

Animal Institute Committee
Albert Einstein College of Medicine

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**GUIDELINES FOR PROMOTING
THE PSYCHOLOGICAL WELL-BEING OF NON-HUMAN PRIMATES**

Reapproved by Animal Institute Committee: 6/28/06

The Animal Institute Committee (AIC) 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 to each individual non-human primate shall be addressed and, where possible, changes instituted to benefit the animal.

General Consideration:

1. Sufficient space appropriate for the species shall be provided in their primary enclosures. Animal 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 AIC, non-human primates will be group or pair housed. Care shall be exercised to house socially compatible animal 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:
 - a. Cages will be positioned to allow visual, auditory, olfactory, and limited tactile contact between compatible individuals.
 - b. 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.
 - c. 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 which ones appear to be most interesting to individual animals and changed as necessary to provide novelty.

Special Consideration:

1. *Solitary Non-human Primates (one animal per room)*: Because of 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 (if available) so that the animal may have visual stimulation. Solitary animals will always be given mirrors and/or a radio for companionship.
2. *Individually Housed Macaca fascicularis in Neurophysiology Studies (one animal per cage)*:
 - a. **Adequate exercise**: *Macaca fascicularis* monkeys are now 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 2 animals are being housed in our facility, and every third weekend when 3 animals are in the facility. Greater numbers of housed animals is not anticipated.
 - b. **Adequate social interaction**. The new more spacious cages allow monkeys to have direct visual and auditory contact with their neighbors. The tempered glass sides of the new cages, however, restrict direct physical contact between adjacent primates. Group / pair housing of primates is not employed. The issue of group housing male primates was discussed at length by our Animal Care and Use Committee (March 2004) and deemed to present too many risks to the animals and handlers as well as to the scientific research. The principal investigator has spoken at length with other primate researchers, including:
 - i. Dr. Luis Populin, Dept of Anatomy, University of Wisconsin at Madison, and
 - ii. Dr. Charles Schroeder, Nathan Kline Institute, who have extensive experience using similar experimental conditions.

The Institute for Animal Studies has also spoken to the following primate researchers:

- i. Dr. Taylor Bennett, University of Illinois at Chicago
- ii. Dr. Jim Artwohl, University of Illinois at Chicago, and
- iii. Dr. Diane Scorpio, John Hopkins University.

In general, co-housing of male primates is not advised due to dominance interactions. 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) 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 fruits are provided (e.g. apples, oranges, pears, bananas etc.). Additional preferred food treats, including nuts, seeds, dried fruits, and fresh vegetables are also provided. These foods are also given *ad libitum* 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 foraging boards to enhance interest and activity. Treats (e.g. chocolate, cookies or candies) are also 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 investigators 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, including a small hand-held mirror. These include a variety of toys specifically designed for primates, as well as human toddler's toys. Toys are regularly rotated among the animals after adequate washing and sanitation. Periodically, a puzzle feeder is attached to the activity module to increase foraging-like activity.