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THE JOURNEY TO FOOD-BASED TUBE FEEDINGS IN ADULT AND PEDIATRIC PATIENTS

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Sponsor Disclosure

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Speaker



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Disclosure

I have a commercial relationship with Nestlé Health Science and Avanos as a consultant/member of speaker's bureau and will provide practice recommendations that are based on formal structured review of the literature.

Objectives

- Identify practical tips the acute-care clinician should know when providing nutrition therapy to inpatients that receive a food-based tube feeding at home.
- Explain the recent literature pertaining to food-based tube feedings.
- Describe the key steps to implement a successful food-based tube feeding regimen with patients/caregivers.
- Identify the potential benefits of a food-based tube feeding formula.

BTF in History

BTF started 3500 years ago
(rectally)

- Ancient Egypt

1793 the first BTF formula
was administered into the
stomach via tube

- Jelly, eggs, sugar, milk and wine
- President James Garfield
received rectal feeding in 1881

Modern commercial tube
feeding formulas introduced
in 1960-1970s

Chernoff R. An Overview of tube feeding: from ancient times to the future. NCP 2006;21(4): 408-410.

McMamish MA, Bounous G, Geraghty ME. History of enteral feeding: past and present perspective. In: Rombeau JR, Rolondo R, eds.

Clinical Nutrition: Enteral and Tube Feeding . 3rd ed. Philadelphia, PA: W.B. Saunders; 1997

RDN in 2020

RDN survey results

Patient survey results

Education-patients and dietitians

Nutrition assessment

Follow up plan



Surveys

Dietitians

- › 2,448 dietitians responded
- › 58% use and recommend BTF
- › Most common reason for use was parent request (70.2%)

Parents

- › 244 parents responded, 50% using BTF in some way
 - Only half (49.3%) of parents using BTF referred to dietitians for feeding oversight

Johnson TW, Spurlock A, Pierce L. Survey Study Assessing Attitudes and Experiences of Pediatric Registered Dietitians Regarding Blended Food by Gastrostomy Tube Feeding. *Nutr Clin Pract*. 2015;30(3): 402-405.

Johnson T, Spurlock A, Epp L, et al. Reemergence of Blended Tube Feeding and Parent's Reported Experiences in Their Tube Fed Children. *J Altern Complement Med*. 2017;24:

RDN Challenges

- › 221 RDN responded to survey
 - 24% had confidence in managing patients on BTF
 - 27% of respondents did not have BTF education
 - Informal education
 - Limited perceived competence on BTF practice and formula education opportunities are needed.

Kariya C, Bell K, Bellamy C, Lau J, Yee K. Blenderized Tube Feeding: A Survey of Dietitians' Perspectives, Education, and Perceived Competence. Can J Diet Pract Res. 2019;80(4):190-194.

Patient-Centered Assessment

› Formula guide-over 130 formulas

› [https://www.nutritioncare.org/Guidelines and Clinical Resources/EN Formula Guide/Enteral Nutrition Formula Guide/](https://www.nutritioncare.org/Guidelines_and_Clinical_Resources/EN_Formula_Guide/Enteral_Nutrition_Formula_Guide/)

› Mimic previous oral diet

- “What did you eat before?”

› Patient/caregiver may not be part of decision in hospital but involve them when possible.

- Patient centered approach



Patient-Centered Planning

- › Include primary care provider
- › Nutrition professional available
- › Appropriate tube
 - Gastrostomy preferred
 - Mature stoma
 - 12 French or greater tube
 - Smaller French sizes may work with some commercial formulas and thinner home blends
 - Some formulas may work with nasal tubes
 - Tube formulary helpful
- › Determine a system for monitoring
- › Tools available

Tools

› Blender study

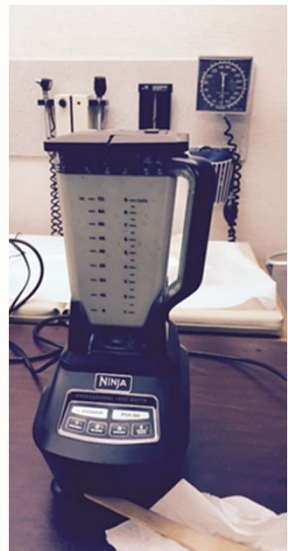
- Blenders tested: Oster® Blender, Cuisinart® Food Processor, Magic Bullet®, Mega Kitchen-Ninja® System and Vitamix®
- Vitamix® seems to blend better than all of the devices, for thicker recipes, with the exception of the Mega Kitchen-Ninja® System
- Increased blending time helped with less powerful blender
- Blendtec® worked as well as Vitamix®

