

Module 33: Systemic Approaches to Obesity



The Goldring Center
for Culinary Medicine

TULANE UNIVERSITY

Obesity Overview

Body mass index (BMI) is typically the tool used to screen for obesity with a BMI > 30 considered in the obese range

BMI is not a perfect measure of obesity, but rather a tool that may be used by providers to better quantify their patient's health risks

Obesity is a multifactorial disease. Genetic, hormonal, and socioeconomic factors all contribute to the incidence of obesity and patient's response to treatment

Obesity Bias

- **Social stigma that higher BMIs equate to being unhealthy**
 - Can keep patients from seeking help from healthcare providers
 - Impairs efforts to combat the obesity epidemic in the United States
- Weight is the **second largest discrimination factor** reported after gender discrimination
- Providers often ignore the social stigma of obesity as a complication
- Providers should take care not to attribute all medical problems to a patient's weight status

Culinary Medicine's Role

- Important role in **meeting patients where they are** with their diet
- Focus on making **sustainable and manageable lifestyle changes** that are more likely to lead to significant weight loss
- Also focuses on **educating patients** which can prevent further weight gain and promote improved health among family members

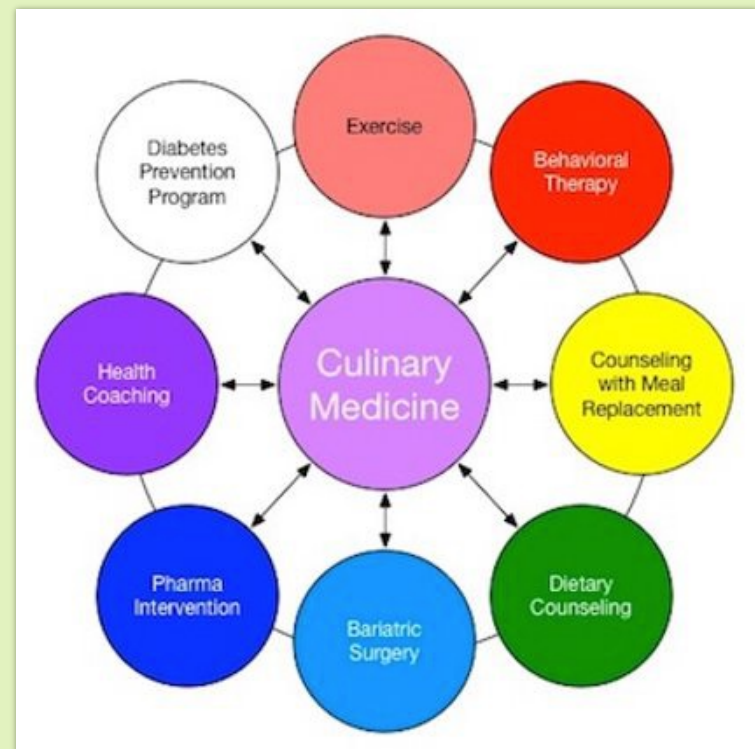


Management of Obesity

Eight interventions documented in the literature that have been shown to be effective in the management of obesity

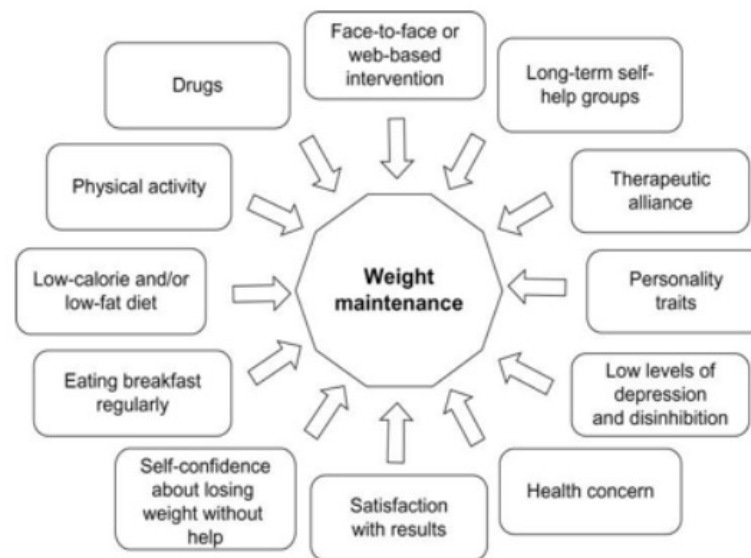
Intervention strategies should be tailored to the individual patient

