

Enhancing Nutritional Value with Fortified Foods: *A Resource for Professionals*



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Enhancing Nutritional Value with Fortified Foods

Introduction

This special edition reviews nutrition interventions to boost calories, protein and other nutrients for those who cannot get enough nutrition from normal foods. These suggestions may be beneficial for people who cannot consume enough volume, who have poor appetites, or have experienced weight loss or pressure ulcers.

Focus on food first! Assure that the individual is receiving foods that are acceptable to them. Try to provide the individual's favorite foods and cater to preferences as much as possible. Also, be sure that the individual is being provided with the assistance they need at meal time (assistive feeding devices, encouragement, assistance with eating, etc.).

Next, enhance the nutritional value of the food being served. Start with the individual's favorite and most accepted foods, and boost the nutritional value by using the suggestions presented here.

Calorie dense foods such as butter or margarine, mayonnaise, half and half or sour cream can be added to lower calorie foods to boost the impact of each bite of food. The goal is to **power pack** each bite of food or fluid for those who cannot consume a large volume. See the Calorie Boosters chart on page 2 for more ideas.

High protein items can also be added to foods to boost the protein value. Powdered milk, cheese, eggs, and peanut butter are a few examples. See the Protein Boosters chart on page 3 for more ideas.



As always, it is important to monitor acceptance, tolerance, and weight status. It may be necessary to alter interventions if not well tolerated by the individual.

Included in this special edition are samples of fortified recipes for commonly accepted foods such as hot cereal, pudding and shakes. See pages 5-10 for some easy fortified recipes!

The following pages contain information on enhanced foods and supplements which may be used to boost calories and protein as allowed by the diet texture ordered.

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We hope these suggestions will assist you in helping your clients achieve their nutrition and health goals!

Enhancing Nutritional Value with Fortified Foods

Calorie Boosters

The following suggestions are intended for people who need to increase their calories in order to maintain or gain weight. These recommendations are not necessarily intended for people on low fat or carbohydrate controlled diets. Use multiple suggestions to boost calories in the diet.

Margarine or Butter	Add to casseroles, hot cereals, vegetables, potatoes, noodles, soups and pureed foods Spread on bread, sandwiches and muffins		
Mayonnaise	Spread on bread, sandwiches, use as a garnish for appropriate pureed foods Use in egg, chicken, tuna, meat salad or their alternate ground or pureed foods		
Peanut Butter	Use as a snack on bread, pretzels, apples or celery Blend into cookies, brownies or milkshakes Note: For Mechanical soft diets and dysphagia Level 2 or 3 diets, do not use peanut butter. For Pureed diets, use creamy peanut butter only if pureed into another recipe such as pureed sandwiches, muffins, cookies, etc.		
Sour Cream	Use on mashed potatoes, noodles, or as a dip		
Half-and-half or Cream	Add to milk shakes, hot chocolate and other beverages; pour over cereals; use in cream soups and puddings		
Other Calorie Dense Foods	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> Casseroles with added calorie boosters Cream Cheese *Corn syrup Cream cheese Evaporated milk Gravy *Honey *Ice Cream floats and sundaes </td> <td style="width: 50%; border: none;"> *Jelly *Maple syrup Oils *Pudding Salad dressings Soups (made with whole milk or half-and-half) *Syrup Whipped cream </td> </tr> </table>	Casseroles with added calorie boosters Cream Cheese *Corn syrup Cream cheese Evaporated milk Gravy *Honey *Ice Cream floats and sundaes	*Jelly *Maple syrup Oils *Pudding Salad dressings Soups (made with whole milk or half-and-half) *Syrup Whipped cream
Casseroles with added calorie boosters Cream Cheese *Corn syrup Cream cheese Evaporated milk Gravy *Honey *Ice Cream floats and sundaes	*Jelly *Maple syrup Oils *Pudding Salad dressings Soups (made with whole milk or half-and-half) *Syrup Whipped cream		
Commercially Prepared High Calorie/Protein Supplements	*Beverages Fortified or enhanced foods Juices *Milkshakes *Puddings		
Meal Frequency	Offer three meals and two or more snacks each day		

Please Note: For people on thickened liquids, all liquids must still be served at the thickness ordered by the physician.

*These foods are high in simple sugars and must be counted into the day's total carbohydrate if on a carbohydrate controlled diet.

Enhancing Nutritional Value with Fortified Foods

Protein Boosters

The following suggestions are intended for people who have difficulty eating high protein foods. These suggestions will help boost protein intake.

