** PERSONALIZED BLENDERIZED TUBE FEEDING MEAL PLAN**

**Name: DOB: Date:**

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| **Daily Food Blend Recipe makes about 45 oz** |
| **FOOD GROUP** | AMOUNT | EXAMPLES |
| **Dairy** | 2 cups  | Use whole milk or full fat daily products |
| **FRUITS**  | 1 1/2 cups |  ½ large banana and ½ cup fresh peach  |
| **VEGETABLES** | 2 cups | 2 cup steamed mixed vegetables from frozen |
| **PROTEINS** | 4 oz.  | ½ cooked chicken breast and 2 eggs |
| **GRAINS** | 6 oz.  | 1 cup cooked oatmeal, 1 cup pasta, 2 slice wheat bread |
| **Extras: FATS & OILS** | 2 Tbsp.  | 2 Tbsp. canola or olive oil |
| **Extras: SUGARS** | 2 Tbsp.  | 2 Tbsp. honey |
| **Daily Vitamins/Minerals/Water/Other Additives**(in addition to Blended Food Recipe) |
| Morton Lite Salt | If food is not seasoned add ¼ tsp.  |  |
| Calcium Carbonate liquid | none |  |
| Kiddievite multivitamin/mineral liquid | 15ml daily |  |
| **Feeding Schedule** |
| **G-tube feeds:** 1/5th of above BTF recipe 5 times daily (about 10-11 oz. feeds)**Water flushes:** 10ml after each feeding, can increase to meet water needs as tolerated**Extra water:** 300 ml daily including flushes. (10ml flushes after each feed and 120ml twice daily  |

**Preparing the Blend**

* **Review resources provided** prior to making your first blend; **Watch YouTube videos** listed in resources for practical tips for preparing the blend.
* **Use the recipe** tailored for your child above
* **Use the Food and Portion Guide** below to determine the portion sizes to add to the blend
	+ **Note:** Portions will vary depending on the food you select
	+ **Examples:** 1 oz. of grain = 1 ¼ cup puffed rice OR ½ cup cooked rice OR 1 slice bread
* **Vary food choices** to meet vitamin and mineral needs especially fruits and vegetables.
* **If your child needs a high calorie blend,** choose higher calorie foods as listed in the guide.
* **If your child needs a low calorie blend,** choose lower calorie foods as listed in the guide.
* **Vitamin and mineral supplements** can be added to the food blend if your child finishes the entire blend daily. If not give separately by g-tube or orally if able.

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| **For office use:** above blend provides approximately the following in about 55 oz.  |
| **NUTRIENTS** | **DAILY NUTRIENTS** | **% of Total Calories** |
| CALORIES | 1700 kcals  |  |
| PROTEIN | 72 grams | 17% |
| CARBOHYDRATE | 214 grams | 52% |
| FAT | 59 | 31% |
| WATER | 1275 ml  |  |
| Estimated calories/oz | 30 kcal/oz.  |  |

Ordering Physician:

