

UIC UNIVERSITY OF ILLINOIS
AT CHICAGO
**GUIDELINES – Food and
Fluid Regulation in
Animals**

Version 1.1

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I. Introduction

The Public Health Service Policy on Humane Care and Use of Laboratory Animals and the Animal Welfare Act require that research, teaching, and testing, which use animals be performed in such a way as to minimize discomfort, distress and pain consistent with sound research design. The UIC Animal Care Committee (ACC) must review the protocols submitted to determine that the research project conforms to the Institution's Letter of Assurance and meets the following requirements:

1. "Animal care and use shall be conducted with consideration for the health and comfort of the animals and in conformance with applicable laws and regulations."
2. "Research and testing procedures should be designed to avoid discomfort, distress, and pain."

The use of food and fluid regulation paradigms is not uncommon in animal studies involving homeostatic regulation, motivated behaviors, and the performance of behavior where food/fluid consumption is the motivator. Whenever possible studies should be designed to use preferred foods/fluids as the motivator; however, the ACC recognizes that food/fluid regulation paradigms can be essential methodologies in a variety of experimental situations. The ACC also recognizes that regulation methodologies may elicit behavioral and physiological responses consistent with stress/distress. Therefore, the ACC has adopted the following definitions and guidelines for studies involving food and fluid regulation in animals. Because species, age, and health status differences may exist in studies involving food and fluid regulation in animals, the ACC reserves the right to customize definitions and guidelines as deemed necessary.

A. Definitions

The ACC has developed two categories for food and fluid regulation:

1. *Scheduled access*: An animal is given access to food and/or fluid sources for a period of time that allows the animal to consume its daily allotment of food and fluid. In such studies animals will not lose weight and be the same weight as age-matched controls. Scheduled access is used when animals need to perform behavioral testing during a set period of the day, then animals are fed after the testing period. Animal use protocols utilizing scheduled access to food and/or fluid will undergo subcommittee review prior to full ACC approval.
2. *Restricted access*: An animal's total volume of food and/or fluid consumed is strictly monitored and controlled. Restricted access is used when an animal is being given less than its daily allotment of food/fluid. In such studies animals will lose weight or gain less weight than age matched controls. When food/fluid restricted access results in >10% body weight loss or >10% difference from aged-matched control animals fed ad libitum the protocol will be reviewed in its entirety by both the subcommittee and full ACC. Restricted access protocols that result in ≤ 10% body weight loss or ≤ 10% difference from aged-matched control animals fed ad libitum will be reviewed at subcommittee level prior to full ACC approval.

II. Institutional Guidelines

The following guidelines have been developed to assist investigators with the process of completing the UIC Protocol for Animal Use and to assure that animal welfare issues are appropriately addressed.

A. Scheduled access:

1. Investigators should describe in detail in Form A, item 8g, the following information:
 - a. Designate that animals will undergo food/fluid scheduling.
 - b. Duration of the food/fluid scheduling study.
 - c. Duration of time of animal access to food and fluid.
 - d. Assurance that the food scheduling is compatible with normal health and well-being for the animal and that regular monitoring of animal health is occurring.
 - e. Criteria to determine when an animal will be removed from a food and/or fluid scheduling study.
 - f. Assurance that the animal is receiving a complete and balanced diet.

B. Restricted access:

1. Investigators should describe in detail in Form A, item 8g, and Form B, item 10, the following information:
 - a. Designate that animals will undergo food/fluid restriction.
 - b. Duration of the food/fluid restriction study.
 - c. Duration of time of animal access to food and fluid.
 - d. Description of the monitoring program to assess an animal's physical condition including:
 - i. Food and fluid consumption should be recorded daily.
 - ii. Urine and feces output and skin and fur condition should be assessed daily.
 - iii. Animals should be weighed weekly or more often, as might be necessary for small animals such as rodents.
 - iv. Documentation to support monitoring program.
 - e. Criteria to determine when an animal will be removed from the food and/or fluid restriction study.
 - f. Justification of why positive reinforcement techniques are not appropriate.
 - g. Assurance that the animal is receiving a complete and balanced diet.

References:

- *Guidelines for the Care and Use of Mammals in Neuroscience and Behavioral Research. National Research Council. National Academies Press, Washington D.C., 2003.*
- *Guide for the Care and Use of Laboratory Animals, 8th Edition. National Academy Press, Washington, D.C., 2010.*
- *Public Health Service Policy on Humane Care and Use of Laboratory Animals. Reprinted 2002.*
- *Animal Welfare Act, Animal and Plant Health Inspection Service, USDA, 1986.*
- *Animal Care Policies, Animal and Plant Health Inspection Service, USDA, 1997.*
- *Food and Water Restriction on Resting Serum Cortisone and Open Field Behavior in Laboratory Rats. Contemporary Topics in Laboratory Animal Science. Vol 37 (4), 1998.*