Culinary medicine's role is to help patients understand day to day management of their kitchens and the foods they eat



Weight Loss Maintenance

- While weight loss is often the main focus when we are treating patients with obesity, long-term maintenance is just as important
- Maintenance plans need to be personalized and dependent on the individual
- Continuous follow-up is important to maintain motivation and provide any additional support



Constellation of factors associated with long-term weight loss maintenance in the general population of obese subjects attending nonsurgical weight loss programs

Montesi L, El Ghoch M, Brodosi L, Calugi S, Marchesini G, Dalle Grave R. Long-term weight loss maintenance for obesity: a multidisciplinary approach. *Diabetes Metab Syndr Obes.* 2016;9:37-46 <https://doi.org/10.2147/DMSO.S89836>

Energy Density vs. Nutrient Density

- **Energy dense** – high in calories, low in nutrients (vitamins & minerals) per serving
 - Ex: Butter, candy bars, cookies, chips, sugar sweetened beverages, ultra-processed foods
- **Nutrient dense** – lower in calories, high in nutrients (vitamins & minerals) per serving
 - Ex: Fruits, vegetables, whole grains, legumes, nuts and seeds, low-fat dairy, lean proteins
- Can a food be BOTH?
 - Ex: Avocado, natural peanut butter, cheese
- Standard American Diet (SAD) = energy-rich and nutrient-poor

Meal Supplements

Many protein supplements do not have enough calories to constitute a whole meal. Pair with foods containing fiber and healthy fats to keep you fuller longer.

Enjoy a shake in the morning or as a healthy snack.



Nutrition Facts
1 serving per container
Serving size 1 Shake (11.5 fl oz)

Amount per serving	
Calories 160	
	% Daily Value*
Total Fat 3g	4%
Saturated Fat 1g	5%
Trans Fat 0g	
Cholesterol 20mg	7%
Sodium 230mg	10%
Total Carbohydrate 4g	1%
Dietary Fiber 1g	4%
Total Sugars 1g	
Incl. 0g Added Sugars	0%
Protein 30g	60%

Vitamin A 230mcg 25% • Vitamin C 46mg 50%
Vitamin E 3.8mg 25% • Vitamin K 30mcg 25%
Thiamin 0.3mg 25% • Riboflavin 0.3mg 25%
Niacin 4mg 25% • Vitamin B6 0.4mg 25%
Folate 100mcg DFE 25% • Vitamin B12 0.6mcg 25%
(59mcg folic acid)
Biotin 8mcg 25% • Pantothenic Acid 1.3mg 25%
Phosphorus 550mg 45% • Iodine 37mcg 25%
Magnesium 90mg 20% • Zinc 2.8mg 25%
Selenium 14mcg 25% • Copper 0.25mg 25%
Manganese 0.6mg 25% • Chromium 8mcg 25%
Molybdenum 11mcg 25%

