

Subject: Food and Water Deviations

Source: UC Denver Institutional Animal Care and Use Committee (IACUC)
Effective Date: 07/10/2023
Replaces: 01/13/2020
Applies to: Personnel involved in research or teaching studies involving animals
Reference: Animal Welfare Act; PHS Policy on Humane Care & Use of Laboratory Animals; Guide for the Care & Use of Laboratory Animals



Introduction

The Institutional Animal Care and Use Committee (IACUC) maintains oversight review for federally mandated rules and regulations with regard to animal research, ethics, misconduct and biomedical research for the University of Colorado Denver (UC Denver).

Policy Statement

This policy is intended to provide information on the requirements of food and water restriction and to establish procedures to be followed when restricting food and/or water. Standard housing of most laboratory animals provides *ad libitum* access to food and water.

Food/Water Restriction

Food or water restriction of any duration for research purposes needs to be scientifically justified and approved in the IACUC protocol. If the restrictions meet the definitions below, physiologic or behavioral parameters must be monitored, including criteria for ending the restriction regimen if adverse outcomes occur, such as weight loss or dehydration. Animals meeting those parameters should be returned to ad libitum access to food and water. In the case of conditioned-response experiments, the use of a highly preferred food or fluid as a positive reinforcement, instead of restriction, is recommended. Each protocol proposing food or water restriction will be considered and reviewed by the IACUC on a case-by-case basis.

Water restriction is defined as the discontinuation of ad libitum access to water for longer than 12 hours. It encompasses total deprivation and regimented access to water.

- It should be noted that rodents, especially mice, can become dehydrated very quickly.
- In rodents, food consumption is known to decrease with water restriction.

Food restriction is defined as the discontinuation of ad libitum access to food for longer than 24 hours for simple stomach animals, or longer than 48 hours for ruminants. It encompasses total deprivation and regimented access to food.

- It should be noted that rodents, especially mice, have a very high metabolism and gastrointestinal transit time. Therefore, they can be affected very quickly and significantly from food restriction.

Food/Water Restriction Information and Notification

- Food or water restriction should only be applied to singly-housed animals to prevent cannibalism.
- Physiologically, rodents are not able to vomit and therefore would not benefit from food or water restriction prior to surgery like many larger animals. Food and water restriction should therefore be reserved for specific scientific purposes.
- Daily Check by Lab Staff: Animals under a food or water restriction regimen must be checked daily for signs of morbidity (abnormal posture, rough hair coat, difficulty ambulating).
- Written records **MUST** be maintained and kept near the animal to document daily food or water consumption
 - OLAR flags **MUST** be utilized to inform staff of restrictions
 - The back of these flags can be utilized to document daily consumption
- Precautions that **MUST** be used in cases of water restriction to avoid dehydration include:
 - Recording of body weight at least three times per week - or more often for smaller animals, such as rodents.
 - Behavior/clinical changes used as criteria for removal from the restriction regimen
 - Comparison of body weight to normal growth curves for that strain and/or littermates growth curves, if applicable. For older animals, comparison to the body weight pre-restriction is acceptable.

Food/Water Removal Notification

It is required that **any** food or water removal must be marked with standardized OLAR flags, as OLAR staff must know the status of the animals' food/water regardless of the IACUC definition of restriction.

- Daily check by lab staff: Animals undergoing food or water removal must be checked daily for signs of morbidity (e.g., abnormal posture, rough hair coat, difficulty ambulating)
- OLAR flags **MUST** be utilized to inform staff of food/water removal.

Per regulatory requirements, failure to comply with this policy may result in notification of your funding agency (e.g. NIH) and regulatory agencies (e.g. USDA) that your research has violated federal and/or local policies regarding the humane use of animals. This notification may affect continuous funding of your animal-related research. Further, depending on the violation, you may be required to take additional training and/or your privilege to conduct animal research at UC Denver might be temporarily suspended or even completely revoked.