Skim milk powder (for cooking use only)	Mix one cup of skim milk powder into one quart of whole milk and use in recipes for creamed soups, hot cocoa, cooked cereals, cooked custard or pudding, casseroles and mashed potatoes Skim milk powder can also be added to scrambled eggs, soups, casseroles, meat loaf or meat balls, cookies and muffins, and pureed foods If using dry milk powder, start by adding 1 tablespoon of skim milk powder per serving.
Milk or Half-and-half	Use instead of water for soups, cereals and instant cocoa Add to milk shakes, hot chocolate and other beverages; pour over cereals; use in cream soups and puddings
Cheese sauce, smooth	Add to or pour over vegetables, casseroles, soups
Eggs (cooked only)	Plain, in egg dishes or added into mixed dishes
Peanut butter	Use as a snack on bread, pretzels, apples or celery Blend into cookies, brownies or milkshakes For pureed diets, use creamy peanut butter only if pureed into another recipe such as pureed sandwiches, muffins, cookies, etc.
Other high protein foods	Cottage cheese Yogurt Meat, fish, poultry
Commercially prepared high calorie/protein supplements	*Beverages Fortified or enhanced foods Juices *Milkshakes *Puddings

Please Note: For those on thickened liquids, all liquids must still be served at the thickness ordered by the physician.

*These foods are high in simple sugars and must be counted into the day's total carbohydrate if on a carbohydrate controlled diet.

Enhancing Nutritional Value with Fortified Foods

Increasing Calories and Protein in the Diet Sample Daily Meal Plan

** Standard Menu Item	Calories	** Fortified Menu Item	Calories
<u>Breakfast:</u> ¾ c Orange Juice ¾ c Oatmeal 1 sl/1 tsp Toast and Margarine ¼ c Scrambled Egg 1 c 2% Milk Sugar, Salt, Pepper *Coffee, Tea or Beverage	84 74 118 133 121	<u>Breakfast:</u> ¾ c Orange Juice ¾ c Fortified Oatmeal 1 sl/1 Tbs Toast & Margarine ¼ c Scrambled Egg Made with Whole Milk & 1 oz Cheese 1 c Whole Milk Sugar, Salt, Pepper *Coffee, Tea or Beverage	84 452 186 133 94 150
Subtotal	530	Subtotal	1099
<u>Lunch:</u> 3 oz/1 oz Roast Beef/Gravy ½ c Seasoned Rice ½ c Seasoned Peas 1 c/1Tbs Green Salad with Drsg 1 sl/1 tsp Bread and Margarine ½ c Ice Cream 1 c 2% Milk Sugar, Salt, Pepper *Coffee, Tea or Beverage	215 133 126 84 118 113 121	<u>Lunch:</u> 3 oz/1 oz Roast Beef/Gravy ½ c Buttered Seasoned Rice ½ c Buttered Seasoned Peas 1 c/2 Tbs Green Salad with Drsg 1/1 Tbs Biscuit and Margarine ½ c Ice Cream 1 c Whole Milk Sugar, Salt, Pepper *Coffee, Tea or Beverage	215 132 126 154 208 133 150
Subtotal	930	Subtotal	1118
<u>Dinner:</u> 2 oz Baked Chicken ½ c Mashed Potatoes ½ c Buttered Spinach 1 sl/1 tsp Bread and Margarine 1 Baked Apple 1 c 2% Milk Sugar, Salt, Pepper *Coffee, Tea or Beverage	130 135 31 118 183 121	<u>Dinner:</u> 2 oz/1 oz Baked Chicken with Gravy ½ c/1 oz Bu Mashed Potatoes/ Gravy ½ c Buttered Spinach 1 sl/1 Tbs Bread and Margarine 1 Baked Apple 1 c Whole Milk ½ c Fortified Pudding Sugar, Salt, Pepper *Coffee, Tea or Beverage	145 180 31 208 183 150 290
Subtotal	718	Subtotal	1043
<u>H.S.</u> ½ c Apple Juice 2 Squares Graham Crackers	60 60	<u>H.S.</u> ½ c Orange Creamsicle Shake 2 Choc Sandwich Cookies (1½ oz)	250 190
Subtotal	120	Subtotal	440
Totals	2298	Totals	3700

*Beverage and sugar or creamer may add additional calories.

The fortified menu also increases protein by 20 grams.

Bold/italicized items indicate differences from original menu.

**Calorie calculations are based on information in Jean A. T. Pennington's *Bowes & Church's Food Values of Portions Commonly Used*, Seventeenth Edition, Philadelphia, Pa. JB Lippincott, 1998 and the USDA Nutrient Data Base.

