UNDERSTANDING THE THERAPEUTIC DIET: ENTERAL NUTRITION AND ORAL SUPPLEMENTS

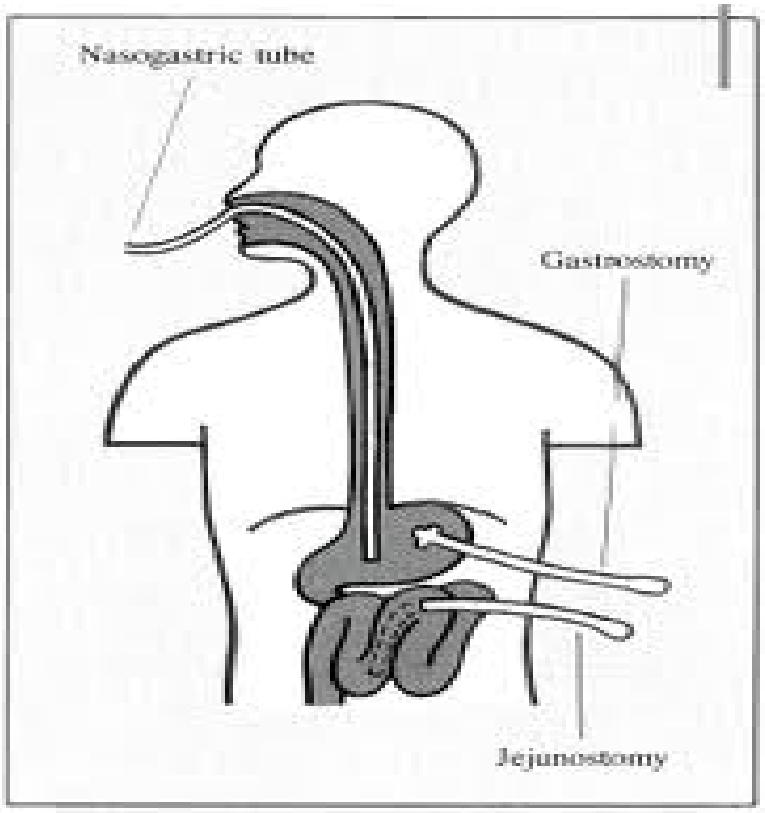
By: Kayla Holt and Kendra Schapansky

Enteral Nutrition

What is it?

- Enteral Nutrition is the process of providing nutrients to those who can not obtain enough orally. The nutrition needed is provided via tube feeding.

Tube Feeding

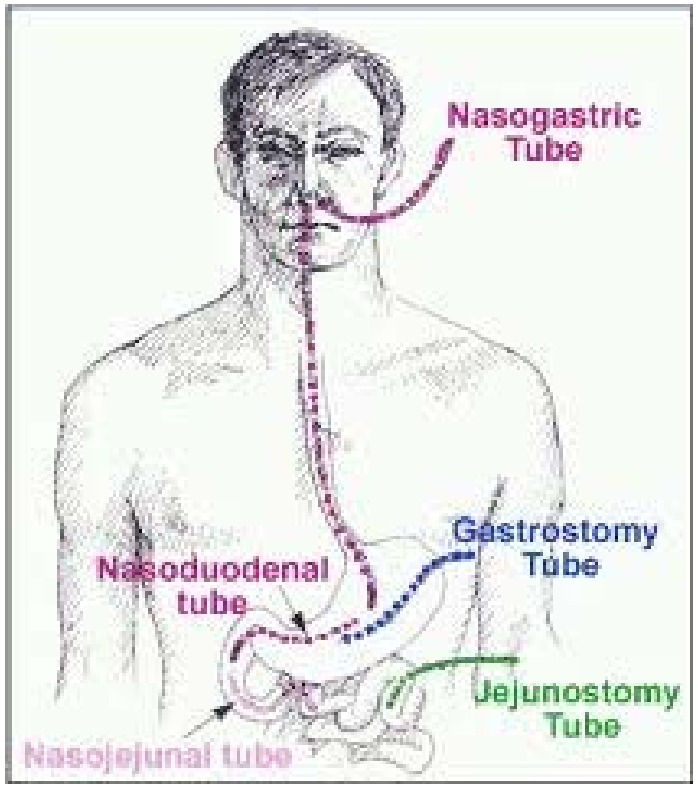


Who Receives Enteral Nutrition?

