



Institutional Animal Care and Use Committee Guidelines and Policies

June, 2007

GUIDELINES FOR RISK REDUCTION WHEN WORKING AROUND ANIMALS:

This document presents some general guidelines for reducing your risk from the main types of hazards present in animal research. These hazards include **Physical hazards** (e.g. bites, scratches, kicks, sharps, noise, ergonomic hazards, wet floors, electricity, steam), **Chemical hazards** (e.g. anesthetics or other laboratory chemicals which may be flammable, explosive, corrosive, irritating or toxic), **Biological hazards** (e.g. allergies and zoonotic agents like viruses, bacteria or parasites which can be transmitted between animals and human) and **“Protocol-specific” hazards** (e.g. use of radioactive materials or radiation, infectious agents or recombinant DNA agents). This is only a summary of the main types of strategies available and is not intended to be an all inclusive information source. It is important that you consult with your supervisor for additional information about appropriate safety precautions and methods of hazard control as well as for hands-on training needed for your specific duties! At any time, you or your supervisor can request additional risk assessment and advice from the Office of Environmental Health and Safety or the veterinary staff of the BRF.

Personal Hygiene

- Do not eat, drink, chew gum, use tobacco products handle contact lenses, apply cosmetics or take or apply medicine in areas where animals are present.
- Keep hands away from your mouth, nose, and eyes when handling animals.
- Wash hands after handling animals and prior to leaving animal care and use areas.

Personal Protective Equipment (PPE)

Laboratory coats, scrubs, disposable coveralls or other garments should be worn to protect street clothes from contamination when handling animals. Gloves should be worn whenever handling animals, their fluids, tissues, excretions or soiled bedding to reduce exposure to allergens and potentially zoonotic agents. Follow the specific animal protocol requirements for additional protective equipment that may be required such as hair covers, surgical masks or respirators, eye protection and booties as directed by your supervisor. Some rooms in the BRF (Biohazard areas) require special PPE in order to even enter the room. Special requirements posted on the door to such areas must always be followed. Protective clothing and equipment should not be worn in public areas (such as cafeteria or library) and should be disposed of properly or left in the area of use, depending on instructions.

If a person is required to use, or chooses to use a respirator they must be enrolled in the **Respiratory Protection Program**. This program is administered by the Office of Student Affairs. Additional information can be obtained from the Office of Environmental Health and Safety (X3420).



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Allergen Reduction

Allergic reactions are among the most common conditions that adversely affect the health of personnel involved in the care and use of animals in research. Rats, mice, guinea pigs, rabbits and cats are among the most important inducers of allergies in laboratory animal workers. Individuals who are already sensitized (for example due to pre-existing allergies to domestic cats or other pets) may be more susceptible to developing allergies to laboratory animals. Allergens present in the urine, saliva, fur, dander, bedding and other unknown sources are aerosolized during handling of laboratory animals, clipping hair, and cleaning animal cages and rooms.

Procedures should be performed to minimize contact with animal dander, hair, scales, fur, saliva, urine and feces. This involves the use of personal protective equipment (PPE) such as laboratory coats, gloves, face masks, respiratory equipment and well as the use of biosafety cabinets, hoods and dump stations. The following good laboratory practices will help reduce your exposure to animal allergens:

- Whenever possible, perform animal manipulations in a ventilated hood or a biosafety cabinet. If this is not possible, a dust mask or surgical mask may be helpful.
- When not working in a hood or cabinet, make sure that the animal room or other work area is adequately ventilated and that all the air handling equipment in the room is in good order.
- Reduce skin contact with animals by wearing gloves and long-sleeved lab coats.
- Don't wear your street clothes when working with animals. Wear dedicated, protective clothing.
- Launder your protective clothing at work, or have it cleaned by a professional service (provided at the university). Don't take your protective clothing home with you!
- Wash your hands frequently; wash hands, face and neck before leaving the work area.
- Avoid touching your hands to your face while working with animals and animal equipment.
- Consider using hair covers since allergens in the hair may be carried home resulting in prolonged exposure.
- Keep the work area as clean as possible, wipe up urine spills and clean up the area frequently if shaving animals.
- If you suffer from allergies to a species you must work with, consider wearing an approved, NIOSH certified N95 respirator when in the animal facility. Respirators are, in general, less effective than the other methods shown above and should not be used as a substitute for good workplace hygiene.