Vitamin D 6mcg 30% • Calcium 650mg 50%
Iron 1.8mg 10% • Potassium 180mg 4%

*The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Ingredients: WATER, MILK PROTEIN CONCENTRATE,¹ CALCIUM CASEINATE,¹ CONTAINS LESS THAN 1% OF HIGH OLEIC SUNFLOWER OIL OR SOYBEAN OIL, NATURAL AND ARTIFICIAL FLAVORS, INULIN, CELLULOSE GEL AND CELLULOSE GUM, SALT, SUCRALOSE, ACESULFAME POTASSIUM, CARRAGEENAN, TRIPOTASSIUM PHOSPHATE, DIPOTASSIUM PHOSPHATE, SODIUM HEXAMETAPHOSPHATE, **VITAMIN AND MINERAL BLEND** (DL-ALPHA-TOCOPHERYL ACETATE [VITAMIN E], ZINC GLYCINATE CHELATE, FERRIC ORTHOPHOSPHATE, VITAMIN A PALMITATE, NIACINAMIDE, PHYTONADIONE [VITAMIN K1], POTASSIUM IODIDE, CHOLECALCIFEROL [VITAMIN D3], COPPER GLUCONATE, CALCIUM D-PANTOTHENATE, MANGANESE SULFATE, SODIUM SELENITE, BIOTIN, SODIUM MOLYBDATE, FOLIC ACID, THIAMINE MONONITRATE [VITAMIN B1], CYANOCOBALAMIN [VITAMIN B12], PYRIDOXINE HYDROCHLORIDE [VITAMIN B6], RIBOFLAVIN [VITAMIN B2], CHROMIUM POLYNICOTINATE), MAGNESIUM PHOSPHATE, SODIUM ASCORBATE. **CONTAINS MILK AND SOY.**

¹Source of Protein

Meal Supplements



MM GENUINE | CHOCOLATE

Nutrition Facts

4 servings per container

Serving size 11 fl oz (330mL)

Amount per serving

Calories 160

% Daily Value*

Total Fat 4.5g 6%

Saturated Fat 1g 5%

Trans Fat 0g

Cholesterol 10mg 3%

Sodium 230mg 10%

Total Carbohydrate 9g 3%

Dietary Fiber 5g 17%

Total Sugars 0g

Includes 0g Added Sugars 0%

Protein 25g 50%

Vitamin D 7mcg 35%

Calcium 390mg 30%

Iron 1.8mg 10%

Potassium 630mg 15%

Vitamin A 270mcg 30%

Vitamin C 18mg 20%

*The % Daily Value (DV) tells you how much a nutrient

in a serving of food contributes to a daily diet. 2,000

calories a day is used for general nutrition advice.

INGREDIENTS: WATER, CALCIUM CASEINATE (MILK DERIVATIVE), MILK PROTEIN ISOLATE, CONTAINS LESS THAN 2% OF SODIUM CASEINATE (MILK DERIVATIVE), COCOA (PROCESSED WITH ALKALI), HIGH OLEIC SUNFLOWER OIL, SOLUBLE CORN FIBER, NATURAL AND ARTIFICIAL FLAVOR CELLULOSE GEL, TRIPOTASSIUM PHOSPHATE, SUNFLOWER LECITHIN POTASSIUM CHLORIDE, POTASSIUM PHOSPHATE, SALT, SODIUM POLYPHOSPHATES, CELLULOSE GUM, MIXED TRIGLYCERIDES, SUCRALOSE, CARRAGEENAN, ACESULFAME POTASSIUM ASCORBIC ACID (VITAMIN C), SODIUM CITRATE, VITAMIN A PALMITATE, VITAMIN D3.



Scan here for more
food information or
call 1-888-298-6629



Meal Supplements



Nutrition Facts

1 serving per container

Serving size **1 Carton (330mL)**

Amount per serving

Calories 130

% Daily Value*

Total Fat 2g **3%**

Saturated Fat 0g **0%**

Trans Fat 0g

Cholesterol 15mg **5%**

Sodium 170mg **7%**

Total Carbohydrate 9g **3%**

Dietary Fiber 1g **4%**

Total Sugars 3g

Includes 3g Added Sugars **6%**

Protein 20g **40%**

Vitamin D 0mcg **0%**

Calcium 620mg **50%**

Iron 0.3mg **2%**

Potassium 230mg **4%**

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Ingredients:

FILTERED WATER, GRASS-FED MILK PROTEIN CONCENTRATE, ORGANIC AGAVE, NATURAL FLAVORS, ORGANIC HIGH OLEIC SUNFLOWER OIL, VEGETABLE GLYCERIN, CELLULOSE, SUNFLOWER LECITHIN, SODIUM POLYPHOSPHATE, MAGNESIUM PHOSPHATE, POTASSIUM CITRATE, TRICALCIUM PHOSPHATE, POTASSIUM CHLORIDE, SEA SALT, GELLAN GUM, MONK FRUIT EXTRACT, ORGANIC REB A (STEVIA EXTRACT), ORGANIC LOCUST BEAN GUM.

