



**TITLE: Animal Acquisition & Acclimation**

**Purpose:** To protect the health and well-being of animals used at FIT, the IACUC must approve the acquisition and transport of animals to institutional animal facilities. Transportation unavoidably causes stress in animals. Utilizing animals for research prior to their stabilization from transport stress may have unintended or detrimental effects on research results. The Guide for the Care and Use of Laboratory Animals strongly recommends that newly received animals be given a period for physiologic, behavioral, and nutritional acclimation before their use. This policy sets forth the required minimal time that animals should be allowed to acclimate prior to research use. For some species or strains of animals longer times may be required to allow for return to normal parameters.

**Definitions:**

- Acclimation: physiological and psychological adaptation to a novel environment or procedure.
- Acclimation Period: [species-specific] pre-determined period of time during which animals undergo no experimental manipulations in order to adequately recover from the stress of transport and acclimate to the new housing environment.
- Transportation: movement of animals from a vendor or other off-campus location, including intra- and inter-city, intra- and inter-state and international transport involving land, sea and/or air transport.

**PROCEDURE:**

No animals are to be ordered, transferred, and/or transported to FIT animal facilities prior to IACUC approval. Failure to gain IACUC approval prior to the arrival of animals will be reported to OLAW, which may affect federal funding. The acquisition method must be described in the approved protocol. In an emergency, the IACUC may place animals that arrive prior to approval on a Holding Protocol, but this will be considered by the committee on a case-by-case basis.

This procedure applies to all experimental animals that arrive at a FIT animal facility following transportation as defined above. This policy does not address room-to-room or building-to-building transport of animals within the same campus.

No experimental manipulations may be performed during acclimation periods. Only routine husbandry-related interactions, health-assessments and medically necessary treatments may occur during the acclimation period.

Listed below are the minimum acclimation periods for animals newly received at FIT. Investigators are strongly encouraged to allow additional time for animals to stabilize to their new environment and to consider longer periods of acclimation if indicated for the specific type of study being performed. Exceptions to this procedure must be described and justified in the animal use approval form and approved by the IACUC. Failure to allow animals to acclimatize properly could adversely impact animal health and research data.

Rodents: minimum 48 hours; 1 week is standard and recommended. It is in the Principal Investigator's best interest to ascertain how the studies undertaken are confounded by transportation stress. For

example, it has been reported in rodents that subsequent to transportation:

- Reproduction including reproductive hormones and behavior are affected (larger effect in adolescent rodents) [1, 2, 3]
- Immunologic functions are inhibited [4]
- Corticosterone levels are elevated [5]
- Serum chemistry parameters are affected [5]
- Fetal brain development and response to toxins are affected [6]
- Heart rate, body temperature and activity are affected [7]

Fish: Species specific and must be described in approved protocol. Fish should be given time to acclimate to new environments, feeds, and routine activities before being used in studies. Slow acclimation to change often is critical [8]. It is not uncommon for fish to exhibit acute health problems 48 to 72 hours following transfer. The time used for acclimation within and between experiments should be standard and specific for a species. A commonly used acclimation period is 2–4 weeks. However, investigators should note that laboratory holding conditions may cause physiological changes in wild animals brought into the laboratory, such as immunosuppression, or loss of tidal or diel rhythmicity, even though no visual signs of stress are present. (See also *Guidelines for the Use of Fishes in Research.*)

Reptiles: Species specific and must be described in approved protocol. Upon receipt of commercial specimens, and prior to introduction to any existing laboratory colonies, commercial specimens should be subjected to careful inspection for potential health problems or known pathogens. If feasible, a quarantine period may be advisable. If not euthanized upon procurement, wild-caught reptiles must be quarantined for a minimum of 30 days. Exceptions to this requirement, including captive animals purchased from commercial suppliers, will be dependent on the source and/or justifications described in the protocol. (See also *Guidelines for Use of Live Amphibians and Reptiles in Field and Laboratory Research.*)

#### **References:**

1. Stewart J, Kolb, B. The effects of neonatal gonadectomy and prenatal stress on cortical thickness and asymmetry in rats Behav Neural Biol 1988. May, 49(3): 344-60.
2. Hayssen V. Effect of transatlantic transport on reproduction of agouti and nonagouti deer mice, *Peromyscus maniculatus*. Lab Anim 1998 Jan 32(1): 55-64.
3. Laroche J et al Reduced behavioral response to gonadal hormones in mice shipped during the peripubertal/adolescent period. Endocrinology 2009 Jan [Epub ahead of print]
4. Landi, MS et al. Effects of shipping on the immune function of mice. Am J Vet Res 1982 Sep. 43(9):1654-7.
5. Bean-Knudsen DE and Wagner, JE. Effect of shipping stress on clinicopathologic function in F344/N rats. Am J Vet Res 1987 Feb. 48(2): 306-8.

6. Ogawa, T. et al Valproate-induced developmental neurotoxicity is affected by maternal conditions including shipping stress and environmental change during early pregnancy. *Toxicol Lett* 2007 Nov 174(1-3):18-24.

7. Capdevila, S et al Acclimatization of rats after ground transportation to a new animal facility. *Lab Anim* 2007, Apr 41(2):255-61.

8. Casebolt, DB et al. Care and use of fish as laboratory animals: current state of knowledge. *Lab Anim Sci* 48:124-36.

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