› ENFit® O ring syringes

- Don't get sticky
- Easier to push
- May help to oil syringes

› Straight bolus extension sets

Mundi M, Epp L, Duellman W, Davidson J, Yaramala S, Corner S, Hurt R. Efficiency of blenders used to prepare home blenderized tube feeding. Presented at ASPEN Clinical Nutrition Week, 2017.
ENFit® is a registered trademark of GEDSA.



Tools

- › Large bore gravity bags
- › Feeding pump
 - May need to increase pump rate to compensate
 - Priming takes longer
 - Viscosity may result in inconsistent feeding times
- › Bolee™ bags



Reddick C, Flaherty J. Considerations when using commercially prepared blenderized tube feeding via an enteral feeding pump. Presented at ASPEN Nutrition Science and Practice Conference, 2018.
Bolee is a trademark of U Deliver Medical, LLC.

Thermal Effect of Food

- › Increased calories needed?
 - Thermal effect of food (7-10%)
 - Home recipes may not be precise
 - Change in digestion due to diverse microbiota
- › Participants required 20-50% more calories to maintain their body mass index while on BTF compared with commercial formula

Gallagher K, Flint A, Mouzaki M, et al. Blenderized Enteral Nutrition Diet Study: Feasibility, Clinical, and Microbiome Outcomes of Providing Blenderized Feeds Through a Gastric Tube in a Medically Complex Pediatric Population. *J Parenter Enter Nutr.* 2018;42(6):1046-1060.
Tanchoco CC, Castro CA, Villadolid MF, et al. Enteral feeding in stable chronic obstructive pulmonary disease patients. *Respirology.* 2001;6:43-50.
Reed GW, Hill, JO. Measuring the thermic effect of food. *Am J Clin Nutr.* 1996;63(2):164-169.
Bennett K, et al Short-term outcomes using blenderized tube feedings among gastrostomy-tube dependent children. Presented at ASPEN, 2015.

Formula Journey is Never-Ending

- › Multiple standard ➡ specialty ➡ elemental ➡ food based
- › Elemental ➡ food based
- › Start with home blends right away
- › Home blends ➡ food based commercial formula
- › Avoid placing your own opinions on the patient, avoid “shaming”



Formula Journey is Never-Ending

- › Blend foods into standard commercial formula (green beans for diarrhea)
- › Food based formulas + added foods (variety)
- › Food based formula
- › Home blending
 - Exchanges
 - Standard recipe
 - Plate method (family meal)

Commercial formula +
carrot and applesauce



Standard Formula + Added Food

- › 1 can of standard 1kcal/mL formula
 - ½ banana
 - ½ cup cooked steel cut oatmeal
 - ½ cup blackberries

This provides approximately 400 kcal and 13 grams protein

Food-Based Formula + Added Foods

Examples

- 1 pouch commercial blenderized product + ½ cup fresh picked black raspberries.
- 1 pouch commercial blenderized product + 1 tablespoon coconut oil
- 1 pouch commercial blenderized product + 2 tablespoons peanut butter

The following information is being provided for a learning experience and not to promote any one product over another*.

- Compleat[®] Organic Blends is a registered trademark of Nestlé Health Science.
- Kate Farms[®] is a registered trademark of Kate Farms.
- Liquid Hope[®] and Nourish[®] are registered trademarks of Nutritional Medicinals, LLC.
- Pediasure Harvest[™] is a trademark of Abbott Nutrition.
- Real Food Blends[™] is a trademark of Real Food Blends.
- Kitchen Blends[®] is a registered trademark of Medline, Inc.
- Whole Story Meals[™] is a trademark of Whole Story Meals.

*Information obtained from manufacturer's websites October 2020.

