

Occupational Health Program for Personnel Exposed to Vertebrate Animals East Tennessee State University

Animal-Related Allergies

Allergic reactions to animals are among the most common conditions that adversely affect the health of worker involved in the care and use of animals in research. The estimated prevalence of allergic symptoms in this group ranges from 10% to 44%. Up to 73% of persons with pre-existing allergic disease eventually develop an allergy to laboratory animals.

Allergy is most often manifested by nasal symptoms, itchy eyes and rashes. Symptoms usually evolve over an exposure period of one (1) to two (2) years. Occupation-related asthma, a more serious disorder, can develop in about 10% of persons with allergic disease who work with laboratory animals. This condition can lead to chronic symptoms, persisting for months to years, even after exposure ceases.

Contact urticaria ('hives') is typically due to the application of an allergen (usually a protein or glycoprotein) directly onto the skin. A common example is the development of wheal and flare reactions that produce welts when a person's skin and the tail of a mouse or rat come into contact. Scratches by cats and dogs can produce similar responses. Latex in rubber gloves is another cause of contact urticaria.

In rare instances, a person who has become sensitized to an animal protein experiences a generalized allergic reaction termed anaphylaxis when bitten by an animal. Anaphylactic reactions vary from mild generalized urticaria reactions to profound life-threatening reactions. Anaphylaxis can be evident as diffuse itching hives, and swelling of the face, lips, and tongue. Some people experience difficulty in breathing because of laryngeal edema or develop asthma with wheezing. In some cases shock can lead to loss of consciousness.

The diagnosis of animal sensitivity is

based on the history of symptoms in conjunction with exposure as well as on 'allergy tests', the demonstration of specific IgE antibodies to animal allergens.

Exposure reduction and exposure avoidance measures should be undertaken when people become sensitized and develop animal-related allergy symptoms. Medicines to reduce or prevent allergic reactions might be necessary. Many highly sensitized people will continue to have symptoms in spite of exposure reduction and appropriate medication and therefore must avoid animal-allergen exposure completely.

Persons with sensitivities to laboratory animals should avoid repetitive exposure. Also some work practices and personal protective equipment can reduce the potential development of allergies and perhaps alter the severity. Development of aerosols and dust should be avoided when working with animals. Protective clothing such as a long-sleeved coat and gloves should be worn when working with animals. Once sensitization has occurred it may be necessary to also wear a dust-mist respirator, disposable surgical masks usually are not sufficient for protection.

Remember: If you think you are developing allergy symptoms related to laboratory animal exposure, you should consult with your physician or contact the Occupational Health Nurse in the College of Nursing for a consultation

Reference: Occupational Health and Safety in the Care and Use of Research Animals. National Research Council. National Academy Press 1997. ISBN 309-05299-8