



**THE UNIVERSITY OF TOLEDO
INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE**

SUBJECT: Food and Fluid Restriction

DATE: August 21, 2024

Food and Fluid Restriction Guideline

At times, an experimental design may require food and/or fluid restriction to create a physiological or psychological state consistent with an experimental goal. The IACUC is required to approve these restrictions and ensure that they are scientifically justified, that restriction is minimized as much as is possible given the experimental requirements, and that criteria are in place to monitor the health and well-being of animals on studies requiring these restrictions. This guideline addresses any deviation from free-feeding schedules, except pre-surgical fasting, which is considered in a separate document.

1. Food and/or fluid restriction for research purposes must be scientifically justified and approved by the IACUC.
2. Written records should be maintained for each animal to document daily food/fluid consumption, hydration status, and any behavioral and clinical changes used as criteria for temporary or permanent removal of an animal from a protocol. Body weight and/or body condition scores must be recorded at least weekly.
3. The food and/or fluid restriction must be clearly indicated on the cage and the use of a cage-based form must be used to indicate the timing (date and time) of such restriction.
4. Depending upon the length, duration, and/or extent of food or fluid restriction, animals may be placed into USDA Category E, based upon the IACUC's determination.
5. In the case of conditioned-response research protocols, use of a highly preferred food as positive reinforcement, instead of restriction, is recommended.
6. For protocols involving food restriction, special attention should be given to ensure that food/fluid intake meets the animals' nutritional needs, unless this is justified as a specific scientific goal or end-point.
7. Criteria should be established to indicate the need for supportive care and removal from the study, including euthanasia. The criteria may include:
 - a. Rapid loss of body weight
 - b. Loss of skin turgor or tenting of skin
 - c. Minimal or no urine output for >12 hours
 - d. Sunken eyes, listlessness, and inactivity

Rodents

1. Rodents typically consume 70-85% of their food and water during the night cycle. This needs to be kept in mind when developing and executing a food and/or fluid restriction protocol.
2. Animals should be gradually introduced to a food and/or fluid restriction schedule over time.
3. Maximum weight loss, due to food restriction, should not exceed 20% of baseline body weight.
4. Fasting for more than 24 hours is associated with stress and should be avoided unless strong scientific justification is provided.
5. Food must be provided at the same time as water, as rodents will often not eat if water is not available.

References

1. *The Guide for the Care and Use of Laboratory Animals*, 8th Edition. National Research Council Committee for the Update of the Guide for the Care and Use of Laboratory Animals. Washington (DC): National Academies Press (US).
2. *Guidelines for Diet Control in Behavioral Studies*, National Institutes of Health ARAC Guidelines, March 2023. https://oacu.oir.nih.gov/sites/default/files/uploads/arac-guidelines/b7_diet_control_in_laboratory_animals.pdf.
3. Rowland, Neil E. Food or Fluid Restriction in Common Laboratory Animals: Balancing Welfare Considerations with Scientific Inquiry. *Comparative Medicine*, 57(2), April 2007