



**Duke University
Animal Care & Use Program
Policy**



TOP SHELF HOUSING OF RODENTS

PERFORMANCE STANDARD: Rodents should be housed in a manner that is supportive of normal behavior and provides protection from adverse environmental conditions, including excessive light.

BACKGROUND: Animals require an appropriate housing environment to thrive and provide a stable biologic model. Barring any scientific evidence to the contrary, long term, high intensity lighting of rodents (especially albino) should be discouraged, as described in The Guide for the Care & Use of Laboratory Animals. Rodents are nocturnal and commonly burrow and tunnel as part of their natural behavior. The potential for pain and distress resulting from continuous exposure of rodents to high light intensity levels does exist, particularly in albino rodents. The Guide for the Care and Use of Laboratory Animals notes that albino rats are susceptible to phototoxic retinopathy. The Guide recommends light levels equal to or less than 325 lux (30-ft candles) as sufficient to avoid phototoxic retinopathy in albino rats. The Guide for the Care and Use of Laboratory Animals also indicates a recommended light level of 130 lux to 325 lux for rodents as being preferred in most cases. The Division of Laboratory Animal Resources (DLAR) has determined light levels on the top shelves of racks in Duke operated animal care facilities often exceed 325 lux and in some cases have been observed to exceed 1000 lux. This concern is not simply with albino rodents, but includes pigmented rodents also. According to the literature, even in pigmented animals phototoxicity can provoke durable retinal alterations beyond the period of lighting. There is evidence that progressive and probably continuous modifications of retinal physiology occur even in pigmented animals in which the retina seems morphologically normal. (Investigative Ophthalmology & Visual Science 2002;43: 813–820).

ROLES:

1. Research and DLAR staff will abide by the policy statement below unless there is documented PRIOR approval for an exemption by the IACUC.
2. All deviations from this policy shall be reported to the IACUC at the earliest opportunity.
3. Institutional Animal Care & Use Committee (IACUC) will consider exceptions to this policy, if the Principal Investigator provides justification that the deviation will not negatively impact the animals.

PROTECTIVE POSTURES REQUIRED: Personnel PPE will be worn as prescribed by the specific care facility management.

OUTLINE OF POLICY: The housing of rodents (either pigmented or non-pigmented eyes) on the top shelf of static rack systems requires prior approval from DIACUC. Exemptions for top shelf housing will be considered based upon: a) protocol, or b) specific housing room within a facility. Exemption requests will be considered by the IACUC as an amendment (Minor with Veterinary Review). All exemption requests should include light measurements (taken at the top shelf) which are consistent with The Guide expectations, and veterinary opinion of the appropriateness of housing rodents on the top shelf of the proposed environment.

Note: The IACUC is not opposed to the use of the top shelf for rodent housing, but that such use must provide a reasonable environment for the welfare of research animals and when used, top shelf housing must be supportive of outcomes of research activities.