

Bariatric Tool Kit

With Recipes



Getting Started

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Introduction

Who are we?

American Dairy Association Indiana, Inc. (ADAI) is a not-for-profit communication and nutrition education organization funded by and serving Indiana dairy farm families. We provide services to the public, health professionals, teachers, food service professionals, and media outlets.

Our organization is affiliated with the National Dairy Council. The National Dairy Council (NDC) has been a leader in dairy nutrition research, education, and communication since 1915. NDC provides timely, scientifically sound nutrition information to the media, physicians, dietitians, nurses, educators, and consumers concerned with fostering a healthier society.

Why was this tool-kit developed?

“Cooking and preparing meals that fit into a bariatric diet and also taste great is difficult. Patients need help finding new options which makes it easier to stay on target. After cooking class, patients are inspired and find new ways to prepare some of their favorite foods and are able to find new food options that they love.” -Sarah Muntel, RD, Bariatric Coordinator, Community Bariatrics North, Indianapolis, IN.

The goals after any restrictive weight loss surgery are:

- Maximize weight loss and absorption of nutrients
- Maintain adequate hydration
- Avoid adverse effects such as vomiting and dumping syndrome
- Initiate and continue behaviors integral to long-term weight maintenance (e.g., food choices, activity options)

These goals are especially important after Roux-en-Y gastric bypass (RYGB) because malabsorption of certain nutrients occurs after the surgery. Patients are at higher risk for deficiencies of folate, vitamin B-12, iron, and calcium. Supplementation with vitamin D may also be important, as this nutrient can affect bone health. Dairy and whey can help meet these vitamin and mineral deficiencies. (Source: American Academy of Nutrition and Dietetics)

Bariatric dietitians face a challenge to make food more attractive, nutritious, and easy to make for clients recovering from weight loss surgery. The food needs to be simple to prepare, high in protein, and not create overwhelming leftovers. Keep in mind that this clientele will be consuming small amounts of food each setting. By combining the experience of a chef and dietitian, we developed recipes that are delicious, nutritious, easy to make, and are also easily converted to small portions to eliminate leftovers.

Whey Information

What is Whey?

Whey is the protein-packed liquid derived from cheese making. Most whey consumed is sweet whey, which is obtained from processing with a minimal amount of lactose being converted to lactic acid.

Liquid whey is then processed into many commercial uses, including dry whey containing whey concentrates and isolates.

The drying process of whey may influence different flavor profiles. Offering a variety of types of dry whey will help clients make choices they can tolerate and enjoy.

What are the Benefits of Dairy Protein?

When asked this question of Christopher J. Cifelli, Ph.D., Director, Nutrition Research for Dairy Management Inc, Innovation Center for U.S. Dairy, Chris says,

“Overall, meeting protein needs can be challenging in these [bariatric] patients, so that is why they are suggesting whey. Whey is easily digestible, can be added to foods/beverages, and has levels branched chained amino acids needed to stimulate muscle protein synthesis.

Also, some patients will experience more lactose intolerance following bariatric surgery. So, lactose-free milk is a good recommendation to help people meet the thirteen essential nutrients. Also, cheese and high-protein yogurt are other good choices because they have the nutrients [most] found in milk, the protein needed for health, but are easier on the gut for those with lactose intolerance.”

Whey Protein, specifically, has many benefits, especially for bariatric patients:

- It's a natural complete protein
- It's a convenient way of adding more high-quality protein to your diet
- Contains all the essential amino acids (“building blocks”) the body needs
- Is one of the best sources of branched-chain amino acids (BCAA), especially leucine, which has been shown to help increase muscle protein ^{3,5}
- Helps increase protein synthesis, which can help our bodies function properly ²
- As part of a reduced-calorie, higher protein diet, may improve the quality of weight loss by helping people lose more fat and/or maintain more lean muscle

Whey Information (cont.)

Whey Protein, specifically, has many benefits, especially for bariatric patients:

- Can help people feel fuller longer than carbohydrates or fats
- Consuming whey protein and performing regular resistance exercise can help build more lean muscle compared to resistance training alone or resistance training combined with carbohydrate consumption.
- Consuming whey protein after exercise helps to build and repair muscle
- Emerging research shows older Americans may be able to reduce the age-related decline of muscle mass by engaging in resistance training and consuming higher protein meals.

Frequently Asked Questions

The National Dairy Council's (NDC) Whey Protein Advisory Panel (WPAP) consists of nationally renowned nutrition and health experts who help educate health and fitness professionals about the benefits of whey protein for active adults.

Q: Can I eat whey protein if I'm lactose intolerant?

A: You may not need to rule out whey protein because of lactose sensitivities. Whey protein *isolate* contains very little lactose (0.1 g/20 g scoop), so it may be a great choice for you. The amount of lactose in whey protein *concentrate* is slightly higher (1.0 g/20 g scoop), but both ingredients contain much less lactose than a glass of milk (12 g/8 oz serving). Check the ingredients label to find out what type of whey protein is used in a specific product before buying. *Susan Kundrat, MS, RD, CSSD, Assistant Clinical Professor, University of Wisconsin-Milwaukee*

Q: Is whey protein as beneficial as other protein sources?

A: Protein quality varies. Animal-based proteins, including whey protein, are high-quality, complete protein sources that supply all the essential amino acids the body needs to build and maintain muscle and to function properly. Protein found in most plant foods is considered “incomplete” protein because it lacks some of the essential amino acids the body needs each day. Therefore, it is important to carefully combine your plant-based proteins to get all the amino acids you need. Whey protein is a natural dairy protein, fast absorbing and easy to digest. Try it with breakfast or as a pre- or post-workout snack. *Doug Paddon-Jones, PhD, Professor, The University of Texas Medical Branch*

Q: Does whey protein contain gluten?

A: Whey protein does not contain wheat protein or gluten. However, whey protein bars and beverages may contain added wheat-based or other cereal ingredients that contain gluten, so be sure to check the ingredients list. *Chris Mohr, PhD, RD, CSSD, Owner, Mohr Results, Inc.*

Q: How can I identify whey protein? Is there a government or other departmental seal?

A: There is no official seal on food products to identify whether it contains whey. The best way to find foods with whey protein is to look for these ingredients on an ingredient label: whey protein, whey protein isolate, whey protein concentrate, and hydrolyzed whey protein. *Susan Kundrat, MS, RD, CSSD, Assistant Clinical Professor, University of Wisconsin-Milwaukee*

Frequently Asked Questions (cont.)

Q: How much whey should you use on a daily basis?

A: The Institute of Medicine recommends that 10 to 35 percent of the total calories we consume each day should come from protein. Although most people meet minimum protein requirements at the low end of this recommended range, many more would benefit from a moderately higher protein intake. Active individuals and older adults in particular should be encouraged to follow the MyPlate recommendations (20-25 percent of calories from protein) and include a moderate amount of high-quality protein with each meal. I would also encourage you to work with a dietitian in your area to assess your daily protein intake and determine whether you're consuming enough, too little, or too much. *Susan Kundrat, MS, RD, CSSD, Assistant Clinical Professor, University of Wisconsin-Milwaukee*

Q: I usually eat a large amount of protein at dinner, but have heard that it is better to eat smaller amounts throughout the day. Is that true?

A: Recent studies suggest that spacing protein intake evenly throughout the day helps maximize muscle protein synthesis. Try eating 20-30 grams of high-quality protein, such as whey protein, at each meal rather than loading up at the end of the day. Adding a scoop of whey protein powder to a breakfast smoothie or sprinkling it in yogurt or oatmeal is an easy way to include protein at the beginning of the day. Increase mid-day protein consumption by eating a turkey and cheese sandwich or tuna salad made with Greek yogurt for lunch. *Leslie Bonci, MPH, RD, CSSD, LDN, Director of Sports Nutrition, University of Pittsburgh Medical Center*

Benefits of Protein

What are the benefits of protein after surgery?

The body needs 20-30 grams of protein per meal. This is about the size of a 6 - 8 ounce cup of Greek yogurt. This visual gives you a starting point for your protein needs of the day.

Protein is the most important nutrient in the bariatric diet. Foods high in protein should be eaten first, in case you feel full and cannot finish your meal. Protein helps build muscle, maintains satiety, and repair tissue. After surgery, it is important for the client to get the best type and suggested amount of protein daily to ensure an adequate number of amino acids to help build and repair the body. Dairy, meat, and eggs are examples of the good sources of protein.

Post-surgery clients can consume whey protein mixed in liquids, milk, and food to help boost the nutritional requirements. Consuming an adequate amount of protein is vital to help clients heal well, maintain a healthy recovery, and build good habits for maintenance post-recovery.

