



Dartmouth College

Animal Care and Use Program

Institutional Animal Care and Use Committee

IACUC Policies and Procedures

Title: Food and/or Fluid Restriction for Rodents

Purpose: Food and/or fluid restriction may be required in order to achieve a variety of research and/or husbandry objectives. These objectives may include: conditioning a response in order to train animals to perform a task, nutrition studies that may require altering the levels of specific nutrients below nutrient requirements, or pre-surgical fasting.

Policy: The policy, food or fluid restriction is defined as any deviation from the normal husbandry procedures as provided by the Animal Resources Center. Any food and/or fluid deviation must be scientifically justified in an IACUC approved protocol. The protocol should mention the length of time the animal will be restricted from ad libitum access to food or fluid, or the amount of time the animal is allowed ad libitum access to food per 24 hour period. The amount of food/fluid restriction used should be the minimum level that will achieve the objective. Examples of specific endpoints to restriction, such as failure of the animal to gain weight and/or loss of greater than 15-20% of body weight of a free fed similar type animal (or other percent based on published guidelines for that particular species and strain) should be mentioned. The protocol needs to specify what happens when the end point is reached.

Guidelines: Principal Investigators (PI) should provide a narrative statement on why alternative methodologies such as use of a preferred food or fluid as positive reinforcement cannot be used. In the event that the food restriction is a “special”, or alternative diet (lacking nutrients), the investigator will need to provide justification to the IACUC requesting this diet.

Since it has been shown that some methods of food and/or fluid restriction are physiologically and/or psychologically stressful, the PI should note in the Post-Procedural Care Section of the protocol, which research personnel are responsible for carrying out any deprivation studies so that an ARC veterinarian may contact the appropriate individuals in an emergency. Also in this section, the PI should describe the plan to monitor parameters such as body weight, hydration status, body condition, and food consumption. Some indications that an animal may not be thriving due to caloric or fluid deprivation are: poor body condition, muscle wasting, prominent bones, sunken eyes, poor hair coat, lethargy, dehydration, constipation, crusting around eyes and nose and loss of skin elasticity.

Animals should be maintained at a percentage of their baseline weight or that of aged matched controls must be weighed at least weekly and recorded. The weights should be compared to the baseline weight, age matched controls or established growth curves, and the food and water restriction should be adjusted accordingly. Chronic fluid deficiencies often result in a loss of body weight due to the reduced food consumption therefore fluid restricted animals must also be weighed weekly. Rodents may need increased monitoring due to their small size and increased metabolism.

Food and water consumption must be recorded daily and records must be available for review by the ARC veterinarians and the IACUC. The type of food (i.e., regular chow, special treats) and fluid (i.e., water, juice) must be specified. The investigator is responsible for ensuring that “INVESTIGATOR WILL [FEED/WATER]” cage cards are placed on each cage for animals undergoing restriction. These cards are to be maintained by the investigative/research staff and are to be available to the ARC veterinary staff for review. The laboratory staff must record body weight on the reverse side of this card as indicated on the card.

In situations where a food/fluid restricted animal appears sick or unfit (see symptoms above), ARC veterinarians will have the authority to remove these animals from the restricted food/water study and provide food or water or any other necessary medical treatment. ARC veterinarians will try to contact the investigator before removal of animal from study or initiating medical treatment, whenever possible.

Animals on study for extended amounts of time will have regular physicals with an ARC veterinarian.

Fluid Restriction

When fluids are restricted, the PI must ensure that the sum of the fluid earned through reward and the fluid provided through free choice are sufficient to maintain the animal in a healthy state. When water is not provided ad libitum, either the animal should be permitted to earn fluids to satiety during the period of behavior training or its fluid intake should be appropriately supplemented on a daily basis.

When animals are returned to water control after an extended ad lib period, baselines may need to be adjusted. Investigators should describe how this would be accomplished in the IACUC protocol. One option may be to use the last study weight and the current weight and average them as the starting point.

Food Restriction

Constant access to water is generally provided under food control regimens.

Pre-anesthetic Fasting or Surgical Fasting

For non-rodent species, food may be withheld for up to 18 hours prior to an anesthetic procedure (i.e. overnight fasting). Water should be available during the overnight fast but may be removed in the morning on the day of surgery. In most cases, pre-anesthetic fasting is not required for rodents. However, specific surgical procedures may require an overnight fast and should be explained in the IACUC Protocol.

INVESTIGATOR WILL	
FEED	WATER <input type="checkbox"/>
CAGE CARD NUMBER _____	
TIME PERIOD:	
FROM _____	TO _____
REQUESTED BY: _____	

BEGINNING BODY	
WEIGHT _____	
(WEEKLY WEIGHT RECORDS ON REVERSE)	