CONTAINS: MILK



Meal Supplements



NO FRUIT JUICE

Nutrition Facts

1 serving per container

Serving size 1 Carton (330mL)

Amount per serving

Calories 140

% Daily Value*

Total Fat 4.5g 6%

Saturated Fat 1g 5%

Trans Fat 0g

Cholesterol 0mg 0%

Sodium 510mg 22%

Total Carbohydrate 8g 3%

Dietary Fiber 2g 7%

Total Sugars 0g

Includes 0g Added Sugars 0%

Protein 20g 30%

Vitamin D 0mcg 0%

Calcium 50mg 4%

Iron 7.5mg 40%

Potassium 250mg 6%

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Ingredients:

FILTERED WATER, PEA PROTEIN, NATURAL FLAVORS, ORGANIC ALKALIZED COCOA, ORGANIC HIGH OLEIC SUNFLOWER OIL, SUNFLOWER LECITHIN, TRISODIUM PHOSPHATE, TRIPOTASSIUM CITRATE, MONK FRUIT EXTRACT, GELLAN GUM, REB M (STEVIA EXTRACT), **ORGAIN ORGANIC FRUIT & VEGETABLE POWDER BLEND™** (ORGANIC APPLE FIBER, ORGANIC ACAI, ORGANIC BEET, ORGANIC KALE, ORGANIC RASPBERRY, ORGANIC SPINACH, ORGANIC TOMATO, ORGANIC BANANA, ORGANIC BLUEBERRY, ORGANIC CARROT), SEA SALT.



Meal Supplements



Nutrition Facts

Serving size 1 carton (330 mL)

Amount per serving
Calories 150

	% DV*		% DV*
Total Fat 1.5g	2%	Total Carbohydrate 6g	2%
Saturated Fat 0.5g	3%	Dietary Fiber 2g	7%
Trans Fat 0g		Total Sugars 1g	
Cholesterol 20mg	7%	Incl. 0g Added Sugars	0%
Sodium 240mg	10%	Protein 30g	60%

Vitamin D 14mcg 70% • Calcium 650mg 50%
Iron 4.5mg 25% • Potassium 420mg 10% • Vitamin A 30%
Vitamin C 50% • Vitamin E 25% • Vitamin K 25%
Thiamin 25% • Riboflavin 25% • Niacin 50%
Vitamin B₆ 25% • Folate (60mcg Folic Acid) 25%
Vitamin B₁₂ 25% • Biotin 25% • Pantothenic Acid 25%
Phosphorus 40% • Iodine 25% • Magnesium 25%
Zinc 25% • Selenium 25% • Copper 25%
Manganese 25% • Chromium 25% • Molybdenum 25%
Chloride 10% • Choline 15%

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

INGREDIENTS: WATER, MILK PROTEIN CONCENTRATE, COLUMBIAN COFFEE EXTRACT, CALCIUM CASEINATE, LESS THAN 0.5% GP: VITAMINS AND MINERALS, INULIN, SOLUBLE CORN FIBER, CELLULOSE GEL, SUNFLOWER OIL, NATURAL AND ARTIFICIAL FLAVOR, CELLULOSE GUM, SALT, ACESULFAME POTASSIUM, CARRAGEENAN, AND SUCRALOSE.

VITAMINS AND MINERALS: MAGNESIUM PHOSPHATE, SODIUM ASCORBATE, POTASSIUM PHOSPHATE, SODIUM PHOSPHATE, POTASSIUM HYDROXIDE, CHOLINE CHLORIDE, FERROUS SULFATE, D-ALPHA-TOCOPHERYL ACETATE, NICOTINAMIDE, ZINC SULFATE, CALCIUM PANTOTHENATE, THIAMINE HYDROCHLORIDE, PYRIDOXINE HYDROCHLORIDE, RIBOFLAVIN, MANGANESE SULFATE, VITAMIN A PALMITATE, COPPER SULFATE, FOLIC ACID, POTASSIUM IODIDE, CHROMIUM CHLORIDE, PHYLOQUINONE, SODIUM SELENATE, VITAMIN D₃, SODIUM MOLYBDATE, BIOTIN, VITAMIN B₁₂. CONTAINS MILK INGREDIENTS.

