

### **How common are animal allergies?**

In the United States, an estimated 40 to 50 million people currently suffer from allergies. Hypersensitivity to household pets is a common problem in the population as a whole, and in the research setting allergies to laboratory animals (ALA) can become a serious concern. ALA affects approximately one out of every five people whose education or occupation requires significant exposure to laboratory animals.

### **What laboratory animal species can cause allergy problems?**

Rats and rabbits are the most frequently implicated species, but mouse allergies are becoming more apparent as the numbers of mice utilized increases and the research projects using them require more direct handling (e.g., surgical manipulations, individual testing and identification, etc.). Cat and dog allergies may also be occupational if a research project includes those species, and it is possible to develop allergic reactions to most other species after chronic exposure, including hamsters and ferrets.

### **I spend most of my time in the laboratory, and I only work with animals a few times a week. Can I still develop allergies?**

Although it is true that persons with very limited contact develop fewer problems, studies have shown that the problem of ALA can be just as severe in those handling animals for scientific purposes (research staff) as it is in those responsible for their primary care (caretaking staff).

### **I have problems with “hay fever” certain times of the year. Does that mean I’ll become allergic to animals?**

A history of previous allergies (i.e., atopy) is not a guarantee that animal-related problems will develop, but some studies have found a correlation between pre-existing atopy and ALA.

### **How do I know if I have ALA?**

The symptoms are generally evident after 6-24 months of exposure, but they may take years to develop and often become worse as years go by. Mild symptoms of ALA involve the eyes and nose (sneezing, runny nose, watery eyes; 80% of cases) and/or the skin (itchy welts or rashes; 40% of cases). Allergic responses to unrelated allergens can be additive, so “hay fever” or an associated occupational allergy (e.g., latex hypersensitivity) may cause ALA symptoms to worsen.

### **I don't mind a few sniffles now and then when I'm around animals. Is there really anything to worry about?**

These minor problems typically will not go away if the exposure to animal allergens does not change, and they can ultimately progress to the most serious manifestation of ALA, which is animal-related asthma. Asthma is a serious, potentially debilitating problem that is considered an end-stage lesion in the progression of ALA, and it will predictably affect a percentage of workers who ignore the earlier symptoms of rhinitis or conjunctivitis (runny eyes and nose). Asthma is estimated to affect 2% of all people using animals during their first year of exposure, and an additional 2% per year thereafter.

### **What happens to people who develop serious problems?**

ALA can have serious consequences for affected personnel, not just in terms of personal health but in determining future career options. Studies have shown that about 50% of those with symptoms (or 9% of all workers) will eventually stop working with animals permanently or temporarily because of the discomfort involved with ALA. Many of those people can change career tracks or be reassigned to non-animal duties within the same institution, but as many as 15% of affected workers will eventually quit their jobs because of ALA. Even after making a change, manifestations of asthma may not completely subside until 6 months or more after ending contact with the animals.

### **What causes these allergies?**

It was once thought that dog and cat allergies were provoked by dander or fur, but it is now known that the actual allergens are proteins in the saliva which are present on the skin and hair. In the case of ALA involving rodents the major allergens are low-molecular weight proteins excreted in the urine. These proteins adhere to the skin and hair and can also be found in soiled bedding and distributed as airborne contamination in rooms where animals are housed or manipulated.

### **What are the options for treating ALA?**

There are three general approaches to the treatment of allergies: avoidance of the allergen (through environmental control methods), medication to relieve symptoms, and immunologic desensitization (allergy shots). Medications can provide relief, but a few things should be kept in mind. First, although there are over-the-counter drugs

*(continued on back flap)*

(continued from inside flap)

which can give temporary symptomatic relief, it is best to seek the advice of a physician before self-prescribing because these drugs can mask the warning signs of developing asthma and cause drowsiness. Second, if an antihistamine is used, best results will be obtained only if the drug is taken PRIOR to allergen exposure, not after the symptoms begin. In addition, other types of anti-allergy drugs that do not induce drowsiness are now available by prescription if necessary. Standard allergy shots (immuno-therapy) to reduce allergic sensitivity to cats/dogs have improved in recent years and may be considered for select individuals.

**I have ALA and I want to continue working with animals. What can I do?**

Allergen avoidance is the only sure way to deal with ALA, but this can be a problem if an individual's choice of occupation involves animals. If complete avoidance is impossible, it is critical that exposure be minimized as much as possible. The good news is that there are many people with ALA who are able to continue to work with animals by taking some simple precautions. The use of personal protective equipment should include use of a tight-fitting mask, gloves, and a long-sleeved lab coat or other dedicated uniform at all times when working with animals. In some cases a respirator or a filtered air-supplied face mask may be warranted. Users can take advantage of filter-topped caging (if available in the facility) to contain allergens when animals are transported or held, and an understanding of the proper use of the different types of ventilated workstations which may be present in laboratories and/or the animal facility will help minimize aerosol exposure when cages are opened. Irritant chemicals can worsen

airborne allergy symptoms, so persons with ALA should try to avoid unnecessary exposure to irritants such as dust, tobacco smoke, and air pollution. If you are experiencing symptoms of ALA, specialized medical professionals are available to help evaluate and treat your problems.

**I don't have allergies now. Is there anything I can do to prevent them?**

It is important to stress that procedures to minimize allergen contact (such as those listed above) should be followed by all exposed persons even if ALA symptoms are not present, because this may prevent the development of clinical signs or at least greatly slow the progression of ALA.

**Why is my supervisor interested in my allergy status? Isn't that my business?**

Current federal guidelines require that all personnel beginning to work with animals be given information regarding ALA and the precautions that should be taken. ALA should be treated like any other occupational health hazard, and personnel should notify their supervisors of known or potential work-related allergies. Clear procedures should be established in each facility for reporting all allergic reactions in the same way that accidents, bites, and scratches are reported.

**Questions?**  
Any concerns or questions you have about working with vertebrate animals and allergies can be discussed with the occupational medical provider, Dr. Patrick O'Callahan 725-5440 or Stanford Environmental Health & Safety, 723-0448.

DoR 1/00

**ANIMAL ALLERGIES:  
An Occupational Concern**

**Frequently Asked Questions**

**Laboratory Animal  
Occupational Health Program**

**Administrative Panel on Laboratory  
Animal Care (A-PLAC)  
Research Compliance  
Environmental Health and Safety  
Office of the Dean of Research**

**Guidance for Personnel  
Working with Laboratory Animals  
at Stanford University**