

Basic Use Guide

The First Semi-Elemental Diet System designed for a wide variety of critically ill exotic animals

Exotic animal veterinarians and veterinary teams are presented with challenging emergencies every day. Will your next debilitated patient be an Amazon parrot, a rabbit, or a gecko?

The EmerAid Intensive Care System is designed to provide life-saving semi-elemental nutrition for a wide variety of species during the critical period of rehabilitation.

EmerAid products are divided into four primary categories: Carnivore, Herbivore, Omnivore, and Piscivore

By using these products singly or in combination, most acutely ill exotic and wildlife animals can benefit nutritionally from EmerAid enteral or hand feedings.

Benefits of the EmerAid Intensive Care System

Designed to meet the needs of critically ill animals and to be fed as a sole or partial source of nutrition.

- Meets the acute dietary needs of most exotic animals
- Semi-elemental diet made with purified amino acids and hydrolyzed proteins
- All essential amino acids
- Hydrolyzed carbohydrates essential for acute carbohydrate needs associated with debilitation
- Highly digestible blend of fats.
- High levels of nutrients that support the immune system including arginine and glutamine
- Dietary nucleotides to provide DNA and RNA precursors
- Each nutrient-dense, high energy EmerAid formulation can be prepared at various levels of concentration, as determined by the needs of the patient.
- Balanced omega 3:6 polyunsaturated fatty acids

GUARANTEED ANALYSES



EmerAid IC Carnivore
 Protein 36.0
 Fat 29.5%
 Fiber 4.9%
Caloric Content (ME)
 4979.41 kcal/kg
 1.60 kcal/ml



EmerAid IC Herbivore
 Protein 18.1%
 Fat 9.0%
 Fiber 35.7%
Caloric Content (ME)
 2950 kcal/kg
 1.32 kcal/ml



EmerAid Sustain Herbivore
 Protein 14.5%
 Fat 9.9%
 Fiber 25.1%
Caloric Content (ME)
 3039 kcal/kg
 1.00 kcal/ml



EmerAid IC Omnivore
 Protein 20.7%
 Fat 12.7%
 Fiber 3.9%
Caloric Content (ME)
 4086.62 kcal/kg
 1.86 kcal/ml



EmerAid IC Piscivore
 Protein 51.3%
 Fat 5.9%
 Fiber 6.5%
Caloric Content (ME)
 3288 kcal/kg
 3.29 kcal/ml

Available: 100g and 400g Bags

To Order, Contact: Veterinary Nutrition Solutions • www.vetnutritionsolutions.com.au

Step 1: Weigh patient

- Best done at the beginning of each morning before they have eaten, been medicated or had fluids given, (or on admission).



Step 2: Correct hydration status

Daily maintenance fluid recommendations		
Species	Volume ml/kg/day	Route
Ferret	50-100	SC, IV, IO
Rabbit	100-150	SC, IV
Guinea Pig	60-120	SC, IV, IO
Chinchilla	60-120	SC, IV, IO
Hedgehog	50-100	SC, IV, IP
Bird	100	PO, SC, IV, IO
Reptile	10-30	PO, SC, IV, IO, ICe, EpiCe

Daily maintenance and replace dehydration deficit over 2-3 days.

Step 3: Provide support

Maintain patient in ICU with environmental support as needed

- Oxygen
- Heat
- Lighting



Step 4: Determine appropriate EmerAid or EmerAid combination

Abbreviated list of species that benefit from EmerAid [most common species]

