

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



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# Enhancing Nutritional Value with Fortified Foods

## Introduction

This special edition is a review of nutrition interventions to boost calories, protein and other nutrients for those who cannot get enough nutrition from their meals and snacks. The suggestions in this document may be beneficial for people who cannot consume enough volume, who have poor appetites, or have experienced unintended weight loss or other nutrition related concerns.

Our goal is to focus on food first! Assure that the individual is receiving foods that are acceptable to them personally. 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 mealtime (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 of these favorite foods 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 individual acceptance, tolerance to interventions, and weight status. It may be necessary to alter interventions if they are not well accepted or tolerated by the individual. And you may need to reduce the number of interventions if the individual is gaining too much weight.

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

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

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## 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 intended for people on low fat or carbohydrate controlled diets. Try various ways to boost calories in the diet based on what is acceptable to the individual.

<b>Margarine or Butter</b>	Add to casseroles, hot cereals, vegetables, potatoes, rice and noodles, soups. Spread on bread, sandwiches, toast, crackers, rolls, and muffins.																						
<b>Mayonnaise</b>	Spread on bread, sandwiches, toast, crackers, rolls and muffins. Use in egg, chicken, tuna or meat salad.																						
<b>Peanut Butter (and other nut butters)</b>	Spread on bread, sandwiches, toast, crackers, rolls, muffins, apples, bananas.																						
<b>Sour Cream</b>	Use on baked potatoes or as a dip.																						
<b>Half-and-half or Cream</b>	Add to milk shakes, hot chocolate, and other beverages; pour over cereals; use in cream soups and puddings.																						
<b>Other Calorie Dense Foods:</b>	<table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">Casseroles with added cream</td> <td>*Maple Syrup</td> </tr> <tr> <td>Cheese</td> <td>*Marshmallows</td> </tr> <tr> <td>*Corn Syrup</td> <td>Oils</td> </tr> <tr> <td>Cream cheese</td> <td>*Pudding</td> </tr> <tr> <td>Evaporated milk</td> <td>Salad dressings</td> </tr> <tr> <td>Fried foods</td> <td>Soups (made with whole milk or half-and-half)</td> </tr> <tr> <td>Gravy</td> <td>*Syrup</td> </tr> <tr> <td>*Hard Candy</td> <td>Whipped cream</td> </tr> <tr> <td>*Honey</td> <td></td> </tr> <tr> <td>*Ice Cream floats and sundaes</td> <td></td> </tr> <tr> <td>*Jam and jelly</td> <td></td> </tr> </table>	Casseroles with added cream	*Maple Syrup	Cheese	*Marshmallows	*Corn Syrup	Oils	Cream cheese	*Pudding	Evaporated milk	Salad dressings	Fried foods	Soups (made with whole milk or half-and-half)	Gravy	*Syrup	*Hard Candy	Whipped cream	*Honey		*Ice Cream floats and sundaes		*Jam and jelly	
Casseroles with added cream	*Maple Syrup																						
Cheese	*Marshmallows																						
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<b>Commercially Prepared High Calorie/Protein Supplements</b>	<ul style="list-style-type: none"> <li>*Bars</li> <li>*Beverages</li> <li>Fortified or enhanced foods</li> <li>Juices</li> <li>*Milkshakes</li> <li>*Puddings</li> </ul>																						
<b>Meal Frequency</b>	Offer three meals and two or more snacks each day.																						

\*These foods are high in simple sugars and/or added sugars and must be counted into the day's total carbohydrate if on a carbohydrate controlled diet. Liberal use of these foods to increase calories available will increase the added sugar content of the diet.

Note: There are commercial products available that allow for easy creation of enhanced foods. These products may be in the form of powders or liquids that mix into certain foods or beverages, thus boosting calories.

Source: Dorner, B. *Diet Manual: A Comprehensive Nutrition Care Guide*. Becky Dorner & Associates, Inc. Dunedin FL. 2021.

## Enhancing Nutritional Value with Fortified Foods

### Protein Boosters

The following suggestions are intended for people who have difficulty consuming enough protein. Here are a few suggestions for boosting protein intake. Try various ways to boost protein in the diet based on what is acceptable to the individual.

