

University of Colorado at Boulder, Office of Research Integrity Institutional Animal Care and Use Committee

SOP #12

Title: Food and Water Restriction

Introduction

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. (Guide, 8th edition, pages 30-31)

Procedures

All planned restrictions or total deprivation of food and water, regardless of duration, require IACUC approval. Restrictions up to 24 hours require checking Category B (USDA category C) on the protocol application, while extended restrictions are Category D (USDA category E). All restrictions or total deprivation requires scientific justification.

Mammals and birds used for research and teaching are generally expected to have *ad lib* access to food and water. Reptiles, fish and amphibians may have different requirements, especially with regard to food availability, depending on species. Incidental food and water restrictions, usually 2 hours or less, often occur when cages are transported or animals are placed in test chambers. These types of incidental restrictions of food and water do not require specific IACUC approval. Planned restrictions or total deprivation occur for a variety of experimental conditions (training to perform a task, fasting required for certain blood tests, etc.) that are required to conduct the research project.

Food and water restriction in rodents

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 and water restriction. Also, mice and rats are not able to vomit and therefore do not benefit from food and water restriction prior to surgery like a larger animal, so any food restriction for something other than a specific scientific reason is not recommended.

Options for monitoring food and water restriction

- Daily recording of food or fluid intake
- Recording of body weight at least three times per week - or more often for smaller animals, such as rodents. Weight log should be maintained in the room with the animals
- Food is often restricted, for training purposes, and maintained at a specific percentage (i.e. 80%) of their starting weight. For growing animals, body weight will be compared to normal growth curves, not to the initial body weight of the animal.

Other considerations

- Special attention should be given to ensure that animals consume a balanced diet, as food consumption may decrease with fluid restriction.
- In the case of conditioned-response experiments, use of a highly preferred food or fluid as a positive reinforcement instead of restriction is recommended.
- When administering compounds in drinking water, verify that animals are drinking enough to avoid dehydration. Unpalatable water might be refused.

IACUC Approval

In order to be approved by the IACUC, water or food restrictions or total deprivation for research purposes need to be scientifically justified and a program established to monitor physiologic or behavioral parameters, including criteria for removal of the animal from the experiment (such as weight loss or hydration status).