

**University of Prince Edward Island  
Animal Care Committee  
Standard Operating Procedure**

<b>SOP Title:</b>	Deprivation or Restriction of Water or Food	<b>SOP #:</b>	ACC - ET01
<b>SOP Section:</b>	Experimental Technique	<b>Issued by:</b>	ACC
<b>Created:</b>	April 2011	<b>Version Date:</b>	May 2016
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## **1.0 Introduction**

- 1.1 Deprivation or restriction of food or water is sometimes necessary in studies involving behavior, training, obesity, nutrition, etc. The intent of this standard operating procedure (SOP) is to outline the policy regarding water or food deprivation/restriction.

## **2.0 Materials**

- 2.1 Not applicable

## **3.0 Procedures**

### **3.1 Definitions**

- i. 'Deprivation' is defined as complete withholding of food or water.
- ii. 'Restriction' is defined as a partial limitation on the ad libitum intake of food or water. Restriction is typically described in terms of either the amount of food or water provided on a daily basis or the amount of time each day that the animal is given access to food or water or as a percentage of the ad libitum daily intake for a defined period of time.

### **3.2 Principles**

- i. It is recognized that the requirements for food or water may differ between species and even between individual animals within a species. In addition, it is understood that metabolic requirements for food and water will be influenced significantly by environmental and experimental variables such as temperature, administration of compounds which affect metabolic or diuretic rates, animal activity (e.g. placement of a wheel in a rodent cage), etc. Therefore this SOP assumes optimum conditions for animals which are deprived or restricted of food and/or water. Any of these variables should be taken into consideration in the ACC approval of a protocol employing this technique.
- ii. The least deprivation/restriction that will achieve the scientific objective should be used.

- iii. In the case of conditioned response research protocols, use of a highly preferred food or fluid as positive reinforcement, instead of deprivation/restriction is recommended.
- iv. Although protocols proposing water or food deprivation/restriction may be approved by the ACC with appropriate ethical and scientific merit, each animal use protocol proposing this technique will be considered and reviewed by the ACC on a case-by-case basis.
- v. When experimental situations require food or fluid deprivation/restriction, at least minimal quantities of food and fluid should be available to provide for development of young animals and to maintain long-term wellbeing of all animals.

### 3.3 Description of the level of deprivation/restriction

- i. Describe how food or water will be limited. Indicate the degree and length of time of limitation, the time of any scheduled 'breaks' from an on-going program, criteria used to determine whether an animal should be removed from the study, etc.
- ii. The level of restriction is typically measured in terms of either the amount of food or water provided on a daily basis or the amount of time each day that the animal is given access to food or water or as a percentage of the ad libitum daily intake. For instance, investigators may monitor and record the normal daily intake of an animal prior to beginning a restriction protocol to determine how much food/water can be removed from an individual without negatively impacting their health.
- iii. Please note that investigators working with young, developing animals should specifically address their use in the protocol, since these animals may have additional dietary requirements for maintaining a normal rate of growth.

### 3.4 Record Keeping

- i. Record keeping is extremely important to document the health of the animal prior to and during the restriction period.
- ii. Records must be maintained daily. The schedule of food/water availability must also be documented and records accessible for inspection by the University Veterinarian. The following items must be documented at a minimum for each animal on study:
  - Person monitoring the animals
  - General Information (i.e. protocol number, animal identification number, principal investigator, contact person, contact phone number)
  - Baseline weight (before restriction period began)
  - Date (daily documentation is necessary)
  - Total fluid amount per day (ml)
  - Total food amount per day (g)
  - Weight (daily documentation is necessary)

- State of hydration
- Health/Condition
- Initials

### 3.5 Intervention

- i. If an animal under a diet restriction protocol experiences an acute body weight loss of more than 7% over 24-48 hours, or a chronic body weight loss of 15% over any period, this must be reported to the University Veterinarian.
- ii. If an animal under fluid restriction protocol is dehydrated by greater than 10% on the basis of either physical examination (eyes sunken, extended skin tenting) or clinical pathological measurements (Hemoconcentration), the University Veterinarian must be notified and appropriate intervention must be taken.
- iii. Exceptions to these guidelines will require prior approval from the ACC.

## 4.0 **Safety**

- 4.1 Not applicable

## 5.0 **Contingencies**

- 5.1 Not applicable

## 6.0 **References**

- 6.1 *Food and water restriction protocols: Physiologic and behavioural considerations*. Linda A. Toth and Thomas W. Gardiner. Contemporary Topics 2000, Volume 39, No. 6 pp. 9-17  
<http://www.ufrgs.br/bioterio/artigo2.pdf>
- 6.2 *Guide for the Care and Use of Laboratory Animals*. National Research Council; National Academy Press, Washington, DC, 1996.  
<http://oacu.od.nih.gov/regs/guide/guide.pdf>
- 6.3 *Guideline for Food and/or Fluid Scheduling and Restriction And Fasting*. University of Pennsylvania, Office of Regulatory Affairs.  
<http://www.upenn.edu/regulatoryaffairs/Pdf/Guideline%207-Food%20Water%20Restriction.pdf>
  - 6.3.1 *Guidelines for Diet Control in Behavioral Studies*. National Institutes of Health (NIH) ,  
[http://oacu.od.nih.gov/ARAC/documents/Diet\\_Control.pdf](http://oacu.od.nih.gov/ARAC/documents/Diet_Control.pdf)

- 6.4 *Food Deprivation or Water Deprivation - Guidelines for Diet Control in Behavioral Studies*. United States Department of Agriculture Agricultural Research Service National Agricultural Library Animal Welfare Information Center, Resources Series 7.  
<http://www.nal.usda.gov/awic/pubs/IACUC/food.htm>
- 6.5 *Fasting in rodents*. Norecopa.  
<http://www.norecopa.no/norecopa/vedlegg/Food-deprivation.pdf>