



Duke University & Duke University Medical Center
Animal Care & Use Program
Policy



ENRICHMENT FOR SPECIES OTHER THAN NON-HUMAN PRIMATES

PERFORMANCE STANDARD: Animals housed at the Duke University Medical Center (DUMC) and Duke University will be provided with species appropriate enrichment and opportunities to express species specific behaviors that meet or exceed regulatory requirements.

BACKGROUND: The Animal Welfare Act and The Guide for the Care and Use of Laboratory Animals (Guide) detail basic behavioral management expectations in the broad areas of structural environment, social environment, and activity. General laboratory animal expectations assume that animals that are relaxed and comfortable and able to express species specific behaviors are a more stable research platform and provide more accurate research data. Exemptions require annual approval by the IACUC.

ROLES:

1. Research and DLAR staff will abide by the institutions policy as described in this document unless PRIOR approval for an exemption has been obtained from the IACUC.
2. Researchers will submit an annual exemption request (if they desire continuation of the exemption to environmental enrichment) with the Annual Protocol Report.

PROTECTIVE POSTURES REQUIRED: Personnel Protective Equipment (PPE) routinely required for normal activity in animal rooms is required when individuals are providing enrichment as well.

POLICY:

1. Cats:
 - a. Cats will be group or pair housed when space is available, animals are compatible, and research aims do not limit that type of housing.
 - b. All cats must be provided with raised resting areas (as defined by USDA regulations).
 - c. Cats should be provided with species specific manipulanda.
 - d. Cats with claws may require material/objects to express normal sharpening movements.
 - e. Material/objects should be easily sanitizable or disposable.
 - f. DLAR personnel (husbandry and vet tech) as well as approved research personnel may provide time for human interaction as enrichment. Consultation with the PI is necessary prior to modifying the existing care or interaction with the research animal, to prevent any untoward effects upon the research outcomes.
 - g. DLAR personnel (husbandry and vet tech) as well as approved research personnel may provide novel treat items as enrichment if not contra-indicated by research goals.
 - h. Consultation with the PI is necessary prior to modifying the existing care or interaction with the research animal, to prevent any untoward effects upon the research outcomes.
 - i. Food enrichment will be provided at least one time per month.
 - j. Requests to exempt cats from receiving enrichment, interaction, treats, or group housing must be provided in writing from the principal investigator and have received prior approval on the animal care protocol approved by DIACUC.

2. Dogs:

- a. Dogs may be pair housed when space is available, animals are compatible, and research aims do not limit that type of housing.
- b. All dogs will be provided with either raised resting cots or at least a surface so that dogs may choose not to sleep directly on the floor of the cage or run.
- c. All dogs will have at least one item of species specific manipulanda.
- d. Dogs housed individually with less than 2 times the USDA required floor space for that dog will be provided with the opportunity for exercise at least 3 times a week.
- e. Exercise opportunity may include walking on a leash or group playtime with other dogs and/or humans in a large space.
- f. Time periods for exercise opportunities will be determined by the enrichment coordinator and/or veterinary staff.
- g. Dogs housed individually with greater than 2 times the USDA required floor space do meet exercise requirements per the Animal Welfare Act but may still be provided with exercise opportunities as described in above.
- h. DLAR personnel (husbandry and vet tech) as well as approved research personnel may provide time for human interaction as enrichment. Consultation with the PI is necessary prior to modifying the existing care or interaction with the research animal, to prevent any untoward effects upon the research outcomes.
- i. DLAR personnel (husbandry and vet tech) as well as approved research personnel may provide novel treat items as enrichment if not contra-indicated by research goals.
- j. Consultation with the PI is necessary prior to modifying the existing care or interaction with the research animal, to prevent any untoward effects upon the research outcomes.
- k. Food enrichment will be provided at least one time per month.
- l. Requests to exempt dogs from receiving enrichment, interaction, treats, or group housing must be provided in writing from the principal investigator must be approved by the Duke Institutional Animal Care and Use Committee (DIACUC)

3. Swine:

- a. Swine will be group or pair housed when space is available, animals are compatible, and research aims do not limit that type of housing.
- b. Swine will be provided species specific manipulanda in their cage.
- c. DLAR personnel (husbandry and vet tech) as well as approved research personnel may provide time for human interaction as enrichment. Consultation with the PI is necessary prior to modifying the existing care or interaction with the research animal, to prevent any untoward effects upon the research outcomes.
- d. DLAR personnel (husbandry and vet tech) as well as approved research personnel may provide novel treat items as enrichment if not contra-indicated by research goals.
- e. Consultation with the PI is necessary prior to modifying the existing care or interaction with the research animal, to prevent any untoward effects upon the research outcomes.
- f. Food enrichment will be provided at least one time per month

