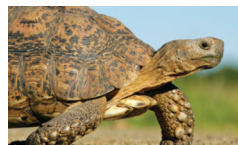
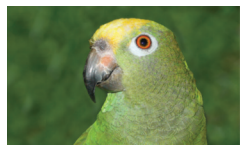


Intensive Care Basic Use Guide

For critically ill exotic animals



What is Emeraid and how is it used?

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

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

The Emeraid Critical Care System is designed to provide life-saving semi-elemental nutrition for a wide variety of species during the critical first week of rehabilitation.

Emeraid products are divided into three primary categories: Carnivore, Herbivore, and Omnivore

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 metabolic needs of critically ill animals and made 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 plus simple and complex carbohydrates for energy
- High levels of nutrients that support the immune system including arginine and glutamine
- Dietary nucleotides to provide DNA and RNA precursors
- Balanced omega 3:6 polyunsaturated fatty acids

GUARANTEED ANALYSES



Emeraid Carnivore

Protein	37.80%
Fat	34.00%
Fiber	4.50%
Energy	1.67 kcal/ml
Dry Weight	5.14 kcal/gm



Emeraid Herbivore

Protein	19.00%
Fat	9.50%
Fiber	32.00%
Energy	1.32 kcal/ml
Dry Weight	2.95 kcal/gm



Emeraid Omnivore

Protein	20.00%
Fat	9.50%
Fiber	2.50%
Energy	2.39 kcal/ml
Dry Weight	4.06 kcal/gm



Emeraid Piscivore

Protein	44.50%
Fat	4.40%
Fiber	4.60%
Energy	3.89 kcal/ml*
Dry Weight	4.55 kcal/gm

*10.5% fish oil

Available: 100g, 400g and 2kg Bags

To Order, Contact: Lafeber Company 1.815.358.2301 • www.LafeberVet.com



MADE IN THE USA

Distributed by: 24981 N. 1400 East Road • Cornell, IL 61319 USA
Lafeber Company 1.815.358.2301 • 1.800.842.6445 • www.LafeberVet.com

Manufactured by: Emeraid LLC, A Division of Lafeber
24981 N 1400 East Road • Cornell, IL 61319 • www.Emeraid.com

Emeraid Intensive Care Basic Use Guide Flow Chart

Table 1. Fluid Provision on Admission

Species	Volume ml/kg	Route
Ferret	30-60	s/c
Rabbit	60	i/v max 30ml/kg balance s/c
G-pig	20	s/c
Chinchilla	20	s/c
Bird	20	i/v max 20ml/kg balance s/c
Reptile	10	s/c or intra-coelomic (chelonian)

Step 1: Weigh patient

Step 2: Correct hypovolemia

- See Table 1.
- Keep patient warm and quiet.
- See Lafebervet.com for additional information.

Step 3: Address hypothermia

- Keep patient warm and quiet (2 hours).
- See Lafebervet.com for additional information.

Step 4: Determine appropriate Emeraid or Emeraid combination

- See Table 3.
- See Emeraid.com for additional species.

Step 5: Determine mls/feeding

- Mammals and Birds: 1% 1st feed, 2% 2nd feed, 3% subsequent feeds.
- Reptiles: 0.5% first, 1% 2nd, 2% subsequent.

Step 6: Mix enough Emeraid for feeding

Step 7: Determine frequency of feeding

- 4 x daily for all mammals and birds (<500g)
- 3 x daily for birds (>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: Re-assess patient

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

Table 2. On-going Fluid Requirements

Species	Volume ml/kg/24hr		Route
	Remainder day 1	Day 2 & 3	
Ferret	0	10ml bid/kg	s/c
Rabbit	0	10ml bid/kg	i/v, s/c
G-pig	20ml bid/kg	10ml bid/kg	
Chinchilla	0	0	
Bird	20ml tid/kg	20ml bid/kg	i/v, s/c
Reptile	20ml bid/kg	20ml sid/kg	s/c, i/c

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 hypovolemia

Table 1. Fluid provision on admission

Species	Volume ml/kg	Route
Ferret	30-60	s/c
Rabbit	60	i/v max 30ml/kg balance s/c
G-pig	20	s/c
Chinchilla	20	s/c
Bird	20	i/v max 20ml/kg balance s/c
Reptile	10	s/c or intra-coelomic (chelonian)

Step 3: Address hypothermia

- Keep patient warm and quiet.
- See LafeberVet.com for additional information.



