

**Enrichment Standard Operating Procedures (SOP)
Howard University Institutional Animal Care and Use Committee
Veterinary Services and Department of Biology**

ENRICHMENT FOR ANIMALS

Purpose

- To enhance animal well-being and improve animal welfare
- To promote species natural behavior and interaction
- To reflect some of the would-be natural habitat of the animal
- To reduce species to species vices when possible through enrichment
- To increase job satisfaction for staff who all desire optimal care for research animals
- To provide an improved animal and promote quality research

Note of Caution (Also refer to “Precautions” at end of SOP): No enrichment program should be implemented for laboratory rodents (or other species) without reviewing the full impact of enrichment on animal behavior, development or endocrine and physiological status. While Nestlets™ (Nesting Material, Ancare) and comparable nesting material appear to have a benign impact on mice and appear to promote species-specific behavior, other more complex enrichment paradigms may change animal behavior or background biochemical and physiological parameters. This may unfavorably impact on-going studies. Yet, it is important that enrichment be actively pursued for the benefit of the animal. It is also likely that enrichment may more closely parallel the human experience and could, perceptively speaking, promote a more normalized response to research manipulation. Enrichment is a goal that the researcher and the VS Staff must pursue cooperatively and collectively. However, because all animals will be provided with standard enrichment, all are enrolled unless the investigator chooses to opt out of enrichment based on scientific justification.

This Standard Operating Procedures (SOP) document will only address enrichment for species housed or anticipated to be housed in Veterinary Services and the Department of Biology Laboratory Rodent Facility. This trend has not included the housing or use of dogs or cats.

I. Procedures: Mechanisms for Enrichment

- A. *Promote human to animal contact and interaction purely for the sake of socialization when feasible (when it is not prohibited by study design or logistics), allowing time for:*
 1. Petting rabbits and gently touching rodents
 2. Handling animals of all species to acclimate them to human scent, touch, voice, and gentle manipulation

3. Interacting and playing with rabbits and ferrets
 4. Using animal toys to facilitate human to animal interaction
- B. Enable species to species interaction by group or companion housing or indirect contact by sight, sound and odor:*
1. House compatible animals together.
 2. House animals of the same species within direct sight, smell and sound of each other.
 3. Allow rabbits, etc., which are not housed together, an opportunity for supervised floor play together
- C. Enhance the environment or habitat of the animal with items that increase habitat complexity, promote species natural behavior and enable individual or groups of animals to explore, burrow, hide or seek shelter from the light or each other.*
1. Place plastic tubing or huts on cage floors for rodents to crawl or run through, sleep in or scurry to in order to avoid an aggressive encounter with a cage mate.
 2. Provide nesting or litter material that facilitates burrowing and nest building
- D. Promote gnawing-chewing natural behavior:*
1. Provide Nylabone® chew toys (chew toy produced by Nylabone), chew sticks or clean disposable nontoxic paper tubes for rodents.
 2. Provide chew rings for rabbits.
- E. Provide an opportunity for play for animals by providing: Cat toys such as balls and dangling toys for rabbits.*
1. Bright colored floor toys for chicks to peck.
 2. Balls for pigs
 3. Balls and rolling toys for rabbits.

- F. If not prohibited by protocol requirements, provide nutritional treats or treat-seeking opportunities to enhance foraging and food seeking behavior, dietary variety and reward association with humans or experimental procedures.
- G. The animal care staff is encouraged to engage in interaction with animals for the sake of enrichment on a volunteer basis while keeping in mind that it should be carried out in a manner that:
- H. Minimizes exposure to animal allergens and does not increase exposure of individuals with known allergy to additional animal contact.
 1. Minimizes exposure to zoonotic diseases by personnel through compliance with good husbandry and animal care practices
 2. Sustains good husbandry and care procedures and does not pose a risk of spreading species specific diseases to the animal, within the cage to other animals, within the room or from room to room (Wash hands before and after animal contact, before leaving room, etc.).
 3. Employs periodically sanitation of toys, manipulanda and rodent habitat-style enrichment items and discards any item that poses an animal health concern (choke hazard, etc.).

Area	Washing/Sanitizing Method (mechanical washer, hand washing, high-pressure sprayers, etc.)	Washing/Sanitizing Frequency	Chemical(s) Used*	Other Comments (e.g., autoclaved)
Exercise devices and manipulanda used in environmental enrichment programs, etc.	Mechanical	Weekly	Alka-Det HW/Acid Power	autoclaved

4. Assures that nutritional enrichment or treats are compatible with protocol requirements and are approved by the Investigator. Such treats must also be properly sourced so as not to introduce pathogens or other biological variables that are incompatible with sound species nutritional requirements or that might interfere with study requirements
5. Observes appropriate protocol dictated procedures such as not giving edible treats to animals during periods when they are being fasted for surgery.

II. Precautions Regarding Enrichment

- A. *It is important to be aware of the need to consult with the Principal Investigator and the research team before research paradigms are implemented. The impact of enrichment on the research subject or the research must not be assumed nor minimized.*
- B. Behavior research may be altered by the introduction of enrichment mid-study and may alter animal brain development (rodents) in such a way that it may be difficult to compare current data with previous or retrospective data. As well, although environmental enrichment such as tubing placed in cage may decrease vices such as barbering in mice, it may increase the level of aggression over new territory for other rodents. Nutritional research of dietary manipulation studies may be deleteriously affected by food treats.
- C. Yet, the importance of providing enrichment must also not be overlooked for all species of animals. As sure as enrichment becomes the norm, as it is becoming for all species including rodents, failure to include it may put ones research and research facility outside the mainstream and affect comparisons with the multitude of studies which provide enrichment.
- D. For the field of laboratory animal medicine research, animal enrichment with improved animal welfare is here to stay.

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