The Lactose Low-Down

Dairy is a rich source of Protein and if lactose is a concern:

Product	Lactose (g)
Whole, 2%, 1%, skim Dairy Milk (1 cup)	12.6 g
LACTAID® Milk, Low-fat, lactose-free (1 cup)	0 g
Whey Protein Isolate (20 grams)	0.1 g
Cottage Cheese, low-fat, 2% milk-fat (1/2 cup)	3.2 g
Cheddar Cheese, sharp (1 oz.)	<0.1 g
Swiss Cheese (1 oz.)	<0.1 g
Mozzarella (1 oz.)	<0.1 g
American Cheese- pasteurized, processed (1 oz)	1.2 g
Yogurt- low-fat (6 oz)	5.7 g
Yogurt, Greek-style	4.2 g
Ice Cream (2/3 cup)	3.9 g



Recipes

By Michelle Plummer, MS, RD, CD

Recipe Analysis through: <http://myfoodrecord.com>

Note: Recipes developed and modified by Michelle Plummer, MS, RD, CD

Beverages

Smoothie with a Kick

Ingredients

1 cup tomato juice (low sodium)
2 tbsp. unflavored whey powder
¼ avocado, peeled and seeded
2 tbsp. onion, chopped
¼ tsp. tabasco
Dash of celery salt
1 cup ice
Celery sticks, cucumber wedges, lemon wedges (for garnish)

Directions

Combine juice, whey powder, and spices in the blender. Blend until smooth and thick. Pour over ice in a tall glass, garnish with desired vegetables, and a dollop of Greek yogurt. Makes one 8 oz. serving.

Nutritional Analysis: 94 Cal; Fat 6gm; Protein 12gms; Fiber 3.4gms; Chol 0gms; Sodium 342 mg; Calcium 67mg



Strawberry Tomato Basil Smoothie

Ingredients

1 cup ripe tomatoes, cut up
½ cup frozen strawberries
1 cup strawberry yogurt
2 large basil leaves
½ cup ice

Directions

Combine all ingredients in the blender and blend until smooth and frothy. Makes two 8 oz. servings.
Note: To increase protein, whey powder can be added to mixture.

Nutritional Analysis: 150 Cal; Fat 1gm; Protein 6gms; Fiber 2gms; Chol 0gms; Sodium 71mg; Calcium 146mg



Soups

Creamy Cauliflower and Potato Soup

Ingredients

1 tbsp. canola oil	1½ cups onion, diced
3 cups cauliflower, chopped	1/2 cup white potato, diced
1 cup cabbage, shredded	2 packets chicken flavored whey protein
2 cups water	1 tsp. garlic, chopped
2 cups evaporated skim milk	2 tbsp. parsley, chopped
1 tbsp. curry	1 tsp. lemon zest

Directions

Heat oil in large sauce pan over medium heat.

Combine water with whey protein and blend well.

Add onions and curry and cook 2-3 minutes; add cauliflower, potatoes, cabbage and broth.

Cover and cook for 8 minutes until tender.

Add milk and combine with emersion blender until smooth.

Heat until 155°F. Ladle in bowls garnished with lemon and garlic.

Makes ten 8 oz. servings.

Nutrition information per 8-ounce bowl:

Nutritional Analysis: 120 Cal; Fat 2.5gm; Protein 16gms; Fiber 2gms; Chol 0gms; Sodium 210mg; Calcium 209mg



Soups

Pumpkin Curry Soup

Ingredients

2 tbsp. butter
1 cup onion, chopped
2 cloves garlic, crushed
2 tsp. curry powder
 $\frac{1}{2}$ tsp. salt
 $\frac{1}{2}$ tsp. pepper
2 packets chicken flavored whey protein
16 ounces water
1 (15 ounce) can pumpkin puree
1 cup evaporated milk

Directions

Melt butter in large saucepan and sauté onion and garlic for 5 minutes.
Combine whey protein and 16 ounces of water together, blend well; set aside.
Stir in the curry, salt, and pepper into the onion mixture and cook for one minute.
Add the broth and pumpkin; whisk together well; bring to a simmer and cook uncovered for 20 minutes.
Stir in evaporated skim milk just before serving. Heat to 165°F.
Makes six 1 cup servings

Nutritional Analysis: 182 Cal; Fat 8gm; Protein 9gms; Fiber 3.4gms; Chol 22gms; Sodium 186 mg; Calcium 191mg



Salads

Confetti Salad

Ingredients

1 passilla bell pepper, diced	1 red bell pepper, diced
1 orange bell pepper, diced	1 yellow bell pepper, diced
1/2 cup red onion, diced	2 ribs celery, thinly sliced
12 sun dried tomatoes, cut into thin slices	12 Kalamata olives, pitted, sliced
¼ cup mozzarella, grated	

Dressing

2 tsp. olive oil
2 tbsp. lemon juice, fresh
1 tsp. Cajun spice blend

Directions

Combine vegetables in a large bowl.

In small bowl, combine dressing mixture. Pour over salad vegetables and toss.

The salad should look like confetti in the bowl and on the plate. Makes twelve ½ cup servings

Nutritional Information: Serving size: ½ cup

Nutritional Analysis: 31 Cal; Fat 1.1gm; Protein 1.5gms; Fiber 1.3gms; Chol 0gms; Sodium 342 mg; Calcium 32mg



Vegetable and Potato Salad

Instructions

1 lb. green beans, blanched and cut into 1" pieces
1/2 cup sweet potato, cubed
1 cup carrot, diced
2 cups cauliflower florets
1 cup celery, diced

1/2 cup potato, cubed
1/2 cup red onion, diced
1 cup lima beans
1/2 cup radishes, sliced
1 cup broccoli florets

Directions

Cut potatoes in cubes, boil for 6-8 minutes and drain.

In large bowl, combine all other vegetables and place hot potatoes on top.

With potatoes still warm, drizzle 1/2 cup dressing over mixture and combine well.

Pour remaining dressing over vegetables and toss gently to avoid smashed potatoes.

Makes twelve 1 cup servings

Dressing:

2 cups Greek Yogurt

2 tbsp. Brown Sugar sweetener

1 tsp. Dill

1 tbsp. Dijon Mustard

2 tsp. cumin, ground

Add salt and pepper to taste

Combine all dressing ingredients together and shake well. If dressing is too thick thin with milk.

Nutritional Analysis: 82 Cal; Fat .5gm; Protein 7.1gms; Fiber 3.5gms; Chol 4gms; Sodium 57 mg; Calcium 86mg



Sausage and Quinoa-Stuffed Zucchini

Ingredients

1 tbsp. extra-virgin olive oil	4 ounces sweet or hot turkey sausage, casings removed
1 portabella mushroom, stem and scrape the gills, minced	½ cup onion chopped
1/2 cup quinoa	1 pkt. chicken soup whey protein powder
½ cup chopped tomatoes	1 tbsp. marjoram, minced
8 small zucchini	1/4 tsp. freshly ground pepper
1/8 tsp. salt	1/3 cup finely shredded Parmesan cheese
1 cup water	

Directions

Heat oil in a large pan over medium-high heat. Add sausage and onion and cook, breaking the sausage into small pieces, until no longer pink, about 5-8 minutes.

Combine whey protein and water together in a cup; blend well and set aside.

In a small saucepan, cook quinoa and whey protein mixture (may need extra water), bring to a boil. Reduce heat to maintain a simmer. Cover and check once or twice, until the water is absorbed and the quinoa is tender, 15 to 20 minutes.

Remove from heat and stir in tomatoes and marjoram. Meanwhile, cut zucchini in half lengthwise. Cut a thin slice off the bottoms so each half of the zucchini sits flat.

Scoop out the pulp, leaving a 1/4-inch shell. Add pulp to meat mixture. Place the zucchini in a microwave-safe dish and sprinkle with pepper. Cover and microwave on high until tender-crisp, 3 to 4 minutes. Uncover.

Position rack in upper third of oven; preheat broiler to high. Transfer zucchini to a broiler-safe pan (or pans). Fill with the quinoa mixture and sprinkle with cheese. Broil on the upper rack until the cheese is melted, about 2 minutes.

Makes: 8 servings **Serving Size:** 2 zucchini halves *Nutritional Analysis: 238 Cal; Fat 11.3gm; Protein 23gms; Fiber 2.5gms; Chol 53gms; Sodium 589mg; Calcium 82mg*



Meats and Side Dishes

Mexican Quinoa Casserole

Ingredients

1 cup quinoa, rinsed well	2- 2 1/2 cup water
2 teaspoons taco seasoning (or 1 tablespoon chili powder with ½ tsp cumin and cayenne)	½ cup brown rice
2 cups frozen onion pepper mix	15 ounces black beans, rinsed, drained,
1 cup grated cheddar cheese, fine shred	2 tablespoons olive oil
1 tomato cut into wedges	1 cup corn
	1 avocado, sliced, sprinkled with second ½ of lime

Directions

In a saucepan, add quinoa, instant brown rice, water, and 2 teaspoons taco seasoning. Bring to a boil.

Reduce heat to medium. Cover and cook 20 minutes. After grain mixture is prepared, add beans and corn, combine all ingredients well.

Place ingredients in an 8x8 inch baking dish.

Heat olive oil in pan over medium heat, add pepper/onion blend. Cook until browned and tender. (about 10 minutes). Place on top of grain mixture.

Top with cheese and bake for 15 minutes. Remove from oven and top with sliced avocados and diced tomatoes.

To serve: Plate and garnish with yogurt dressing. Serves twelve (12) 1 cup servings.

Nutritional Analysis: 224 Cal; Fat 9gm; Protein 9gms; Fiber 6gms; Chol 67gms; Sodium 67 mg; Calcium 109mgca

Ingredients for dressing

6 oz. Greek yogurt
1 tbsp. taco spice mix
1/2 lime, zest and juice
2 tbsp. cilantro, minced
pinch of salt

Combine all dressing ingredients together.
Mix until well incorporated and set aside.