Fortified Food Recipes

Fortified Oatmeal

1/2 Cup Portion

Ingredients	Measurement	Serves 10
Oatmeal	cup	3 1/3
Half-and-half	cup	5
Water	cup	2 1/2
Salt	tsp	1 1/4
Margarine	Tbs	3 1/3
Brown Sugar	Tbs	10

Directions:

1. Measure half-and-half, water, salt and margarine into saucepan. Bring to a boil.
2. Add oatmeal and cook until thick.
3. Serve with brown sugar on top.
4. Hold at $\geq 135^{\circ}$ F until service.

Calories	Protein, gm
331	6.6

Note: Oatmeal must be pureed for level 1 pureed diets.

Orange Creamsicle

1/2 Cup Portion

Ingredients	Measurement	Serves 10
Orange Sherbet	cup	3 1/3
Half-and-half	cup	2 1/2
Light Corn Syrup	cup	5/8
Oil	Tbs	3 1/3

Calories	Protein, gm
264	2.5

Directions:

1. Measure ingredients and blend together.
2. Maintain temperature $\leq 41^{\circ}$ F.
3. Serve immediately.



Fortified Food Recipes

Calorie Dense Pudding

1/2 Cup Portion

Ingredients	Measurement	Serves 10
Dry Instant Pudding Mix	cup	1 1/4
Half-and-half	cup	5

Directions:

1. Measure ingredients and blend together.
2. Refrigerate to set.
3. Maintain temperatures $\leq 41^{\circ}$ F until service.

Calories	Protein, gm
240	4.4

Ice Cream Delight

1/2 Cup (4 oz) Portion

Ingredients	Measurement	Serves 10
Ice Cream	cup	5
Half-and-half	cup	2 1/2
Light Corn Syrup	Tbs	10
Vanilla Extract	Tbs	5

Directions:

1. Blend all ingredients together.
2. Maintain temperature $\leq 41^{\circ}$ F until service.
3. Serve immediately after producing.

Calories	Protein, gm
283	4.1

Super Soup

3/4 Cup (6 oz) Portion

Ingredients	Measurement	Serves 10
Condensed Cream Soup*	10 3/4 oz cans	3
Half-and-half	1 can	3

*Cream of Celery, Cream of Chicken, Cream of Mushroom, Cream of Potato, or Cream of Onion

Directions:

1. Measure ingredients into an appropriate size pan and whisk together. (Use soup can to measure the half-and-half). Heat to boiling stirring constantly.
2. Maintain temperature $\geq 135^{\circ}$ F for holding and service.
3. Cool any leftovers to $< 41^{\circ}$ F within 4 hours for storage. Reheat leftovers to 165° F for a minimum of 15 seconds prior to serving (hold at $\geq 135^{\circ}$ F for service).

Calories	Protein, gm
217	5.3

Fortified Food Recipes

Power Potatoes

1/2 Cup Portion

Ingredients	Measurement	Serves 10
Mashed Potato Flakes	cup	3 1/3
Water	cup	1 1/4
Half-and-Half Cream	cup	3 1/3
Margarine	Tbs	5
Salt	tsp	1 1/2

Directions:

- Heat water, half-and-half cream, margarine and salt in a sauce pan just to boiling. (Do not overheat or cream will curdle.)
- Remove from heat. Stir in mashed potato flakes until moistened. Let stand 30 seconds or until liquid is absorbed.
- Whip with spoon until fluffy. Add additional hot liquid if potatoes are too stiff.
- Serve with margarine or gravy to moisten.
- Hold at $\geq 135^{\circ}$ F for service.

Calories	Protein, gm
226	4

Variations: Sour Cream: Serve with 1-2 Tbsp. sour cream per serving.
 Cheesy: Mix in 1 Tbsp grated cheddar cheese per serving.
 Garlic: Substitute garlic salt for salt in the recipe.

Cherry Vanilla Drink

3/4 Cup (6 oz) Portion

Ingredients	Measurement	Serves 10
Cherry Sherbet	cup	3 1/3
Half-and-Half Cream	cup	1 2/3
Almond Extract Flavoring	tsp	1

Calories	Protein, gm
216	3

Directions:

- Process cherry sherbet in blender.
- Add other ingredients and blend until smooth.
- Maintain temperatures $\leq 41^{\circ}$ F.



