INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE (IACUC)
Guidelines for Humane Endpoints of Rodents

Applications do not permit death (other than euthanasia) as the experimental endpoint in animal studies. Investigators who seek approval from IACUC to conduct an experiment that may induce morbidity must also agree to, and address the following:

1. Animals must be monitored at least once daily by personnel trained and experienced in recognizing signs of illness, injury, or abnormal behavior for at least the following:
   a. Abnormal appearance: abnormal posture, rough coat, head tucked into abdomen, exudate around eyes and/or nose, skin lesions, abnormal breathing.
   b. Abnormal activity: abnormal movement, decreased food or water intake, self mutilation.

   (This daily monitoring is usually done by DLAM staff, however, lab staff are expected to monitor their animals periodically during the week as well.)

2. Animals with abnormalities may be removed from group housing and housed individually to provide easy access to food and water. Laboratory personnel will be notified and must make an assessment shortly thereafter, whether to continue to use the animal in the study. If personnel directly responsible for the project cannot be contacted, veterinary services should be contacted (phone 966-2906 or 216-1235 after hours). It is good practice for the investigator to determine, in advance of an emergency, what procedures should be used to care for abnormal animals. In all instances, veterinary services should be notified that animals are showing clinical signs of disease.

3. Animals showing any of the following signs should be euthanized by approved methods, regardless of whether they are endpoints specifically listed in the protocol or not:
   a. Inability to ambulate or maintain an upright position that prevents the animal's easy access to food and/or water.

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b. Agonal breathing and cyanosis.

c. Severe muscular atrophy or other signs of emaciation (Body Condition Score ≤ 2)  
Refer to guidelines for Maximum Tumor Bearing in Laboratory Rodents for body 
condition scoring p. 2 http://research.unc.edu/iacuc/sop/tumor
burden.pdf

d. Severe ulceration of skin or uncontrolled bleeding.

(Note that most endpoints listed in the protocol address clinical signs to use as
endpoints that would occur before an issue progressed to the endpoints that are
listed above.)

4. The frequency of observation should be increased as animals approach the clinical
sign endpoints in the protocol, or if the animals are experiencing increased
morbidity or mortality in the study.

5. Written records of monitoring sessions may be required, depending on the protocol
and the endpoints and should be made available to the attending veterinarian or
the IACUC staff on request.

6. Unexpected phenotypes that affect the morbidity or that cause mortality should be
reported to IACUC. A review of the endpoints in the protocol, written prior to the
knowledge of the unexpected result and revision of the endpoints may be
required to address new issues in the phenotype. In addition, more frequent
monitoring of the animals may be needed. (p 28, 8th edition of the Guide for the
Care and Use of Laboratory Animals, 2011)

(Modified from Current Issues in IACUC Protocol Review, National Welfare Education
Workshop held in Raleigh, NC, in February 1994.)