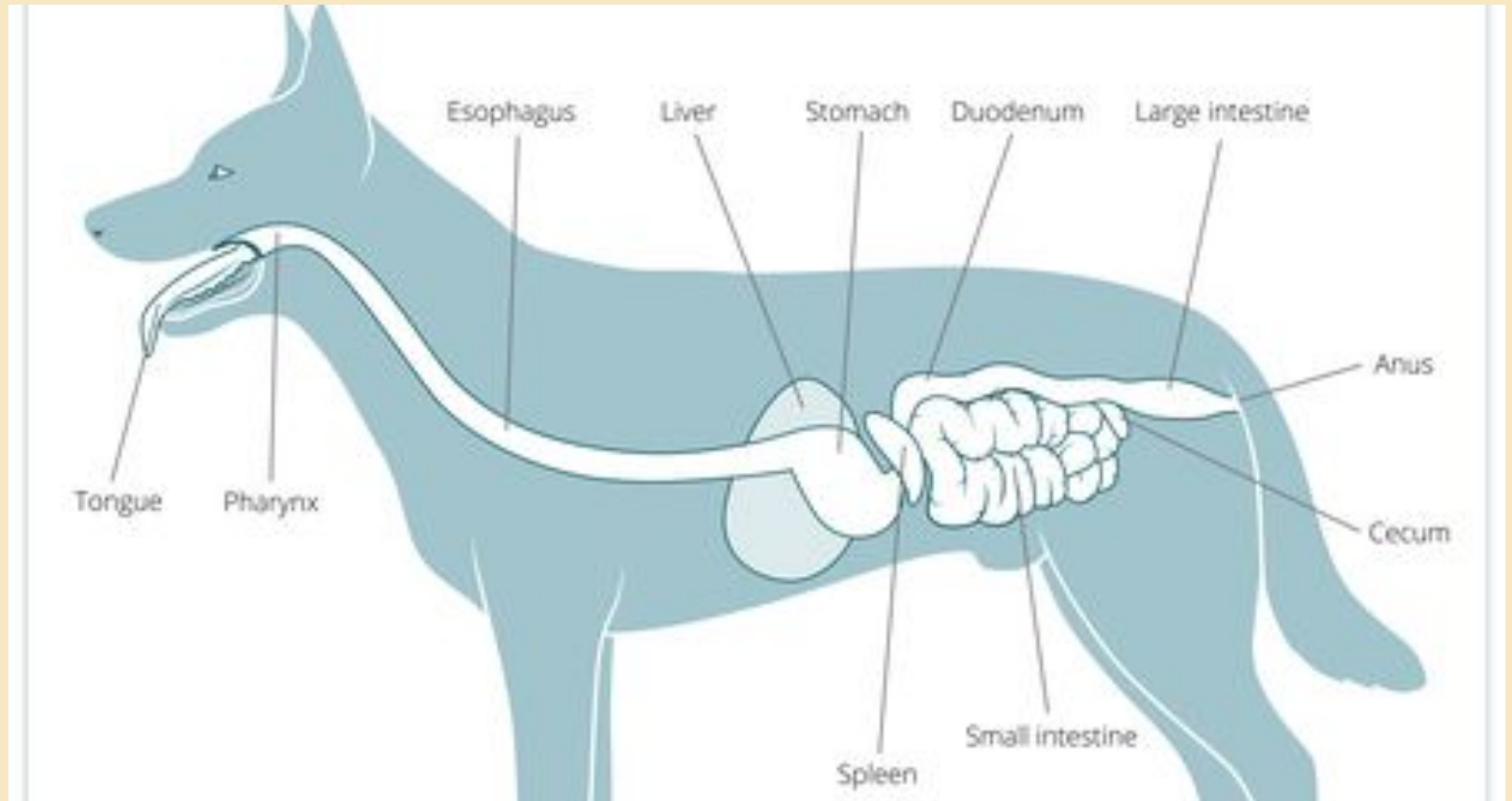




CRITICAL NUTRITION

Anne Arundel
Veterinary Emergency
Clinic

THE DIGESTIVE TRACT



THE 6 STEPS OF DIGESTION

INGESTION	PROPULSION	MECHANICAL	CHEMICAL	ABSORPTION	DEFECATION
Teeth pulverize the food and the salivary glands bathe the food in enzymes	Food is swallowed and muscles contract and relax to transport food down the esophagus to the stomach	Gastric acid decontaminates the food as well as break it down further to make it smaller for passage through the intestines	The liver, gallbladder, and pancreas secrete enzymes that breakdown and help extract necessary nutrients	The body absorbs what it needs to maintain energy and will let waste and fiber pass.	Waste and fiber is excreted through the anus.

LARGE MOLECULES WE GET FROM FOOD

CARBOHYDRATES	PROTEINS	LIPIDS	NUCLEIC ACIDS
Carbon, Hydrogen and Oxygen	Amino Acids	Fat, Oils, Waxes and Steroids	DNA & RNA
Helps cells recognize each other and to help parts of body work together	Helps body repair cells and make new ones.	Stores energy and can be broken down to create energy	Create and encode and then store information. They transmit and express that information inside and outside of the cell nucleus
Sugars, Starches & Fibers	Meat, Milk, Fish, Eggs, Soy, Beans, Nut Butters, & Grains,	Dairy, Meat, and other saturated fats	