Food-Based Formulas*

1. Compleat[®], Compleat[®] Pediatric, Compleat[®] Pediatric Reduced Calorie, Compleat[®] Organic Blends, Compleat[®] Pediatric Organic Blends, Compleat[®] Peptide 1.5 Cal, Compleat[®] Pediatric Peptide 1.5 Cal
2. Kate Farms[®]: Standard 1.0, Standard 1.4, Pediatric Standard 1.2, Pediatric Peptide 1.5, Pediatric Peptide 1.0, Peptide 1.5 (plant-based; not food-based)
3. Kitchen Blends[™]
4. Liquid Hope[®], Liquid Hope[®] Peptide, Nourish[®], Nourish[®] Peptide, Keto
5. PediaSure Harvest[™]
6. Real Food Blends[®]
7. Whole Story Meals[™]

*Formulas available as of October 2020

Food-Based Formulas

Pros

- › Precise/consistent macronutrients and micronutrients
- › Variety of options
- › Convenient
- › More consistent viscosity

Cons-improving

- › Limited published peer reviewed publications
- › Possible decreased pump accuracy, pump alarms
- › Insurance coverage (B4149, B4153)
- › Supplier availability

Recipe Idea 500 kcal (Exchanges)

INGREDIENT	AMOUNT
Starch – well-cooked oatmeal, rice, pasta or potato	½ cup
Yogurt, reduced fat (2%)	¼ cup
Milk, 1%	¾ cup (6 oz)
Oil, flaxseed, canola, soybean, walnut	2 teaspoons
Fruit – canned, fresh or frozen apple, banana, peaches, mandarin oranges	½ cup
Vegetable – canned, fresh or frozen well cooked broccoli, carrots, green beans or cauliflower	½ cup
Protein – cooked tender chicken, turkey, beef, fish or smooth soft tofu	½ cup

PROCEDURE:

Put all items in a blender and mix well. Fits into a Magic Bullet® Blender.
Refrigerate if not used immediately.

Standard Recipe

1000 kcal










Ingredients	Volume
Cooked oatmeal	1 cup
Egg, cooked	1 each
Melon	½ cup
Whole milk	8 fluid ounces
Olive oil	1 teaspoon
Cooked brown rice	½ cup
Cooked green beans	½ cup
Canned peaches (drained)	½ cup
Yogurt (reduced fat 2%)	6 oz
Cooked carrots	½ cup
Tofu-cubed	½ cup
Avocado	4 tablespoons

Family Meals

MyPlate Daily Checklist

Write down the foods you ate today and track your daily MyPlate, MyWins!

Food group targets for a 1,400 calorie* pattern are:		Write your food choices for each food group	Did you reach your target?
 Fruits 1 1/2 cups 1 cup of fruits counts as • 1 cup raw or cooked fruit; or • 1/2 cup dried fruit; or • 1 cup 100% fruit juice.	_____ _____ _____	<input type="checkbox"/> Y <input type="checkbox"/> N	<div>  Limit: • Sodium to 1,500 milligrams a day. • Saturated fat to 16 grams a day. • Added sugars to 35 grams a day. <input type="checkbox"/> Y <input type="checkbox"/> N </div> <div>  Activity Be active your way: • Children 2 to 5 years old should play actively every day. <input type="checkbox"/> Y <input type="checkbox"/> N </div>
 Vegetables 1 1/2 cups 1 cup vegetables counts as • 1 cup raw or cooked vegetables; or • 2 cups leafy salad greens; or • 1 cup 100% vegetable juice.	_____ _____ _____	<input type="checkbox"/> Y <input type="checkbox"/> N	
 Grains 5 ounce equivalents 1 ounce of grains counts as • 1 slice bread; or • 1 ounce ready-to-eat cereal; or • 1/2 cup cooked rice, pasta, or cereal.	_____ _____ _____	<input type="checkbox"/> Y <input type="checkbox"/> N	
 Protein 4 ounce equivalents 1 ounce of protein counts as • 1 ounce lean meat, poultry, or seafood; or • 1 egg; or • 1 Tbsp peanut butter; or • 1/4 cup cooked beans or peas; or • 1/2 ounce nuts or seeds.	_____ _____ _____	<input type="checkbox"/> Y <input type="checkbox"/> N	
 Dairy 2 1/2 cups 1 cup of dairy counts as • 1 cup milk; or • 1 cup yogurt; or • 1 cup fortified soy beverage; or • 1 1/2 ounces natural cheese or 2 ounces processed cheese.	_____ _____ _____	<input type="checkbox"/> Y <input type="checkbox"/> N	

* This 1,400 calorie pattern is only an estimate of your needs. Monitor your body weight and adjust your calories if needed.