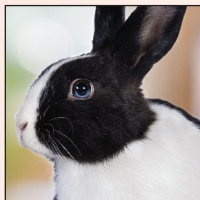
Taxonomic Group	Species	IC Omnivore (Parts)	IC Carnivore (Parts)	IC Herbivore (Parts)	Water (Parts)
Birds	Budgerigar, Cockatiel, Cockatoo, Conure, Lovebird, Macaw Parakeet, Parrot	6			4
	Finch, Canary, Blackbird, Cowbird, Grackle, Jay, Magpie, Siskin	6			4
	Chicken, Dove, Myna Bird, Quail	6			4
	Goose	3		2	4
	Ruddy Duck, Scaup, Sparrow, Cardinal, Grosbeak, Junco, Raven	4.5	0.5		4
	Woodpecker, Sapsucker, Robin, Thrush	3	1		4
	Mammals	Rabbit, Chinchilla, Guinea pig, Degu, Porcupine			4
Sugar Glider, Chipmunk, Mouse, Squirrel		6			4
Rat, Gerbil		4.5		1	4
Hamster		3		2	4
Hedgehog, Raccoon, Skunk		1.5	1.5		4
Ferret, Coyote, Fox, Mole, Opossum			2		4
Reptiles	Bearded dragon, Blue-tongue Skink, Ground Iguanas	1.5	1.5		4
	Chameleons-Old World		2		4
	Frogs - Toads-Aquatic, Horned, Pacman, Dart, Mantella, Tree		2		4
	Small Lizards - Anoles, Collared and others		2		4
	Geckos - Leopard, Fat-tail, Tokay, Day, Crested, Radcodactylus		2		4
	Salamanders, Newts, Caecilians		2		4
	Green Iguana, Uromastyx, Chuckwalla			4	4
	Snakes		2		4
	Tortoises - Desert, Gopher, Sulcata, Red-foot, Russian			4	4
	Turtles - Box, Wood Aquatic-Sliders, Painted, Map, Cooter	1.5	1.5		4
Snapping, Mud and Musk Turtles		2		4	

For a more extensive list of species, and including juvenile values and various wildlife, visit EmerAidVet.com.

EmerAid IC Carnivore meets the nutritional needs of both carnivores and insectivores.

Step 5: Determine mls/feeding

- When feeding **CRITICALLY ILL ANIMALS**, begin with a smaller food volume.
- Mammals and Birds:** 1st feeding = 1% BW, 2nd feeding = 2% BW, 3rd feeding = 3% BW. Continue at 3% BW until recovered.



- Reptiles:** Reptiles: 1st feeding 0.5% BW, 2nd feeding 1% BW, 3rd feeding 2% BW. Continue at 2% BW until recovered.



- Volumes fed are only increased if well tolerated and passed through GI tract.

Feeding volumes for mammals and birds

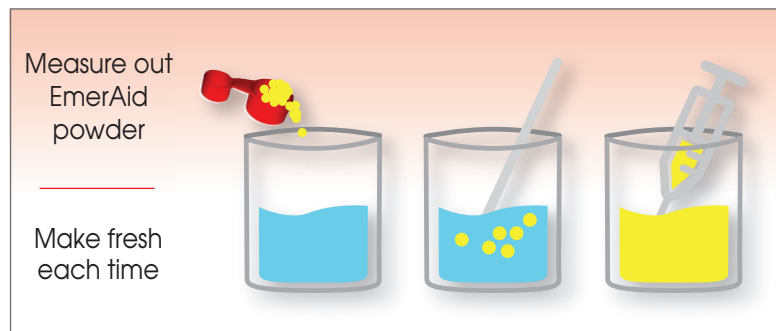
Weight	1st feeding (1%)	2nd feeding (2%)	3rd feeding (3%)
50g	0.5ml	1ml	1.5ml
100g	1ml	2ml	3ml
500g	5ml	10ml	15ml
1kg	10ml	20ml	30ml
2kg	20ml	40ml	60ml

Feeding volumes for reptiles

Weight	1st feeding (0.5%)	2nd feeding (1%)	3rd feeding (2%)
50g	0.25ml	0.5ml	1ml
100g	0.5ml	1ml	2ml
500g	2.5ml	5ml	10ml
1kg	5ml	10ml	20ml
2kg	10ml	20ml	40ml

Step 6: Mix enough EmerAid for feeding

- Measure out EmerAid according to Step 4. "Parts" indicate the proportions needed. To mix EmerAid, use the scoop provided, a syringe cap, or any measuring implement of your choice as long as the proportions described above remain consistent.
- Add powder to very warm water measuring 122F° (50°C).
- Mix well.
- Use a syringe to draw up the mixture. When made as directed, EmerAid formula can pass through both an 18-gauge feeding needle and a 5 French feeding tube.
- Make fresh for each feeding. Discard remaining food after each feeding.



Standard mixing directions for the EmerAid Critical Care System

EmerAid	Powder (parts)	Water (parts)
IC Carnivore	2	4
IC Herbivore	4	4
IC Omnivore	6	4
IC Piscivore*	2	4

*Visit EmerAidVet.com for additional mixing recommendations.

