

# How Do I MINIMIZE MY RISK OF DEVELOPING ANIMAL ALLERGIES?

## WHAT ARE ALLERGIES?

An allergy is an extreme sensitivity to a usually harmless substance, such as food, dust, or pollen. About 20% of Americans suffer from an allergic disease with symptoms such as itchy, watery eyes, sneezing, or an itchy, runny nose. Skin rashes and hives or more severe symptoms such as asthma may also occur.

## WHY IS THIS IMPORTANT TO ME?

About 30% of workers who are exposed to lab animals develop a laboratory animal allergy (LAA) and up to 73% of those with pre-existing allergic disease eventually develop allergy to laboratory animals. **About 10% of those who have clinical symptoms when exposed to animal proteins develop work-related asthma.** LAA is most likely to occur in individuals with previously known allergies, especially to domestic pets; however, more than a third of the workers developing LAA do not report any previous allergies. The allergens are sticky and may be carried on an exposed person's hair or clothing so family members and non-exposed coworkers may be sensitized to the allergens and develop a related allergy.

## WHAT ARE THE ROUTES AND SOURCES OF EXPOSURE?

Skin exposure, injection, ingestion and inhalation are the main routes of exposure to allergens, with inhalation being the most common way allergens enter the body.

Sources of animal allergens vary with animal species. For example, the most important allergens have been found in the urine of rats and in the urine, saliva, and pelts of guinea pigs. Other important sources of allergens include rabbit pelts, cat saliva and dander, dog dander, and horse serum and dander. Exposures to birds have been associated with other respiratory diseases, including hypersensitivity pneumonitis. Even exposure to low amounts of these animal allergens can result in allergies, but the risk increases as the worker's exposure increases.



Note that exposure to animal allergens doesn't always happen in a lab environment. Up to 20% of dairy farmers, for example, report a sensitivity to cattle, and horses are a potent source of allergens. You can also be exposed to animal allergens if you have pets or other animals at home.

## AM I AT RISK FOR LAA?

Any person exposed to animal allergens can be at risk for developing work-related allergy symptoms. However, workers who had symptoms or signs of allergies before they began working with animals are more likely to develop animal-induced asthma. Those who are sensitized to domestic animals, such as cats and dogs, are more likely to develop sensitivity to laboratory animals and asthma than non-allergic workers.

## HOW DO I PREVENT OR MINIMIZE MY RISK OF DEVELOPING LAA?

Reducing or preventing exposure to animal allergens can improve your quality of life and prevent the more debilitating symptoms that can jeopardize a career. Pay attention to the following:

- Perform animal manipulations within ventilated hoods or biological safety cabinets whenever possible. Never use horizontal laminar flow hoods.
- Dumping of dirty bedding must be done in a HEPA-filtered unit or device approved for this purpose. If engineering controls such as a HEPA-filtered dumping station is not available, respirators must be used.
- Avoid wearing street clothes while working with animals.
- Leave work clothes at the workplace to avoid potential exposure problems for family members. Be sure your work clothes are laundered and changed daily.
- Be sure to wash your hands and face after working with or around animals. Whenever possible, shower and change clothes after extended or excessive exposures. Do not wear lab clothes while eating.
- Keep cages and animal areas clean.
- Reduce exposure to animal products such as dander, serum, and urine by using gloves, lab coats, and approved particulate respirators. Remember, though, that you must be trained, fit tested and medically qualified by Environmental Health and Safety (EHS) before wearing a respirator!
- Modify ventilation and filtration systems: increase the ventilation rate and humidity in the animal-housing areas; ventilate animal-housing and handling areas separately from the rest of the facility; direct airflow away from workers and toward the backs of the animal cages; and, install ventilated animal cage racks or filter-top animal cages.
- Keep animal density as low as possible (number of animals per cubic meter of room volume).
- Use absorbent pads for bedding. If these are not available, use corncob bedding instead of sawdust bedding.
- Use an animal species or sex that is known to be less allergenic than others.
- Attend training to learn about animal allergies and the steps you can take to reduce your exposures at work.

## WHERE CAN I GO FOR MORE INFORMATION OR ASSISTANCE?

If you are experiencing allergic symptoms as a result of your animal-related exposures at work, contact EHS at 231-3600. Virginia Tech's Office of Environmental Health and Safety offers a variety of services for LAA and other occupational exposures via its Occupational Health Assurance Program (OHAP). Please go to [www.ehss.vt.edu](http://www.ehss.vt.edu) to find out more about the LAA program at EHS.

References: <http://www.cdc.gov/niosh/animairt.html>; [http://www.umdj.edu/eohssweb/publications/animal\\_allergies\\_guide.pdf](http://www.umdj.edu/eohssweb/publications/animal_allergies_guide.pdf)  
<http://dohs.ors.od.nih.gov/pdf/LAAPP.pdf>; [www.nap.edu/catalog/4988.html](http://www.nap.edu/catalog/4988.html)