

## Exceptions to the Animal Welfare Regulations and Standards: 2010

### 2.31 Institutional Animal Care and Use Committee (Major Operative Procedure)

- 12 Pigs: for chronic myocardial ischemia studies to first create a coronary artery blockage and afterwards to treat the damaged heart muscle.
- 6 Nonhuman primates: in xenotransplant studies the spleen is initially removed and a gastronomy tube placed prior to the organ transplant to improve animal survival at the time of the transplant. Post transplant laparotomies may be performed to inspect the organ for rejection or for biopsies of the transplant if non-invasive methods are not definitive. If the transplant is rejected it may be removed and the monkey used for immunological response to the transplant. If the animal has been taken to surgery for receiving an organ, but the organ is found to be defective, then the monkey will be recovered to serve as a recipient at a later time.
- 40 Nonhuman primates: Multiple major surgical procedures have been approved when scientifically justified in an ASP as part of the same experimental paradigm. These include: 1) craniotomies carried out in 2 stages to reduce surgical trauma to the animal due to the length and extent of the manipulation; 2) craniotomies carried out in 2 stages to determine anatomical/behavioral functions; 3) for medical, as well as scientific purposes if cylinder attachments, recording chambers, eye coils, etc. used for microelectrode recording malfunction, are damaged, or become impaired due to an otherwise irreparable thickening of the dura mater; they are repaired in a second surgery; and 4) two surgeries due to the "timing" of an experiment, i.e. receive two craniotomies because transport times (and degradation) of tract tracing substances varies.

### 3.80 Primary Enclosures (NHP)

- 41 Nonhuman primates: breeding marmosets are housed in family groups in cages with less floor space than described in the AWR; however the cages provide extra height for these arboreal species. Additionally juveniles are kept with their parents to learn parenting skills when a younger litter is born.

### 3.81 Environmental Enrichment to Promote Psychological Well Being (Singly housed NHP)

*Note: all nonhuman primates described in this section participate in other aspects of their environmental enrichment programs and are housed in rooms with other monkeys for visual, auditory, and olfactory interaction.*

- 94 NHP: a) when animals are prepared with chronic indwelling catheters the catheters are externalized and protected under a jacket. If housed together, these monkeys will pull out the catheters which would jeopardize the health of the animal. b) When evaluating the effects or possible toxicity of drug compounds, food and water intake must be individually monitored. c) When determining the effects of psychoactive drugs, animals must be individually housed to quantify behaviors.
- 736 Nonhuman primates: for infectious disease research to prevent cross infection and cage mate caused injury to morbid animals.
- 30 NHP: animals on immunological studies are singly housed to help prevent cross contamination of animals that are in different infectious stages.
- 116 NHP on approved infectious disease research proposals are singly housed for the duration of the studies. The avoidance of direct contact between infected animals and therefore the potential for cross contamination, along with the need to protect individual

animals from harmful interactions with other animals during the disease process requires single housing.

- 27 NHP: displaying aggressive behavior, for medical and/or clinical treatment, or quarantine purposes may be singly housed temporarily or long term, based on assessment by veterinary staff.
- 397 NHP: due to use in infectious disease studies because any potential alteration in the animals' biology, either immunologically, or due to social stress caused by potential animal incompatibility through pair housing, may result in a profound negative impact on the studies. Key articles in the scientific literature (Sloan et. al. J Neurosci 27:8857, 2007 and J Virol 80:4326, 2006, and Cappitanio et. al. Brain Behav. Immun. 22:676, 2008) show that social stress can modulate immune responses, viral pathogenesis and potential alterations in post challenge virus uptake.
- 8 NHP: are individually housed due to the placement of an arterial port. Non-ported animal are initially pair housed with a companion and then are individually housed next to the same companion after the ports are placed.

### 3.83 Watering

- 90 Nonhuman primates: Chronic water control has been approved when scientifically justified in an ASP as a methodology to motivate performance of specific operant tasks. This restriction only results in animals not having continuously available water twice daily for at least one hour at each session.

### 3.90 Feeding

- 141 Dogs: are deeply sedated for a 96 hour period during sepsis studies to alleviate pain and distress and therefore are unable to obtain food by mouth. Hydration is provided by IV fluid administration and the study is terminal prior to removal of the sedation.