<b>Skim Milk Powder</b> (for cooking use only)	Mix 1 cup of skim milk powder into 1 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. Start by adding 1 tablespoon of skim milk powder per serving.
<b>Milk or Half-and-Half</b>	Use instead of water for soups, cereals, and instant cocoa.
<b>Cheese or Cheese Sauce</b>	Add grated or melted cheese to vegetables, casseroles, soups.
<b>Eggs (fully cooked only)</b>	Plain or in mixed dishes or casseroles.
<b>Peanut Butter or other nut butters</b>	Use on bread, crackers, or celery, apples, and bananas.
<b>Instant Breakfast Milk Shake</b>	Combine and mix well; 1 packet instant breakfast mix, 1 cup whole milk or half-and-half, ½ cup ice cream.
<b>Other High Protein Foods</b>	Cottage cheese Yogurt, Greek yogurt Meat, fish, poultry

Note: There are commercial products available that allow for easy creation of enhanced foods. These products may be in the form of powders or liquids that mix into certain foods or beverages, thus boosting protein.

### Sample Nutritional Supplement Schedule

In order to avoid flavor fatigue, it is important to offer variety and 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.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<b>2 PM</b> ½ Egg Salad Sandwich 4 oz Milk	<b>2 PM</b> 4 oz Vanilla Pudding 4 Short- bread Cookies	<b>2 PM</b> ½ Chicken Salad Sandwich 4 oz Milk	<b>2 PM</b> 4 oz Chocolate Cream Pie 6 Vanilla Wafers	<b>2 PM</b> ½ Tuna Salad Sandwich 4 oz Milk	<b>2 PM</b> 4 oz Butterscotch Pudding 6 Vanilla Wafers	<b>2 PM</b> ½ Peanut Butter & Jelly Sandwich 4 oz Milk
<b>PM</b> 8 oz Cherry Vanilla Shake ½ Cheese Sandwich	<b>PM</b> 8 oz Peach Shake ½ Tuna Salad Sandwich	<b>PM</b> 8 oz Orange Cream Shake ½ Peanut Butter & Jelly Sandwich	<b>PM</b> 8 oz Strawberry Shake ½ Egg Salad Sandwich	<b>PM</b> 8 oz Chocolate Shake ½ Peanut Butter/Jelly Sandwich	<b>PM</b> 8 oz Strawberry Banana Shake ½ Cheese Sandwich	<b>PM</b> 8 oz Vanilla Shake 4 Lorna Doones

Source: Dorner, B. *Diet Manual: A Comprehensive Nutrition Care Guide*. Becky Dorner & Associates, Inc., Dunedin, FL. 2021.