Meats and Side Dishes

Oven-Fried Chicken

Ingredients

8 ounces boneless, skinless chicken thighs 1 cup buttermilk
1 tsp. oregano ½ tsp. black pepper
1 tsp. onion powder 1/8 tsp. cayenne pepper
½ tsp. salt

Place all ingredients into a resealable bag and marinate for 1 hour.

Note: Chicken thighs can be cut into small strips (for “fingers”).

Breading for chicken

1/2 cup almond meal 1 packet chicken flavor soup whey protein
1 tsp. paprika 1 tsp. black pepper
¼ tsp. cayenne pepper, or to taste ½ tsp. oregano
1 tsp. onion 1 egg

Directions:

Gather 3 plates for breading station.

Plate one: Place marinated chicken.

Plate two: Place beaten egg.

Plate three: Place breading and seasonings. Blend well.

Preheat oven to 425°F.

Line a baking sheet pan with parchment or foil, spray with nonstick spray.

Dip marinated chicken in beaten egg; dip into breading mixture, coat well.

Place chicken on rack to set for 10 minutes.

Continue this process until all chicken is coated.

Place chicken on baking sheet pan. Spray the top of chicken tenders with nonstick spray.

Place on middle rack of oven and bake for 20 minutes or until tenders reach 165°F internal temperature.

Remove from oven and serve immediately.

Nutritional Analysis: 255 Cal; Fat 12gm; Protein 28gms; Fiber 2.2gms; Chol 110gms; Sodium 434 mg; Calcium 96mg



Meats and Side Dishes

Cauliflower Pancakes

Ingredients

16 ounce bag of frozen cauliflower 2 eggs or ¼ cup egg whites
½ cup low fat cheddar cheese, fine grate ½ cup ground almond meal
¼ tsp. cayenne or to taste ¼ cup sliced green onions
Garnish with a dollop of Greek yogurt mixed with minced herbs

Directions

Place all ingredients into a food processor until well combined.

- Using a scoop, make 16 balls and flatten them to ¼".

Heat griddle or electric skillet to 400°F; spray with non-stick spray.

Place cakes on griddle and cook 2-3 minutes on first side until golden; flip and cook an additional 2-3 minutes. Remove and place on warm plate. Garnish with chopped veggies, salsa, Greek yogurt dip, or use a snack or croutons with salad.

Makes 24 patties.

Nutritional Analysis: 29 Cal; Fat 1gm; Protein 2.1gms; Fiber; 1gms; Chol 0gms; Sodium 23 mg; Calcium 25mg



Meat and Side Dishes

Blueberry Walnut Quinoa Salad with Cauliflower Rice

1 cup fresh spinach, cleaned and washed
4 ounces Fresh blueberries, smaller the better
1 cup roasted or canned red and golden beets, diced
1/3 cup toasted and chopped walnuts
1 cup cannellini beans, rinsed and drained
1/3 cup red onion, diced
3 tablespoons fresh chives, minced
2 cups Cauliflower rice, thawed or made fresh

Dressing

1 clove of garlic, grated
4 tablespoons white vinegar
2 tablespoons olive oil
¼ teaspoon black pepper
1 tablespoon lemon juice
2 heads Boston lettuce, washed and drained

Place all salad ingredients in a bowl and lightly toss.
Add all dressing ingredients to a container with a tight lid and shake well.

Place Boston lettuce on plate, top with ½ cup of salad mixture and 1 tablespoon dressing. Roll into a wrap and serve.

Meat and Side Dishes

Mashed Carrots

The perfect alternative to sweet potato casserole

16 ounces carrots, cleaned and cut small
Water to cover

Cook carrots until tender and easy to mash.

Drain Carrots

Add 2 tablespoons unflavored whey powder
½ teaspoon black pepper
2 tablespoons orange juice
½ teaspoon nutmeg
½ teaspoon grated orange rind
1 tablespoon butter, reserved

In the saucepan the carrots were cooked in, mash the carrots with a masher or mixer. Add other ingredients and whip until creamy. Pour out into a bowl and top with reserved butter. Serve hot!

Meat and Side Dishes

Parmesan Asparagus Spears

Ingredients

1 pound asparagus
Olive oil flavored spray
Salt and black pepper to taste
1/4 cup loosely packed grated parmesan cheese
¼ cup almond meal
2 tablespoons whey protein powder

1. Combine whey protein powder, parmesan, and almond meal in a resealable bag.
2. Clean and trim asparagus.
3. Spray with olive oil spray .
4. Drop into parmesan mixture and toss gently to coat.
5. Place in a non-stick skillet and roast until tender crisp about 8-10 minutes.

Meat and Side Dishes

Harvest Chicken Salad

Ingredients

5.3-ounce Strawberry Greek yogurt (blueberry or vanilla can be used)

1 teaspoon Dijon mustard

1 ½ cups shredded roasted chicken (rotisserie is great)

½ cup chopped apple, peel left on

¼ cup toasted walnut pieces, chopped

½ cup chopped celery

¼ cup sliced green onions

4 cups salad greens

1. In a bowl, combine Greek yogurt, mustard, and salt and pepper. Mix well. Add remaining ingredients except greens. Toss to coat.
2. To serve, place 1 cup of greens on each plate. Mound 1 scant cup chicken salad mixture on top of greens and serve.

Calories 195; Total fat 9g; Chol 50mg; Sodium 105mg; total carbs 9 g; Fiber 2g; Sugars 6g, Protein 20g.



Lesson Plan

Getting Ready for the Demonstration

Lesson Plan

It's helpful for instructors to follow a lesson plan. It helps to ensure all materials are covered and in a logical pattern. Below are two examples depending on how much time the demonstration will last.

2-Hour

- Administer a pre/post-test. This will help get the audience excited about the presentation (10 minutes)
- Demonstration Title and introduction of the presenter(s) (15 minutes)
 - What the demonstration will cover
 - Provide background on the topic
 - Cover the Who, What, When, How, and Why of the topic
 - List objectives for the audience such as what they will observe, what they may be tasting, etc.
 - Explain to the audience what to expect
 - Cook then taste after the dish is prepared OR plan to do all tasting later in the demonstration
 - Provide trinkets for questions that have been woven through the presentation
- Demonstration (30-40 minutes)
- Post-test (10 minutes)
- Wrap up with Q&A (10 minutes)

1-Hour

- Introduction of the presenter(s) (15 minutes)
 - What the demonstration will cover
 - Provide background on the topic
 - Cover the Who, What, When, How
 - List Objectives for the audience such as what they will observe and what they may be tasting
- Demonstration (30 minutes)
- Wrap up with Q&A

Demonstration Guidelines

Food demonstrations are a good use of visuals. Providing food demonstrations in this instance helps the novice to the seasoned cook learn new techniques, a new way to look at Foods, or develop a new method for themselves.

Consider your timing of the event, your comfort level, and the audience. Preparing more than two recipes along with answering questions and serving can be a challenge. Don't be afraid to ask for help or bring along an assistant who can help serve or field questions.

Prepare foods that are in your comfort zone. If a recipe is difficult for you, it will likely be difficult for your audience. You want to be entertaining, informative, and able to have fun with the audience.

Keys to a good demonstration

1. Know your audience. Ask questions ahead of time—what are they able to do, what do you want them to take away from the event?
2. Be prompt and prepared for your event. Do not make the audience wait.
3. Have a clear message and repeat it several times.
4. Be organized and follow proper sanitation guidelines.
5. Provide handouts, recipes, and samples. (Always have a little extra something.)
6. Make your table colorful. If you bring all ingredients prepared, then bring a few colorful whole pieces to make the table pretty.
7. Be sure to point out the aroma when you add herbs or spices.
8. Don't be too technical. Have stories, nutritional tidbits, and a few audience questions to keep everyone engaged.
9. Bring a thermometer. Be sure to temp the food prior to serving.
10. Let the audience taste the food and ask for feedback. Not all people may like your food, but they make still take some good information away from the demonstration.

Preparing for the demo (two days prior)

- Determine the recipes. Make the necessary modifications if needed.
- Figure out the 'theme' of the demonstration.
- Practice cooking the recipe and while doing so, talk aloud as if to an audience (to get the timing down and to practice cooking and talking at the same time).
- Prepare the shopping list.
- Prepare the equipment list (attached).
- Gather handouts, recipes, and giveaways (if applicable).