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| **FOOD & PORTION GUIDE** |
| **Dairy & Dairy****Substitutes*****\*If using alternative milks such as rice, almond, coconut, etc., you may need to give more protein and calories from other sources.*** | **Amount that counts as 1 cup** |
| **80-120 calories*** 1 cup nonfat or 1% milk
* 1 cup calcium fortified soymilk
* *1 cup calcium fortified milk made from rice, almond, coconut, etc. (see note)\**
* ½ cup whole milk yogurt
* 1 cup low fat yogurt
* 3 Tb. Powdered nonfat milk
* 1oz soft cheese
* 1 slice (1oz) processed American cheese
* ½ cup fat free or 1 or 2% low fat cottage cheese
* ¼ cup ricotta cheese (part skim or whole milk)
 | **Greater than 120 calories*** 1 cup 2% or whole milk
* 1 cup soy or coconut yogurt (plain or flavored)
* 1/3 cup shredded cheese
* ½ cup 4% fat cottage cheese (full fat)
* ½ cup evaporated milk (not diluted)
* ½ cup part skim ricotta cheese
* ½ cup whole milk ricotta cheese
* ½ cup pudding made with milk or soy milk
* ½ cup frozen yogurt or ice cream
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| **Fruits**Each cup (or serving) provides about: 120-160 calories | **Amount that counts as 1 cup or 1 serving** |
| * 1 cup cut up fresh, canned or frozen fruit, apples, pitted cherries, peach, pear, plum, papaya, mango, apricot, seedless grapes, melon, blueberries, canned mandarin oranges
* 1 large banana (8-9 in) or 1 cup slices
* ½ ripe avocado or ½ cup cubes
* ½ cup stewed prunes
* ¼ cup dried fruit that has been stewed
* 1 cup pulp free fruit juice (limit young children to 4-6oz daily)
* 8oz (2 containers/jars) Stage 2 infant fruit
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| **Vegetables**Each cup (or serving) of **non-starchy** vegetable provides about:30-60 calories, 2-3 grams proteinEach cup (or serving) of **starchy** vegetable provides about:130-160 calories, 2-5 grams proteinNutrition Hints:Offer both green and orange veg.Green = High vitamin COrange = High vitamin A***If using beans as a vegetable, do not also count it as a protein.*** | **Amount that counts as 1 cup or 1 serving** |
| **Non-Starchy = 30-60 calories*** 1 cup cooked **non-starchy** vegetables: asparagus tips, beans (green, wax), beets, bell peppers, Bok Choy, broccoli, Brussels sprouts, cabbage, carrots, cauliflower, eggplant, escarole, greens (collard, mustard, turnip), kale, mushrooms, onions, pumpkin (calabaza), spinach, squash (green/yellow), tomato (juice sauce or puree)
* 2/3 cup artichoke hearts, butternut squash
* 4 Tbsp. tomato paste
* 4oz Stage 2 baby carrots, garden, green beans, mixed, peas, squash
 | **Starchy = 130-160 calories*** 1 cup cooked **starchy** vegetables: acorn squash, black eyed peas, broad beans, cubed potatoes (white/sweet), green peas, plantain (green/yellow)
* 2/3 cup cassava (yuca), creamed corn (canned), mashed potatoes (white/sweet)
* 2/3 cup cooked or canned beans *(baked beans, black, garbanzo = chick peas, great northern, kidney, lentils, lima, navy, pink, pinto, refried, soy, split peas, white, etc.)*