Step 4: Determine appropriate Emeraid or Emeraid combination

Table 3. Abbreviated list of species that benefit from Emeraid [most common species]

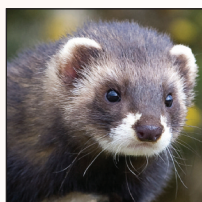
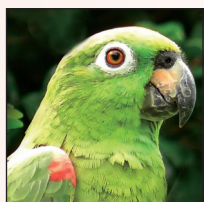
Taxonomic Group	Species	Omnivore (Parts)	Carnivore (Parts)	Herbivore (Parts)	Water (Parts)
Aves	Budgerigar, Cockatiel, Cockatoo, Conure, Lovebird, Macaw Parakeet, Parrot	6			4
	Finch, Canary, Blackbird, Cowbird, Grackle, Jay, Magpie, Siskin	6			4
	Chicken, Dove, Myna Bird, Quail,	6			4
	Goose	3		2	4
	Ruddy Duck, Scaup, Sparrow, Cardinal, Grosbeak, Junco, Raven	4.5	0.5		4
	Woodpecker, Sapsucker, Robin, Thrush	3	1		4
Mammalia	Rabbit, Chinchilla, Guinea pig, Degu, Porcupine			4	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
Reptilia	Bearded dragon, Blue-tongue Skink, Ground Iguana	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, Uromastix, 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 herbivores, omnivores, piscivores, carnivores & insectivores species, and including juvenile values and various wildlife, visit Emeraid.com.

Feeding Insectivores: Technically the Emeraid Carnivore is a faunivore diet, which means it 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 feed 1% body weight, 2nd feed 2% body weight, 3rd feed 3% body weight.
- Volumes fed are only increased if well tolerated and passed through GIT.



- Reptiles:** 1st feed ½ % body weight, 2nd feed 1% body weight, 3rd feed 2% body weight.

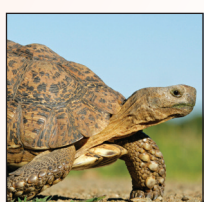


Table 4. Feeding volumes for mammals and birds

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

Table 5. Feeding volumes for reptiles

Weight	1st feed (1/2 %)	2nd feed (1%)	3rd feed (2%)
50g	1/4ml	1/2ml	1ml
100g	1/2ml	1ml	2ml
500g	2.5ml	5ml	10ml
1kg	5ml	10ml	20ml
2kg	10ml	20ml	40ml

Visit Emerald.com for a table with recommended volume per meal based on patient body weight.

Step 6: Mix enough Emerald for feeding

- Measure out Emerald according to Step 4 (Table 3) "Parts" indicate the proportions needed. To mix Emerald, you can 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 39° to 40.5°C (103° to 105°F).
- Mix well
- Use a syringe to draw up the mixture. When made as directed, Emerald 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.

Measure out
Emerald
powder

Make fresh
each time

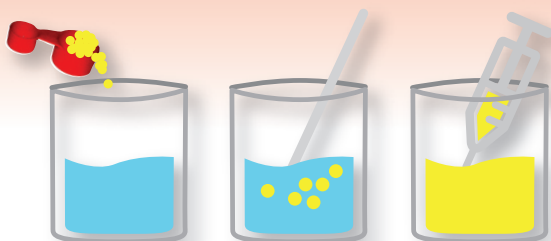


Table 6. Standard mixing directions for the Emerald Critical Care System

Emerald	Powder (parts)	Water (parts)
Carnivore	2	4
Herbivore	4	4
Omnivore	6	4
Piscivore*	3	4

*Visit Emerald.com for additional mixing recommendations.

Helpful Hints: Emerald mixture can be placed in a shake tube or capped pill vial for mixing. Draw Emerald mixture into syringe through the feeding tube or feeding needle 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?

Table 7. Recommended frequency of feeding. Bolus feedings are often administered:

4 x daily	For all mammals and birds	(<500g)
3 x daily	For 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

- Assuming 10% dehydrated and given advised feeding volumes and frequencies.



Table 2. On-going fluid requirements

Species	Volume ml/kg/24hr		Route
	Remainder day 1	Day 2 & 3	
Ferret	0	10ml bid/kg	s/c
Rabbit	0	10ml bid/kg	i/v, s/c
G-pig	20ml bid/kg	10ml bid/kg	
Chinchilla	0	0	
Bird	20ml tid/kg	20ml bid/kg	i/v, s/c
Reptile	20ml bid/kg	20ml sid/kg	s/c, i/c

Step 10: Next day—weigh patient first

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



Step 11: Re-assess 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/

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 guideline, such as maximum volume tolerated, general neuro-muscular/ skeletal weakness against very poor condition and an urgent need for critical care administration and weight gain.

Disclaimer: These simplified instructions are based on the patient being 10% 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 veterinary clinician.