- Infants, Adolescents, and Adults
- Those who are sick, diseased, or cannot absorb nutrients orally
- Those who require surgery
- People with difficultly swallowing
- Patient must have a functioning GI tract
- Patients with an obstruction or fistula-the tube is placed below the obstruction

Placement of a Tube Feeding

- Nasogastric (NG)
- Nasoduodenal/Nasojejunal
- Gastronomy (G-Tube or PEG)
- Jejunostomy (J-Tube orJEG)



Formula Delivery

- Continuous: a controlled amount is delivered throughout the day
- Bolus Feeding: “meal infusion”
- Cyclic Infusion: formula is delivered only during certain hours of the day

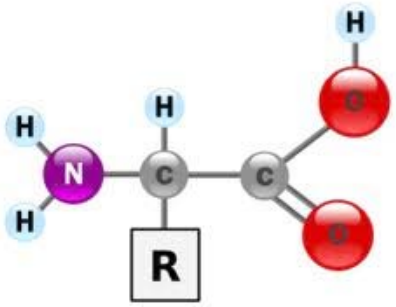
What is in a Tube Feeding?

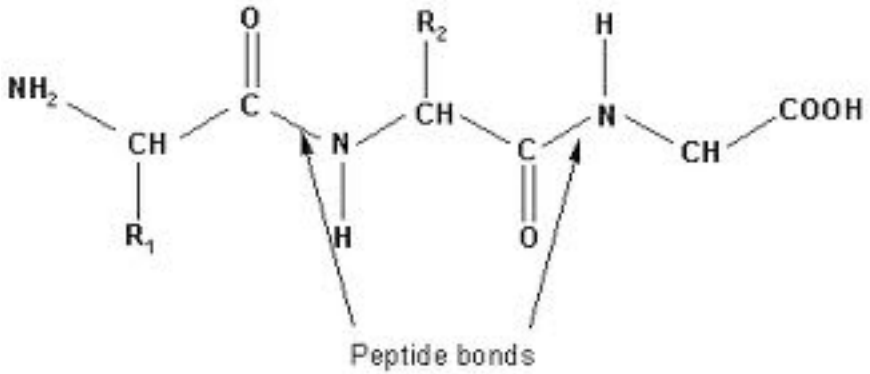
Tube feedings provide nutrients, therefore all feedings are made up of CHO, PROTEIN, and LIPIDS

Tube feedings must also provide fluid.

Tube Feeding Formulas

- Depending upon each patient and their specific needs, the formula for the contents differ.
  - Standard/Intact/Polymeric Formulas: patient must be able to digest and absorb nutrients
  - Hydrolyzed/Elemental Formulas: used when the patient is unable to break down nutrients, the protein source is single Amino Acids or small peptides, usually low fat, more $$$





CHO, LIPIDS, and PRO?

- Each formula makes a complete and balanced meal, therefore usually containing no more than 30% protein, 40-60% carbohydrates, and about 10% fat.
- The RD and Doctor decide how many calories, protein and fluids the patient needs

Free Water in Enteral Formulas

- Each formula contains free water
- Water in milliliters must equal amount of calories
  - Example: 2200 calorie diet needs at least 2200 ml water.
- Water flushes may be necessary in order for patients to stay hydrated
  - Example: 800 ml water needed; 200 ml flushes q 6 hours

