

UTHSC Rat Housing Policy

I. Purpose

This policy is based on guidelines given in the National Research Council's *Guide for the Care and Use of Laboratory Animals, Eighth Edition* (the *Guide*) and its purpose is to ensure that rats are housed in a manner that promotes their health and well being and avoids overcrowding. Cage overcrowding usually occurs in rat breeding colonies when litters are not weaned on time, excessive number of breeder animals are housed together, or weanling rats are not separated as they age.

II. UTHSC Rat Cage Density Guidelines

Unless otherwise noted, all rats housed at LACU facilities are caged in either conventional cages or micro-isolation cages or, at the Cancer Research Building, in OptiRAT® cages.

Standard rat cages measure 9"w X 8"H X 17"L (153 sq.in. floor area)

OptiRAT® cages measure 18.5"w (front) X 6.5" w (rear) X 8.1"H X 12.8"L (160 sq. in. floor area)

Rats are housed in solid-bottom cages. Cages must measure at least 7 inches in height.

Weight (g)	Floor Area/ Animal (sq. in.)	# Rats per Standard Rat Cage	# Rats per OptiRAT® cage
<100	17	9	9
100- 200	23	6	6
200-300	29	5	5
300-400	40	3	4
400-500	60	2	2
>500	≥70	2	2

Rats are to be housed based on guidelines for the space requirements for rats as specified in Table 3.2, page 57, of the *Guide*, summarized above. As rats are social animals, they should be housed in pairs or groups whenever possible. Rats that are housed individually must be provided with a form of enrichment unless scientifically justified and approved by the IACUC.

A litter of rats should be housed only with the mother. No other adult rats should be present. The female rat and her litter must be provided with at least 124 square inches of cage space.

Based on the above guidelines, when animals are determined to be overcrowded an "Overcrowded Cage" card is placed on front of the cage and the Principal Investigator notified by LACU personnel, requesting that the overcrowded animals be separated.

III. Breeding

1. Two breeding schemes are permitted:
 - I. Monogamous pairing (1 male, 1 female) – this is the preferred technique to prevent overcrowding
 - II. Trio grouping (1 male: 2 females) – This should be done in the large rat cages and females must be placed in individual cages prior to parturition.
2. Pregnant rats should be placed into a separate box after pregnancy confirmation to avoid post-partum insemination. A post-partum estrus occurs within 48 hours of parturition.
3. No more than one adult and one litter of pups may be housed together.
4. The breeding strategy must be described in the ACUC protocol. This includes the breeding scheme and the weaning age of pups. Justification is required for any breeding scheme other than monogamous and trio housing, and for cage densities that exceed those described above.

IV. Weaning

1. Investigators who choose to manage their own breeding colonies are responsible for timely weaning. Rats are generally weaned at 21 days of age. At 23 days of age, the PI will be notified via email if litters have not been weaned. Forty-eight (48) hours after notification these rats will be weaned by LACU staff (for a fee) and weanlings will be placed on inventory. Delayed weaning protocols must be approved by the IACUC with specification of actual weaning ages. Additionally, cages should be properly marked to identify the group of rats approved for delayed weaning.
2. The LACU veterinary staff provides training in the management of rodent colonies for investigators and their staff. LACU also offers colony management services to those PIs who choose this option.

V. Policy Implementation

1. Exceptions to this policy should be justified scientifically and submitted for IACUC consideration, either at the time of original protocol review or as a protocol revision. The IACUC will determine whether the exception is reasonable and consistent with provisions of the *Guide* and AAALAC standards.
2. LACU personnel will monitor cages as part of their routine husbandry duties and LACU supervisors will notify researchers and/or their designated contact persons, in writing, when cage density has been exceeded. Investigators will have 48 working hours to correct the situation.
3. If there is no response from the investigator within 48 working hours, LACU personnel will take appropriate action to correct the problem (e.g. remove post-parturient females and their newborn pups from adult only or overcrowded breeding cages, wean animals etc).
4. A fee of \$20.00 per cage per incident will be assessed by LACU for above services.
5. If three instances of non-response by a single investigator and/or their staff occur within a three-month period, LACU personnel will notify the IACUC.