



Policy Statement #17–04 Provision of Feed and Water Faculty of Science, Mahidol University–Institutional Animal Care and Use Committee (MUSC–IACUC)

The MUSC–IACUC recognizes that ethical use of animals requires animals receive adequate feed/water to assure normal physiology. Occasionally, research or testing activities will require reduced quantity or quality of feed/water. In that situation, IACUC approval is required. Monitoring for health risks and clear milestones for animal well-being is also necessary. The MUSC–IACUC defines the following terms and conditions for provisions of feed and water:

1. **Ad libitum or free access:** A situation where animals have unfettered access feed/water. *Ad libitum* feeding is occasionally harmful to the well-being of animals (e.g., rabbits). In these cases, limit feeding shall be used to provide sufficient quantities and quality for normal growth and maintenance whereas water may be provided *ad libitum*.
2. **Restricted feed/water:** In a situation where quantities of feed/water are controlled and measured, and are less than the 'standards' for species, this restricted feed/water must not cause significant negative impact upon animal well-being. There are three general methods of restricting feed/water, only one method requires IACUC approval;
 - i. **Restriction as a management activity:** Feed restriction is a necessary husbandry process to prevent over-eating which may result in dysbiosis and/or obesity (e.g. rabbits), either of which is potentially fatal to the unrestricted animal. Metering of food for purposes of animal well-being does not require IACUC approval. MUSC–CAF veterinary clinical opinion is sufficient
 - ii. **Restriction as a clinical activity:** Feed restriction is a necessary clinical care activity to prevent aspiration or asphyxiation. Restriction may also be employed for several other clinical veterinary reasons. Restricted feed or water intake based upon veterinary clinical requirements does not require IACUC approval. MUSC–CAF veterinary clinical opinion is sufficient.
 - iii. **Restriction as a research activity:** Feed restriction is a necessary component in certain types of research. IACUC approval is required. For IACUC approval, the following information must be provided;
 - a) The scientific justification for restriction of feed/water
 - b) A program to monitor physiologic or behavioral parameters
 - c) Criteria for removal of the animal from the study if specific endpoints have been reached (e.g., weight loss, hydration state, behavior change)
 - d) Urine specific gravity measurements, if appropriate, should be frequent enough to track increasing levels of dehydration (including endpoints for removal from study)

- e) Hematocrit measurements, if appropriate, may be used to track increasing levels of dehydration (including endpoints for removal from study)
 - f) A recovery plan for rehydration must be based upon a clinically acceptable rehydration plan
3. **Deprivation of feed/water:** Deprived intake generally means no intake of feed/water for extended periods of time which may have impact upon animal wellbeing. Deprivation of feed/water for research or clinical purposes may be necessary, and it requires IACUC approval. However, the minimum quantities of food and fluid must be sufficient to sustain normal physiology. Deprivation is defined as follows;
- i. Food deprivation: defined as no intake for more than 36 hours for simple stomach animals
 - ii. Water deprivation: defined as no intake for more than;
 - a) 8 hours: Lagomorphs
 - b) 23 hours: Other species (including rodents)
4. **IACUC Approval of feed/water deprivation** (Pain category E). IACUC approval requires;
- i. An assessment of ethical cost and/or scientific benefit
 - ii. Clear scientific justification
 - iii. PI agreement to notify the MUSC–CAF veterinary staff prior to starting the period of deprivation
 - iv. A program to monitor physiologic or behavioral parameters (as in 2–iii)
 - v. A recovery plan for rehydration (based upon the humane endpoints)