS?

Three levels of control are employed to prevent workers from contact with animal allergens: engineering controls, workplace practices or administrative controls, and personal protective equipment (PPE).

Engineering controls. For A&M-SA animal facility, these include biosafety cabinets, animal transfer stations, cage dumping stations, and individually ventilated caging systems. This HEPA-filtered containment equipment is maintained and calibrated to industry standards.

Air quality monitoring of high-risk areas is provided by EH&S. Personal and area monitoring may be performed to determine the effectiveness of controls.

Administrative controls. These include the Laboratory Animal Allergen Prevention Program. An Animal Exposure Risk Assessment form (ARA) that includes animal hazards, medical history, and factors that may influence allergy development is completed by enrolling (on-line) in the A&M-SA Occupational Health Program. An Occupational Medicine physician then reviews the completed ARA form. Based on the assessment, the following may be recommended: use of an N95 respirator, a follow-up evaluation with a physician.

PPE. Minimum PPE requirement for entering animal facilities that includes:

- Pants or other leg covering
 - Closed-toe/closed heel shoes worn with socks
 - Disposable, closed front gown
 - Gloves
 - Shoe covers
 - Face mask
 - Hair bonnet
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- Use proper PPE for work setting as appropriate (e.g. coverall, facemask, boot covers). Maintain dedicated protective clothing and footwear while working with animals or in animal facilities. Do not wear protective clothing outside of animal facility.
 - Wear disposable gloves during procedures that increase the likelihood of exposure to zoonotic agents (e.g. handling of aquatic animals or cleaning holding tanks / aquariums). Exercise increased caution when handling sick animals (i.e. animals showing clinical signs such as skin lesions and lethargy) or when you have an exposed break in skin (e.g. cut or scratch).
 - Use face masks/goggles when appropriate (i.e. activities where splashing of water may occur).

Safe Work Practices

1. Good Personal Hygiene

- Wash hands after working with animals or animal products and when leaving animal facilities.
- Cover abraded skin, cuts, scrapes or sores and do not allow wound contact with animals or contaminated materials.
- Avoid touching your face, eyes, nose, or mouth with unwashed hands or contaminated gloves.
- Do not eat, drink, or use tobacco products in animal facilities.

2. Cleaning and Disinfection

- Maintain clean, dry, and uncluttered animal areas and workspace.
- Disinfect laboratory work surfaces after each use. Use only disinfectants approved by facility management and that are suitable for the potential agents identified on this page.
- Dispose of deceased animals, animal products, items contaminated by animal products, contaminated materials, and laboratory waste in a facility approved manner.

3. Proper Sharps Handling

- Work only with one uncapped needle at a time and immediately dispose of after use in sharps receptacle.
- Avoid recapping needles whenever possible.

6.0 REFERENCES

1. [Occupational Health and Safety in the Care and Use of Research Animals \[NRC, 1997\]](#)
2. [Guide for the Care and Use of Laboratory Animals \[NRC, 2011\]](#)
3. [NIOSH: Preventing Asthma in Animal Handlers](#)