* 8oz (2 containers/jars) Stage 2 sweet potatoes
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| **FOOD & PORTION GUIDE** |
| **Proteins** Each ounce (oz.) provides about:4-9 grams protein35-100 caloriesMeasure meats, fish, poultry after cooking and removing skin and gristle ***If using beans as a protein, do not also count it as a vegetable.******If using nut butter as a protein, do not also count it as a fat.*** | **Amount that counts as 1 oz.** |
| **35-70 calories*** 1 oz. cooked fish, poultry, ham
* ¼ cup pureed fish, poultry
* ¼ cup canned salmon or tuna (in water)
* ½ cup cubed or 4 oz. tofu
* 1 oz. cooked tempeh
* ½ cup split pea, lentil or bean soup
* ¼ cup fat free, 1% or 2% cottage cheese
* 2.5oz jar (5 Tb.) baby beef
 | **75-110 calories*** 1 oz. beef, lamb, pork, goat
* ¼ cup pureed beef, lamb, pork, goat
* 1 cooked egg or 2 cooked egg yolks
* ¼ cup canned tuna or sardines ( in oil, drained)
* 4 Tbsp. hummus
* ½ cup canned or cooked dry beans, e.g. baked, chickpeas, pinto, lentils, split peas, refried beans, etc.
* 1 Tbsp. smooth peanut or nut butter
* 2 Tbsp. nuts
* 1 oz. falafel
* 1 veggie burger
* 2.5oz jar (5 Tb.) baby ham, chicken, or turkey
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| **Grains**Each ounce (oz.) provides about: 80-110 kcalsMake half of the grains whole grains. | **Amount that counts as 1 oz** |
| * ½ cup cooked amaranth, barley, bulgur, macaroni, millet, noodles, pasta, rice, quinoa
* 2 Tbsp. Quinoasure™ (80 kcals)
* 1 pancake (4 ½ in) or 2 small (3 in) or 1 waffle (~1oz or 30grams)
* 5-7 crackers (depending on size)
* ½ English muffin
* 1 slice (1oz) bread ( no seeds)
* ¼ cup (4 Tbsp.) wheat germ (100 kcals)
* 1 small piece corn bread (2 ½ x 1 ¼ in)
* 1 small corn or flour tortilla (6 in)
* ½ cup (8 Tb.) dry infant cereal
* ½ cup prepared hot cereal (oatmeal, cream of rice or wheat, farina, grits, Wheatena®)
* 1 packet instant dry plain oatmeal (100kcals)
* 1 cup ready-to-eat cold cereal flakes or rounds
* 1 ¼ cup puffed cereal
* ½ small muffin (2 ½ in) or 2 minis (~ 1oz muffin)
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| **Extras**Each serving of fat provides about 35 caloriesChoose polyunsaturated or monounsaturated fats for heart health. ***Avoid trans fats.***Each serving of sugar provides about 50-60 calories | **Amount that counts as 1 serving** |
| Fat* 1 tsp. oil, e.g. olive, canola, corn, flax or coconut, etc.
* 1 tsp. butter or margarine
* 1 tsp. smooth peanut or nut butter
* ½ Tbsp. tahini paste
* 1 Tbsp. sour cream
* 1 Tbsp. cream cheese
* 1 tsp. mayo or vegan mayo
* 1/8 avocado
 | Sugar* 1 Tbsp. table sugar (sucrose)
* 1 Tbsp. honey\* or agave nectar \*avoid if <1 year of age
* 1 Tbsp. molasses
* 1 Tbsp. table, corn or rice syrup
* 1 Tbsp. pure maple syrup
* 1 Tbsp. fruit jelly or jam (no seeds)
* 1 Tbsp. fruit syrup
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**TIPS AND RESOURCES**

