

ACVS

Guidelines for Reducing Allergies and Asthma in Animal Facilities

Significance:

Some people develop allergies to the animals they work with or to their own pets. The incidence can be quite high - some estimate that as many as 15% of a human population is allergic to some animal species - for those who regularly work with animals as part of their occupation (such as researchers or animal care providers), the estimate is up to 40%. If you're allergic to a species that you work with in your job, it can be quite debilitating. If you suffer from asthma, working with a species to which you are allergic can be a significant health risk.

Symptoms:

Allergic individuals may display any of a number of symptoms; 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 (characterized by wheezing and shortness of breath), or by contact dermatitis (a red, bumpy rash that may appear where your skin touches the animal). If you have a stuffy nose or other respiratory signs, and if it seems to last longer than a common cold (weeks instead of days) then you may very well be suffering from an allergy. If you develop suspicious symptoms whenever you're exposed to a certain species, then you're very likely to have an animal allergy.

Human Biology:

Workers may be allergic to any animal species. The allergens are proteins that are excreted in the animals' saliva, urine, and from various glands associated with the skin. The proteins tend to be sticky and become associated with the animal's hair and with particles of dander. The allergens are unique to each species of animal, so it's possible to be allergic to mice and not to rats and vice versa. It's also possible to be allergic to multiple species; in fact a person who is already allergic to one allergen (animal or otherwise) has a greater chance of becoming allergic to a new allergen than a person that has no allergies at all.

Animal:

The animals most commonly associated with workplace allergies are mice and rats, perhaps because these are the most common laboratory animals. Other animals to which allergies are seen include rabbits, cats, guinea pigs, dogs, horses, and even cattle and pigs. An individual could potentially be allergic to almost any animal.

Relative Risk:

Exposure to animals is only one of many risk factors associated with asthma and allergy. Various studies have shown that the incidence of animal allergies among animal handlers may be as low as 10% or as high as 40%. While this means that the

majority of animal handlers don't suffer from allergies to the animals under their care, it also means that animal handlers have an incidence of allergy and asthma about three times as high as that seen in workers who do not work with animals. Allergy is clearly an important risk associated with animals.

Prevention and Treatment:

Those who work with animals should be aware of the signs and symptoms of animal allergies. If you work with animals, you must disclose this on your Position Hazard Form (completed at the time of employment) and if you feel you may suffer from allergy to the animals you work with, you must report to your Supervisor who will direct you to Staff Health for counseling and appropriate treatment. If you're a supervisor, you should be aware of the possibility of allergy in your workers, and you should be aware of factors in the workplace that can increase or decrease the exposure of your workers to animal allergens.

Allergy can often be managed by a combination of medical management and workplace strategies. It's important to consult with a physician to determine the cause of your allergy in order to manage it effectively.

The most effective way to control and prevent allergies is to minimize exposure to the allergens. If you work in an animal facility, or if you work with animals in a laboratory setting, the following practices may help reduce your exposure to animal allergens:

- When possible, perform animal manipulations in a ventilated hood or a biosafety cabinet.
- When you're not working in a hood or cabinet, make sure that the animal room or other work area is adequately ventilated and that all the air handling equipment in the room is in good order. If there is doubt, your supervisor can ask Facilities to measure the number of air changes in the room. Animal rooms should deliver at least 10 air changes per hour.
- Utilize additional containment strategies where feasible, such as microisolator lids and ventilated rack systems.
- Don't wear your street clothes when working with animals. Wear dedicated, personal protective equipment (PPE).
- PPE should include your dedicated facility scrubs, and room specific PPE as per the room instructions. A NIOSH N-95 respirator is strongly recommended for entry into all animal holding rooms, even if you do not have allergies or asthma.
- Dispose of outer PPE as directed in the rooms. Launder your protective clothing (scrubs) frequently at work. Don't take your protective clothing home with you.
- Wash your hands frequently. Avoid touching your hands to your face while working in the vivarium (wearing a surgical mask is a good way to prevent you from touching your nose or eyes with your

hands). Shower after work.

- Keep cages and your work area clean.
- Use bedding that produces least amount of dust and utilize techniques that reduce dust production.
- If taking a cage of rodents to a procedure room, place the rodents in a clean cage with clean bedding (a dirty cage has significantly more allergen in the bedding than a clean cage would have).
- Reduce your skin contact with animals by wearing gloves and long-sleeved lab coats.

If you suffer from allergies to a species you work with, you must wear an approved, NIOSH certified N95 respirator when in the animal facility. Respirators, in general, are most effective when used with other methods described above and should not be used as a substitute for good workplace hygiene.

If your job requires you to be exposed to something to which you are allergic, you should discuss with your physician what effect the allergy may have on your future health. Some workers are so severely affected that only a change in career will control their allergies.

References:

- National Institutes of Health; Laboratory Animal Allergy Prevention Program, May 24, 2011
- Preventing Asthma in Animal Handlers. January, 1998. DHHS (NIOSH) Publication No. 97-116. Available on the Web at: <http://www.cdc.gov/niosh/animalrt.html>.
- Laboratory Animal Allergy, Bush, R.K; Wood, R.A.; Eggleston, P.A., Journal of Allergy and Clinical Immunology 1998; 102:99-112.
- Duke University and Medical Center. Guidelines for Asthma & Allergy Prevention in Animal Facilities.
- McGill, University Animal Care Committee Theory Course. Occupational Health and Safety.