

TITLE:	Food and Water Restriction
Policy Number:	2014-037
Responsible Department:	Institutional Animal Care and Use Committee
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Revised:	9/13/17 (Refined purpose; added acceptable wt loss will be protocol specific); 5/13/2020 (Added a) endpoints for BCS and dehydration; b) for tumor studies, consider tumor wt when determining baseline wt)

Purpose of Policy: To ensure that animal well-being is maintained to the extent possible during the course of a scientific study in which the amount of food and water offered to the animals must be reduced or offered at irregular schedules.

Policy Information: The [Guide for the Care and Use of Laboratory Animals](#) states that food and water restriction should be the “least restriction necessary to achieve the scientific objective while maintaining animal well-being.” [Section F19 of the Office of Laboratory Animal Welfare’s \(OLAW\) FAQs](#) states that “The IACUC must evaluate the level of restriction and potential adverse consequences in regulating food or fluid. The IACUC must also evaluate the methods for assessing the health and well-being of animals involved in activities that regulate food or fluid consumption.”

Food and/or water restriction are at times necessary for valid scientific reasons. However, such restrictions can potentially cause distress in laboratory animals and, therefore, must be

- 1) scientifically justified,
- 2) performed in a manner that will minimize risk to the animals’ well-being, and
- 3) approved by the Institutional Animal Care and Use Committee (IACUC).

Prior to initiating food and/or water restriction in rodents, it is highly recommended that investigators and animal care personnel learn how to determine rodent Body Condition Score (BCS). Animals under a BCS of 2 that do not resolve within a reasonable time frame (consult with the Attending Veterinarian) or animals determined to be 10+% dehydrated that do not resolve with rehydration treatment should either be considered for removal from the study or be euthanized.

Thus, the IACUC has established the following guidelines for food and/or water restriction.

- The least restriction that will achieve the scientific objective should be used.
- **Baseline body weight must be measured before food or water regulation occurs.** Note: For tumor studies, the weight of the tumor must be taken into consideration.
- Ad libitum values should be used as a baseline for food and/or fluid regulation. These values may be determined by the laboratory for rodents of the same strain, background, sex, and age group as those used in the study. Published values may be used in lieu of a laboratory determination as long as the published value is for a rodent of the same strain, background, sex, and age group.
- Regulation is not recommended in rodents under eight weeks of age and no rodent should be completely deprived of fluids for more than 24 hours.
- Rodents should be acclimated over 3 days to new regulation/scheduling paradigms.
- Animals undergoing surgical procedures should receive ad libitum food/water at least one week prior to and following the surgical procedure.
- Rodents may be placed under chronic water regulation of as much as 50% of the ad libitum daily ration, if it is imposed over an interval of up to 7 days.
- Rodents on fluid regulation must be monitored daily for clinical signs of dehydration, and should be treated as follows:
 - Any rodent appearing dehydrated (e.g., displaying listlessness/inactivity, increased “skin tint,” and/or sunken eyes) must have drinkable fluid support provided immediately by supplying a measured volume of fluid. Enough fluid should be provided to allow the animal to freely drink without interruption.
 - Alternative fluid sources (e.g., hydrogel, moistened food, 0.5-2 mL subcutaneous sterile lactated ringers or saline) must be administered.
 - Lab members involved in fluid regulation must be trained to be able to identify dehydration and be comfortable giving subcutaneous fluids.
- If a rodent appears dehydrated, listless, hunched, or showing signs of pain/distress, contact the veterinary staff in addition to providing supplemental food/water.
- Animals should be monitored at least daily to determine that they are in good health.
- Body weights should be recorded at least weekly and more often if the restriction is severe.
- Written records should be maintained for each animal documenting their daily food and water intake and health status, including any behavioral changes that might suggest they should be removed from the study.
- Consideration should be made to allow food and water to be available concurrently, as rodents typically do not eat without available water. Additionally, scheduled regulation should make food and/or water available for at least 15 minutes a day.
- The acceptable amount of body weight loss due to any form of food or water restriction will be protocol specific. Full grown animals can be fed 70% of ad libitum food consumption until they reach 85% of a baseline weight. Upon reaching this point, they should no longer be heavily

restricted. More than a 15% loss in body weight within a 24-48 hour time frame shall require rigorous scientific justification.

- The animal care staff must be fully informed of the need for restriction to prevent animals from receiving improper rations.
- Cages housing restricted animals should be clearly identified by means of a card or some other means.

In conditioned-response studies, the use of a highly preferred food or liquid as a positive reinforcement might circumvent the need for restriction. When restricting water, skin turgor, mucous membrane dryness and urine output should be monitored for signs of dehydration. Behavioral changes that suggest stress include, but are not limited to, changes in sleep cycles, abnormal social interactions, cage chewing, barbering, abnormal vocalizations and aggression.