# Enhancing Nutritional Value with Fortified Foods

## Increasing Calories and Protein in the Diet

### Sample Daily Meal Plan for a Well Balanced High Calorie/High Protein Diet

** Standard Menu Item	Calories	** Fortified Menu Item	Calories
<b>Breakfast</b>		<b>Breakfast</b>	
¾ c Orange Juice	91	¾ c Orange Juice	<b>91</b>
½ c Oatmeal	133	¾ c <b>Fortified Oatmeal</b>	<b>321</b>
¼ c Scrambled Egg	82	¼ c Scrambled Egg <b>Made with Whole Milk &amp; 1 oz Cheese</b>	<b>300</b>
1 slice/1 tsp WW Toast/Margarine	123	1 slice/ <b>1 Tbs</b> WW Toast & Margarine	<b>191</b>
1 Tbs Jelly	56	1 Tbs Jelly	56
1 c Low Fat Milk	105	<b>1 c Whole Milk</b>	<b>149</b>
Condiments as Desired+ Coffee, Tea or Beverage*		Condiments as Desired+ Coffee, Tea or Beverage*	
<b>Subtotal</b>	<b>590</b>	<b>Subtotal</b>	<b>1108</b>
<b>Lunch</b>		<b>Lunch</b>	
2 oz Roast Beef/1 oz Gravy	184	3 oz Roast Beef/1 oz Gravy	207
½ c Seasoned Rice	176	½ c Seasoned Rice	176
½ c Seasoned Peas	72	½ c Seasoned Peas	72
1 c/1Tbs Green Salad/Dressing	108	½ c Green Salad/ <b>2 Tbsp</b> Dressing	<b>162</b>
1 slice/1 tsp WW Roll and Marg.		<b>1/1</b> Whole Wheat roll and Margarine	
½ c Fruit Sorbet/¼ c Strawberries	100	½ c Ice Cream	<b>143</b>
¼ c Strawberries	12		
1 c Low Fat Milk	105	<b>1 c Whole Milk</b>	<b>149</b>
Condiments as Desired+ Beverage of Choice*		Condiments as Desired+ Beverage of Choice*	
<b>Subtotal</b>	<b>757</b>	<b>Subtotal</b>	<b>909</b>
<b>Afternoon Snack</b>		<b>Afternoon Snack</b>	
None	0	<b>1 oz Cheese</b>	<b>114</b>
		<b>6 Crackers</b>	<b>80</b>
<b>Subtotal</b>	<b>0</b>	<b>Subtotal</b>	<b>194</b>
<b>Dinner</b>		<b>Dinner</b>	
3 oz Baked Fish/1 Tbs Tartar Sauce		3 oz Baked Fish w/ <b>2TbsTartar Sc</b>	173
½ c Mashed Potatoes	143	½ c/1 oz <b>Bu</b> Mashed Potatoes/ <b>Marg.</b>	237
½ c Green Beans Almondine	174	½ c Green Beans Almondine	174
1 slice/1 tsp WW Bread w/Marg.	50	1 sl/ <b>1 Tbs</b> WW Bread and Margarine	135
1 Baked Apple	108	1 Baked Apple	149
1 c Low Fat Milk	135	<b>1 c Whole Milk</b>	170
	105	½ c <b>Fortified Pudding</b>	
Condiments as Desired+ Beverage of Choice*		Condiments as Desired+ Beverage of Choice*	
<b>Subtotal</b>	<b>715</b>	<b>Subtotal</b>	<b>1038</b>
<b>H.S.</b>		<b>H.S.</b>	
Beverage of Choice: ½ c Apple Jc	60	½ c <b>Orange Creamsicle Shake</b>	264
2 Squares Graham Crackers	60	<b>2 Choc Sandwich Cookies (1½ oz)</b>	108
<b>Subtotal</b>	<b>120</b>	<b>Subtotal</b>	<b>372</b>
<b>Totals</b>	<b>2182</b>	<b>Totals</b>	<b>3621</b>

*Bold/italicized items indicate differences from the Regular Diet menu.* This menu increases protein by approximately 20 grams.

\*Beverage and sugar or creamer may add additional calories.

+May include pepper or other spices, sugar, sugar substitute, salt, coffee creamer, etc. based on nutrition goals. Additional condiments and garnishes (i.e., margarine, gravy, sauces, ketchup, etc.) may round out the menu and make it more appealing and palatable. These add additional calories, added sugars, micro- and macronutrients (i.e., calories, fat, carbohydrates, sodium, etc.) and may not be appropriate for some individuals.

Source: Dorner, B. *Diet Manual: A Comprehensive Nutrition Care Guide*. Becky Dorner & Associates, Inc. Dunedin, FL. 2021.

# Enhancing Nutritional Value with Fortified Foods

## Fortified Oatmeal

½ 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
<b>331</b>	<b>6.6</b>

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

## Orange Creamsicle

½ 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
<b>264</b>	<b>2.5</b>

**Directions:**

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



# Enhancing Nutritional Value with Fortified Foods

## Calorie Dense Pudding

½ 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
<b>240</b>	<b>4.4</b>

## Ice Cream Delight

½ mCup (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
<b>283</b>	<b>4.1</b>

## Super Soup

¾ Cup (6 oz) Portion

Ingredients	Measurement	Serves 10
Condensed Cream Soup*	10¾ oz cans	3
Half-and-half	10¾ oz (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  $165^{\circ}$  F for a minimum of 15 seconds prior to serving (hold at  $\geq 135^{\circ}$  F for service).

