



VETERINARY VOICE: Tips of the Trade

Emergency/Critical Care: Enteral Nutrition

What patients benefit from enteral nutrition supplementation?

Any patient that has not eaten in 3-5 days may benefit from supplemental nutrition. Patients with severe injury like heat stroke patients, septic patients, or patients with severe parvoviral infections may also benefit from supplemental nutrition. Enteral nutrition is superior to parental nutrition when it is tolerated because enteral nutrition increases mucosal blood flow and preserves enterocyte function.

How can enteral nutrition be supplied to the Emergency/Critical Care Patient?

There are four basic types of feeding tubes:

1. **Nasogastric or Nasoesophageal feeding tubes:** A 3.5-8 Fr red rubber tube or other nasal feeding tube is passed from the ventromedial nasal meatus into the caudal esophagus or stomach. Generally only good for short term/ in hospital nutritional support (3-14 days).
2. **Esophagostomy Tubes:** A 12-20 Fr red rubber tube is placed in left mid-cervical esophagus with distal end just cranial to gastroesophageal sphincter. Good for weeks to months.
3. **Gastrostomy Tubes:** These tubes are generally placed either surgically or with endoscopic assistance; although a blind, percutaneous technique is described. Good for weeks to months. Must be in place for at least 10 days.
4. **Jejunostomy Tubes:** These are generally placed surgically but can also be placed endoscopically through a G-tube. Generally only good for use in hospital. Must be in place for at least 10 days.

What diets are available for enteral nutrition?

1. **Polymeric Diets:** These diets consist of intact protein, polysaccharides, and long-chain triglycerides. All veterinary diets are polymeric diets. Liquid veterinary diets include Clinicare, EnteralCare, or Rebound.
2. **Elemental Diets:** These diets are composed of free amino acids, mono- or disaccharides, and medium-chain triglycerides and are therefore more easily absorbed. There are no veterinary products but human products include Vivonex. These diets are lower in protein than most veterinary patients need so you may need to supplement them with amino acid powders. Use with caution in cats because human formulations are often deficient in essential amino acids.

Guidelines for delivering enteral nutrition?

- Introduce the diet slowly. For patients with acute illness, often full nutritional support can be instituted within 2 days. Chronically malnourished patients may require a slower introduction like starting with 1/4- 1/3 caloric requirement and gradually increasing daily.
- Tube size and location will dictate type of diet and method of delivery
 - NE/NG tubes require liquid diets and often trickle feeding is needed to meet caloric requirements
 - E-tube or G-tubes allow for blenderized diets to be fed and bolus feedings are generally tolerated.
 - J-tubes require continuous infusion of liquid diets.

Questions?

Critical Care Experts:

Stacy Armstrong, DVM,
DACVECCS

Heather Connally, MS, DVM,
DACVECCS

The Veterinary Specialty Center of Tucson has board-certified critical care specialists available for questions and consultations on emergency conditions 7 days a week. Board-certified critical care specialists have four additional years of training are certified by the American College of Veterinary Emergency and Critical Care to assure competency in advanced veterinary care.