Demonstration Checklist

Shopping for food (one day prior)

- Shopping one day before allows time to prepare or shop for any missing item
- Prepare fruits, vegetables, and meats that may need cut, sliced, cubed, or marinated
- Place prepared items in resealable bags labeled with the date, item, and your initials
- Pack equipment and materials

Demo day

- Dress appropriately. You may need to bring a change of clothes
- Limit jewelry and nail polish, and pull your hair back if needed
- Rehearse your demo once more just to be comfortable
- Wear an apron with a logo (if possible) and closed toed shoes
- Pack a camera for photos to use on social media and newsletters later
- Pack all food items in cooler using more cooling product than needed (situations occur)
- Pack all items for moving and double check everything
- Arrive to demo at least 1 hour ahead of time (2 hours may be preferred if this is a new venue)
- Set up the table in the order of the items being prepared, setting out extra gloves, towels, and knives as needed
- Greet each guest as they arrive to help make you more relaxed

During the Demo

- Introduce yourself, even if you have already been introduced
- Tell the audience what to expect from this demo. If you're using your own recipe, let them know that!
- Let the audience know it's OK to ask questions. This is for them!
- Tell the audience about the nutrition being provided from each food
- Talk about how to use Whey. You may have a story of when you used it or let them know some things to note. For example, when mixing, use cool water to remove the lumps
- You can determine whether to sample all foods at once or as the food is completed
- Ask for comments, what they would add or omit, what flavors are most noticed
- Continue until all recipes are completed
- Ask questions and hand out trinkets if applicable
- Leave time for Q&A
- Allow the audience to come up and see what's going on
- Thank the group and begin clean up
- Discard any food items for sanitation purposes
- Take coolers back to site. Clean and sanitize for next event
- Record how the event went, how to make things better, and the number people in attendance
- Send a thank you note to the person who invited you to do the demo

Equipment Checklist

Most food demonstrations will not require all of the following items:

- Apron
- Strainer
- Hair cover (hat, hairnet)
- Colander
- Disposable gloves
- Mixing bowls
- Recipes
- Measuring spoons
- Cutting board (2)
- Measuring cups (liquid and dry)
- Chef Knife
- Vegetable steamer
- Paring knife
- Baking pan
- Masher
- Baking sheet
- Grater
- Pots and pans
- Potato peeler
- Skillet or Electric skillet
- Spatula
- Dutch oven
- Wire whisk
- 1 Quart pan
- Ladle
- 2 Quart pan
- Rubber scrapers
- 3 Quart pan
- Stove top butane burner
- Extra butane for stove top
- Wooden spoons
- Potholders
- Slotted spoon
- Thermometer, oven
- Tongs
- Thermometer, meat
- Vegetable brush
- Jar opener
- Soap and washcloth
- Can opener with bottle opener
- Dish towel and dishcloth
- Foil
- Paper towels
- Saran wrap
- Scrub pad
- Vegetable spray
- Dish detergent
- Dial timer
- Plastic dishpans (2)
- Spice kit
- Serving platters and bowls
- Salt and baking soda
- Tablecloths
- Trash bags
- Folding luggage rack
- Serving utensils (spoons and forks)
- Plates
- Ice chest with wheels

Dietary Conversion Guide

3 tsp. = 1 tablespoon (T)

4 T = $\frac{1}{4}$ cup

5 $\frac{1}{3}$ T = $\frac{1}{3}$ cup

8 T = $\frac{1}{2}$ cup

16 T = 1 cup

1 cup = $\frac{1}{2}$ pint = 8 ounces fl.

2 cups = 1 pint = 16 ounces fl.

1 quart = 2 pints = 4 cups

32 ounces

Facts:

Rice: 1 cup raw = 16 oz. cooked

Pasta: 1lb. raw = 32 oz. cooked

1 Tbsp. dairy protein = 4 grams protein

References

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7. Addorisui, D. The Post-Surgery Diet for Bariatric Patients: What to Expect. Nutrition Corner, National Obesity Action Coalition.
8. <http://ndb.nal.usda.gov/nbb/search/list>

Other Suggested Websites:

- www.WinnersDrinkMilk.com
- www.USDairy.com
- www.MealTime.org
- www.InnovateWithDairy.com
- www.ChooseMyPlate.gov
- www.USDairy.com/DairyresearchInstitute



LEARN MORE ABOUT **ADAI**

American Dairy Association Indiana Inc. (ADAI) is a not-for-profit organization funded by and serving Indiana dairy farm families.

We strive to promote and educate our state and communities about the importance of dairy farming, sustainable nutrition, and youth wellness. Sharing these three areas of focus with community, health professionals, educators, food service experts, the media, and others is beneficial to Indiana's vast and vibrant dairy community.

#WinnersDrinkMilk | @INDairy

FARMING

Dairy farmers in Indiana continue to make animal care, innovation and conservation a priority.

Through the use of safe and innovative technology, dairy farmers deliver exceptional animal care and fresh, nutritious dairy foods.

Dairy farmers work with veterinarians and nutritionists to make sure their cows stay healthy and get a balanced diet.

Many Indiana dairy farmers grow crops to feed their cows and use manure to fertilize their crops. Over the past thirty years, reducing energy, reusing water, and recycling manure for fertilizer and energy have become cornerstones of a dairy farm's environment.

Since 2007, dairy farming has reduced the environmental impact

21% less land

30% less water

20% less manure



Studies show dairy foods, as part of a healthy diet, improve overall diet quality and may contribute to

reduced risk for type 2 diabetes



better bone health



lower blood pressure



reduced risk for cardiovascular disease



SUSTAINABLE NUTRITION

Kids need **calcium** and **vitamin D** for their growing bones and teeth. Research shows that milk is the number one food source containing these essential nutrients.



Studies show that chocolate milk is the best post exercise drink for athletes, providing the perfect combination of **protein** and **carbohydrate** to rebuild muscle and replace electrolytes.

COMMUNITY INVOLVEMENT

Ice Cream Social



Indianapolis Mini Marathon and Chocolate Milk Races



Indianapolis 500 tradition of #WinnersDrinkMilk

Indiana State Fair



All cow's milk provides the same **13 essential nutrients**, whether you prefer conventional or organic, whole milk or fat free, and all milk is antibiotic free.



Milk, cheese, and yogurt provide **protein power** to meals and snacks, filling in the gaps for lower quality protein foods like cereals, fruits, and vegetables.

YOUTH WELLNESS



Supporting **good nutrition and physical activity** is vital to students' wellness.

Wellness is a key to success in school and life. It's about making healthy choices every day to live a better life.

Supporting youth wellness in schools and activating Fuel Up to Play 60 (FUTP 60) is a priority for ADAI. FUTP 60 was launched by the National Dairy Council (NDC) and National Football League (NFL), in cooperation with the U.S. Department of Agriculture (USDA), to help schools meet their wellness goals and encourage youth to consume nutrient-rich foods and achieve at least 60 minutes of physical activity each day.

The program offers nutrition information (that includes dairy), grant funding, rewards and helpful resources that allows FUTP 60 to be customized for any school to implement, while keeping educators and students engaged.



Over 800,000 students reached in Indiana through FUTP 60



More than 73,000 schools have enrolled



Over 1,400 schools within the state participate



Dairy Can Help You Meet Your Protein Needs



The Institute of Medicine recommends that 10 to 35 percent of total daily calories should come from protein. That's about 50 to 175 grams per day if you normally eat about 2,000 calories each day. Although most people meet minimum protein requirements (i.e., the low end of this recommended range), many may benefit from a moderately higher protein intake, such as active individuals and older adults. Some experts suggest that you may benefit from consuming approximately 20 to 30 grams of high-quality protein at each meal. But please remember to check with your doctor or registered dietitian before making changes to your diet and/or exercise routine.

– Leslie Bonci, MPH, RD, LDN, CSSD, Director of Sports Nutrition, University of Pittsburgh Medical Center

Protein in Common Foods

	Serving Size	Protein (grams)	Tip
Milk	1 cup	8-10	Choose low-fat or fat-free varieties, including flavored or lactose-free options.
Cheese, such as Cheddar	1.5 oz.	9-11	Choose reduced-fat or low-fat cheese.
Cottage cheese	½ cup	13	Choose low-fat or fat-free varieties.
Greek-style yogurt	6 oz.	14-18	Choose low-fat or fat-free varieties.
Traditional yogurt	6 oz.	5-7	Choose low-fat or fat-free varieties.
Lean beef	3 oz.	22-27	Choose cuts with round or loin in the name, such as sirloin, round tip, tenderloin and top round.
Lean pork	3 oz.	24-26	Choose cuts with loin in the name, such as tenderloin, top loin and Canadian bacon.
Lean poultry	3 oz.	25-26	Choose breast meat, and remove the skin before eating.
Seafood and fresh water fish	3 oz.	18-22	
Eggs	1 large	6	
Beans	½ cup	7-8	Choose beans such as kidney or pinto.
Nuts	1 oz.	6-8	
Peanut butter	2 Tbsp.	8	
Tofu	3 oz.	6	

For illustration purposes only. Check the nutrition label for product specific protein content.



Get recipes that include protein at wheyprotein.nationaldairyCouncil.org and nationaldairyCouncil.org.



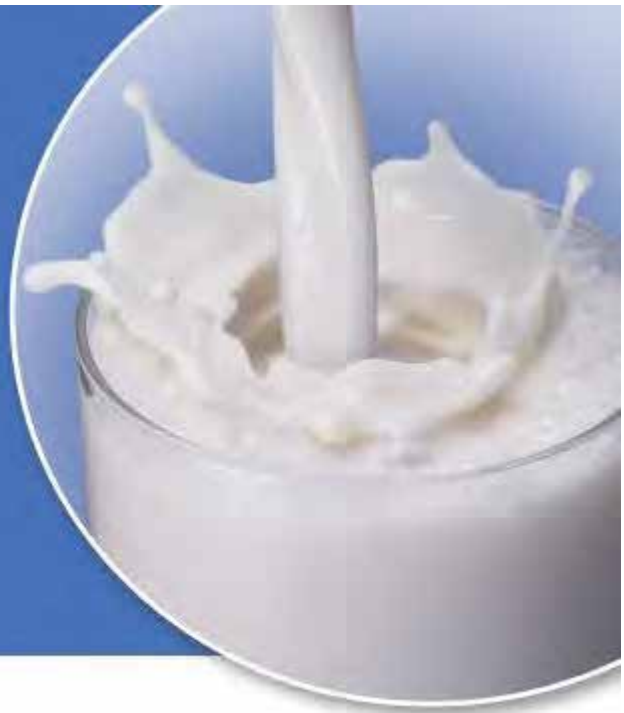
NATIONAL DAIRY COUNCIL





LACTOSE INTOLERANCE

WHAT IS LACTOSE INTOLERANCE?



