Primate Enrichment Policy

I. Purpose

The purpose of this Policy is to provide guidelines for promoting the psychological well-being of non-human primates.

II. Scope

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

III. Policy

The Institutional Animal Care and Use Committee (IACUC) recognizes that the body of knowledge regarding the environmental enrichment of non-human primates is complex and ever changing. As new methods are developed, this policy for environmental enrichment shall be modified accordingly. The needs of each individual non-human primate shall be addressed and, where possible, changes instituted to benefit the animal.

A. General Consideration

1. Sufficient space appropriate for the species shall be provided in their primary enclosures. Animals shall be able to accomplish the full range of normal postural movements.

2. Unless exempted for health reasons by the attending veterinarian or for research or other considerations by the IACUC, non-human primates will be group or pair housed. Care shall be exercised to house socially compatible animals in a manner consistent with species typical behavior that allows for adequate access to veterinary care and minimizes serious injury.

3. For individually housed monkeys, at least one of the following methods shall be used for enrichment:
   • Cages will be positioned to allow visual, auditory, olfactory, and limited tactile contact between compatible individuals.
   • Daily positive interaction will occur with caretaker(s) and other authorized persons. This includes provision of small food treats as permitted within research protocol constraints.
   • Primates will be given periodic access to task-oriented feeding devices (e.g., puzzle feeders).

4. Each non-human primate shall have access to various stimuli, including non-toxic objects such as soft toys, balls, and non-breakable mirrors. These objects shall be periodically evaluated to determine those that appear to be most interesting to individual animals, and changed as necessary to provide novelty.
B. Special Consideration

1. Solitary non-human Primates (one animal per room): due to quarantine or other experimental constraints, occasionally primates must be housed alone in a room. Quarantine is necessary to determine the health status of newly acquired non-human primates and to protect the health of animals and caretakers in the facility. Solitary animals housed do not have visual or other social contact with other non-human primates. In addition to daily positive interactions with animal care staff and provision of inanimate novelties, attempts to enhance the psychological well-being of these animals will include placement of primary housing near windows or a wall mirror (if available) so that the animal may have visual stimulation.

Solitary animals may be given a mirror, radio, or television for companionship.

2. Individually Housed Macaque Species in Neurophysiology Studies (one animal per cage):
   a. Adequate exercise: Macaque species are housed in large modular caging units that exceed minimal space requirements for this species. Animals are given equal access to the activity module adjoining their home cages. We alternate access to the activity module during the 5-day work-week such that each monkey has the access to the activity module every other day.

   On weekends, access to the activity module is alternated every other weekend when two animals share an activity module, and every third weekend when three animals share an activity module. We strive to have only two animals share access to an activity module.

   b. Adequate social interaction. The cages allow monkeys to have direct visual and auditory contact with their neighbors. The tempered glass sides of the cages, however, restrict direct physical contact between adjacent primates. Group/pair housing of adult primates is not employed. Our IACUC has discussed the issue of group housing primates at length.

   Fighting, aggressive grooming, and aggressive sexual behavior could lead to severe injury. The risk is especially high following surgery when one monkey has a head implant that can become infected or become loosened by an overly attentive cage mate. Even under close human supervision, the possible need for human intervention to stop potentially injurious behaviors by the animals incurs unacceptable health and safety risks to the human.

   c. Direct Social Interaction with humans: Non-human primates will have frequent direct social interaction with the caretakers (daily), veterinary staff, and laboratory personnel as they undergo extensive behavioral training and conditioning as part of the experimental paradigm. Interactions involve safe socially interactive play activities such as grooming and distribution of small food items (treats) by hand.

   d. Dietary enrichment: In addition to their daily ration of monkey biscuits, a variety of fresh or dried fruits/vegetables are provided (e.g. apples, oranges, bananas, baby carrots, lettuce, etc.). Additional preferred food treats, including nuts, seeds, are provided, too. These foods are given ad libitum also, in the immediate postoperative period to further stimulate appetite. Food treats are either given by hand, provided in the feeder with the regular ration, or placed in puzzle feeders or on foraging boards to enhance interest and activity. Treats (e.g. candies, peanut butter) are used extensively during behavioral training and electrophysiological recording sessions as
positive reinforcement (rewards). Because the scientific protocols usually require that food intake be controlled so that behavioral motivation is not diminished, during periods (weeks to months) that monkeys will be undergoing series of behavioral training and recording sessions, all food supplements (fruits, treats, etc.) are provided only by the research laboratory personnel.

e. Behavioral stimulation: In addition to access to the activity module, each monkey is provided with several enrichment products (toys) in its home cage. These include a variety of toys specifically designed for primates, as well as human toddler’s toys. Toys are rotated among the animals regularly, after adequate washing and sanitation. Periodically, a foraging board is attached to the activity module to increase foraging-like activity.

3. Infants and young juveniles (Macaque species). Infants are not used at Einstein. If studies with these animals are proposed, specific plans will be developed and incorporated into this Policy.

4. Macaques showing signs of being in psychological distress through behavior or appearance. Should any monkey exhibit signs of being in psychological distress (stereotypical behavior, aggression, social withdrawal, self-mutilation, etc.) it will be evaluated by the attending veterinarian, or their designee, and in consultation with the investigator a plan for intervention developed. Interventions are developed and evaluated on a case-by-case basis and could include altering the social environment, more intensive positive interactions with human caregivers, trying other types of cage enrichment (toys, foraging puzzles, etc.), and pharmacologic treatments, or a combination of interventions. If the animal does not improve with these interventions such that a humane endpoint is reached, or if these interventions would abrogate the investigators ability to achieve research goals, then the animal would be euthanized.

5. Macaca used in research for which Committee-approved protocol requires restricted Activity. Currently there are approved protocols for cognitive studies in which animals are restrained in a chair for several hours. During this time however, the monkeys are engaged actively in non-stressful behavioral tasks with positive rewards (treats). The training/task-oriented behavior itself is viewed as a positive interaction with humans.

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)

[Signature]
Institutional Official

[Signature]
Date

17 December 2019
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