Helpful Hints: EmerAid mixture can be placed in a shake tube or capped pill vial for mixing. Mix thoroughly to avoid any clumps or potential blocks during administration.

Step 7: Determine frequency of feeding

The decision on how frequently to feed must rely on clinical judgment as FREQUENCY depends on the species, the individual and their ability to handle the stress of restraint, the patient's clinical response, and the underlying clinical problem.

- Is the patient gaining or losing weight?
- Has the patient vomited or regurgitated?
- Has normal fecal production been observed?

Recommended frequency of feeding. Bolus feedings are often administered:

4 x daily	For all mammals and birds	(<500g)
3 x daily	For all mammals and birds	(>500g)
1-2 x daily	For reptiles	

Step 8: Administration of EmerAid by syringe or gavage

- Monitor patients closely.
- Administer all other treatments BEFORE gavaging to prevent regurgitation.
- **Immediately after gavaging, please place patient gently back in cage or incubator.**
- See LafeberVet.com for restraint and administration techniques.

Step 9: On-going fluid requirements

- Calculate daily fluid requirements and correct for dehydration needs over 2-3 days.



Daily maintenance fluid recommendations

Species	Volume ml/kg/day	Route
Ferret	50-100	SC, IV, IO
Rabbit	100-150	SC, IV
Guinea Pig	60-120	SC, IV, IO
Chinchilla	60-120	SC, IV, IO
Hedgehog	50-100	SC, IV, IP
Bird	100	PO, SC, IV, IO
Reptile	10-30	PO, SC, IV, IO, ICe, EpiCe

Step 10: Next day—weigh patient first

- Important to weigh before first feeding to ensure accurate feeding amount.
- Consider possible increased weight due to slow stomach/crop or GI emptying.
- Am I meeting my patient's ENERGY REQUIREMENTS?



Step 11: Reassess patient

- If the patient is in very poor condition, or has lost weight, increase frequency or volume of feeding.
- For more detailed calculations refer to: LafeberVet.com/emergency-medicine/
- See LafeberVet.com for care, treatment and feeding techniques.

Repeat Steps 5-11: Begin feeding assessment cycle again.

Medicine is both science and art. While these instructions may work, many patients have conflicting aspects that must be considered when using these guidelines. Patient considerations include maximum volume tolerated, patient stress, general neuro-muscular/skeletal weakness, speed of GI motility, hydration status, temperature and critical weight loss.

Disclaimer: These simplified instructions are based on the patient being dehydrated on admission and the patient physiologically accepting suggested feeding volumes and frequency. They are intended only as a guideline and must be adjusted with the patient assessment of the attending veterinarian.

EmerAid Intensive Care Basic Use Guide Flow Chart

Daily maintenance fluid recommendations

Species	Volume ml/kg/day	Route
Ferret	50-100	SC, IV, IO
Rabbit	100-150	SC, IV
Guinea Pig	60-120	SC, IV, IO
Chinchilla	60-120	SC, IV, IO
Hedgehog	50-100	SC, IV, IP
Bird	100	PO, SC, IV, IO
Reptile	10-30	PO, SC, IV, IO, ICe, EpiCe



See LafeberVet.com
for additional assistance.

Step 1: Weigh patient

Step 2: Correct hydration status

- Daily maintenance and replace dehydration deficit over a 2 to 3 day period
- Maintain maintenance fluid therapy until the patient is replenishing on it's own.

Step 3: Provide support

- Keep patient warm and quiet.

Step 4: Determine appropriate EmerAid or EmerAid combination

Step 5: Determine mls/feeding

- Mammals and Birds: 1st feeding = 1% BW, 2nd Feeding = 2%BW
3rd feeding = 3% BW. Continue at 3% BW until recovered.
- Reptiles: 1st feeding = 0.5% BW, 2nd Feeding = 1%BW,
3rd feeding = 2% BW, Continue at 2% BW until recovered.

Step 6: Mix enough EmerAid for feeding

Step 7: Determine frequency of feeding

- 4 x daily for all mammals and birds (<500g)
- 3x daily feeding for birds and mammals (>500g)
- 1-2 x daily for reptiles

Step 8: Administration of EmerAid by syringe or gavage

Step 9: On-going fluid requirements

Step 10: Next day

- Weigh patient first, before feeding or administration of any fluid or medication.