CAFFEINE CONTENT: 100mg of Caffeine/serving.

**100mg
CAFFEINE**

AS MUCH AS A
CUP OF COFFEE*

150
CALORIES

25
VITAMINS &
MINERALS

* Contains 100 mg of caffeine—
as much as 1 8-fl-oz cup of coffee.

Abbott

Understanding Nutrient Density



- These pictures show what **100 calories** of each of these foods look like
- Focus on eating more nutrient dense foods, such as fruits, vegetables, beans, legumes, nuts and seeds

Tips for Decreasing Energy Density

- Add vegetables, fruit, and legumes to your meals
 - Incorporate into sandwiches, pastas, oatmeal, yogurt and eat as a snack!
- Swap in whole grains for refined grain products
 - Start with bread, rice and pasta – try different brands, a 50/50 blend can help you adjust
- Cut out sugar sweetened beverages
 - These are empty calories - a 50/50 blend with water or seltzer can help you make the switch to less sweet beverage options

Nutrition and Culinary Considerations

GCCM targets (per meal)	
Calories	< 500 kcal
Saturated Fat	< 5 g
Sodium	< 550 mg
Fiber	5-10 g

Cooking Techniques:

- Increasing vegetables
- Incorporating legumes and whole grains
- Reducing meat portions
- Using flavor building methods & ingredients to make tasty food that is low in calories, fat, and sodium

Let's take a look at the results on visual appeal, texture and overall taste of the dishes we made!

Parmesan
Crusted Fish

Grilled
Vegetables

Simple Lemon
& Parsley
Quinoa



Group 1

Nutrition Facts

4 servings per container

Serving size 4 oz fish (203g)

Amount Per Serving
Calories 110

% Daily Value*

Total Fat 2g 3%

Saturated Fat 1g 5%

Trans Fat 0g

Cholesterol 55mg 18%

Sodium 360mg 16%

Total Carbohydrate 5g 2%

Dietary Fiber 1g 4%

Total Sugars 2g

Includes 0g Added Sugars 0%

Protein 18g 36%

Vitamin D 0.6mcg 2%

Calcium 20mg 2%

Iron 0.4mg 2%

Potassium 290mg 6%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

CONTAINS: MILK, FISH

Nutrition Facts

6 servings per container

Serving size ~3/4 cup (104g)

Amount Per Serving
Calories 70

% Daily Value*

Total Fat 5g 6%

Saturated Fat 0g 0%

Trans Fat 0g

Cholesterol 0mg 0%

Sodium 170mg 7%

Total Carbohydrate 5g 2%

Dietary Fiber 1g 4%

Total Sugars 3g

Includes 0g Added Sugars 0%

Protein 1g 2%

Vitamin D 0.1mcg 0%

Calcium 10mg 0%

Iron 0.3mg 2%

Potassium 260mg 6%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Nutrition Facts

4 servings per container

Serving size 1/2 cup (175g)

Amount Per Serving
Calories 160

% Daily Value*

Total Fat 2.5g 3%

Saturated Fat 0g 0%

Trans Fat 0g

Cholesterol 0mg 0%

Sodium 130mg 6%

Total Carbohydrate 28g 10%

Dietary Fiber 3g 11%

Total Sugars 1g

Includes 0g Added Sugars 0%

Protein 6g 12%

Vitamin D 0mcg 0%

Calcium 30mg 2%

Iron 2.1mg 10%

Potassium 270mg 6%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Sheet Pan Chicken & Vegetables



