

COMPARATIVE MEDICINE  
LABORATORY ANIMAL FACILITIES

STANDARD OPERATING PROCEDURES  
FOR  
TREATMENT OF WEIGHT LOSS IN RESEARCH ANIMALS

1.0 **Purpose:**

This procedure outlines the treatment that will be employed for the various species housed at the CMLAF for weight loss in association with experimental procedures.

2.0 **Scope:**

This procedure applies to all CMLAF personnel and principal investigators involved with the use of research animals in experimental protocols that may induce weight loss.

3.0 **Introduction:**

Many times in research we are faced with situations during a study that affect an animal's health. One of the first indicators that an animal's well being has been compromised is a decrease in their body weight. The following paragraphs describe the procedures that should be adhered to when weight loss has developed.

4.0 **Procedure:**

4.1 This outline is a guideline for treatment for PI's to follow if their animals lose weight during their studies. If their animals continue to lose weight ( $\geq 10\%$  of their body weight) despite efforts initiated in accordance with this outline, the veterinary care staff should be informed. It is our goal to prevent the animals from becoming debilitated, emaciated, and/or moribund. Once an animal has declined to this point and/or lost 20% of its normal body weight, it must be euthanized. Our whole purpose is to prevent any and all animals from deteriorating to this point.

A. To clarify, an animal in a moribund state is close to death and exhibits the following signs:

1. Impaired ambulation,
2. Lack of physical or mental alertness,
3. Difficulty breathing,
4. Inability to remain upright, and
5. Not likely to survive until the next observation.

4.2 You need to be able to determine if the animals are able to eat or not. If an animal is not eating, reasons for this incapability should be investigated, i.e. malocclusion, pain, etc. Keep in mind if an animal is not eating, it is more than likely dehydrated and efforts to counteract this must be undertaken.

4.3 Milk and milk products should never be offered to the animals as treatment. Animals do not have the enzymes to breakdown these foodstuffs and will develop diarrhea and may become even more dehydrated.

4.4 All weights should be compared to the animal's initial weight obtained on the first day of experimentation.

- 4.5 For animals involved in studies that require food or water restriction, please refer to SOP 2.D.12.
- 4.6 If there is a question at anytime about an animal's well being or health status, the veterinary care-staff should be contacted for assistance.
- 4.7 The following is a rule of thumb when approaching weight loss:
- A. 5% weight loss → intervene using the suggested treatments described in the charts.
  - B. 10% weight loss → notify the veterinary staff for further help in treating the animal.
  - C. 15% weight loss → must notify the LAF veterinarian so aggressive treatment can be initiated ASAP.
  - D. 20% weight loss → euthanize.

#### 4.8 Mice, Rats, and Other Small Rodents

Weight Loss	Recommended Treatment
5-10%	Offer fresh wet chow daily and/or fruits/vegetables with a high water content ad lib (grapes, pineapple, Nutripet, seeds, nuts, banana, peanut butter). Offer a container of Recovery diet. Weigh animals daily and record weights on a weight chart. Discontinue treatment when the weights increase to normal. Treatment may be administered by the LAF staff or PI's technicians. Remove the animal from the study until it returns to its initial weight.
10-15%	Measures listed for 5% weight loss in addition to subcutaneous fluids (LRS, 0.9% NaCl, Normosol, Plasmalyte) administered once daily. <b><u>Mice</u></b> – 1-3mls (25g needle) <b><u>Rats</u></b> - 5-10mls (22g or 20g needle) <b><u>Hamsters</u></b> - 1.0mls – 25g needle Notifying the LAF staff of the decrease in body weight is recommended. Place a yellow tag on the cage.
15-20%	<b>Animals in this category <u>MUST</u> be evaluated by a veterinarian.</b> Measures listed for 5% and 10% weight loss in addition to: <b><u>Mice</u></b> – gavage with 1ml of water-soaked chow or a liquid diet once daily using a 22g gavage needle. <b><u>Rats</u></b> – gavage with 3-5mls of water-soaked chow or a liquid diet once daily using a 22g or 20g gavage needle.
20%	<b><u>All animals MUST be either euthanized or evaluated by a veterinarian.</u></b> Treatment versus euthanasia will be at the discretion of the veterinarian.