4. Rabbits

- a. All rabbits will have at least one item of species specific manipulanda in their cage.
- b. Rabbits may be brushed to provide human interaction and reduce fur ingestion.
- c. Rabbits may receive playtime in a designated playcage in the treatment room.
- d. DLAR personnel (husbandry and vet tech) as well as approved research personnel may provide time for human interaction as enrichment. Consultation with the PI is necessary prior to modifying the existing care or interaction with the research animal, to prevent any untoward effects upon the research outcomes.

- e. DLAR personnel (husbandry and vet tech) as well as approved research personnel may provide novel treat items as enrichment if not contra-indicated by research goals.
- f. Consultation with the PI is necessary prior to modifying the existing care or interaction with the research animal, to prevent any untoward effects upon the research outcomes.
- g. Food enrichment will be provided at least one time per month.

5. Avian Species

- a. Avian species will be pair or group housed when space is available, animals are compatible, and research aims do not limit that type of housing.
- b. Avian species will be provided with various species specific manipulanda.
- c. Avian species will be provided with items to foster species specific behavior at least once per month.

6. Guinea pigs

- a. Guinea pigs will be group or pair housed when space is available, animals are compatible, and research aims do not limit that type of housing.
- b. Housing devices (huts/tubes) will be placed in each cage.
- c. DLAR personnel (husbandry and vet tech) as well as approved research personnel may provide time for human interaction as enrichment. Consultation with the PI is necessary prior to modifying the existing care or interaction with the research animal, to prevent any untoward effects upon the research outcomes.
- d. DLAR personnel (husbandry and vet tech) as well as approved research personnel may provide novel treat items as enrichment if not contra-indicated by research goals.
- e. Consultation with the PI is necessary prior to modifying the existing care or interaction with the research animal, to prevent any untoward effects upon the research outcomes.
- f. Food enrichment will be provided at least one time per month.
- g. Guinea pigs may be held in a cage as single pregnant sows for the last 1/3 of gestation (approximately 3 weeks) to prevent cage mate trauma. This specific housing arrangement DOES NOT require a separate exemption. This specific housing is considered a positive animal welfare activity, for the benefit of the pregnant sow

7. Ferrets

- a. Ferrets will be group or pair housed when space is available, animals are compatible, and research aims do not limit that type of housing
- b. Housing devices (boxes/tubes/huts) will be placed in each cage.
- c. Ferrets will be given species specific manipulanda.
- d. DLAR personnel (husbandry and vet tech) as well as approved research personnel may provide time for human interaction as enrichment. Consultation with the PI is necessary prior to modifying the existing care or interaction with the research animal, to prevent any untoward effects upon the research outcomes.
- e. DLAR personnel (husbandry and vet tech) as well as approved research personnel may provide novel treat items as enrichment if not contra-indicated by research goals.
- f. Consultation with the PI is necessary prior to modifying the existing care or interaction with the research animal, to prevent any untoward effects upon the research outcomes.
- g. Food enrichment will be provided at least one time per month.

8. Mice and rats

- a. Mice and rats may be provided with some type of nesting material in addition to the regular bedding to foster species-specific behaviors.
- b. Mice and rats will be group housed unless prior protocol exemption has been approved.
- c. DLAR personnel (husbandry and vet tech) as well as approved research personnel may provide time for human interaction as enrichment. Consultation with the PI is necessary prior to modifying the existing care or interaction with the research animal, to prevent any untoward effects upon the research outcomes.
- d. DLAR personnel (husbandry and vet tech) as well as approved research personnel may provide novel treat items as enrichment if not contra-indicated by research goals.
- e. Consultation with the PI is necessary prior to modifying the existing care or interaction with the research animal, to prevent any untoward effects upon the research outcomes.
- f. Housing items and manipulanda may be provided if space allows.
- g. Male mice identified by the PI in consultation with Duke veterinary staff as exhibiting aggressive behavior may be singly housed with inanimate enrichment (e.g. crawl tubes, tunnels, exploratory manipulanda). This single housing is not considered an exception to The Guide but is approved under this policy as a focused activity for the well being of the animal.
- h. Mice or rats may be held in a cage as single pregnant females for the last 1/3 of gestation (approximately 1 week) to prevent cage mate trauma. This specific housing arrangement DOES NOT require a separate exemption. This specific housing is considered a positive animal welfare activity, for the benefit of the pregnant female.