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Allergies to latex gloves and latex-containing masks and respirators used during animal procedures may also develop in animal workers. Personnel with latex allergies should use alternatives such as nitrile or vinyl gloves and latex-free masks and respirators.

If you feel you may suffer from an allergy related to the animals you work with, report to your supervisor and to the EHS office as well as your physician. Many allergies can be effectively managed by a combination of medical management and workplace strategies.

Reference on Allergies:

Preventing Asthma in Animal Handlers. January, 1998. DHHS (NIOSH) Publication No. 97-116. Available on the Web at: <http://www.cdc.gov/niosh/animalrt.html>.

Sharps

- Exercise caution when using sharps such as needles, scalpels, razor blades and glass pipettes. Special care is required in the use of needles to avoid needle stick injuries.
- Always dispose of sharps including needles, without recapping, directly into an appropriate sharps container.
- Appropriate restraint or sedation of animals during procedures involving needles or other sharps decreases the risk of injury. Sometimes it is advisable to have a second person available to assist in animal handling.

Chemicals

Burns and irritation of the skin are possible chemical injuries associated with animal care and use. Understand the risks and precautions for working with disinfectants, anesthetic gases, chemicals used for preserving tissues (e.g. formaldehyde), and other chemicals. Consult the Material Safety Data Sheet (MSDS) for each chemical in use to better understand the risks associated with a substance. Exposure to anesthetic waste gases must be minimized by using effective scavenging techniques.

Laboratory Animal Maintenance and Transport

Animals and animal cages must be stored and transported in a contained manner to protect personnel from potential exposure to animal allergens, bites and scratches. For example, in order to minimize liberation of airborne animal allergens, laboratory personnel should ensure that filter tops are placed on mice and rat cages during transport or storage. Soiled cages may also be contained in bags as a means of minimizing allergen exposure during transport. Personnel should use non-public corridors and service elevators to minimize potential exposure to the public. Animals that are to be moved through areas of access by the public should be visually obscured.



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Bites and Scratches

All animals are capable of inflicting bites and scratches. Small animals, such as rodents and rabbits usually deliver relatively minor wounds. Bite and scratch wounds can become infected by the normal bacterial flora of the animal's mouth or toenails, or by bacterial flora from the individual's skin. To prevent bites and scratches use proper animal handling techniques. Protective garments, such as gloves, gauntlets and long-sleeved laboratory coats limit injury to the hands and arms. Contact the PI or the BRF staff for guidance on appropriate animal handling and restraining devices.

In case of an animal bite or scratch **immediately wash the wound with plenty of soap and water**, contact your supervisor and, if necessary, seek emergency medical care. Report all incidents of animal bites or scratches to your supervisor and to Security at X3288.

Housekeeping

Poor housekeeping practices can increase the seriousness of other hazards associated with animal care and use. Housekeeping should be sufficient to keep work surfaces clean and clear of clutter, obstructions, waste, and other materials. Keep walkways and egress pathways clean and free of debris at all times. Clean up your work area frequently!

Pressure Vessels

Compressed-gas cylinders and other pressurized vessels present a substantial hazard to workers if an uncontrolled or improper release of pressure occurs. Compressed-gas cylinders **must be secured at all times and capped when not in use**. Do not transport gas cylinders without appropriate personal protective equipment (i.e., safety shoes). Cylinders are to be transported on a gas cylinder transport cart and under no circumstance shall cylinders be "rocked" or "rolled" to a new location.