Fortified Food Recipes

Key Lime Shake

3/4 Cup (6 oz) Portion

Ingredients	Measurement	Serves 10
Lime Sherbet	cup	3 3/4
Light Corn Syrup	cup	1/2
Half-and-half	cup	2 3/4
Limeade Concentrate	Tbs	3 1/3

Directions:

1. Place ingredients in blender.
2. Blend until smooth and serve immediately.
3. Maintain temperature < 41° F.

Calories	Protein, gm
250	3

Orange Ale

1/2 Cup (4 oz) Portion

Ingredients	Measurement	Serves 10
Orange Sherbet	cup	3 1/3
Ginger ale	cup	2 1/2
Light Corn Syrup	cup	1/2
Oil	Tbs	3 1/3

Directions:

1. Measure ingredients and blend together.
2. Maintain temperature < 41° F.
3. Serve immediately.

Calories	Protein, gm
208	1

Other flavors of sherbet may be substituted.



Fortified Food Recipes

Strawberry-Banana Frost

3/4 Cup (6 oz) Portion

Ingredients	Measurement	Serves 10
Banana, ripe, frozen, sliced	each	3 1/3
Strawberries, frozen in syrup	cup	2 1/4
Light Corn Syrup	Tbs	3 1/3
Vanilla Ice Cream	cup	1 1/2
Half-and-half	cup	3 1/3
Vanilla Extract	tsp	3/4 tsp

Directions:

1. Slice bananas and freeze overnight.
2. Place ingredients in blender and blend until smooth.
3. Maintain temperature $\leq 41^\circ$ F.
4. Serve immediately.

Calories	Protein, gm
255	4

Chocolate Dream

3/4 Cup (6 oz) Portion

Ingredients	Measurement	Serves 10
Chocolate Syrup	Tbs	2 1/2
Light Corn Syrup	Tbs	2 1/2
Chocolate Ice Cream	cup	5
Half-and-half	cup	2 1/2

Directions:

1. Blend all ingredients together in blender until smooth.
2. Maintain temperature $\leq 41^\circ$ F.
3. Serve immediately.

Calories	Protein, gm
246	4



Fortified Food Recipes

Strawberry Frost

6 oz Portion

Ingredients	Measurement	Serves 10
Strawberries, sweetened, frozen, sliced	cup	2 1/4
Light Corn Syrup	Tbs	3 1/3
Vanilla Ice Cream	cup	1 1/2
Half-and-half	cup	3 1/3
Vanilla Extract	Tsp	3/4 tsp

Directions:

1. Thaw strawberries and process in blender until smooth.
2. Add remaining ingredients and blend until smooth.
3. Maintain temperature $\leq 41^{\circ}$ F.
4. Serve immediately.

Calories	Protein, gm
280	4

Peach Cooler

3/4 Cup (6 oz) Portion

Ingredients	Measurement	Serves 10
Peaches, canned in heavy syrup	cup	3 1/3
Light Corn Syrup	Tbs	3 1/3
Vanilla Ice Cream	cup	3 1/3
Half-and-half	cup	2 1/4
Almond Extract	Tsp	1/2

Calories	Protein, gm
208	1

Directions:

1. Puree peaches.
2. Add half-and-half, almond extract and corn syrup. Process in blender to liquefy.
3. Add ice cream and blend until smooth.
4. Maintain temperature $\leq 41^{\circ}$ F.
5. Serve immediately.



Nutritional Supplement Schedule

Sample Nutritional Supplement Schedules

In order to provide variety and avoid flavor fatigue, it is important to rotate types and flavors of high calorie/high protein supplements. Here is an example of how nourishments and supplements may be varied to achieve these goals.

NOTE: All items must be at the consistency ordered by the physician for diet level and liquid thickness.

Regular Diet: Sample Enhanced/Fortified Food Schedule

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
2 PM ½ Egg Salad Sandwich 4 oz Milk	2 PM 4 oz Vanilla Pudding made with half & half	2 PM ½ Chicken Salad Sandwich 4 oz Milk	2 PM 4 oz Chocolate Pudding made with half & half	2 PM ½ Tuna Salad Sandwich 4 oz Milk	2 PM 4 oz Butterscotch Pudding made with half and half	2 PM ½ Turkey Sandwich (with mayo) 4 oz Milk
HS 6 oz Cherry Vanilla Drink	HS 6 oz Peach Cooler	HS 4 oz Orange Creamsicle	HS 6 oz Strawberry Shake	HS 6 oz Chocolate Dream	HS 6 oz Strawberry Banana Shake	HS 6 oz Key Lime Shake