Rabbit Example: A debilitated, anorectic 3-year old male neutered Dutch rabbit (*Oryctolagus cuniculus*) is presented. The patient weighs 2.0 kg BCS 3/5.

- Correct hypovolemia: Assume 10% dehydrated unless indicated otherwise. 60ml/kg lactated ringers with a maximum of 30ml/kg i/v and the balance s/c. For this 2kg rabbit, give 60ml i/v over 1 hr and 60ml s/c.

See LafeberVet.com for critical care feeding videos

- Keep warm at 29°-32° C (85°-90° F), monitor for hyperthermia, and keep quiet for 2 hours before feeding.

- Feed Emeraid Herbivore 4 parts Herbivore to 4 parts water.

- First feed: 1% body weight for 1st feed. 20 ml.

- Try syringe feeding first, failing this, place a nasogastric tube.

See LafeberVet.com for critical care feeding videos

- If the patient does not take the prescribed volume, then offer smaller amounts of food more frequently.

- Did the patient accept this feeding well? Then increase the volume fed gradually over subsequent feedings (40, then 60ml). Frequency and volume should be adjusted based upon patient response, maintenance of body weight, but a cautious plan could be:

First feed:	1% bwt	i.e. 20ml
Second feed:	2% bwt	i.e. 40ml
Third feed:	3% bwt	i.e. 60ml
Fourth feed	3% bwt	i.e. 60ml

- Feedings are cautiously planned for every 3 to 4 hours, however the clinician will closely evaluate patient response, signs of discomfort and fecal output if relevant.

- If feedings accepted, additional fluids are not necessary.

- Day 2. Weigh patient first, before feeding or administration of any fluid or medication. Reassess feeding and fluid protocols.

Reptile Example: Debilitated and dehydrated bearded dragon. 500g body weight.

- Correct hypovolemia: Assume 10% dehydrated unless indicated otherwise. After cleaning skin well with prep solution, give 5-10ml warm lactated ringers fluids s/c over thoracic wall.

See LafeberVet.com for critical care feeding videos

- Keep warm at 29°-32° C (85°-90° F) and quiet for 2 hours before feeding.

- Mix 1.5 parts Emeraid Herbivore to 1.5 Emeraid Omnivore to 4 parts water.

- First feed: 0.5% body weight for 1st feed. 2.5 ml.

- Try syringe feeding first, then gavage feed or consider esophagostomy tube.

See LafeberVet.com for critical care feeding videos

- Did the patient accept this feeding well? Did the food pass through your patient well? Then increase the volume fed gradually over subsequent feedings (5, then 10ml). Frequency and volume should be adjusted based upon patient response, but a cautious plan could be:

First feed:	0.5% bwt	i.e. 2.5ml
Second feed:	1% bwt	i.e. 5ml
Third feed (next day)	2% bwt	i.e. 10ml

- Feedings are cautiously planned for every 8-10 hours, however the clinician will closely evaluate patient response, signs of discomfort and fecal output if relevant.

- If feedings accepted, 10mls BID additional fluids are suggested. If feedings not accepted, more fluids may be necessary.

- If the patient does not take the prescribed volume, then (a) offer smaller amounts of food more frequently or (b) gavage.

- Day 2. Weigh patient first, before feeding or administration of any fluid or medication. Reassess feeding and fluid protocols.

Parrot Example: Debilitated and dehydrated African grey parrot. 500g body weight.

- Correct hypovolemia: Assume 10% dehydrated unless indicated otherwise. 10 ml warm lactated Ringers fluids s/c between shoulder or i/v in superficial ulna vein.

See LafeberVet.com for critical care feeding videos

- Keep warm at 29°-32° C (85°-90° F) and quiet for 2 hours before feeding

- Mix 6 parts Emeraid Omnivore to 4 parts water.

- First feed: 1% body weight for 1st feed. 5ml.

- Gavage feed.

See LafeberVet.com for critical care feeding videos

- Did the patient accept this feeding well? Did the food pass from the crop? Then increase the volume fed gradually over subsequent feedings (10, then 15ml). Frequency and volume should be adjusted based upon patient response, but a cautious plan could be:

First feed:	1% bwt	i.e. 5ml
Second feed:	2% bwt	i.e. 10ml
Third feed (next day)	3% bwt	i.e. 15ml

- Feedings are cautiously planned for every 3-4 hours, however the clinician will closely evaluate patient response, signs of discomfort and faecal output if relevant.

- If feedings accepted, 10mls TID additional fluids are suggested. If feedings not accepted, more fluids may be necessary.

- If the patient does not take the prescribed volume, then offer smaller amounts of food more frequently.

- Day 2. Weigh patient first, before feeding or administration of any fluid or medication. Reassess feeding and fluid protocols.

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

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