It's when the body lacks the ability to break down milk sugar (lactose). Here are some important tips about lactose intolerance, and how you can work around it to ensure you're always performing at your best.



Being Lactose Intolerant

Being Lactose Intolerant doesn't mean you can't get all the dairy goodness your body needs.

There are lots of foods that are naturally low in lactose—like yogurt, cheese, cottage cheese, kefir and most whey protein powders.

IS LACTOSE INTOLERANCE DIFFERENT FROM A DAIRY ALLERGY?

Yes! Nearly everyone who has **lactose intolerance** (difficulty digesting dairy's natural sugar) can still enjoy some dairy. In contrast, a **dairy allergy** (which is rare and should be diagnosed by a physician), is an allergic reaction to the protein in dairy that causes an immune system response, requiring the complete elimination of all dairy foods.

SO HOW DO YOU KEEP DAIRY IN YOUR DIET?



TRY IT

Opt for lactose-free milk and milk products. They are real milk products, just without the lactose, taste great and contain the same nutrients as regular dairy foods.



SIP IT

Start with a small amount of milk daily and increase slowly over several days or weeks to build your tolerance.



STIR IT

Mix milk with other foods, such as soups and cereal; blend with fruit or drink milk with meals.



SLICE IT

Choose natural cheeses such as Cheddar and Swiss. They are low in lactose.



SPOON IT

Enjoy yogurt. Its live and active cultures help digest lactose.

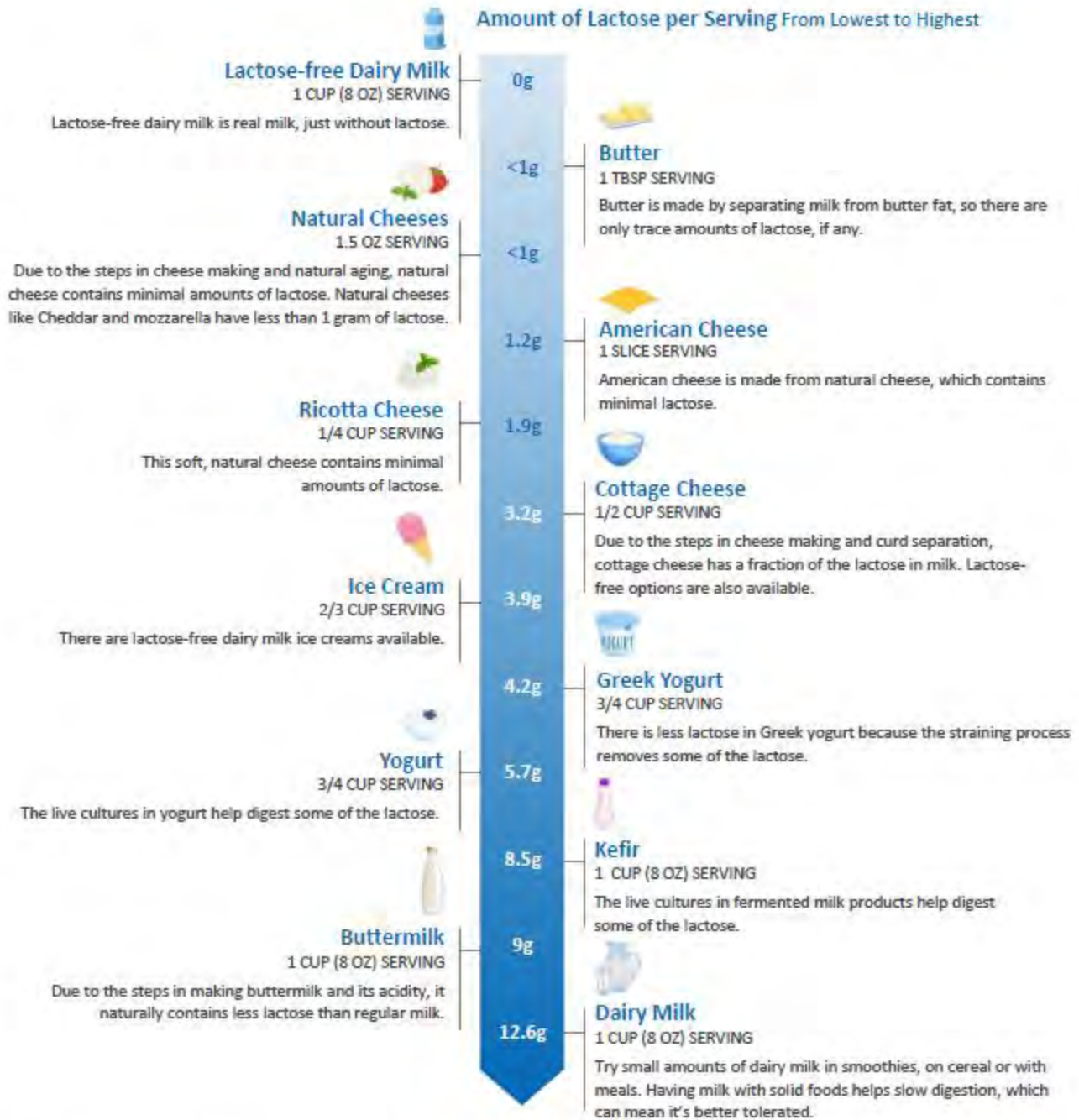


For more information on how to fuel your everyday greatness, scan the QR code or visit: winnersdrinkmilk.com

Created in Partnership with Unbottled

Lactose Intolerance: How to Enjoy Dairy Foods with Confidence

Everyone tolerates lactose differently. The good news is there are a variety of lactose-free and lower-lactose choices that deliver on taste and nutrition.



Lactose content based on the Reference Amount Customarily Consumed (RACC) and data from FoodData Central: <https://fdc.nal.usda.gov/>. Accessed October 2022. Ricotta lactose content based on Facioni MS et al. 2020, Di Costanzo M et al. 2020 and Food Standards Australia New Zealand. Detailed data is on file and available upon request.

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What's in Your Glass?

Choices are great, but they can be overwhelming.

This at-a-glance chart can help you understand what's in your glass.



Vitamins and Minerals²⁻⁴ (% Daily Value)

Vitamin B12	60%	60%	40%	35%	50%
Iodine	60%	-	2%	-	-
Calcium	25%	25%	20%	30%	30%
Riboflavin (B2)	25%	25%	15%	6%	55%
Phosphorus	20%	20%	15%	6%	20%
Pantothenic acid (B5)	20%	-	-	-	-
Niacin (B3)	15%	15%	4%	<2%	<2%
Vitamin A	15%	15%	15%	10%	25%
Vitamin D	15%	15%	8%	10%	20%
Potassium ⁵	10%	10%	10%	2%	10%
Zinc	10%	10%	6%	4%	2%
Selenium	10%	10%	8%	-	-

■ = Naturally occurring nutrients - = Nutrition data not available or reported quantitatively

*Source: Cincera Group, L.P. Multi-outlets and convenience stores. 52 week-period ending July 16, 2023.

(Dairy milk, unflavored (1%); Dairy Milk, Lactose-Free, unflavored (1%); unflavored almond, soy and oat beverages.)

1. IRI Total US - Multi Outlet + Conv 2022 YTD ending 5-22, based on U.S. average price of unflavored, private label milk, 1 gallon.

2. USDA, Agricultural Research Service. FoodData Central, 2019. <https://fdc.nal.usda.gov/>. Foundation Foods. FDC IDs: 746772, 2340765, 1999630, 1999631, 2257046. Accessed July 2023.

3. USDA, Agricultural Research Service. USDA, FDA and ODS-NIH Database for the Iodine Content of Common Foods Release 3.0 (2023).

4. Naturally occurring nutrients based on publicly available product ingredient lists. Accessed July 2023.

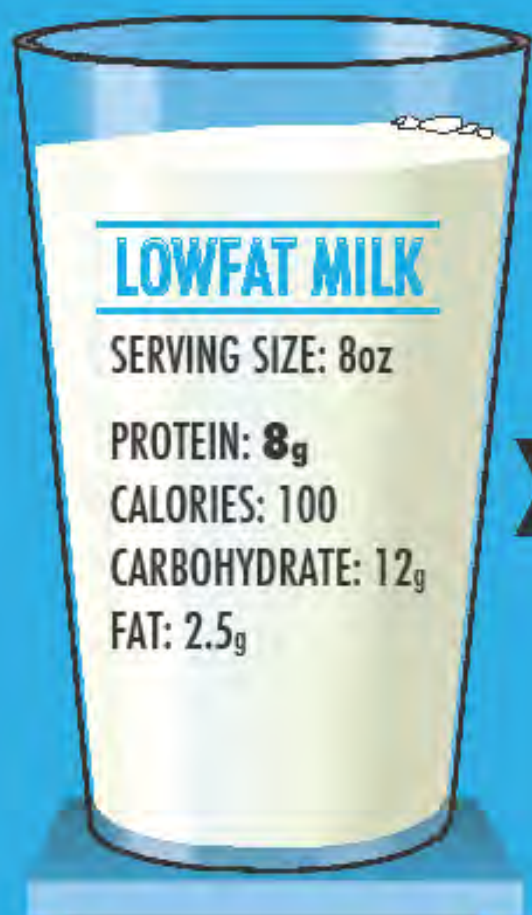
5. FDA's Daily Value (DV) for potassium of 4700 mg is based on a 2005 DRI recommendation. In 2013, NASEM updated the DRI to 3400 mg. These values are based on the 2019 DRI of 3400 mg.