Track your MyPlate, MyWins

Center for Nutrition Policy and Promotion
January 2016
USDA is an equal opportunity provider and employer.

<https://www.choosemyplate.gov/resources/MyPlatePlan> accessed 10/20

Documenting Medical Necessity

› Medicare

- Guidelines are from 1984
- Retiring current Local Coverage Determination on 11/12/2020 to provide more consistent guidelines throughout the country and reflect current practice and remove outdated tests and documentation requirements
 - Still need clear documentation in EHR that tube feeding is sole source of nutrition and will be for greater than 3 months
 - More focus on changes to parenteral nutrition
 - This link provides more information:
<https://www.cgsmedicare.com/jc/pubs/news/2020/10/cope19135.html#:~:text=The%20DME%20MACs%20will%20be%20retiring%20the%20Enteral,to%20the%20evolution%20of%20enteral%20nutrition%20clinical%20paradigms.>

› Medicaid

- Varies by state

› Commercial insurance

- Varies by plan

› Examples of medical necessity

- Diarrhea, reflux, increased use of stool softeners, vomiting, not reaching goal volumes on standard formula

Post Pyloric Feeding

- › Feeding food based formula into the small bowel requires clinical judgement
 - Remember French size of jejunal extension (If GJ tube)
 - Adding water decreases hang time to 4 hours
- › Adults may be safer as their gut is more mature
 - Gastric bypass, gastrectomy
- › More experience/research needed

Hospital Setting

- › Continue patient centered approach
- › Proposed guidelines
 - Limited use in the ICU
 - Would not feed a critically ill patient a big salad
 - Commercial food based product
 - Home blends if able to self administer feedings
 - Order from pureed menu
 - Commercial grade blender
 - Follow same protocols as tray service



COVID-19 Challenges

- › COVID may change family income/time, making home blending a challenge
 - Food security (for food or formula if paying out of pocket)
- › School may have new protocols preventing use of home blends
- › May be educating virtually
 - Zoom (create a tool kit)
 - Phone visits



COVID-19 Requires Planning Ahead

Surge in cases, supply shortages (pumps, bags) and shipping delays are concerning.

› Shipping delays

- Unable to order early
- UPS, FedEx and postal service delays
- Weather (Wild fires causing delays in CA)

› Emergency stock needed

- Commercial product
- Private purchase emergency supply (rotate)
- Foods to blend

Hang Time Reminder

- › Hang time of food is 2 hours
 - Per USDA “Perishable food should not be left out more than 2 hours at room temperature --1 hour when the temperature is above 90 °F (32.2 °C).”
- › Commercially prepared formulas 8-12 hours
- › Adding modulars decreases hang time to 4 hours
- › Nothing, so far, that shows us that adding ice packs increases hang time.

Boullata JL, et al. ASPEN Safe Practices for Enteral Nutrition Therapy. *JPEN*. 2017;41:15-103.

<http://www.fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/get-answers/food-safety-fact-sheets/safe-food-handling>, Accessed 10/20

Storage: Commercial vs Homemade

- › Once opened, unused formula should be stored in a clean, tightly sealed, container, refrigerated, and used within 24 hours.
- › Leftovers can be kept in the refrigerator for 3 to 4 days or frozen for 3 to 4 months.
- › Use clean food storage container with tight fitting lid

Clinical Benefits: Review of Recent Literature

- › Improved GI symptoms (reflux, vomiting, bowel regularity)
- › Building patient rapport
- › Patient-centered and individualized health care
- › Improved quality of life
- › Decrease in health care utilization

Poll

In your practice, what is needed to support food-based formulas as the best option for tube-fed patients?

- A. Protocols from ASPEN
- B. Additional literature
- C. I already think it is best
- D. More time

Literature Review

17 of 20 pediatric patients were transitioned from standard formula to homemade BTF

- › BTF micronutrient content was superior, Prevalence of vomiting decreased with BTF, The bacterial diversity and richness in stool samples significantly increased, while the relative abundance of Proteobacteria decreased and Caregivers were more satisfied with BTF and unanimously indicated they would recommend BTF.