TF table

	STANDARD TUBE FED		HIGH CALORIE HIGH PROTEIN	CRITICALLY ILL		ELEMENTAL	SPECIALIZED FORMULAS				
Product Name	**Jevity 1.2**	**Osmolyte 1.2**	**Two Cal HN**	**Pivot 1.5**	**Oxepa**	**Optimental**	**Glucerna**	**Pediasure w fiber**	**NutriHep**	**Pulmocare**	**Nepro**
Type of Diet	Intact Protein Fiber Containing	Intact Protein Low Residue	High Calorie High Protein Fluid Management	Metabolic Stress Immune Support	ARDS/SIRS Inflammatory Response Modulation	Metabolic Stress Immune Support Malabsorption	Glucose Management	Pediatric	Hepatic	Pulmonary	Renal/Dialysis Fluid Management
Prefilled System	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes
Tube/Oral	Tube	Tube	Tube/Oral	Tube	Tube	Tube	Tube/Oral	Tube/Oral	Tube/Oral	Tube/Oral	Tube/Oral
Calories/ml	1.2	1.2	2.0	1.5	1.5	1.0	1.0	1.0	1.5	1.5	2.0
Protein (gm/L)% & Source	55/18.5% Sodium and calcium caseinate	55.5/18.5% Sodium and calcium caseinates	83.5/16.7% Sodium and calcium caseinate	93.8/25% Partially hydrolyzed sodium caseinate, Whey protein hydrolysate, L-arginine	62.5/16.7% Sodium and calcium caseinates	51.3/20.5% Soy protein hydrolysate, partially hydrolyzed sodium caseinates, L-arginine	41.8/16.7% Sodium and calcium caseinates	30/12% Milk protein concentrate	40/11% L-Amino acids, Whey Protein (50% BCAA)	62.6/16.7% Sodium and calcium caseinates	70/14% Calcium, magnesium, and sodium caseinates, Milk protein isolates
Carbohydrate (gm/L)% & Source	171/52.5% Corn maltodextrin, Corn syrup solids FOS	157.5/52.5% Corn maltodextrin	218.5/43.2% Corn syrup solids, Corn maltodextrin, Sugar, FOS	172.4/45% Corn syrup solids, FOS	105.5/8.1% Sucrose, Maltodextrin	138.7/54.5% Corn maltodextrin, Sugar, FOS	95.6/34.3% Corn maltodextrin, Fructose	138/53% Corn maltodextrin, Sugar, Dextrose, FOS	290/77% Maltodextrin, Modified corn starch	105.7/28.2% Sugar, corn maltodextrin	222.7/43% Corn syrup solids, Sugar, FOS
Fat(gm/L)% & Source	39.3/29% High oleic safflower oil, Canola oil, MCTs, Lecithin	39.3/29% High oleic safflower oil, Canola oil, MCTs, Soy Lecithin	90.5/40.1% High oleic safflower oil, MCTs, Canola oil, soy lecithin	50.8/30% Sardine oil/MCT structured lipid, Soy oil, Canola oil, Soy lecithin	93.7/55.2% Canola Oil, MCT Oil, Sardine Oil, Borage Oil,	28.4/25% Sardine oil/MCT structured lipid, Canola oil, Soybean oil	54.4/49% High oleic safflower oil, Canola oil, Soy lecithin	393.7/35% High oleic safflower oil, Soy oil, MCTs, Soy lecithin, Mono and diglycerides,	21.2/12% MCT Oil, Canola Oil, Soy Lecithin, Corn Oil	93.3/55.1% Canola oil, MCTs, Corn oil, High oleic safflower oil, Soy lecithin	95.6/43% High oleic safflower oil, Canola oil, soy lecithin
%Free Water	81	82	70	76	79	83	85	85	76	79	70
Osmolality	450	360	725	595	535	540	355	345	790	475	665
Fiber Content (gm/L)	22*	--	5	7.5	--	5*	14.4	8	--	--	15.6
Na+ (mg/L)/mEq	1350/58.7	1340/58.3	1450/63	1400/60.9	1310/57	1055/45.9	930/40.4	380/16.5	160/7.0	1310/57	845/36.7
K+ (mg/L)/mEq	1850/47.4	1810/46.4	2440/62.6	2000/51.2	1960/50.1	1760/45	1570/40.2	1308/33.5	1320/34	1960/50.1	1055/27.1
Base	1000	1000	948	1000	946	1422	1420	1000/1500**	1000	947	947

Nutrition Supplements…when food is just not enough

Who can have nutritional supplements?

- Patients who are not NPO
- Patients not on a tube feeding
- Patients needed extra kcals or protein

Abbott Nutrition

Supplement and diet sheet terminology

- NPO: nothing by mouth
- TID: every meal
- HS: before bed
- PO: oral intake
- I/O: ins and outs
- NTL: nectar thick liquids
- HTL: honey thick liquids
- ADAT: adapt diet as tolerated

Categories of Nutritional Supplements

- Standard Supplements
- High Calorie/High Protein
- Diabetic
- Dialysis
- Bariatric
- Children's Supplements

Standard Supplements

- Ensure is the most commonly prescribed nutritional supplement for patients who need additional calories and nutrients
- Ensure Clinical Strength is designed for patients who are in need of extra protein and calories
- Other varieties of Ensure include: bone health, immune health, and muscle health
- Ensure is gluten-free and lactose-free

Diabetic Supplements

- Glucerna is designed to have “steady carbs” for diabetic patients
- Each can contains 15 grams of CHO

Renal Supplements

- Nepro is for patients with kidney disease
- This supplement is designed for patients who are on dialysis and have an altered metabolism

Bariatric Supplements

- Necessary for recovery after Bariatric surgeries
- High in the Amino Acid Glutamine
- Juven: used to rebuild tissues
- Optisource: high protein, gluten-free and lactose-free

Pediatric Supplements

- Infants born prematurely with an underdeveloped GI system and have malabsorption
- Infants and toddlers are given supplements when they have severe vomiting and diarrhea

Now that we know the differences between supplements and enteral feedings…

- Make sure you are bring the patient the correct supplement. Do not bring them an enteral feeding!
- Check with supervisor before bringing a tube feeding formula
- Both tube feedings and supplements are doctor ordered and are in your diet sheets

Works Cited

- ASPEN American Society for Parenteral and Enteral Nutrition http://www.nutritioncare.org/wcontent.aspx?id=266
- Abbott Nutrition http://abbottnutrition.com/Adult/Adult-Oral-Nutrition-Products.aspx
- Nestle Nutrition http://www.nestle-nutrition.com/products/Product.aspx?ProductId=8491e67b-b4cd-481d-9773-1450f22e013f