PROTEIN FIGHT CLUB



MILK'S PROTEIN AT BREAKFAST HELPS YOU WIN THE DAY.

Win the day by starting each morning with milk. Milk is a breakfast powerhouse packed with 9 essential nutrients, including **8 grams of high-quality protein in an 8 oz. glass**. Protein at breakfast can help power you through the morning so you can win the day, but not all protein sources are created equal. **Milk delivers winning high-quality protein in any breakfast bottle.**



LOWFAT MILK

SERVING SIZE: 8oz

PROTEIN: **8g**

CALORIES: 100

CARBOHYDRATE: 12g

FAT: 2.5g

VS.



ORANGE JUICE

SERVING SIZE: 8oz

PROTEIN: 2g

CALORIES: 120

CARBOHYDRATE: 29g

FAT: 0g

Naturally nutrient rich like no other beverage, milk is a breakfast powerhouse. It has nine essential nutrients, including high-quality protein to build muscle, calcium and vitamin D to strengthen bones and B vitamins for energy.



OMELET

SERVING SIZE: 1 Omelet

PROTEIN: 30g

CALORIES: 410

CARBOHYDRATE: 7g

FAT: 29g

Milk is a delicious, easy and affordable way to get high-quality protein in the morning.



BREAKFAST BURRITO

SERVING SIZE: 1 Burrito

PROTEIN: 12g

CALORIES: 300

CARBOHYDRATE: 26g

FAT: 16g

Whether in a glass, cup or bowl, milk helps power up your morning meal.



BREAKFAST SAUSAGE

SERVING SIZE: 1 Serving

PROTEIN: 9g

CALORIES: 160

CARBOHYDRATE: 0g

FAT: 14g

Whether lowfat or fat free, all milk has 9 essential nutrients, including high-quality protein for the whole family.



BAGEL WITH CREAM CHEESE

SERVING SIZE: 1 Bagel w/ Cream Cheese

PROTEIN: 13g

CALORIES: 410

CARBOHYDRATE: 56g

FAT: 14g

Spreading out your protein throughout the day can optimize how your body uses it - and that means making sure you include more protein at breakfast.



EGGS

SERVING SIZE: 1 Large Egg

PROTEIN: 6g

CALORIES: 70

CARBOHYDRATE: 0g

FAT: 5g

Milk has more protein than an egg!

BREAKFAST CHAMPION

get milk? got protein.

VISIT GOTMILK.GOTPROTEIN.COM TO SEE THE POWER OF MILK IN ACTION.

Nutrient data from USDA National Nutrient Database for Standard Reference, Release 28 and based on nationally recommended products for comparison. For complete information visit www.fda.gov/oc/ohrt/ohrt010107.pdf.

The **Power** of

WHEY PROTEIN

Naturally Found in Dairy

Where's The **Whey** Protein?

Whey protein is a high-quality, complete protein that is naturally found in dairy. It provides protein, which your body needs each day to build and maintain muscle. Eating a diet higher in protein can also help you feel full longer. And, along with regular exercise, consuming a diet rich in high-quality protein can help you maintain a healthy weight.^{1,2} In addition, whey protein promotes muscle repair and recovery after a workout.³

Whey protein is available as a powder and can be found in many foods and beverages such as energy bars, oatmeal, yogurt, and flavored water.

Tips for finding whey protein:

- Look for these words on an ingredient label to be sure the product includes whey protein:
 - ✓ **whey protein**
 - ✓ **whey protein isolate**
 - ✓ **whey protein concentrate**
 - ✓ **hydrolyzed whey protein**
- Look for products that promote "protein" on the front label. Whey protein is often used as a high-quality protein source in products. Check the ingredient label for specific information about whey protein content.



How to spot whey protein on a label:

INGREDIENTS: PROTEIN BLEND [(WHEY PROTEIN CONCENTRATE, WHEY PROTEIN ISOLATE, HYDROLYZED WHEY PROTEIN), SOY PROTEIN ISOLATE], MILK CHOCOLATE FLAVORED COATING (SUGAR, PALM KERNEL OIL, NONFAT DRY MILK SOLIDS, COCOA POWDER, SOY LECITHIN, SALT, NATURAL FLAVOR), INULIN (CHICORY EXTRACT), VEGETABLE GLYCERIN, PEANUTS, CARAMEL (CORN SYRUP, SUGAR, NONFAT MILK, FRACTIONATED PALM KERNEL OIL, CREAM, MILK PROTEIN, NATURAL FLAVOR)...

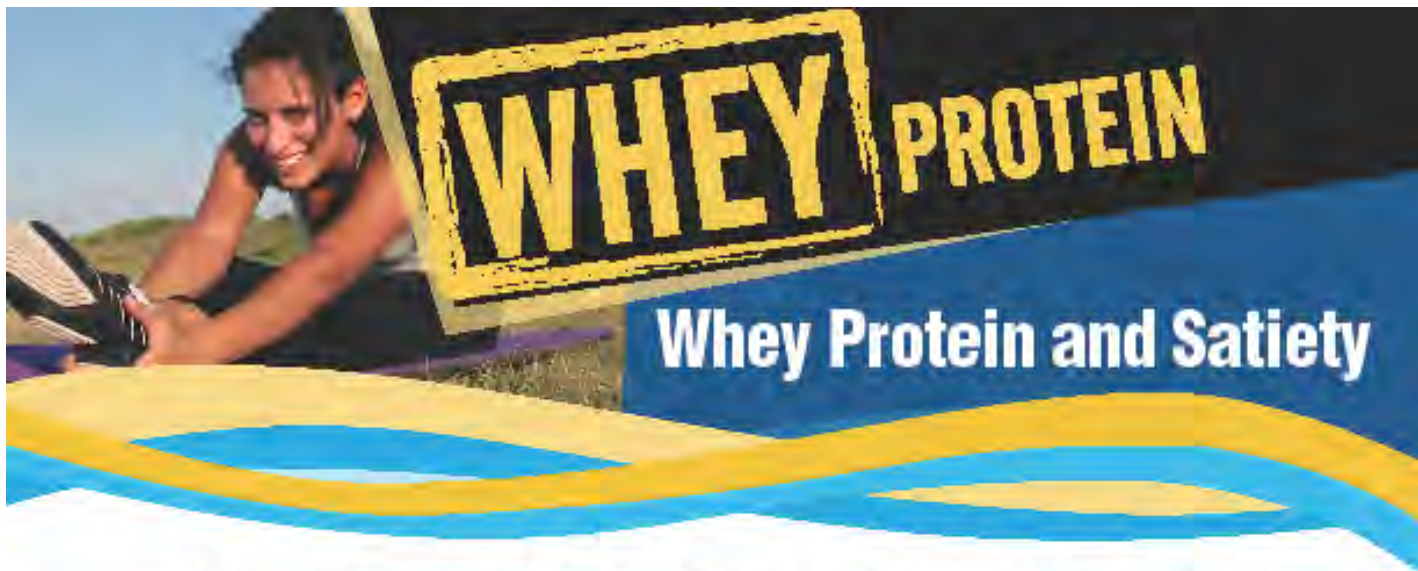
1. Veldhorst MA, et al. Protein-induced satiety: effects and mechanisms of different proteins. *Physiol Behav*. 2008; 94:300-27.
2. Hallon TL and Hu FB. The effects of high protein diets on thermogenesis, satiety and weight loss: a critical review. *J Am Coll Nutr*. 2004; 23(5): 373-85.
3. Hulmi JJ, et al. Effect of protein/essential amino acids and resistance training on skeletal muscle hypertrophy: a case for whey protein. *Nutr Metab*. 2010; 7(1):51.



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www.NationalDairyCouncil.org/WheyProtein

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Whey protein, as part of a diet higher in protein, can help curb hunger. Feeling less hungry may contribute to fewer calories consumed, which may help with weight loss and weight maintenance.^{1,2,3}

In fact, a survey by Dairy Management Inc.TM found that two-thirds of consumers said it was extremely or very important that a food or beverage makes them feel satiated.⁴ Consumers say that a feeling of fullness reduces their cravings for snacks, helps them eat less, and makes them feel more satisfied and content. In the same study, two-thirds of consumers agreed that feeling full is important if you're trying to lose weight and that if you feel hungry, you can't be at your best. Satiety benefits were especially important to people who exercise.

Research shows that calorie-for-calorie, consuming more protein can increase the feeling of fullness more than carbohydrates or fat.⁵

How Can I Increase My Protein Intake?