42 were on food-based, blenderized formulas; 28 were receiving conventional formulas

- › greater satisfaction ratings , lower symptom scores on Pediatric Gastroesophageal Reflux Disease Symptom and Quality of Life Questionnaire and greater scores on the Pediatric Quality of Life Inventory Gastrointestinal Symptoms Scale, indicating less nausea and vomiting, abdominal pain, diarrhea), and fewer total symptoms.

Hron B, Fishman E, Lurie M, et al. Blenderized Enteral Nutrition Diet Study: Feasibility, Clinical, and Microbiome Outcomes of Providing Blenderized Feeds Through a Gastric Tube in a Medically Complex Pediatric Population. *J Parent Enter Nutr.* 2018;42(6):1046-1060.

Fishman E, Lurie M, et al. Health Outcomes and Quality of Life Indices of Children Receiving Blenderized Feeds via Enteral Tube. *J Pediatr.* 2019;211:139-145

Meeting Nutritional Needs

Blenderized Tube Feedings for Adult Patients on Home Enteral Nutrition: A Pilot Study.

- › Open-label pilot study, in which all participants who had been on traditional EN formulas were changed to BTF for 6 weeks.
- › BTF was found to be safe and effective in promoting weight gain in adult participants who required HEN for at least 6 weeks.

Hurt R, Epp L, Duellman W, et al. Blenderized Tube Feedings for Adult Patients on Home Enteral Nutrition: A Pilot Study. J Altern Complement Med. 2019;25(4):413-416.

Table 1. Potential Benefits and Risks of Home Blenderized Tube Feeding and Commercial Blenderized Tube Feeding Products Compared With Commercial Enteral Formula.

	Home Blenderized Tube Feeding	Commercial Blenderized Tube Feeding Products
Potential benefits		
Improved gastrointestinal tolerance ^{12,14,15,17}	Yes	Yes
Increased oral intake ^{12,14,15,17}	Yes	Yes
Increased caregiver/patient satisfaction ^{10,14,15,17}	Yes	Yes
Less expensive	Cost highly variable as depends on ingredients used however may be less expensive than out-of-pocket cost of commercial enteral formula	May be a less expensive option depending on type of commercial enteral formula and out-of-pocket cost
Potential risks		
Caregiver stress/burnout due to preparation	Increased	Decreased
Tube clogging (depends on size of feeding tube and/or general viscosity of feeding type)	Increased because of highly variable nature of viscosity	Decreased risk due to more consistent viscosity
Microbial contamination ^{19,37,38}	Higher because of variable caregiver preparation methods, food safety knowledge, inherent microbial content of food, lack of processing	Lower because of processing/packaging
Growth/weight concerns and risk of inadequate nutrition ^{11,14,17,19,38}	Increased risk; depends highly on healthcare provider involvement and patient follow-up	Decreased risk due to consistent nutrient composition
Other		
Recommended hang time (in home setting) ³⁹	≤2 hours	2–12 hours depending on product
Method of feeding ⁴⁰	Appropriate for oral use Pump or syringe depending on viscosity	Appropriate for oral use Pump or syringe
Need for healthcare provider involvement ^{15,19}	Increased	Decreased
Suitable for inpatient use ^{19,41}	Yes, but with limitations and requires detailed policies and procedures	Yes
Preparation time	Increased	Decreased
Travel ability	More difficult	Less difficult
Shelf stable	No	Yes

Bennett K, Hjelmgren B, Piazza J. Blenderized Tube Feeding: Health Outcomes and Review of Homemade and Commercially Prepared Products. *Nutr Clin Pract.* 2020;35(3):417-431.

Clinical Hesitation

- › Limited published peer reviewed publications
- › Microbial contamination
- › Variability of nutritional composition
- › Increase in clinician's time
- › Potential increase in cost/lose reimbursement
- › Possible tube clogging, tube wears out more quickly
- › May be more difficult for travel
- › Facility or hospital may not support

Literature Review

Microbial contamination

1. Philippines, 78.8-87.8 degrees F
 1. Increased bacteria at time of preparation
2. Home BTF in Brazil tested
 1. high levels of bacterial contamination
 2. lower values for protein, fat, fiber, carbohydrate and energy (used sieves)
3. Iran
 1. Refrigerator temp 49.8 degrees F
 2. At the time of food preparation, 70% were contaminated

Sullivan MM, Sorreda-Esguerra P, Santos EE, et al. Bacterial contamination of blenderized whole food and commercial enteral tube feedings in the Philippines. J Hosp Infect. 2001;49(4):268-273.

