



TITLE: Rabbit Environmental Enrichment

SOP Category: Enrichment

CMR SOP #: 6.06

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Approval: *Bhupinder Singh*

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SCOPE:

This document describes the procedures to be followed when providing environmental enrichment to rabbits. This SOP applies to all Animal Care Staff (ACS), ACS Supervisors (ACSS), Veterinary Staff (VS), and Research Staff members (RS) at the Rutgers University facilities.

OBJECTIVE:

The objective is to summarize rabbit environmental enrichment. This SOP is concordant with the Rutgers Environmental Enrichment Program, which states that all laboratory animal species used at Rutgers must be provided with species-specific environmental enrichment unless scientifically justified.

DEFINITIONS:

Natural Behavior: Rabbits (*Oryctolagus cuniculus*) are crepuscular (active at dawn and dusk) or nocturnal animals that spend most of the diurnal period underground in burrows while emerging to feed at dusk or during the night. In the laboratory, periods of activity are seen throughout the day and night. Rabbits are social animals and stable breeding groups are formed with linear hierarchies of both males and females. Once a dominance hierarchy has been established, continued fighting is rare. Aggressive behavior is seen most in breeding and pubertal animals. Adult males are most aggressive when competing for food, territory, or females. Rabbits are gnawing herbivores requiring a diet with high fiber content. They are normally coprophagic, re-ingesting cecotrophes (produced at night) in order to absorb additional nutrients.

Abnormal Behavior:

1. Barbering or hair pulling
2. Increased aggression (e.g., stomping, charging)
3. Cage nosing or mouthing
4. Digging
5. Excessive frisky hopping
6. Excessive chin rubbing

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When these behaviors are observed, VS will evaluate the need for modification of environmental enrichment.

PROCEDURES:

1. Social Enrichment
 - a. Rabbits should be socially housed where possible, either in pairs or groups of similar health status, age and sex.
 - b. If social housing is not possible, animals should be housed in a manner that allows for as much tactile, auditory, visual, and olfactory contact with conspecifics as possible.
2. Physical Enrichment (minimum requirement)
 - a. If available, an elevated platform/shelf will be placed in the cage. Where an elevated platform is unavailable, a solid floor based resting platform (plastic, metal, or paper) should be provided.
 - b. A toy (hanging or floor) must be provided and exchanged at least every other week.
3. Activity/Food Enrichment
 - a. Food
 - i. Hay should be provided daily. Rabbits may be provided with a food treat as often as daily. Examples include greens, broccoli, apples, carrots, or other acceptable fruits/vegetables.
 - b. Veterinary approved sugary treats should be given in moderation.
Enrichment cage (playpen)
 - i. Rabbits may be placed in an enrichment cage (an exercise pen) once weekly for a minimum of 15 minutes. Rabbits in enrichment cages should be provided with food, water and physical enrichment items. Only compatible animals shall be placed together within the same enrichment cage. Otherwise, animals will be singly placed in the enrichment cage.

Considerations:

- Cost, availability of materials, safety issues for the animals and the staff, study constraints and sanitation requirements must be evaluated for each enrichment plan.
- Exemptions to the environmental enrichment program must be justified and approved by the IACUC or prescribed for medical or behavioral reasons.
- For novel enrichment devices or strategies, a group of animals may be selected for a pilot study to evaluate behavioral changes, husbandry needs, and steps necessary for sanitization of the device(s).
- ACS are responsible for removing and replacing damaged or soiled enrichment devices as well as for sanitizing or disposing of devices as appropriate.

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Records:

The ACS, RS or VS will log provision of enrichment, according to the facility specific documentation records.

REFERENCES

Animal Welfare Act and Regulations: Public Law 99-198 – The Improved Standards for Laboratory Animal Act (<http://www.nal.usda.gov/awic/legislat/awa.htm>)

Gunn, D. and Morton, D.B. (1995) Rabbits: In: Environmental Enrichment Information Resources for Laboratory Animals. AWIC Resources Series No. 2

National Research Council, Guide for the Care and Use of Laboratory Animals, ed 8 available at <http://grants.nih.gov/grants/olaw/Guide-for-the-Care-and-Use-of-Laboratory-Animals.pdf>

Wolfensohn, S. and Lloyd, M. (1998) Small Laboratory Animals: In: Handbook of Laboratory Animal Management and Welfare. Blackwell Science Ltd.