9. Other large agricultural animals (i.e. equine, caprine, ovine)

- a. Other large agricultural animals will be group or pair housed when space is available, animals are compatible, and research aims do not limit that type of housing
- b. Large agricultural animals will be group or pair housed according to species.
- c. Weather/season permitting, animals shall have daily access to pasture type environments.
- d. When single housed, generally in the vivarium, animal must have visual presence and direct contact (must see and / or have contact with compatible species).
- e. If no other compatible species is available for a singly housed animal, alternative enrichment measures will be employed.
- f. DLAR personnel (husbandry and vet tech) as well as approved research personnel may provide time for human interaction as enrichment. Consultation with the PI is necessary prior to modifying the existing care or interaction with the research animal, to prevent any untoward effects upon the research outcomes.
- g. DLAR personnel (husbandry and vet tech) as well as approved research personnel may provide novel treat items as enrichment if not contra-indicated by research goals.
- h. Consultation with the PI is necessary prior to modifying the existing care or interaction with the research animal, to prevent any untoward effects upon the research outcomes.
- i. Food enrichment will be provided at least one time per month.

10. Aquatic species

- a. Schooling fish (ex: zebrafish) should be group housed and / or provided with visual obstacles to offer hiding places when space is available, animals are compatible, and research aims do not limit that type of housing.
- b. Non-schooling fish (ex: flounder) should be provided with visual barriers from other animals.
- c. Amphibians must be group or pair housed when space is available, animals are compatible, and research aims do not limit that type of housing
- d. Amphibians will be provided with hiding places.
- e. For wild-caught animals and fish or non-traditional experimental subject studies, captive care should always try to replicate the natural habitats in which the animals live.
- f. Captive habitats should match natural habitats as closely as possible in temperature range, day length, physical structures, refugia, and cohabitation by compatible species. Thus, each investigator should be prepared to define how the holding facility accommodates each species need for a natural environment. Where such conditions cannot be accommodated due to experimental constraints the PI must defend that lack of accommodation and define what mitigation measures will be in taken.

11. Tree Shrews

- a. Tree Shrews will be pair housed when space is available, animals are compatible, and research aims do not limit that type of housing
- b. Housing devices (boxes/tubes/huts) will be placed in each cage.
- c. Tree shrews will be given species specific manipulanda.
- d. DLAR personnel (husbandry and vet tech) as well as approved research personnel may provide time for human interaction as enrichment. Consultation with the PI is necessary prior to modifying the existing care or interaction with the research animal, to prevent any untoward effects upon the research outcomes.
- e. DLAR personnel (husbandry and vet tech) as well as approved research personnel may provide novel treat items as enrichment if not contra-indicated by research goals.
- f. Consultation with the PI is necessary prior to modifying the existing care or interaction with the research animal, to prevent any untoward effects upon the research outcomes.

12. Opossum

- a. Opossum will be pair housed when space is available, animals are compatible, and research aims do not limit that type of housing
- b. Housing devices (boxes/tubes/huts/substrate) will be placed in each cage.
- c. Approved research personnel may provide time for human interaction as enrichment.
- d. Approved research personnel may provide novel treat items as enrichment if not contraindicated by research goals.

SPECIAL NOTES:

- A. **RESEARCH EXEMPTIONS:** Exemptions based upon research needs must be considered and approved by the IACUC before initiation of the exemption. The consideration of the exemption requires Full Committee review. The exemption must be reconsidered annually by the Full Committee.
- B. **POST SURGICAL CARE:** Researchers DO NOT require an exemption for single housing of immediate post-operative recovery patients. Post-operative recovery is defined as from the time of surgery up to 7 days post surgery.
- C. **CLINICAL VETERINARY CARE:** Exemptions MAY BE GRANTED by the Attending Veterinarian or his designee (see veterinary authority policy) for issues based on animal health, animal condition, or animal well-being. This exemption (veterinary exemption) must in writing, specific the affected animal(s), and written in the animal's medical record. This clinical veterinary care exemption is limited to periods up to 14 days. Exemption longer than 14 days requires IACUC considered and approval.