Vieira MM, Santos VF, Bottoni A, et al. Nutritional and microbiological quality of commercial and homemade blenderized whole food enteral diets for home-based enteral nutritional therapy in adults. Clin Nutr. 2016.

Jalali M, Sabzghabae AM, Badrii SS, et al. Contamination of hospital-prepared enteral tube feeding formulas in Isfahan, Iran. J Res Med Sci. 2009;14(3): 149-156.

Microbial Contamination: Hospital

- › Three formulas
 - Commercial formula
 - Baby food
 - Whole Foods
- › All 3 feeding formulas at zero hour, 2 hours, and 4 hours for each of the 3 sampling dates were acceptable for human consumption.

Johnson T, Milton DL, Johnson K, et al. Comparison of microbial growth between commercial formula and blenderized food for tube feeding. Nutr Clin Pract. 2019;34(2):257-263.

Microbial Contamination: Home

- › 50 participants made blended formula in their home
- › Microbial counts observed over 48 hours
- › 88% of the samples met the US Food Code criteria for safe food consumption
- › Established safe food-handling procedures can minimize bacterial contamination of BTF

Clinical Outcomes Associated With Commercial and Homemade Blenderized Tube Feedings: A Literature Review

- › “The results indicate that BTF, compared with commercial enteral formula (CEF), may be inadequate in calories, macronutrients, and some micronutrients, given variability in BTF formula.”
- › “BTF may result in significantly more weight loss than CEF.” Thus, BTF may not be appropriate for adult patients who are malnourished or are at risk for malnutrition due to the potential worsening of clinical outcomes.
- › Potential for bias, read beyond the abstract.

Brown T, Zelig R, Rigassio Radler D. Clinical Outcomes Associated With Commercial and Homemade Blenderized Tube Feedings: A Literature Review. Nutr Clin Pract. 2020; 35:442-453.10.1002/ncp.10487

Commercial vs. Pureed Feeding

- › Thirty-seven patients aged between 2 and 26 years with severe neurologic impairment
 - 17 received commercial formula
 - 20 received pureed food
- › Patients in both groups improved in their weight-for-age Z scores and body height but was higher with CF

Case Report #1

Former 24-week premature female infant, now 7-years old with developmental delay on homemade blended diet for 2 years

- Since March 2020, caregiver had increase in responsibilities (working from home, distance learning)
- Mother didn't want to ask for help
- RDN provided assessment and reminded mom there are many good ways to feed her child

Change to food-based commercial formula with discussion that this doesn't have to be forever

Case Report #2



3-year old boy with CP and continued vomiting with home blends via g-tube.

- Drop in weight for age z score
- Constipation due to poor fluid intake
- Firm family preferences of food choices for religious reasons
- GI provider had recommended GJ for 1 year, family resisted
- No dietitian follow up during that time

Dietitian met with family to discuss options for formula and this resulted in changing to GJ tube.

Patient was able to get a vegetarian commercial product via jejunal extension. (which made mom happy😊).

- Had 14 French low profile gastrojejunostomy placed, reminder jejunal extension is smaller.
- Diluted 1 pouch formula with 150mL water which changed hang time to 4 hours.

*Use of commercial formulas with pump into jejunum requires clinical judgement.

Case Report #3

66-year old male s/p stroke with continued dysphagia now dismissing from inpatient rehab unit.

- Patient had NG in hospital and RDN decided on standard 1.2 kcal/mL formula.
- PEG placed and changed to 1.5kcal/mL formula to decrease volume
- Ready to go home and supplies set up with DME
 - Wife very upset about what he had been getting.
- Discussed formula ingredients and options

Don't assume patients don't want to/can't pay for formula.



Case Report #4

70-year old male on standard commercial formula while undergoing chemoradiation for tonsil cancer.

- c/o fullness, bloating and inability to achieve goal feedings leading to 5% weight loss in 3 weeks.
- Changed to commercial blended formula with improved tolerance and stabilization of weight. We did have to increase calorie goal by 15%.

“Patient failed standard tube feeding product due to fullness, bloating and inability to achieve goal feedings, resulting in weight loss. Therefore, a commercial food-based formula is needed.”

