

- B. Wearing these items may reduce the incidence of developing allergies to animal dander, etc. If you suspect that you may be allergic or becoming sensitive to a particular species, please inform your supervisor and consult with Occupational Health Services (OHS). Additional respiratory protective gear will be provided upon recommendations of the OHS.

V. Safety Considerations:

Laboratory Animal Allergies-this is the most common health problem among people working with laboratory animals. According to the American Association for Laboratory Animal Science (AALAS), at least 30 percent of people working with laboratory animals develop allergic symptoms.

VI. References:

Acha, P and B Szyfres. 1989. Zoonoses and Communicable Diseases Common to Man and Animals. Pan American Health Organization, Washington DC.

Chomel, BB. 1992. Zoonoses of house pets other than dogs, cats and birds. Pediatric Infectious Disease Journal 11:479-87.

Committee on Occupational Health and Safety in Research Animals Facilities, Institute of Laboratory Animal Resources, Commission of Life Sciences, National Research Council. 1997. Occupational Health and Safety in the Care and Use of Research Animals. National Academic Press. Washington, DC.

Percy, DH and SW Barthold. 1993. Pathology of Rabbits and Rodents. Iowa State University Press. Ames, Iowa.

EHR & ULAR at the University of Pennsylvania. Allergens of Rodents.
<http://www.upenn.edu/regulatoryaffairs/animal/zoonoses-rodents04.doc>

VII. Attachments:

- A. Allergens of Rodents
- B. Major Zoonoses of Rodents

VIII. Document History:

Version Number	Effective Date	Author	Reason
1	December 9, 2005	L.R. Cheatham	New policy
2	December 10, 2014	E.A. Browning	Revised

A. ALLERGENS OF RODENTS

Rats: Rats are among the most commonly used laboratory animals. The major sources of rat allergen exposure appear to be urine and saliva. The major rat urine allergen is Rat n (isoforms 1 A and 1 B). Disturbance of bedding can leave allergens airborne for 15-35 minutes. Exposure concentrations seem to be task related. Cage cleaning results in a much higher concentration of airborne allergens than does other tasks like weighing, shaving, blood collection, and urine collection.

Mice: This group is also a heavily used laboratory animal, and is another important source of allergen exposure. The major mouse allergen is Mus m1. This urinary protein is very similar to Rat n 1B, in that it is produced in the liver and saliva, and is secreted in urine.

Guinea Pigs: Immunogenic studies have identified allergenic compounds in the dander, urine, fur and saliva of guinea pigs. Urine appears to be the major source of allergen.

Gerbils: These animals are also used in the research environment, but to a lesser extent than rats and mice. Allergic sensitivity to them has been reported, but the allergens are yet to be identified.

B. Major Zoonoses of Rodents

PATHOGEN	TRANSMISSION	ANIMAL DISEASE	HUMAN DISEASE
<i>Streptobacillus moniliformis</i> , <i>Spirillum minor</i> (Rat bite fever, Haverhill fever)	<ul style="list-style-type: none"> • animal bites, ingestion of contaminated food products 	<ul style="list-style-type: none"> • usually a subclinical infection, but purulent lesions have been reported in some animals 	<ul style="list-style-type: none"> • polyarthritits, myalgias, regional lymphadenopathy, fever
<i>Salmonellosis</i> (most rodents)	<ul style="list-style-type: none"> • fecal-oral, ingestion of contaminated products 	<ul style="list-style-type: none"> • malaise, dehydration, bloody diarrhea 	<ul style="list-style-type: none"> • dehydration, vomiting, abdominal pain, nausea
<i>Leptospirosis</i> (most rodents)	<ul style="list-style-type: none"> • direct contact with contaminated urine 	<ul style="list-style-type: none"> • infertility, fever, anorexia, anemia 	<ul style="list-style-type: none"> • headache, myalgia, conjunctivitis, nausea
<i>Lymphocytic Choriomeningitis</i> (LCM)	<ul style="list-style-type: none"> • exposure to saliva or urine from infected animals or to infected cell lines in the lab • fomites may play a role 	<ul style="list-style-type: none"> • viremia, viuria, and chronic wasting disease 	<ul style="list-style-type: none"> • subclinical infection, mild flu-like symptoms • viral meningitis and encephalitis (rare)
<i>Hantavirus</i> (most rodents)	<ul style="list-style-type: none"> • exposure to aerosols, urine, and fecal material from infected animals • fomites may play a role 	<ul style="list-style-type: none"> • subclinical 	<ul style="list-style-type: none"> • fever, myalgia, petechiation, abdominal pain, headache
<i>Dermatophytosis</i> (<i>Trichophyton mentagrophytes</i>)	<ul style="list-style-type: none"> • direct contact 	<ul style="list-style-type: none"> • circular raised erythematous lesion with hyperkeratosis and hair loss 	<ul style="list-style-type: none"> • circular raised erythematous lesions with hyperkeratosis and hair loss
<i>Ornythonyssius Bacoti</i> (Tropical Rat Mite)	<ul style="list-style-type: none"> • direct contact with cage materials 	<ul style="list-style-type: none"> • assymptomatic to moderate pruritis 	<ul style="list-style-type: none"> • severe pruritis
<i>Sarcoptes scabei</i> (Guinea Pigs and Hamsters)	<ul style="list-style-type: none"> • direct contact with infected animal 	<ul style="list-style-type: none"> • intense pruritus 	<ul style="list-style-type: none"> • intense pruritus