#### 4.9 Guinea Pigs, Chinchillas, and Rabbits

Weight Loss	Recommended Treatment
5-10%	<p>Offer kale, moistened pellets, and/or fruits/vegetables (canned pumpkin, parsley, carrots, vegetable baby food) with a high water content ad lib.</p> <p>Offer Nutrical once daily.</p> <p>Offer Clinicare diet for small herbivores with or without pineapple juice.</p> <p>Offer water flavored with Kool-Aid or Gatorade in addition to their regular water.</p> <p>Weigh animals daily and record weights on a weight chart.</p> <p>Discontinue treatment when the weights increase to normal.</p> <p>Treatment may be administered by the LAF staff or PI's technicians.</p> <p>Remove the animal from the study until it returns to its initial weight.</p>
10-15%	<p>Measures listed for 5% weight loss in addition to subcutaneous fluids (LRS, 0.9% NaCl, Normosol, Plasmalyte) administered once daily.</p> <p><b><u>Guinea Pigs</u></b> – 100mls/kg (divided; 25g or 22g butterfly)</p> <p><b><u>Chinchillas</u></b> – 7-14mls (23g needle)</p> <p><b><u>Rabbits</u></b> – 30-100mls (23g, 22g, or 23g needle)</p> <p>Notifying the LAF staff of the decrease in body weight is recommended. Place a yellow tag on the cage.</p>
15-20%	<p><b>Animals in this category <u>MUST</u> be evaluated by a veterinarian.</b></p> <p>Measures listed for 5% and 10% weight loss in addition to:</p> <p><b><u>Guinea Pigs</u></b> – Place an IV catheter in the cephalic, saphenous, or jugular vein (24g) and administer 10% of the blood volume daily.</p> <p>Force feed Clinicare - ~6g/100gBW/day.</p> <p><b><u>Chinchillas</u></b> - Place an IV catheter in the cephalic or lateral saphenous vein (28g or 25g) and administer 10% of the blood volume daily.</p> <p>Force feed Clinicare – 5-10mls daily.</p> <p><b><u>Rabbits</u></b> – Place a 22g IV catheter in the cephalic, lateral saphenous, marginal ear, or jugular vein (under sedation) and administer fluids at 5-10mls/100gBW/day.</p> <p>Force feed Clinicare – 5g/100gBW/day.</p> <p>Administer Metoclopramide 0.1mg/kg SQ BID.</p>
20%	<p><b><u>All animals MUST be either euthanized or evaluated by a veterinarian.</u></b> Treatment versus euthanasia will be at the discretion of the veterinarian.</p>

#### 4.10 Dogs and Ferrets

Weight Loss	Recommended Treatment
5-10%	<p>Offer canned food twice daily (a/d, Clinicare, spaghetti [canned], boiled hamburger meat).</p> <p>Offer Nutrical twice daily.</p> <p>Mix Electramine in water and offer in a bowl.</p> <p>Weigh animals daily and record weights on a weight chart.</p> <p>Discontinue treatment when the weights increase to normal.</p> <p>Treatment may be administered by the LAF staff or PI's technicians.</p> <p>Remove the animal from the study until it returns to its initial weight.</p>
10-15%	<p>Measures listed for 5% weight loss in addition to subcutaneous fluids (LRS, 0.9% NaCl, Normosol, Plasmalyte) administered once daily.</p> <p><b><u>Beagles</u></b> – 200-300mls (18g needle)</p> <p><b><u>Hound Crosses</u></b> – 300-500mls (18g needle)</p> <p><b><u>Ferrets</u></b> – 17-50mls (22g Or 20g needle)</p> <p>May offer the animals Ensure.</p> <p>Notifying the LAF staff of the decrease in body weight is recommended. Place a yellow tag on the cage.</p>
15-20%	<p><b>Animals in this category <u>MUST</u> be evaluated by a veterinarian.</b></p> <p>Measures listed for 5% and 10% weight loss in addition to:</p> <p><b><u>Dogs</u></b> - Place a 20g or 18g IV catheter in the cephalic, lateral saphenous, or jugular vein and administer fluids at a rate of 30-35mls/lb/day.</p> <p>Force feed a slurry of canned Science Diet a/d at a dose of 1can/10lbs/day.</p> <p>Administer Famotidine (Pepcid) 0.5mg/kg SQ BID.</p> <p><b><u>Ferrets</u></b> – Place a 25g IV catheter in the cephalic or lateral saphenous vein and administer fluids at a rate of 30-45mls/lb/day.</p> <p>Force feed a slurry of canned Science diet a/d and water at a rate of 20-40g/day.</p>
20%	<p><b><u>All animals MUST be either euthanized or evaluated by a veterinarian.</u></b> Treatment versus euthanasia will be at the discretion of the veterinarian.</p>