Conclusion



Food based formulas appear to be used in many HEN patients and have been used for 1000s of years.

Literature is starting to emerge regarding benefits of food-based formulas (in a variety of forms).

Can meet nutrition needs with the help of a registered dietitian and close follow-up.

Current ASPEN task force working on guidelines which may make hospital use more accepted.

Resources

The Recipe Builder—Tool to Create Blenderized Tube Feeding Recipes
www.Compleat.com/Recipes

Academy of Nutrition and Dietetics www.eatright.org
• The Registered Dietitian Nutritionist's Guide to Homemade Tube

ASPEN videos:
https://www.nutritioncare.org/Guidelines_and_Clinical_Resources/Enteral_Nutrition_Resources/

Oley Foundation https://oley.org/page/HEN_LandingPage

Seattle Children's Hospital <https://www.seattlechildrens.org/pdf/PE442.pdf>

The Blenderized Tube Feeding Recipe Builder



The Blenderized Tube Feeding (BTF) Recipe Builder is powered by the Blenderized Diet Recipe Calculator. The Blenderized Diet Recipe Calculator was created by Robin Cook, MS, RD, CSP, LDN, pediatric surgery/trauma dietitian at Children's Hospital of Philadelphia. Hosted on www.compleat.com and developed in collaboration with Nestlé Health Science, the BTF Recipe Builder allows healthcare professionals, patients, and caregivers easy access to this new tool. The BTF Recipe Builder is intended to be used under the medical supervision of a healthcare provider.

1 Profile

WELCOME, JESSICA

My Recipe Builder Profile

1. What dietary restrictions should be considered?

☐ No Milk Free ☐ No Soy Free ☒ Yes Nut Free

☐ No Egg Free ☐ No Vegetarian

2. How many calories do you need per day?

1200 Calories

3. Do you have any volume restrictions? (if no, leave blank)

Max. mL per day

4. Who are you creating recipes for?

Go to Compleat.com/Recipes and create a personalized profile with calorie needs, volume restrictions and dietary limitations

2 Build

0 1 2 3 4 5 6 7 8 9 10

NUTRIENT-RICH BASE

To create your 1200 Calories recipe, you need to select 2.5 servings. You can select an ingredient more than once. You've reached your total servings.

Build a recipe by selecting any combination of ingredients from 8 nutritionally complete food groups

3 Save

Your Recipe is ready!
Chicken, Veggies and Bananas
Date of creation: 04/09/2020

My Ingredient List

Nutrient Rich Base	1/2 Cup	Whole Milk (120 kcal)
	1/2 Cup	Whole Milk Yogurt (180 kcal)
Protein Rich Foods	3 Ounces	Chicken (80 kcal)
Vitamin A Rich Fruits & Vegetables	1/2 Cup	Mashed Sweet Potato (50 kcal)
Vitamin C Rich Fruits & Vegetables	1 1/2 Cups	Shred Strawberry (200 kcal)
Additional Fruits & Vegetables	3 Cups	Zucchini (40 kcal)
Potassium Rich Fruits & Vegetables	1	Small Banana (75 kcal)
Grains	4	Shred Bread (60 kcal)
Healthy Fats		

Recipe Summary

CALORIES	1224
Protein	62 g / 20% of kcal
Contributions	127 g / 42% of kcal
Total fat	12 g / 38% of kcal
Fiber (g)	21 g
VOLUME	1275 mL

Generate ingredient list, calories, volume and macronutrients, then save to your recipe box

Questions?

The Recipe Builder
www.Compleat.com/Recipes

The Recipe Builder: Take the Guesswork Out of Blenderized Tube Feedings

Presented by Robin Cook, Robin Cook, MS, RD, CSP, LDN

Pediatric Surgery/Trauma Dietitian, Children's Hospital of Philadelphia

(Access the recording on the Nestlé Nutrition Institute website under **videos**.)

Nestlé Health Science Medical Hub

<https://www.nestlemedicalhub.com>

Resource center for healthcare professionals to support everyday practice and professional development. Find a variety of educational resources, best practices on nutrition management, information and clinical evidence for products, patient resources, and information about programs and trainings conducted throughout the year.

MyCE

www.MyCEeducation.com

Offering CE to dietitians and nurses

References

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