**Equipment Needed**

1. Heavy-duty blender. May also be able to use a food processor or hand blender for some foods. Use high power blender for large amounts and if blending vegetable skins and tougher foods such as meats or beans.

Highly recommended if using whole food vs. baby food:

Vitamix® - [www.vitamix.com](http://www.vitamix.com) OR BlendTec®.[www.blendtec.com](http://www.blendtec.com)

Other processors can be used to puree skinless seedless fruits and cooked vegetables:

Magic Bullet®, Cuisinart®, Kitchen Aid®, Stick blenders.

May have to strain foods to prevent clogging of the tube.

1. Measuring cups and spoons. Spatula to remove formula from blender or food processor.
2. Clean cutting boards and pots.
3. Meat thermometer.
4. Large mesh food strainer if processing table foods using a standard blender/food processor.
5. Non-porous plastic or glass wide-mouth bottles/jars to store formula in refrigerator, e.g. 1-qt.; Bottle brush for washing jars.
6. Pill crusher or mortar and pestle if giving vitamin or mineral tablet.
7. 60 ml catheter tip syringes with plunger

**Basics of Preparation**

1. You can prepare this feeding with whole foods that are fresh, canned or frozen. You may also use dried foods cooked with liquid to re-hydrate. Alternatively, you can use commercially pureed baby foods (Stage 2) and infant cereal.
2. You can puree foods individually or as mixtures (e.g. stews, soups, shakes, smoothies, etc.). Place liquids into clean blender first then add solids to liquid and blend for several minutes or until smooth and pourable consistency. Use any of the following liquids: bouillon, broth, fruit juice, milk or substitute, soup, tomato or vegetable juice, V-8 juice, yogurt or water. Smoothies or shakes can be made with yogurt & fruit. **The mixtures must be thin enough to fit through the tube. Some children need thicker blends to help with vomiting, retching or gagging.**
3. Canned soups can be used as a base for a stew and other foods can be added (vegetables, meats, grains). **Do not use cans that are dented or damaged to avoid possible food borne illnesses.**
4. If your blender is not large enough to hold all of the ingredients, blend them in smaller batches and combine all batches in a large, clean container and mix well.
5. Cut vegetables into small pieces and cook before measuring. Then puree.
6. Cut foods into small pieces before placing into blender. Add liquids and blend well. After blending, strain foods to remove chunks, seeds or fibers.
7. If using commercial baby foods, you do not need to blend as much, if at all. Can shake, stir or use a whisk.
8. If the formula is too thick to blend or will not pass through the tube easily, **gradually** add a little more liquid to make formula a thinner consistency and easier to blend. **Be careful not to add too much liquid or the total volume of the formula may be more than your child can tolerate.** If the mixture is too thin, add more solids to make it thicker.
9. If salt is added, use sparingly or use amount recommended by your Dr. or dietitian. **Make sure it is iodized**.
10. If your child needs a vitamin or mineral supplement that is in tablet form, crush it first using a pill crusher or mortar and pestle, then add to blenderized formula. Alternatively, the crushed vitamin can be mixed with water and given the same way as a medication. Liquid or powdered vitamins and minerals may also be used.

**Preparation of Foods by Food Group**

**Dairy foods or substitutes:**

* Milk, non-dairy alternatives, yogurt, yogurt drinks or kefir can be used fresh. Flavored milks have more kcals.

 If less liquid is needed, can use canned evaporated milk, dried milk or unsweetened condensed milk.

Cheese must first be melted in a cheese sauce or used in a casserole dish (e.g. lasagna, macaroni and cheese), otherwise it will not blend well. Ricotta and cottage cheese can be used fresh.

**Fruits & Vegetables:**

* Boil or steam fresh or frozen vegetables until soft. Can also use canned vegetables, which do not need to be cooked as long since they are already very soft and easy to blend.
	+ Green leafy vegetable such as kale, spinach etc. can be added raw
* If not using a high powered blender, remove all skins and seed. Hard seeds should be removed regardless. If seeds are very small, strain them out after pureeing.
* Make sure fresh fruits are ripe and soft. Can also use canned or frozen fruits (thawed).
* Can use instant mashed potatoes or canned pureed pumpkin.

**Meat & Protein Foods:**

* Cook meats, poultry or fish until very soft and tender using a moist method of cooking, e.g. stewing, braising, boiling, or crock pot. Cook beef to 160°F, pork to 170°F and poultry to 180°F (use meat thermometer). Remove all skin, bones, gristle and cartilage before blending. Avoid using tough, hard meats. Ground meats are easier to blend than whole meats.
* Can also use canned meats, poultry or fish (canned stew, Spam®, chicken, mackerel, tuna, salmon, sardines, etc.).
* Cook dried beans, lentils or split peas until very soft or can use canned versions which need less cooking time since these are already cooked. If outer covering of beans is tough, remove before blending. Use split peas or lentils without the hull. If using hummus or canned refried beans, do not need to cook.
* Always cook eggs thoroughly, with both the yolk and white well done (not runny or wet). Good methods for cooking eggs are scrambling, hard-boiling or poaching. Can use thawed frozen egg products since these are pasteurized but **must always cook first**. **Never use raw eggs** since this can lead to salmonella food poisoning. Hard boiled eggs are convenient and blend well.
* If using nut or seed butters, make sure they are smooth, not chunky. Do not use whole nuts or seeds since will they will not blend well.

**Grains**:

* Cook grains such as rice, pasta, quinoa, etc. in liquid until very soft.
* Use prepared breads, muffins or biscuits, crackers without nuts or seeds.
* Soak breads, muffins, cereals in milk or other liquids in the blend to soften

**Fats & Oils**

* Can use any liquid vegetable oil, heavy cream or mayonnaise.
* If solid fats such as butter, margarine, coconut oil, palm or palm kernel oil are used, you must warm the feeding slightly first so fats will melt and not clog tube.