Whey protein, a natural complete protein that comes from dairy, is a convenient way of adding more high-quality protein to your diet. Whey protein:

- Contains all of the essential amino acids ("building blocks") your body needs.
- Is one of the best sources of branched-chain amino acids (BCAA), especially leucine, which has been shown to help increase muscle protein.⁶
- Helps increase protein synthesis, which can help our bodies function properly.

A simple way to increase protein intake is by enjoying snacks and other foods with whey protein as part of a healthy, active lifestyle. Try:

- Grabbing an energy or meal bar that contains whey protein.
- Drinking beverages with whey protein.
- Dropping a scoop of whey protein powder into your milk, yogurt, cereal, or smoothies for an added boost.

1 Leidy et al. The influence of higher protein intake and greater eating frequency on appetite control in overweight and obese men. *Obesity* 2010; 18: 1725-30.

2 Wang et al. A high-protein diet induces sustained reductions in appetite, ad libitum caloric intake, and body weight despite compensatory changes in diurnal plasma leptin and ghrelin concentrations. *Am J Clin Nutr* 2005; 82: 41-48.

3 Hallen and He. The effects of high protein diets on thermogenesis, satiety and weight loss: a critical review. *J Am Coll Nutr* 2004; 23(5): 373-85.

4 Dairy Management Inc. Satiety and the Consumer. July 29, 2009.

5 IOM (Institute of Medicine). Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids. *Washington, DC: The National Academies Press* 2005; 526-50.

6 Layman et al. The role of leucine in weight loss and glucose homeostasis. *J Nutr* 2003; 133: 2615-75.

For more information, visit www.nationaldairyCouncil.org/wheyprotein



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Make a Plan for Protein



Three steps to choosing protein: quality, versatility and timing



QUALITY

Not all proteins are equal for muscle protein synthesis – quality matters! For example, whey protein is a high-quality, complete protein containing all of the EAA* and high levels of BCAA.**

BCAA Content of Foods

	Leucine	Isoleucine	Valine
1 scoop (36 g) whey protein isolate*	4.7 g	2.1 g	1.9 g
1 scoop (36 g) soy protein isolate	2.4 g	1.5 g	1.5 g
3.5 oz sirloin steak	2.3 g	1.3 g	1.4 g
3.5 oz chicken breast	2.5 g	1.5 g	1.6 g
1 cup low-fat yogurt	1.3 g	0.7 g	1.1 g
1 cup skim milk	0.9 g	0.5 g	0.6 g
1 egg	0.5 g	0.3 g	0.4 g
2 tbsp peanut butter	0.5 g	0.2 g	0.2 g

USDA National Nutrient Database for Standard Reference, Release 26
USDEC Reference Manual for U.S. Whey and Lactose Products



VERSATILITY

Whey protein can easily be added to a variety of foods and recipes. More whey recipes can be found at www.wheyprotein.nationaldairyCouncil.org/recipes.

- Stir into hot foods (not boiling), such as soups, pasta sauces and stews immediately after cooking
- Use as an ingredient in baked goods
- Include in savory or sweet dips
- Stir into hot cereal or creamy sauces
- Add to peanut or other nut butters



TIMING

Add high-quality protein, such as whey protein, to meals and snacks to boost protein intake. Some experts suggest 20-35 g at each meal to help maintain muscle. Here are a few ideas:

Include protein after exercise to help with muscle recovery!

Breakfast

Berry Smoothie:
Nonfat Greek yogurt,
frozen berries,
banana, ice +
3 tbsp
vanilla
whey
protein
powder



Lunch

Tomato soup +
2 tbsp whey protein
powder, whole
wheat toast with
low-fat cheese,
apple



Snack

Carrots and whole
wheat pretzels,
reduced fat ranch
dressing + 2 tbsp
whey protein
powder



Dinner

Whole wheat pasta,
marinara sauce +
3 tbsp whey protein
powder, spinach
salad with Italian
dressing



* Essential amino acids
** Branched chain amino acids
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For more information and recipes, visit us at www.wheyprotein.nationaldairyCouncil.org.
Ruler to your registered dietician or healthcare provider for specific meal and calorie recommendations.

Make Your Protein Work Harder for You

Protein Can Help Power Your Plate and Your Lifestyle

Maximize the power of protein

Although most Americans meet their protein needs, some people may benefit from **diets higher in protein** such as **athletes**, **aging adults** and those trying to **manage their weight**. This fact sheet will help you learn how to maximize the protein in your diet. From helping build muscle with exercise to providing easy and tasty options at meals, high-quality protein foods, such as dairy foods, can help you meet your health and wellness goals.

FAQ:

What exactly is protein?

Protein is an essential nutrient (like fat and carbohydrate) your body needs each day. Not all proteins are equal – quality can make a difference. High-quality protein foods make it easy for you to get all of the essential amino acids your body needs to build and maintain muscles and help your body work properly.

Where can I get protein?

Protein is naturally found in animal foods and some plant foods, but the amount and quality of protein varies. The quality of protein is measured by the type and amount of amino acids it provides and by how well the body uses the protein.

What are high-quality proteins?

Dairy foods such as milk, flavored milk, cheese, cottage cheese, yogurt and Greek-style yogurt are good examples of high-quality protein.* High-quality protein

provides all the essential amino acids your body can't make on its own. The high-quality protein found in foods such as dairy foods, eggs, lean beef and pork, skinless poultry, fish and soy offer convenient options to help you meet your protein needs.



What exactly is whey protein?

Whey protein is a high-quality protein that is naturally found in milk. It can help provide the protein your body needs each day and can be conveniently added to foods and beverages to increase the protein content.

What about plant proteins?

Plant proteins can help meet nutrition needs, too. But unlike animal foods, it may not be as easy because most plant foods, including many beans, peas, seeds, nuts, vegetables and grain products, do not provide the significant amounts of the essential amino acids the body needs. Therefore, a variety of plant proteins are often needed to ensure amino acid needs are met.

What are amino acids?

The basic structure of protein is not a single, simple substance, but a multitude of chains of amino acids, which are building blocks that help build, repair and maintain body tissues. There are a total of 21 amino acids; the body makes 12 of them, which are called nonessential amino acids, but the other 9 are called essential amino acids, because the body cannot make them so they must come from food.

Did you know? A little more than half of people are trying to get more protein in their diets, and about 20 percent of adults indicate they're actively doing something about it, such as checking labels or changing their eating behavior. Potentially, this could equate to more than 45 million people! Do they know something you don't? Choosing high-quality protein sources can help benefit a variety of health and wellness goals.



Fast Facts:

- Your body uses protein all day long to actively build, repair and maintain muscle tissues. Try eating foods containing high-quality protein as an easy way to help get your protein throughout the day.
- Your protein can work better for you, if you choose high-quality sources to help ensure you get all the essential amino acids you need. Don't forget to include high-quality protein with breakfast – many people skip this important meal altogether!
- If you are planning meals with less meat, include high-quality protein such as that found in milk, cheese, yogurt or whey as a convenient way to help you get the essential amino acids your body needs.

Did You Know?

- In addition to protein, dairy foods (milk, cheese and yogurt) are important sources of calcium, potassium, phosphorus, magnesium, zinc, vitamins A, D and B₁₂ and riboflavin in the U.S. diet.
- Dairy proteins are high-quality proteins that can help build and repair your muscles following a hard workout.
- **Diets higher in protein** have been shown to help slow muscle loss that occurs as you get older, help curb hunger and help maintain a healthy weight.

Can I get high-quality protein by eating more meat, chicken, fish and dairy foods?

Yes. Healthy diets, including predominantly plant-based diets, should regularly include high-quality, lower fat sources of protein, such as low-fat and fat-free dairy foods, lean meats, chicken, fish and eggs to help you easily meet your protein needs. Find out how many servings of these types of foods are recommended each day based on your age, gender and activity level at www.ChooseMyPlate.gov. Depending on your typical exercise routine and your age, however, you may benefit from additional protein. Eating additional servings of these foods or consuming whey protein, throughout the day, while staying within your calorie needs, are options that can help you satisfy your nutritional needs.

– Dan Benardot, PhD, RD, Professor of Nutrition, Professor of Kinesiology & Health, Georgia State University

Protein in Common Foods

	Serving Size	Protein (grams)	Tip
Milk	1 cup	8-10	Choose low-fat or fat-free varieties, including flavored or lactose-free options.
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Cottage cheese	½ cup	13	Choose low-fat or fat-free varieties.
Greek-style yogurt	6 oz.	14-18	Choose low-fat or fat-free varieties.
Traditional yogurt	6 oz.	5-7	Choose low-fat or fat-free varieties.
Lean beef	3 oz.	22-27	Choose cuts with round or loin in the name, such as sirloin, round tip, tenderloin and top round.
Lean pork	3 oz.	24-26	Choose cuts with loin in the name, such as tenderloin, top loin and Canadian bacon.
Lean poultry	3 oz.	25-26	Choose breast meat, and remove the skin before eating.
Sea food and fresh water fish	3 oz.	18-22	
Eggs	1 large	6	
Beans	½ cup	7-8	Choose beans such as kidney or pinto.
Nuts	1 oz.	6-8	
Peanut butter	2 Tbsp.	8	
Tofu	3 oz.	6	

For illustration purposes only. Check the nutrition label for product-specific protein content.



Get recipes that include protein at wheyprotein.nationaldairycouncil.org and nationaldairycouncil.org.

*Look for products containing 5 grams or more of protein per serving.

