

Laboratory Animal Allergens and Related Respiratory Protection

Laboratory Animal Allergies (LAA) are a significant concern for the University and employees who work in areas with laboratory research animals. This fact sheet describes what these allergens are, their causes, prevention, control, and treatment.

Introduction

Laboratory animal allergens are allergenic materials commonly associated with the proteins in the hair/fur, dander, saliva, and urine of laboratory research animals such as mice, rats, rabbits, guinea pigs, cats, dogs, and farm animals.

Exposure to these allergens causes symptoms such as nasal congestion, runny nose, eye irritation, cough, and or skin rash. More serious symptoms, such as asthma, hives, and anaphylaxis, may occur.

Approximately 11-44% of laboratory animal handlers will develop symptoms, with up to 30% of these cases occurring in the first year.

Information about LAA and the University's **Laboratory Animal Allergen Exposure Control Program** can be found at: <https://z.umn.edu/bohd-laaecp>

Who is at risk?

Anyone who is exposed to laboratory animals is at risk of developing LAA, but risk is a function of dose and duration. Employees are at greater risk, therefore, if they have prolonged or high level exposure to animal urine, feces, dander, or contaminated bedding. Research shows that the greatest exposure occurs during cage dumping or cleaning.

Other risks include animal feeding and care, working in high density areas, working for prolonged periods of time, working around cages without filter tops, and working with non-absorbent bedding.

Employees may have an increased risk if they have a personal or family history of allergies, a positive skin test or blood test for one or more allergies, or a prior pet or domestic animal allergy.

How is LAA prevented?

There are many ways to reduce or eliminate exposure.

The best technique is to prevent high level exposure via the installation and use of a local exhaust ventilation system. Cage changing and related animal care should occur in a biological safety cabinet. Cage dumping should be performed with a biobubble or other such system.

Laminar flow hoods or stations should never be used for this purpose, as they offer no employee protection with respect to allergens and are likely to exacerbate exposures.

Another proven technique to reduce exposures is to limit the frequency or duration of exposures through administrative techniques such as work rotation, and limiting a particular employee's exposure time. Some employees may require work restrictions or additional personal protective equipment.

When the controls outlined above are not feasible, or while they are being implemented, the University requires that employees enroll in the Respiratory Protection Program (RPP) for mandatory use of an appropriate respirator.

In summary, RPP enrollment will require an employee to participate in annual respiratory protection training, baseline and periodic medical evaluations, and baseline and annual fit testing. Most importantly, it will be incumbent upon supervisors to consistently enforce the use of respiratory protection for employees who perform activities such as cage dumping, cage changing, etc.

The University's RPP can provide guidance to identify the types of activities that will require respiratory protection, and the type of respiratory protection that must be provided. Information about the **Respiratory Protection Program** can be found at: <https://z.umn.edu/bohd-rpp>

Questions?

Contact the Biosafety and Occupational Health Department (BOHD) at (612) 626-5008 or uohs@umn.edu.