

ALLERGIES TO LABORATORY ANIMALS

A Significant Health Risk

What is an allergy?

An allergy is an exaggerated reaction by the body's immune system to proteins. In the case of allergies to laboratory animals, the proteins most frequently associated with the allergic reactions are found in the animal's urine, saliva, and dander.

What are the symptoms of allergic reactions to laboratory animals and when do they occur?

The earliest symptoms include nasal stuffiness, a "runny" nose, sneezing, red irritated eyes and hives. Symptoms that are particularly troubling are those that suggest the worker is developing asthma. These symptoms include coughing, wheezing and shortness of breath. Asthma resulting from allergic reactions to laboratory animals can result in severe and occasionally disabling breathing problems. Rarely, an employee with allergic symptoms will develop a potentially life-threatening reaction following an animal bite.

Most workers who develop allergic reactions to laboratory animals will do so within the first twelve months of working with them. Infrequently, reactions only occur after working with animals for several years. Initially, the symptoms are present within minutes of the worker's exposure to the animals. Approximately half of allergic workers will have their initial symptoms subside and then recur three or four hours following the exposure.

What laboratory animals are associated with allergic reactions?

Most animals used in research have been identified as the source of workers' allergy symptoms. Because mice and rats are the animals most frequently used in research studies, there are more reports of allergies to rodents than other laboratory animals.

What are the chances that a worker will develop an allergic reaction to laboratory animals?

It has been reported that one out of every three to five individuals who works with laboratory animals will develop allergic symptoms. Further, one in twenty workers with allergies to animal proteins will develop asthma as a result of their contact with laboratory animals.

Are there factors that are associated with an increased risk for developing an allergic reaction to laboratory animals?

Yes, a history of allergy to other animals (typically cats and dogs) is the best predictor for who will develop an allergy to animals found in research laboratories. Other factors associated with allergic reactions to laboratory animals include the individual's intensity, frequency and route of the exposure to the animals. Activities such as handling animals and cleaning their cages may be associated with an increased risk of exposure to the animal proteins and thereby place the worker at greater risk of developing an allergic reaction. Although workers who have a personal or family history for asthma, seasonal allergies and dermatitis are also at increased risk, individuals with no prior history of allergies and only brief work exposures can also develop allergic reactions to laboratory animals.

What can be done to reduce the chance that a worker will develop an allergic reaction to laboratory animals?

The best approach for reducing the likelihood that a worker will develop an allergic reaction is to eliminate or minimize their exposure to the proteins found in animal urine, saliva and dander. Ideally, this is accomplished by limiting the chances that workers will inhale or have skin contact with animal proteins. In addition to using well-designed air handling and waste management systems in research areas, workers can reduce their risk of exposure by routinely using dust/mist masks, gloves and gowns. If additional respiratory protection is required, the worker should contact the Environmental Health and Safety Department, at (617) 638-8830 on Boston University Medical Campus (BUMC) or (617) 353-4094 on Charles River Campus (CRC). You must also complete a medical clearance for respirator usage form available online and submit it to OHS on the campus that you will be working at with animals or their tissues. Mail form to address below and mark confidential. Make sure every question is answered.

What should you do if you are concerned that you may have some of the symptoms that suggest an allergy to laboratory animals?

Notify your supervisor of your concern and call BMC Occupational & Environmental Medicine at (617) 638-8400 at the BU Medical Campus or the BU Occupational Health Center (CRC) at (617) 353-6630 to schedule an appointment for an evaluation. A clinician will review your medical and work history and perform a targeted physical exam. Based upon the clinical findings, additional testing may be performed. With early identification of allergic reactions to animals and appropriate treatment, most people can avoid further injury or the development of asthma.

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