WHAT HAPPENS WHEN WE STARVE?

1. Within the first 24 hours of being starved the body goes into survival mode.
2. The body concentrates on keeping the blood sugar levels normal. This is top priority.
3. When blood glucose levels drop the body calls on stored glucose from the liver and muscle reserves.
4. This stored glucose is depleted after 48 hours.
5. Gluconeogenesis occurs after this where the liver and kidneys make molecules from fat and proteins.



WHAT HAPPENS NEXT?

1. Energy to run the body's "machinery" is fueled less by glucose and more from fatty acid extracted from the fat reserves.
2. After 72 hours of starvation the metabolism will start to slow down on purpose to conserve energy. (Power Saving Mode)
3. Then the body starts to release ketones into the blood stream to use as energy source which can lead to an imbalance in the blood causing ketosis.
4. By day 4 the body is strictly using fat as main energy source.



THE DIFFERENCE BETWEEN STARVATION TYPES

HEALTHY SIMPLE

Inappetence
Hypometabolism
Using endogenous
(within the body)
stored energy



STRESS

Infection / Inflammation
Hypermetabolism
Heavy protein usage

QUESTIONS TO ASK BEFORE FEEDING



WHEN TO
START?

WHAT ROUTE?

HOW OFTEN?

HOW MUCH OF
WHAT TYPE?

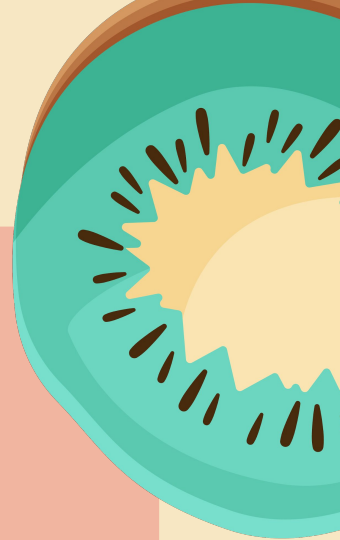
WHICH WAY DO WE GO WITH THIS?

