

**University of Prince Edward Island  
Animal Care Committee  
Codes of Practice**

**Codes of Practice #:** ACC-CP-06

**Codes of Practice Title:** Laboratory Animal Allergy  
**Issued by:** UPEI Animal Care Committee  
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**1.0 Purpose**

- 1.1 The University of Prince Edward Island is committed to providing a safe working and learning environment for all users of research, teaching, and service animals. Awareness of laboratory animal allergy is a critical component to preventing, reporting, and managing workplace associated illness.

**2.0 Scope**

- 2.1 All users of University of Prince Edward Island Animal Facilities

**3.0 Definitions and Abbreviations**

- 3.1 ACC: Animal Care Committee
- 3.2 Allergy: a damaging immune response to a protein to which the body has become hypersensitive.
- 3.3 Animal Facilities: all vivaria at UPEI.
- 3.4 Fomite: inanimate object or material that can transfer allergen or disease, such as door handle, clothing, etc.
- 3.5 LAA: Laboratory Animal Allergy
- 3.6 PPE: Personal Protective Equipment
- 3.7 UPEI: University of Prince Edward Island
- 3.8 Vivaria: enclosures, containers, or structures adapted or prepared for keeping animals under semi-natural conditions for observation or study.

#### 4.0 Responsibility

- 4.1 The Animal Care Committee (ACC) represents UPEI commitment to responsible care and use of experimental animals through the formulation and implementation of policies and Codes of Practice.
- 4.2 The Health, Safety and Environment Department is responsible for assisting in fulfilling an individual's health and safety responsibilities and to provide oversight and guidance on health and safety compliance
- 4.3 The Facility Manager or facility specific responsible person is responsible for providing facility, study, and user appropriate personal protective equipment (PPE).
- 4.4 The animal user is responsible for appropriately using facility specific PPE and following facility practices, reporting any symptoms of laboratory animal allergies (LAA) and communicating any supplemental PPE needs or evaluations to their supervisor and the Health, Safety and Environment Department.

#### 5.0 Codes of Practice

- 5.1 An allergy is an over-reaction of the body's immune response to a protein. Reports vary, but LAA occur in 10-44% of laboratory animal workers over their career. Allergy symptoms include nasal congestion or runny nose, sneezing, red irritated eyes or hives. Symptoms can progress to include coughing, wheezing, and shortness of breath. Severe anaphylactic responses are very rare but possible.
- 5.2 The most common proteins causing LAA are animal dander, urine and saliva from rodents (mice and rats) and rabbits. These proteins can be aerosolized from animal movement, animal handling, and bedding disturbances and can also be transmitted through direct contact. Immunogenic proteins are expected to be present in any room containing open-housed animals or uncovered, used bedding material. Workers can also be exposed to these proteins via fomite transmission after animal handling or cage changes. Mice, rats and rabbits comprise the vast majority of laboratory species and are also associated with the majority of reported LAA.
- 5.3 LAA is best managed through prevention. The hierarchy of prevention control should be:
  - 1. Elimination or substitution  
Substitution is difficult to accomplish as using alternate *in vitro* systems or using fewer animals is already encouraged through the use of the Three R's during Animal Use Protocol review. Androgen drives the production of some allergenic proteins and these therefore have higher production in males than females, especially in rats and mice.

## 2. Engineering controls

Engineering controls focus on minimizing aerosolized allergens. Rodents should be housed in individually ventilated cages or in filter-top cages; this minimizes allergen aerosolization from normal animal movements. All animal handling should be performed in an animal transfer station or similar equipment that provides an air curtain between the user and the animal and filters exhaust air. Regular room air changes prevent allergen build up in the air. Cage changes should be performed in a manner that minimizes aerosolization such as a bedding dump station, an automatic cage washer, or wetting the bedding prior to dumping.

## 3. Administrative controls

Administrative controls include workplace rules and procedures as well as restricting facility access to required personnel. To create a safe working environment, it is important to train personnel in appropriate animal and facility procedures as well as ensure regularly scheduled facility cleaning.

## 4. PPE

PPE is used to minimize exposure to a known environmental contaminant and to serve as personal protection in case engineering controls are incomplete. PPE performance is highly affected by user compliance in both appropriate donning and appropriate usage. For example, it is critical to maintain awareness when utilizing PPE so that it does not become a fomite (i.e. transmitting allergens by holding a mouse in a gloved hand, putting the mouse down and then using that same hand to touch your face). Required PPE is assessed based on the needs of the facility and the individual and is established in consultation with the Facility Manager (or individual responsible for the animal facility) and University Veterinarian; the Health, Safety and Environment Department should be consulted as necessary. PPE above the minimum requirement may be required depending on the health status of the user. Possible PPE includes lab coat, dedicated clothing, hair bonnet, shoe covers, gloves, and N95 respirator. Contact the Health, Safety and Environment Department prior to using N95 respirators as they are sized and must be fit-tested prior to use. The Health, Safety and Environment Department can complete qualitative fit testing to ensure the right type and size N95 respirator is selected to provide an adequate seal between the respirator and user's face (ACC Code of Practice Personal Protective Equipment in UPEI Animal Facilities).

Controlling exposure to an environmental contaminant such as animal allergens requires use of all levels in the hierarchy of prevention control. The levels work together to reduce risk, support appropriate user training and performance, and provide protective redundancy in the system.

5.4 If an Animal Facility user develops allergic symptoms associated with Facility use, the user should immediately notify their supervisor and the Health, Safety and Environment Department by submitting a UPEI Incident Report Form.

Allergic symptoms include but are not limited to:

- nasal congestion
- runny nose
- sneezing
- red, irritated eyes
- hives
- coughing
- wheezing
- shortness of breath
- anaphylaxis

## 6.0 References

- 6.1 Canadian Council on Animal Care Occupational Health and Safety  
<https://www.ccac.ca/en/training/modules/core-stream/occupational-health-and-safety.html>
- 6.2 M. Corradi, Ferdenzi E. and Mutti A. The characteristics, treatment and prevention of laboratory animal allergy. *Lab Anim(NY)*. 2012. 42(1): 26-33
- 6.3 J. Feary and Cullinan P. Laboratory animal allergy: a new world. *Curr Opin Allergy Clin Immunol*. 2016. 16(2):107-112.
- 6.4 M. Jones. Laboratory Animal Allergy in the Modern Era. *Curr Allergy Asthma Rep*. 2015. 15(12):73.
- 6.5 UPEI Incident Report Form  
<http://www.upei.ca/vpaf/health-and-safety/incident-reporting>
- 6.6 ACC-CP-07 Personal Protective Equipment in UPEI Animal Facilities