Vietnamese Cabbage & Chicken Salad

Group 2

Nutrition Facts

6 servings per container

Serving size

**4 oz. chicken thigh and 1.25 cup veg
(350g)**

Amount Per Serving

Calories 260

% Daily Value*

Total Fat 13g **17%**

Saturated Fat 1.5g **8%**

Trans Fat 0g

Cholesterol 65mg **22%**

Sodium 430mg **19%**

Total Carbohydrate 18g **7%**

Dietary Fiber 6g **21%**

Total Sugars 6g

Includes 0g Added Sugars **0%**

Protein 21g **42%**

Vitamin D 0.1mcg 0%

Calcium 110mg 8%

Iron 2.5mg 15%

Potassium 930mg 20%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Nutrition Facts

6 servings per container

Serving size 1.75 cups (186g)

Amount Per Serving

Calories 240

% Daily Value*

Total Fat 13g **17%**

Saturated Fat 2g **10%**

Trans Fat 0g

Cholesterol 55mg **18%**

Sodium 410mg **18%**

Total Carbohydrate 11g **4%**

Dietary Fiber 3g **11%**

Total Sugars 5g

Includes 1g Added Sugars **2%**

Protein 21g **42%**

Vitamin D 0mcg 0%

Calcium 50mg 4%

Iron 1.1mg 6%

Potassium 520mg 10%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

CONTAINS: PEANUTS, ANCHOVIES

Southwest Quinoa & Sweet Potato Stew



Spring Salad with Green Goddess Dressing

Group 3

Nutrition Facts

8 servings per container

Serving size 1.5 cups (546g)

Amount Per Serving

Calories 310

% Daily Value*

Total Fat 11g 14%

Saturated Fat 2g 10%

Trans Fat 0g

Cholesterol 0mg 0%

Sodium 320mg 14%

Total Carbohydrate 48g 17%

Dietary Fiber 13g 46%

Total Sugars 8g

Includes 0g Added Sugars 0%

Protein 10g 20%

Vitamin D 0mcg 0%

Calcium 130mg 10%

Iron 3.2mg 20%

Potassium 910mg 20%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Nutrition Facts

8 servings per container

Serving size 1.5 cups dressed salad (165g)

Amount Per Serving

Calories 110

% Daily Value*

Total Fat 4g 5%

Saturated Fat 0.5g 3%

Trans Fat 0g

Cholesterol 0mg 0%

Sodium 95mg 4%

Total Carbohydrate 16g 6%

Dietary Fiber 3g 11%

Total Sugars 5g

Includes 2g Added Sugars 4%

Protein 4g 8%

Vitamin D 0mcg 0%

Calcium 110mg 8%

Iron 1.7mg 10%

Potassium 160mg 4%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

CONTAINS: MILK

White Bean Shakshuka with Chimichurri Sauce



Creole Roasted Chickpeas

Group 4

Nutrition Facts

8 servings per container

Serving size

1 egg, 2/3 cup tomato mixture, & 2 slices bread (306g)

Amount Per Serving

Calories

260

% Daily Value*

Total Fat 10g **13%**

Saturated Fat 2.5g **13%**

Trans Fat 0g

Cholesterol 180mg **60%**

Sodium 450mg **20%**

Total Carbohydrate 31g **11%**

Dietary Fiber 6g **21%**

Total Sugars 5g

Includes 1g Added Sugars **2%**

Protein 14g **28%**

Vitamin D 0mcg 0%

Calcium 130mg 10%

Iron 3.3mg 20%

Potassium 560mg 10%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Nutrition Facts

4 servings per container

Serving size

1/4 cup (102g)

Amount Per Serving

Calories

110

% Daily Value*

Total Fat 4g **5%**

Saturated Fat 0g **0%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 130mg **6%**

Total Carbohydrate 16g **6%**

Dietary Fiber 5g **18%**

Total Sugars 0g

Includes 0g Added Sugars **0%**

Protein 5g **10%**

Vitamin D 0mcg 0%

Calcium 10mg 0%

Iron 1.2mg 6%

Potassium 190mg 4%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

CONTAINS: MILK, EGG, WHEAT

Thank you for joining us!

For More Recipes and Resources, visit: <https://goldringcenter.tulane.edu/>