ANIMAL EYE CONSULTANTS OF IOWA

Animal Eye Consultants of Iowa	
Institutional Animal Care and Use Committee	
Policy #35	**"Food and Fluid Regulation and Diet Manipulation in Animals"**
Approval Date: 5/25/2023 (Replacing Version 4/17/2020)	

A. Purpose

The purpose of this policy is to establish the standards and expectations for investigators performing food and/or fluid regulation or experimental diet manipulation in animals used for research or teaching purposes. Food and/or fluid regulation and the use of experimental diets requires special IACUC consideration due to its potential impacts on animal welfare. This policy does not apply to routine fasting for up to 12 hours (monogastric) or 24 hours (ruminant) prior to sedation/anesthesia.

Definitions:

- **Regulation** - Deviation from the standard husbandry practices in the amount or availability of food or water. It includes scheduling and restriction as defined below.
- **Scheduled Access** - The animal may consume as much as desired at regular intervals.
- **Restriction** - The total volume of food or fluid consumed is strictly monitored and controlled.
- ***Ad libitum*** - The animal has free access to food and/or water at all times.
- **Special Diet** - Any experimental or non-standard diet for the species.
- **Treats/Food Rewards** - A highly palatable food or fluid item offered in addition to the animal's standard diet, often for reinforcement purposes.

B. Background

Regulation of food and/or fluid intake or the use of special diets may be required for the conduct of some research studies. When these studies are being planned and executed, the objective should be to use the least restriction necessary to achieve the scientific objectives while maintaining animal well-being.

C. Policy

IACUC protocols that involve food and/or fluid regulation or special diets must be scientifically justified, and animals must be monitored closely to ensure welfare. Written records must be maintained as described below and kept in or just outside the animal room to be available for IACUC and/or veterinary review.

Protocols must adhere to the following requirements:

- Food and/or Fluid Regulation
    - Provide a complete description of the proposed food and/or fluid regulation including the feeding or watering schedule, duration, and the total amount of the food and/or fluid restriction (i.e., an exact percentage of the amount of food/fluid being restricted that was calculated from a measured amount of normal daily consumption).
    - Describe any potential and/or expected adverse effects that may result from the food and/or fluid regulation.
    - Describe how the animals will be monitored. Monitoring must be daily, and should include hydration status, body condition (Rodent BCS Chart) and food and/or fluid consumption. Body weights should be recorded at least weekly. If food and/or water is restricted, the animal must be individually housed to be able to monitor input, unless the PI justifies otherwise.
    - Specific criteria (behavioral and/or clinical changes) for an animal's early removal from the study must be clearly defined.
    - The least restrictive schedule that will achieve scientific objectives should be utilized.
    - For reinforcement or training purposes, it is recommended to use a highly preferred treat as positive reinforcement instead of restriction.
    - The humane endpoints criteria must adhere to what is described in the AEC IACUC Policy 8 – Humane Endpoints, unless otherwise described on the ASAF and approved by the IACUC.

- Experimental/Non-standard/Special Diets
    - Provide a complete description of the experimental diet including length of use and how it differs from the standard diet for the animals used (species, age, strain, pregnancy, gender, etc.)
    - Diet must not be expired and must be kept in labeled, clean, easily sanitized, vermin-proof containers.

  - Provide information on where and how the diet is prepared (AEC feed mill, commercial vendor, laboratory-made, etc.) and how the quality of the diet is assured for nutritional content and being free of contaminants (heavy metals, residues, etc.).
  - The diet must meet the animal's nutritional needs unless adequately justified otherwise.
  - Provide details about the method and duration of storage of the experimental diet.
  - Describe any potential and expected adverse effects of diet manipulation.
  - Describe how the animals will be monitored. Depending on the type of manipulation, monitoring should include daily observation. In addition, intake and bodyweights may also need to be monitored.
  - Include any details about potential occupational health and safety concerns that may be associated with use of the experimental diet.

- Treats/Food Rewards
  - Treats and food rewards are not considered to be a special diet but must be adequately described in the protocol if used as a behavioral modifier or other integral part of the experiment.
  - Treats should be species appropriate, and care should be given to ensure it does not interfere with their health or consumption of the animal's normal diet.
  - Treats must not be expired and must be kept in labeled, clean, easily sanitized, vermin-proof containers.

Record Keeping:

- Food and/or Fluid Regulation - Two sample daily log sheets for food or fluid regulation are available for use here, or you may develop your own log based on the template. The following items must be maintained for each animal on the study:
  - Signage to clearly mark which animals are on food or fluid regulation
  - General information including protocol number, PI, and contact person
  - Baseline weight (before regulation period begins)
  - Daily food consumption (for food restriction)
  - Daily fluid consumption (for fluid restriction)
  - Feeding schedule if scheduled access

  - Daily health observations (e.g., hydration status, behavior, body condition score, presence of urine and feces, or any other criteria used to determine temporary or permanent removal from the regulation)
  - Weekly body weight (may be more frequent if protocol requirements indicate)
  - Date, time, and initials of personnel who evaluated the animals (daily) must be in the animal housing area.

- Experimental/Non-standard/Special Diets: The following items must be maintained for each animal on the study:
  - Signage to clearly mark which animals are on a special diet
  - General information including protocol number, PI, contact person
  - Daily health observations (e.g., hydration status, behavior, body condition score, presence of urine and feces, or any other criteria used to determine temporary or permanent removal from the special diet)
  - Date, time, and initial of personnel who evaluated animals must be in the animal housing area.
  - If there are anticipated adverse effects, and/or if protocol requirements indicate monitoring adverse effects such as weight loss, then additional monitoring and weighing of the animals may be necessary.

D. References

- Animal Welfare Act and Regulations, in accordance with 9 CFR, Ch.1 Part 3-Standards-Subpart A through Subpart D.
- National Research Council, 2011. Guide for the Care and Use of Laboratory Animals. 8th Edition. The National Academies Press, Washington, DC. Page 31: Food and Fluid Regulation.
- Rowland NE. 2007. Food or Fluid Restriction in Common Laboratory Animals: Balancing Welfare Considerations with Scientific Inquiry. *Comparative Medicine* 57(2): 149-160.
- Boston University Research Support, 2019. Food Regulation and Restriction in Rodents Policy.
- Westfield State University IACUC, 2017. Food and Water Regulation in Laboratory Animals Policy.

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Sample #1

Daily Log Sheet for Food or Fluid Regulation

Refer to the AEC IACUC Policy #35 for Food or Fluid Regulation on the IACUC Website

Protocol #:_____ PI:_____

Contact Person:_____

Contact Phone/s:_____

Type of Regulation: Food ☐ Water ☐ Both ☐ Baseline Weight: _____

Regulation Start Date: _____ Regulation End Date: _____

Feeding Times (if scheduled access): _____

Animal ID# _____ *If being offered ad-libitum, indicate "ad-lib" in column

Date/Time	Water* Amt given	Food* Amt given	Body Weight Minimum Weekly	Health Observations	Initials

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Sample #2

PI: _____ **IACUC protocol:** _____

ANIMAL ID: _____

Experimental Procedure: _____

Start Date of Experimental Diet or Food Regulation: _____

End Date of Experimental Diet or Food Regulation: _____

Date/time	***Appearance** N=Normal A=Abnormal	****Weight*** **(g)**	**Daily Food Consumption (Volume or mass)**	**Comments****	**Initials of observer**

Appearance of the animal:** ***describe any expected abnormalities here (hydration, body condition, activity level, posture, etc.)

****Animals will be weighed at least weekly**

*****If the animal loses >20% of starting weight that animal will be returned to normal diet until weight is regained.**