Electricity

Electrical equipment in labs and housing areas must be grounded, with plugs and cords in good repair (i.e., no frayed cords or exposed wires). Extension cords must not be used as a long-term solution in place of permanent wiring as they can create other hazards such as tripping. A qualified electrician must make electrical repairs. Contact the BRF Manager at X8470 to report any necessary repairs and he will arrange this with Operations & Maintenance.

High Pressure Water and Steam

High pressure water and steam are physical hazards for animal handlers who utilize equipment such as autoclaves, power washers, cage washers. When unloading an autoclave, verify that the pressure is near zero prior to opening the door. Slowly crack open the door and allow the steam to gradually escape. Allow materials in the autoclave to cool for 10 minutes prior to removal and use heat resistant gloves and boot covers, as necessary. Do not allow untrained personnel to operate such equipment.



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Wet floors

Wet floors are a prominent physical hazard in animal areas. Do your part in promptly reporting or eliminating wet floor surfaces. If it is necessary to walk across wet floors, use extreme caution. Proper non-slip shoes or protective boots are recommended for environments that consistently have wet floor surfaces. When possible, post wet floor signs to alert coworkers and visitors of this hazard.

Ergonomics

Properly designed work spaces and work place practices can reduce the risk of musculoskeletal injury. For example, storing heavy objects on the floor or above chest level should be avoided. Racks or carts should be pushed rather than pulled. The ability to change tasks within a workday helps to lessen static postures or repetitive motions that can result in injury. Contact the Office of Environmental, Health and Safety at X3420 if an **ergonomic assessment** is necessary for a particular task.

Noise

Excessive noise can result from animals, cage washers, and other sources. OSHA regulations impose limits to noise exposure. When noise levels exceed OSHA permissible exposure limits and engineering controls are not feasible, protective equipment (ear plugs) must be used to minimize exposures. Contact the Office of Environmental, Health and Safety at X3420 for noise testing, as necessary.

Eye Protection

Certain areas contain non-ionizing radiation sources such as UV germicidal lamps, transilluminators or lasers. Exposure to such sources can be damaging to eyes and skin and thus it is important to wear proper eye protection (as well as to protect skin) in these areas. Contact the Office of Environmental, Health and Safety at X3420 for additional information.

Waste Disposal

Uncontaminated (i.e. not containing hazardous chemical, biological or radiological materials) animal carcasses, tissues, body parts, blood and materials (e.g. gauze) visibly contaminated with blood must be placed into a non-transparent plastic bag. Bags used for uncontaminated waste disposal should be sealed and transported to the designated disposal area in the BRF.



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SUMMARY - BEST PRACTICES TO REDUCE RISKS ASSOCIATED WITH RESEARCH ANIMALS:

- Never eat, drink, smoke, handle contact lenses, apply cosmetics, or take or apply medicine in areas where research animals are kept.
- Keep hands away from mouth, nose, and eyes.
- Remove gloves and wash hands after handling animals or tissues derived from them and before leaving areas where animals are kept.
- Wear the required PPE (personal protective equipment) in all areas within the animal facility. Solid toed shoes are required in all areas of the BRF
- Wear special PPE required in posted areas and for specific protocols.
- Do not enter areas marked as Biohazard unless you have received proper training and have the necessary PPE.
- Avoid the use of sharps whenever possible. Take extreme care when using a needle and syringe to inject research animals or when using sharps during necropsy procedures. Never remove, recap, bend, break, or clip used needles from disposable syringes.
- Use mechanical pipetting devices (no mouth pipetting!).
- Perform procedures carefully to reduce the possibility of creating splashes or aerosols.
- Conduct operations that generate hazardous aerosols in biological safety cabinets or other ventilated enclosures.
- Keep doors closed to rooms where research animals are kept.
- Promptly decontaminate work surfaces when procedures are completed and after surfaces are soiled by spills of animal material or waste.
- Properly and promptly dispose of animal waste and bedding.
- Do not handle equipment that you have not been trained to operate (autoclave, cage washer, anesthesia device, etc)
- Exercise extra caution in wet areas (cage washing and aquatic animal zones)
- Do not perform any job for which you are not adequately trained.