**Safe Food Handling and Storage**

1. Start with a clean kitchen and clean equipment.
	1. Use mixture of 1 Tbsp. bleach added to 1 gallon of hot water and a clean cloth to wipe kitchen counter tops and cutting boards.
	2. Use separate cutting boards for meat and vegetables/fruits (especially if they are raw) and clean frequently.
2. Prepare fresh blenderized formula daily. You can prepare each meal separately or prepare a 24-hour supply.
3. Preparing and storing some of the ingredients and freezing in portioned amounts saves time.
4. Store formula in clean, covered wide-mouth containers such as mason jars in the refrigerator between feedings. Discard any leftover formula after 24 hours to prevent food spoilage and food-borne illnesses.
5. Serve formula at room temperature but **do not keep unrefrigerated for more than 2 hours!**
6. If desired, can make formula ahead and freeze. Thaw in refrigerator for 24 hours and mix well before using. You may need to re-blend if lumpy. Do not store in freezer for > 3 months. Do not freeze commercial formulas.
7. Wash blender, storing containers, cooking equipment and all utensils thoroughly after each use. Ideally, wash all items in dishwasher.
8. For more information about safe food preparation see website: [www.foodsafety.gov](http://www.foodsafety.gov)

**Tips for Feeding**

1. If food is refrigerated, warm formula slightly until lukewarm or at room temperature before feeding to child.
	1. Place feeding in sealable container in pot of water and heat slowly until feeding has reached room temperature, between 68-72 °F. Be careful not to overheat. Food that is too hot or cold can cause pain or discomfort for your child. Stir well before feeding.
	2. Avoid microwaving feedings since this can heat food unevenly and cause small pockets of hot formula that can burn.
2. Give 60ml boluses of blenderized formula with a 60ml catheter tip syringe. Wait a few minutes between boluses. Give total volume of formula slowly over ~ 20-30 minute period (or longer if necessary) to prevent abdominal distension, discomfort or vomiting.
3. Give feedings at 3-4 hour intervals or as tolerated. Follow the schedule given by your dietitian.
4. Feed child while sitting upright, NOT when lying down. Keep upright for at least 1 hour after feeds to minimize risk of reflux afterwards.
5. To prevent clogging of the feeding tube:
	1. Make sure food is free of lumps, seeds or strings. Strain if necessary.
	2. Always flush GT immediately before & after feeding with 5-15ml water or use prescribed amount.
	3. Never mix medicine with tube feeding unless recommended by your healthcare practitioner.
	4. Flush tube with at least 5ml water before and after medicine and 5ml water between each medicine.
6. Care of the G-tube site is the same as with commercial formula but the extension tubing may need to be changed more frequently.

**HELPFUL VIDEOS AND BOOKS**

**Video examples of how to prepare a Blenderized diet**

[**https://www.youtube.com/watch?v=R1e1g30DjkY**](https://www.youtube.com/watch?v=R1e1g30DjkY)

[**https://www.youtube.com/watch?v=5V\_OTXCkp9g**](https://www.youtube.com/watch?v=5V_OTXCkp9g)(video using high power blender)

[**https://www.youtube.com/watch?v=Bs6\_Cuz7qLc**](https://www.youtube.com/watch?v=Bs6_Cuz7qLc)(using stick blender)

**Online**

[**http://mealtimenotions.com/products/book-homemade-blended-formula/**](http://mealtimenotions.com/products/book-homemade-blended-formula/)

[**www.foodfortubies.org**](http://www.foodfortubies.org)

[**http://feeding-underweight-children.com/blenderizeddiet.html**](http://feeding-underweight-children.com/blenderizeddiet.html)

[**http://www.feedingtubeawareness.com/**](http://www.feedingtubeawareness.com/) **-** A parent’s guide to tube feeding is available in English & Spanish.

**Books**

**Complete Tubefeeding: Everything you need to know about tube feeding, tube nutrition and blended diets by Eric Aadhaar O’Gorman, 2012. Available on Amazon.com.**

**Homemade Blended Formula Handbook by Marsha Dunn Klein and Suzanne Evans Morris, 2007. Available on www.mealtimenotions.com.**

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