Calories	Protein, gm
<b>217</b>	<b>5.3</b>

# Enhancing Nutritional Value with Fortified Foods

## Power Potatoes

½ Cup Portion

Ingredients	Measurement	Serves 10
Mashed Potato Flakes	cup	3 1/3
Water	cup	1 ¼
Half-and-Half Cream	cup	3 1/3
Margarine	Tbs	5
Salt	tsp	1 ½

### Directions:

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

Calories	Protein, gm
<b>226</b>	<b>4</b>

Variations to increase protein, calories, and flavor:

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.

Dry milk powder: Add 2 Tbsp. per serving.

## Cherry Vanilla Drink

¾ 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
<b>216</b>	<b>3</b>

### Directions:

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



# Enhancing Nutritional Value with Fortified Foods

## Key Lime Shake

$\frac{3}{4}$  Cup (6 oz) Portion

Ingredients	Measurement	Serves 10
Lime Sherbet	cup	3 $\frac{3}{4}$
Light Corn Syrup	cup	$\frac{1}{2}$
Half-and-half	cup	2 $\frac{3}{4}$
Limeade Concentrate	Tbs	3 $\frac{1}{3}$

**Directions:**

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

Calories	Protein, gm
<b>250</b>	<b>3</b>

## Orange Ale

$\frac{1}{2}$  Cup (4 oz) Portion

Ingredients	Measurement	Serves 10
Orange Sherbet	cup	3 $\frac{1}{3}$
Ginger ale	cup	2 $\frac{1}{2}$
Light Corn Syrup	cup	$\frac{1}{2}$
Oil	Tbs	3 $\frac{1}{3}$

**Directions:**

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

Calories	Protein, gm
<b>208</b>	<b>1</b>

Other flavors of sherbet may be substituted.



# Enhancing Nutritional Value with Fortified Foods

## Strawberry-Banana Frost

<sup>3</sup>/<sub>4</sub> 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

<sup>3</sup>/<sub>4</sub> 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



## Enhancing Nutritional Value with Fortified Foods

### 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
<b>280</b>	<b>4</b>

### 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
<b>208</b>	<b>1</b>

**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.

### Regular Diet: Sample Enhanced/Fortified Food Schedule

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<b>2 PM</b> ½ Egg Salad Sandwich 4 oz Milk	<b>2 PM</b> 4 oz Vanilla Pudding 4 Short-bread Cookies	<b>2 PM</b> ½ Chicken Salad Sandwich 4 oz Milk	<b>2 PM</b> 4 oz Chocolate Cream Pie 6 Vanilla Wafers	<b>2 PM</b> ½ Tuna Salad Sandwich 4 oz Milk	<b>2 PM</b> 4 oz Butterscotch Pudding 6 Vanilla Wafers	<b>2 PM</b> ½ Peanut Butter & Jelly Sandwich 4 oz Milk
<b>PM</b> 8 oz Cherry Vanilla Shake ½ Cheese Sandwich	<b>PM</b> 8 oz Peach Shake ½ Tuna Salad Sandwich	<b>PM</b> 8 oz Orange Cream Shake ½ Peanut Butter & Jelly Sandwich	<b>PM</b> 8 oz Strawberry Shake ½ Egg Salad Sandwich	<b>PM</b> 8 oz Chocolate Shake ½ Peanut Butter & Jelly Sandwich	<b>PM</b> 8 oz Strawberry Banana Shake ½ Cheese Sandwich	<b>PM</b> 8 oz Vanilla Shake 4 Lorna Doones

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

Source: Dorner, B. *Diet Manual: A Comprehensive Nutrition Care Guide*. Becky Dorner & Associates, Inc. Naples, FL. 2016.

### Food Fortifiers and Oral Nutritional Supplements

There are many food fortifiers and oral nutritional supplements available for purchase. For more information, please contact these manufacturers:

- Abbott Nutrition, [www.abbottnutrition.com](http://www.abbottnutrition.com)
- Hormel Health Labs, [www.hormelhealthlabs.com](http://www.hormelhealthlabs.com)
- Nestle Nutrition, [www.nestle.com/brands/healthcarenutrition](http://www.nestle.com/brands/healthcarenutrition)
- Lyons Magnus, <http://www.lyonsmagnus.com/>