ENTERAL

Uses the
GI Tract to
deliver diet

PARENTERAL

Using the
vein to
deliver diet



ENTERAL FEEDING : THROUGH THE ESOPHAGUS

NASOESOPHAGEAL (NE)

- Through nose to the esophagus
- Short Term
- No Anesthesia
- Liquid Diets Immediately
- In Hospital Only



ESOPHAGOSTOMY (E)

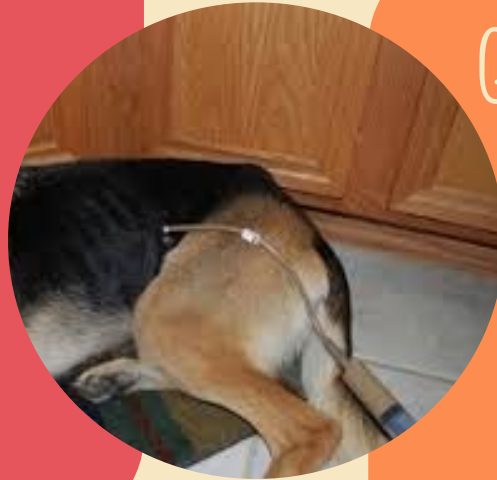
- Surgical Incision Into Esophagus
- Blenderized Diet Immediately
- Can go home with it
- Monitor Incision Site
- Change Bandages

[*ESOPHAGOSTOMY TUBE PLACEMENT VIDEO](#)

ENTERAL FEEDING : THROUGH THE STOMACH

NASOGASTRIC (NG)

- Through nose to the stomach
- No Anesthesia
- Liquid Diets Immediately
- In Hospital Only



GASTROTOMY TUBE (G)

- Surgically into the stomach
- Must be in for at least 10-14 days
- Blenderized diets after 12-24 Hours
- Can Go Home

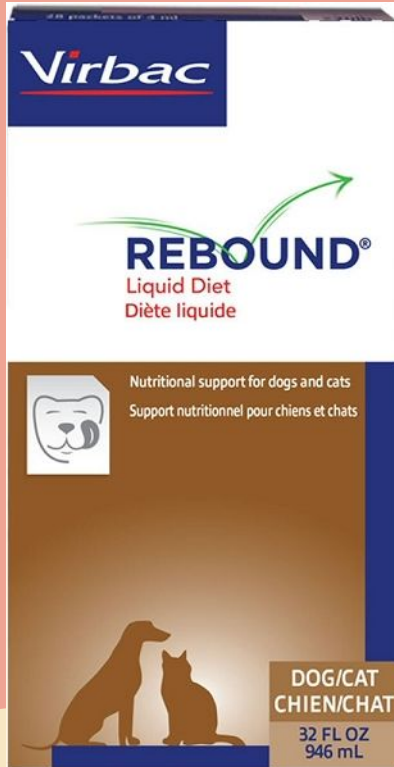
[*NASOGASTRIC TUBE PLACEMENT VIDEO](#)

ENTERAL : JEJUNOSTOMY TUBE (J)

- Surgically placed
- Minimum 7 days In
- Liquid Diet Only
- In Hospital Only
- For Post-Gastric Resection or Severe Pancreatitis



LIQUID DIETS WE USE IN HOSPITAL



BLENDERIZING DIETS

MaxCal, A/D, K/D, &
Recovery RS Diets

Mix 1:1 with H₂O and
blenderized until smooth
and no lumps

Feed via syringe slowly



PARENTERAL: INTRALIPIDS

- Source of Fatty Acids and Calories
- Dedicated IVC
- Wear Gloves
- Discard after 24hrs
- IV Bolus / 5 Mins
- CRI / 30-60 Mins
- Filter





MONITORING YOUR PATIENTS

- RUN BW FOR THE NEXT 2-3 DAYS
 - WATCH FOR FLUID OVERLOAD
 - WATCH DURING FIRST 20 MINUTES WITH INTRALIPIDS - PATIENT MAY HAVE A STROKE
 - MONITOR INCISIONS FOR INFECTION
 - MONITOR FOR DISLODGED TUBES
 - MONITOR FOR OBSTRUCTED TUBES & CLOGS
- * Can use carbonated drink to break up clogs

REFEEDING SYNDROME

Severe hypophosphatemia after giving enteral or parenteral diets after severe weight loss.

Risk of :

- Hemolysis of RBC
- Decreased Release of O₂
- Hypokalemia
- Hypomagnesemia
- Myopathy
- Acid Base Imbalances



THANKS

Does anyone have any questions?

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