

**Food and Fluid Regulation in  
Rodents**  
IACUP Policy  
Effective Date: March, 2015



**I. Purpose**

This policy addresses food and water regulation as part of a protocol for experimental reasons. This policy does not apply to food and water regulation for maintenance of healthy or optimal body weight, or other food or water regulation implemented by LARC veterinarians, or pre-surgical fasting. This policy has been developed to ensure that UCSF complies with the Guide for the Care and Use of Animals, 8th Edition.

**II. Regulatory or Accreditation Authority**

*The Guide for the Care and Use of Laboratory Animals, 8th Edition, November 2013. – Food and Fluid Regulation. p. 31-32.*

**III. Scope**

This policy applies to all research involving rodents, and must be adhered to if the protocol includes food or fluid regulation.

**IV. Definitions**

**Food/Fluid Regulation:** regulation may entail scheduled access to food or fluid sources, so an animal consumes as much as desired at regular intervals, or restriction, in which the total volume of food or fluid consumed is strictly monitored and controlled (The Guide).

**Ad Libitum:** normal feeding practices.

**V. Policy**

**A. IACUC Protocol and Scientific Justification**

Any sort of food or fluid regulation must be included in the IACUC protocol, scientifically justified, and approved before being implemented. The protocol must identify and scientifically justify the details of the food or fluid regulation (Details which must be included can be found in **Appendix A**):

**B. Monitoring and Record Keeping**

Rodents on food and/or fluid regulation must be monitored daily (*including weekends and holidays*), and weighed at least twice per week or more frequently for animals undergoing greater restrictions. The weight of the rodent must be recorded and compared to either baseline age and strain-matched controls, or the baseline weight (in the case of an adult).

Cages containing rodents which are on a food and/or fluid regulation study must be labeled in accordance with LARC guidelines.

The lab must keep a written record for each animal undergoing food or fluid regulation. The records must be made available to IACUC and LARC staff, and must include:

- The baseline weight of the animal before being placed on the regulated diet;
- Date (record must be updated daily);
- Indication of water and food provided or consumed (daily);
- Weight and BCS (twice weekly);
- hydration status (twice weekly) such as:
  - 10% weight loss,
  - displaying listlessness/inactivity,
  - increased “skin tent” or skin turgor,
  - fuzzy facial fur due to piloerection,
  - no urine output for 12 hours or more, and/or
  - sunken eyes;
- Any interventions taken to remedy clinical dehydration;
- Any behavioral or clinical changes used as a criteria to temporarily or permanently remove the animal from the protocol; and
- Initials of the observer/recorder.

### **C. The Level of Regulation**

In accordance with the Guide for the Care and Use of Laboratory Animals, the least amount of regulation necessary to achieve the desired result must be used.

Ad libitum values should be used as a baseline for food and/or fluid regulation. Ad libitum 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.

Animals should be provided an appropriate period of acclimation during which time they receive ad lib feed and water prior to beginning any food or fluid regulation.

Rodents must be given sufficient time to acclimate to new food/fluid regulation schedules.

Water should be provided concurrently with food, unless it is scientifically justified and included in the protocol to provide them at separate intervals.

Regulation is strongly discouraged for rodents less than 14 weeks of age without additional specific scientific justification.

## **IACUC Appendices for Food and Fluid Regulation in Rodents**

Appendices are provided as IACUC suggestions or recommendations. Deviation from the attached appendices may require IACUC approval.

### **Appendix A: Protocol Requirements for Food and Fluid Regulation**

**IACUC Approved: March 2015**

Protocols involving food or fluid regulation must include the following information:

- Alternatives to food and/or fluid regulation included in literature search;
- Schedules of food and/or fluid regulation as well as frequency of monitoring;
- Duration of periods where food and/or water is not provided and necessary level of regulation;
- The age of affected rodents if the rodents are under 14 weeks old;
- The potential adverse consequences of food/fluid regulation, such as expected weight loss, BCS change, or dehydration, and planned interventions, such as provision of food or an oral fluid source or subcutaneous fluid administration
- Methods for assessing the health and well-being of the animals;
- Behavioral or clinical humane endpoints, which will be used as criteria for temporary or permanent removal of an animal from the protocol;
- The methodology of the food and/or fluid regulation, e.g. “good regulation equal to 70% of ad libitum intake until the rodent is 80% bodyweight of peer controls.”
- How frequently the animal is provided access to food and/or fluids;

In accordance with the Guide for the Care and Use of Laboratory Animals, Eighth Edition, for conditioned response protocols, use of a highly preferred food or fluid is preferable to food or fluid regulation. The scientific justification in the protocol should include reasons why positive reinforcement could not be utilized in lieu of food or fluid regulation.