



Albert Einstein College of Medicine

Environmental Enrichment of Rodents and Rabbits Policy

I. Purpose

The purpose of this policy is to ensure, as much as possible, the comfort and safekeeping of animals used in research at Albert Einstein College of Medicine (Einstein).

II. Scope

This policy applies to all research experiments and programs at Einstein.

III. Policy

A. STRUCTURAL ENVIRONMENT

The structural environment is comprised of the components of the primary enclosure, i.e., cage furniture, equipment for environmental enrichment, and objects that can be manipulated by the animals. The structural environment should include objects that increase opportunities to enhance the animals' activities and behavioral well-being, such as nesting materials, tunnels, and toys. Enlarging the space for an animal can enhance well-being. Climbing accessories, shelters/refuges, and exercise devices can be used to enlarge available space.

B. SOCIAL ENVIRONMENT

An animal's social needs should be taken into consideration. The natural social organization of the animals should influence how they are housed in the laboratory. Rabbits naturally live in groups containing at least one other rabbit of the same sex. Whether in cages, in floor pens, or in breeding groups, rabbits should at least be housed in pairs, if possible, with the exception of mature non-castrated males. Since rabbits are social animals, they mix well at an early age, however, there may be difficulties with removal or replacement of adult rabbits in an established group. Male rabbits can be housed in groups until they reach sexual maturity, but may then have to be castrated to be housed in groups successfully.

It is recommended that whenever possible, rabbits should be group-housed. However, if rabbits must be caged individually for experimental purposes, enriching the environment of the cage is beneficial. The cages should be large enough for the rabbits to sit upright and lie out at full stretch. The rabbits should have visual contact with other rabbits, but should also be able to withdraw from visual contact. A resting shelf in the cage may be desirable. Boredom can be alleviated by providing roughage such as autoclaved hay and straw, a varied diet, and objects to gnaw on or manipulate, e.g. wooden shapes.

Mice and rats are social animals and are housed in groups. However, this is not a natural situation for males, and males may need to be separated if aggression becomes a problem. Single housing may also be necessary for experimental purposes. Hamsters are not social animals, which can lead to problems with group-housing. Humans are part of the social environment of laboratory animals, and handling the animals is an important component of daily routine care.

C. NUTRITIONAL ENVIRONMENT

Rabbits may be provided a variety of food treats both for enrichment and to supply roughage. For rodents, food items can be scattered in the bedding so that animals search for it. Since hamsters naturally hoard their food, scattering food pellets in the cage provides a source of stimulation. Besides pellets, hay or straw can be supplied for variety and to satisfy the need for roughage.

D. SENSORY ENVIRONMENT

Sensory enrichment can be provided in numerous forms (e.g. auditory, visual, olfactory, tactile).

Guinea pigs and rabbits are easily frightened and react to environmental noises. Workers are encouraged to work calmly and quietly in guinea pig and rabbit rooms.

Excessive light intensity can be a problem for rodents. Rodents are nocturnal and sleep during the day. Also, rodents with unpigmented eyes (such as albinos) are susceptible to retinal degeneration if exposed to light intensities normally recommended for human working conditions in animal rooms. The light intensity experienced by the rodents is reduced by the presence of wire bar lids, food, water bottles, and microisolator tops. It can also be further decreased by use of reduced lighting, with timer-controlled supplemental lighting when people are working in the room; by use of opaque cages; by not housing animals on the top shelf near the light source; and by providing nesting material or a nest box so the rodents can retreat from the light. Opaque cages or nest boxes can interfere with the daily observation of the animals. At Albert Einstein College of Medicine animal facility, nesting material is provided to mice, and rodent cages are not placed on the top shelf if space permits. Under maximum housing densities, however, the top shelf will be used. Timer-controlled supplemental lighting is in use in most barrier rooms.

E. CONTROL OF THE ENVIRONMENT

Animals should have a certain degree of control over their environment because a lack of control may cause stress. In laboratory cages, the possibilities for environmental control are limited. Providing a shelter, e.g. plastic tubes or old drinking bottles, gives animals the opportunity to withdraw from frightening stimuli or to hide from too much light. Providing nesting material, such as Nestlets, gives the animals a source of activity as well as the ability to create a protected nesting place.

IV. Definitions

None.

V. Effective Date

Effective as of: 20 February 2018.

VI. Policy Management and Responsibilities

Einstein's Institutional Animal Care and Use Committee (IACUC) is the Responsible Office under this Policy. The Institutional Official for the IACUC is the Responsible Executive for this policy. The IACUC Chairperson is the Responsible Officer for the management of this policy.

VII. Approved (or Revised)

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Institutional Official	Date

Revision dates: 3/16/2002, 3/15/2005, 6/15/2011, 4/29/2014, 2/20/2018