Protein Can Help Each Day

Get the Most Mileage From Your Food Choices

Are you getting the most mileage from your food choices? If you lead a busy lifestyle, like most Americans, you will likely appreciate help getting the most nutrition and benefits from your meals and snacks. Protein is an important part of optimizing nutrition throughout the day.

Do you tend to eat the majority of your protein at dinner? Many experts suggest it may be better to spread out protein containing foods more evenly across meals and snacks to reap benefits associated with **higher protein diets**.

Think of proteins as tiny workers that are necessary for virtually every activity in the body. There is a limited store of protein for the body to pull from and use throughout the day. That is why spacing out balanced meals and snacks that contain high-quality protein helps your body put protein to work.

FAQ:

Why is protein important throughout the day?

Protein is an essential nutrient your body uses throughout the day. From helping you curb your hunger to helping with weight management and preserving lean body muscle, diets higher in protein can help power your path to health and wellness.

– For more information on protein basics, see

Protein: Understanding the Basics

What are good sources of protein from the dairy group?

Dairy foods naturally contain high-quality, complete protein.

- Milk, flavored milk, cheese, cottage cheese, yogurt and Greek-style yogurt are good examples of foods with high-quality protein.* Dairy's protein will be present regardless of the type or variety of dairy product you choose, such as milk, cheese or yogurt (e.g., regular, low-fat, fat-free, reduced-sodium, lactose-free, etc.).
- Whey protein, a high-quality milk protein, also can help people meet their protein needs.



Breakfast – what should I eat for the most important meal of the day?

Breakfast is the most important meal of the day, because it's time to refuel the body after a night's sleep. Increasing protein intake at breakfast, which is typically lower in protein than other meals, may help you optimize the benefits of protein. Eating foods that contain protein as part of a balanced breakfast not only helps break the all-night fast but also gets you started on the right path for the day.

Did You Know?

- Getting enough protein in your diet over the course of the day, as part of a **diet higher in protein**, may help in weight management by helping you:
 - Maintain muscle during weight loss, when following a higher protein, reduced-calorie diet.
 - Feel satisfied longer between meals.
- Americans tend to consume more protein at lunch and dinner, but less protein at other parts of the day, such as breakfast and snack time.
 - By spreading out high-quality protein throughout the day, at meals and snacks, you can help your body get the most from its protein all day.
 - An 8-ounce glass of milk, 1-ounce of most cheeses and an 8-ounce container of yogurt each have as much protein as one egg.
- In addition to protein, dairy foods (milk, cheese and yogurt) are important sources of calcium, potassium, phosphorus, magnesium, zinc, vitamins A, D and B₂ and riboflavin in the U.S. diet.





Tips for getting more protein on the go

Including dairy in your between-meal snacks can be a great way to help you achieve a higher protein diet. Diets higher in protein can help you curb hunger. Try these tips for snacking on the go with dairy:**

- ❖ Yogurt containers are perfectly sized to stash in your backpack, briefcase or purse on the way out the door, and you can put yogurt in the fridge at work for later or eat it once you arrive at your destination.†
- ❖ Choose milk as a snack choice because of its versatility, nutrition and convenience. Plus, one 8-ounce glass of milk has as much protein as a handful of nuts.
- ❖ Portion out chunks or slices of cheese;† they will be ready to eat anytime and anywhere – plus, who doesn't love cheese?
- ❖ Add dairy protein such as whey protein, a protein naturally found in milk, to your favorite foods and beverages for a protein boost.

Should I be concerned about getting too much protein?

The Institute of Medicine recommends that 10 to 35 percent of total daily calories should come from protein. That's about 50 to 175 grams per day if you normally eat about 2,000 calories each day. Although most people meet minimum protein requirements (i.e., the low end of this recommended range), many may benefit from a moderately higher protein intake, such as active individuals and older adults. Some experts suggest that you may benefit from consuming approximately 20 to 30 grams of high-quality protein at each meal. But please remember to check with your doctor or registered dietitian before making changes to your diet and/or exercise routine.

– Leslie Bonci, MPH, RD, LDN, CSSD, Director of Sports Nutrition, University of Pittsburgh Medical Center

Myth: Only younger people need to worry about getting enough protein.

Fact: No matter your age, your body needs to replenish its protein stores each day. In fact, **diets higher in protein** can help you maintain muscle to help stay active as you age.

Myth: Protein only comes from meat.

Fact: Protein sources include meat, poultry or fish; milk, cheese and yogurt; eggs, beans and tofu; and nuts, seeds and peanut butter. Find out more about sources of high-quality protein from **Protein: Understanding the Basics**.



From **healthy muscles to healthy bodies** to learning how to pick the best **options for meatless meals to managing weight and controlling hunger**, diets higher in protein can help you meet health and wellness goals. Get recipes that include protein at wheyprotein.nationaldairyCouncil.org and nationaldairyCouncil.org.

*Look for products containing 5 grams or more of protein per serving.
**Choose low-fat or fat-free milk and yogurt and lower fat varieties of cheese.
†Check the label for proper refrigeration for yogurt and soft cheeses.



WHEY PROTEIN

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PROTEIN

Protein is an essential nutrient (like fat and carbohydrate) your body needs each day to help build and maintain muscle mass. Nevertheless, not all proteins are created equal—quality can make a difference. High-quality protein foods make it easy for you to get all of the essential amino acids your body needs to build and maintain muscle and help your body work properly. Among protein sources, whey protein is an easily digested, rapidly absorbed high-quality protein that is naturally found in dairy.

Research shows that whey protein helps promote muscle repair and recovery after exercise.³⁻⁴ Additionally, numerous scientific studies have been conducted to better assess the benefits of higher protein diets, including many studies incorporating whey protein. Findings from this body of research show consuming a higher protein diet can help people:

- *maintain a healthy weight,*⁵⁻¹⁰
- *curb hunger,*¹¹⁻¹³
- *build lean muscle (with regular resistance exercise),*¹⁴⁻¹⁶
- *enhance exercise recovery*¹⁻⁴
- *maintain muscle mass as they age.*^{17, 18}

The following are summaries of several published findings in these areas. For more information on whey protein, visit www.wheyprotein.nationaldairycouncil.org.

MAINTAIN A HEALTHY WEIGHT

Whey Protein, as Part of a Diet Higher in Protein, Can Help with Weight Maintenance

Results from clinical trials indicate higher protein diets may help people preserve lean body mass and maintain a better body composition.⁶⁻⁷ Following a higher protein diet after weight loss may also result in less weight regained, with most of what is regained in subsequent months being muscle.⁸⁻¹⁰ In addition, high-quality protein, such as whey protein, may aid in weight maintenance by promoting satiety, thermogenesis (production of heat by the body) and energy efficiency, and by improving body composition.¹⁹



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CURB HUNGER

Whey Protein, as Part of a Diet Higher in Protein, Can Help Curb Hunger

Eating more protein may help people eat less because consuming protein as part of a higher protein diet increases the feeling of fullness more than carbohydrate or fat.²⁰ Further, there is evidence that shows increasing the amount of protein in the diet can lead to decreased total caloric intake and body weight.²⁰

BUILD LEAN MUSCLE

Whey Protein, With Regular Resistance Exercise, Can Help Maximize Muscle Growth

Whey protein increases the rate at which the body makes lean muscle because it is one of the best sources of naturally occurring branched-chain amino acids, including leucine.²¹ Research shows that consuming whey protein in combination with resistance exercise can boost the rate at which the body makes lean muscle, which may improve body composition.^{1,3,4} Moreover, the combination of protein intake and resistance exercise has been shown to be more effective at increasing lean muscle than either of the two alone, or than the combination of resistance training and ingestion of a carbohydrate.²²⁻²⁸

ENHANCE EXERCISE RECOVERY

Whey Protein Can Help Enhance Muscle Recovery After Exercise

Consuming whey protein post-exercise can help maximize the effects of exercise by increasing the rate at which the body makes lean muscle.^{10,1-4} Further, some studies suggest consuming whey protein during and/or after exercise may improve strength²⁹⁻³¹ and support muscle function^{32,33} after fatigue; however, more research is needed.



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REDUCE MUSCLE LOSS AND SUPPORT HEALTHY AGING

Higher Protein Intakes, Including Whey Protein, Can Help Maintain Muscle Mass in the Aging

It is estimated that by 2030 one in five U.S. residents will be 65 and older.³⁴ This population should pay special attention to maintaining their muscle mass as decreased physical activity, chronic diseases and nutritional deficiencies may contribute to the development of sarcopenia.³⁵ Sarcopenia is a progressive process that can be characterized by approximately 3-8% reduction in lean muscle mass per decade after 30 years of age, and this rate may be even higher as individuals age.³⁶⁻³⁹

In particular, aging muscle seems to be less responsive to lower amounts of amino acids than younger muscle.^{40, 41} As a result, consuming more than the Recommended Dietary Allowance (RDA) for protein (0.8 grams per kg body weight) may be beneficial for older adults to help them meet their metabolic and physiological needs.⁴²⁻⁴⁴

Quality and timing are also important factors to consider. Experts suggest that consuming 20-30 grams of high-quality protein at each meal may help older adults maximize their ability to make more protein, which in turn, may help preserve muscle or slow muscle loss associated with aging.^{36,45,46} However, more research is needed.



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