Step 11: Reassess patient

- If very thin or losing weight increase volume or frequency of feeding.
- Consider other causes of weight loss.



Rabbit Example: A debilitated anorexic rabbit weighing 2.0kg is presented.

- Assess hydration status and administer fluids: Determine fluid volume/rate along with route of administration
- Keep patient warm at 85°-90° F (29°-32° C), monitor temperature, and keep quiet until stable enough for first feeding
- Feed EmerAid IC Herbivore 4 parts EmerAid to 4 parts H₂O.
 - Choose best administration method for patient – Syringe or nasogastric tube
- Feedings are cautiously planned for every 6-8 hours. Monitor patient response, signs of discomfort and fecal output closely. Frequency and volume should be adjusted upon patient response and maintenance of body weight.

Feeding	Percent of Body Weight	Amount
First Feed:	1% BW	~20ml
Second Feed:	2% BW	~40ml
Third Feed:	3% BW	~60ml
Fourth Feed:	3% BW	~60ml

- SC or IV fluid administration should be reevaluated and decreased or discontinued if fluid needs are met by feedings or the animal is rehydrating itself on a normal basis.
- Weigh and reassess feeding and fluid protocols at the beginning of each day or more often if needed.



Reptile example: A debilitated anorexic bearded dragon weighing 500g is presented.

- Assess hydration status and administer fluids: Determine fluid volume/rate along with route of administration
- Keep patient warm at 85°-90° F (29°-32° C), monitor temperature, and keep quiet until stable enough for first feeding.
- Feed EmerAid IC Carnivore 1.5 parts plus EmerAid IC Omnivore 1.5 parts with 4 parts H₂O.
 - Choose best administration method for patient – Syringe, gavage or esophagostomy tube
- Feedings are cautiously planned for every 12 hours. Monitor patient response, signs of discomfort and fecal output closely. Frequency and volume should be adjusted upon patient response and maintenance of body weight.

Feeding	Percent of Body Weight	Amount
First Feed:	0.5% BW	~2.5ml
Second Feed:	1% BW	~5ml
Third Feed:	2% BW	~10ml
Fourth Feed:	2% BW	~10ml

- SC, IO, ICe, EpiCe or IV fluid administration should be reevaluated and decreased or discontinued if fluid needs are met by feedings or the animal is rehydrating itself on a normal basis.
- Weigh and reassess feeding and fluid protocols at the beginning of each day or more often if needed.



Avian example: A debilitated anorexic African Grey parrot weighing 500g is presented.

- Assess hydration status and administer fluids: Determine fluid volume/rate along with route of administration
- Keep patient warm at 85°-90° F (29°-32° C), monitor temperature, and keep quiet until stable enough for first feeding.
- Feed EmerAid IC Omnivore 6 parts EmerAid to 4 parts H₂O.
 - Choose best administration method for patient – Gavage or syringe if will eat on own
- Feedings are cautiously planned for every 6-8 hours. Monitor patient response, signs of discomfort and fecal output closely. Frequency and volume should be adjusted upon patient response and maintenance of body weight.

Feeding	Percent of Body Weight	Amount
First Feed:	1% BW	~5ml
Second Feed:	2% BW	~10ml
Third Feed:	3% BW	~15ml
Fourth Feed:	3% BW	~15ml

- SC, IO or IV fluid administration should be reevaluated and decreased or discontinued if fluid needs are met by feedings or the animal is rehydrating itself on a normal basis.
- Weigh and reassess feeding and fluid protocols at the beginning of each day or more often if needed.

Visit LafeberVet.com for Instructional Videos:

- EmerAid Omnivore + Exotic EmerAid: Hand + Gavage Feeding
- Esophagostomy Tube Placement in the Ferret
- Nasogastric Tube Placement in the Rabbit
- Nutritional Support in Reptiles
- Syringe Feeding Herbivorous Small Mammals
- Syringe Feeding the Ferret
- Tube Feeding Birds

References

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Donoghue S. Nutrition. In: Mader DR (ed). *Reptile Medicine and Surgery*, 2nd edition. Saunders Elsevier; St. Louis: 2006. Pp. 251-298.

Nagy KA, Girard IA, Brown TK. Energetics of free-ranging mammals, reptiles and birds. *Annu Rev Nutr* 19:247-277, 1999.



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