#### 4.11 Pigs

Weight Loss	Recommended Treatment
5-10%	<p>Offer moistened food, canned dog or cat food, and vegetables with a high water content.</p> <p>Mix Electramine in water and offer in a bucket.</p> <p>Weigh animals daily and record weights on a weight chart.</p> <p>Discontinue treatment when the weights increase to normal.</p> <p>Treatment may be administered by the LAF staff or PI's technicians.</p> <p>Remove the animal from the study until it returns to its initial weight.</p>
10-15%	<p>Measures listed for 5% weight loss in addition to subcutaneous fluids (LRS, 0.9% NaCl, Normosol, Plasmalyte) administered twice daily.</p> <p><b><u>Piglets</u></b> – 200-300mls (divided; 18g needle)</p> <p><b><u>50-100lbs Pigs</u></b> – 400-750mls (divided; 16g needle)</p> <p><b><u>150-300lbs Pigs</u></b> – 1100-1900mls (divided; 16g needle)</p> <p>Notifying the LAF staff of the decrease in body weight is recommended. Place a yellow tag on the cage.</p>
15-20%	<p><b>Animals in this category <u>MUST</u> be evaluated by a veterinarian.</b></p> <p>Measures listed for 5% and 10% weight loss in addition to:</p> <p><b><u>Piglets</u></b> – Place a 22g or 20g IV catheter in the marginal ear or jugular vein and administer fluids at a rate of 30-45mls/lb/day.</p> <p>Force feed a slurry of water, Electramine, and canned dog food TID.</p> <p><b><u>Pigs Weighing ≥50lbs</u></b> – Place a 22g, 20g, or 18g IV catheter in the marginal ear or jugular vein and administer fluids at a rate of 30-45mls/lb/day.</p> <p>Force feed a slurry of water, Electramine, and canned dog food TID.</p>
20%	<p><b>All animals MUST be either euthanized or evaluated by a veterinarian.</b> Treatment versus euthanasia will be at the discretion of the veterinarian.</p>

#### 4.12 Sheep

Weight Loss	Recommended Treatment
5-10%	<p>Lambs – offer milk replacer every 2hrs.</p> <p>Ewes – Offer moistened feed, fresh timothy hay, and mix Electramine in water and offer in a bucket.</p> <p>Weigh animal daily and record weight on a weight chart.</p> <p>Discontinue treatment when the weights increase to normal.</p> <p>Notify LAF staff of the decrease in body weight is recommended. Place a yellow tag on cage.</p> <p>Treatment may be administered by the LAF staff or PI's technicians.</p> <p>Remove the animal from the study until it returns to its initial weight.</p>
10-15%	<p>Measures listed for 5% weight loss in addition to subcutaneous fluids (LRS, 0.9% NaCl, Normosol, Plasmalyte) administered twice daily.</p> <p><b><u>Lambs</u></b> – 75-150mls (20g or 18g needle)</p> <p><b><u>150-250lbs Ewes</u></b> – 110-19000mls (divided; 18g or 16g needle)</p>
15-20%	<p><b>Animals in this category <u>MUST</u> be evaluated by a veterinarian.</b></p> <p>Measures listed for 5% weight loss in addition to:</p> <p><b><u>Lambs</u></b> – Place a 22g jugular catheter and administer fluids at a rate of 30-45mls/lb/day.</p> <p><b><u>Ewes</u></b> – Place a 20g or 18g jugular catheter and administer fluids at a rate of 30-45mls/lb/day.</p> <p>Force feed or tube with 90-120mls Propylene Glycol PO TID.</p> <p>If necessary, administer 100mls Calcium Gluconate SQ.</p>
20%	<p><b>All animals MUST be either euthanized or evaluated by a veterinarian.</b> Treatment versus euthanasia will be at the discretion of the veterinarian.</p>