

UM Food and Fluid Restriction Guidelines

University of Mississippi Institutional Animal Care and Use Committee

PURPOSE: to provide guidance regarding food and fluid restriction for research animals.

FOOD OR FLUID RESTRICTION DEFINITIONS

- Standard for Food Intake: “Animals should be fed palatable, uncontaminated diets that meet their nutritional and behavioral needs at least daily, or according to their particular requirements . . . “p. 65 in the [Guide for the Care and Use of Laboratory Animals](#), NRC 8th ed. 2011 (the Guide). The IACUC interprets this to mean "ad lib" feeding unless otherwise justified.
- Standard for Water Intake: "Animals should have access to potable, uncontaminated drinking water according to their particular requirements." (P. 67, " the Guide, 2011). The IACUC interprets this to mean "ad lib" feeding unless otherwise justified.
 - Restriction is any deviation from the standards for food and water intake.
 - Deprivation is total withholding of either food or fluid.
 - Pre-operative fasting of rodents is not recommended except as specific procedures require.

FOOD OR FLUID RESTRICTION GUIDELINES

The IACUC endorses as guidelines the following excerpt from page 31 of the Guide:

“The development of animal protocols that involve the use of food or fluid regulation requires the evaluation of three factors: the necessary level of regulation, potential adverse consequences of regulation, and methods for assessing the health and well-being of the animals. The animals should be closely monitored to ensure that food and fluid intake meets their nutritional needs. Body weights should be recorded at least weekly and more often for animals requiring greater restriction.”

Experimental restriction of either food or fluid intake should be justified based on the scientific objectives of the study, and the least restriction that will achieve these objectives should be used. The plan for appropriate periodic weighing, starting with a pre-experimental weight, and monitoring of animal health must be included in the protocol. When food deprivation or restriction is planned, the following humane endpoints apply, unless alternate endpoints have been appropriately justified and approved by the veterinarian and the IACUC:

- Animals that acutely lose more than 20% of their body weight (compared to matched controls and/or a normal anticipated growth curve) should be eliminated from the study (euthanized) or placed back on a normal diet.
- When weight losses greater than 30% occur over a prolonged period (taking into account the normal anticipated growth for that animal), the deprivation or restriction must be terminated, or the animal must be euthanized if weight loss continues beyond 30%.

These guidelines should not be construed to prohibit moderate caloric restriction of animals which are being housed for long-term studies. “Management of caloric intake is an accepted practice for long-term housing of some species . . . for example, there is good evidence that mice and rats with continuous access to food can become obese with attendant metabolic and cardiovascular changes. . . Benefits of moderate caloric restriction in some species may include increased longevity and reproduction, and decreased obesity, cancer rates and neurogenerative disorders. “(p. 67, the Guide). However, a plan should still be included in the protocol for periodic (at least weekly) monitoring of body weights for animals on caloric restriction.