



Protein, Satiety and Healthy Weight

by Kara McDonald

More than 73 million adults and 16 percent of children in the United States are considered obese, according to a 2009 report from the Centers for Disease Control (CDC). As a majority of the U.S. population struggles with weight issues, consumers look to foods and beverages that offer related benefits, such as satiety, to help fight the battle of the bulge.

"The issue of weight management is a significant concern for many," said Laura Gottschalk, vice president, U.S. manufacturing and ingredient marketing for Dairy Management Inc.™ (DMI). "Controlling hunger can be an appealing message to consumers."

Manufacturers can find new opportunities by adding whey protein to their products, a formulating decision that can help consumers achieve a higher protein diet, which has been shown to have satiety benefits.

According to "Satiety and the Consumer," a 2008 survey conducted by The NPD Group for DMI, 67 percent of consumers stated feeling full is important when trying to lose weight. Further, two-thirds of respondents said satiety (a feeling of fullness or lack of desire to eat following food intake) is important in their food and beverage choices.

"We know that consuming a higher protein diet can be an excellent way to help people feel full, which may help eliminate the desire to reach for unhealthy snacks between meals," said Matt Pikosky, director of research transfer at the National Dairy Council®. "Consuming more

foods with added whey protein is a simple way for consumers to increase their intake of protein and help achieve a higher protein diet and satiety benefits."

Fortunately for those consumers, whey protein-enhanced products are gaining more space on the grocery shelves. According to Mintel, during the last six years, more than 4,100 new food and beverage products containing whey protein ingredients have been introduced to the U.S. retail market. Among them are products like Detour® Protein Bars, Kellogg's Special K2O™ Protein Water, Tula Foods Better Whey of Life™ yogurt and Quaker® Weight Control Instant Oatmeal, which promotes 7 g of protein from whey protein isolate in a single serving to fight between-meal snacking.

Promoting Satiety Naturally

Several recent review papers have concluded protein is more satiating than carbohydrates or fats, and diets higher in protein can help curb hunger and, as such, may play an important role in weight management.^{1,2,3}

"Calorie for calorie, consuming more protein can increase the feeling of fullness more than carbohydrates or fat," Pikosky said. "This has been shown both following a single meal, as well as following the consumption of an overall diet higher in protein. This feeling of fullness may lead to a subsequent decrease in caloric intake which, over time, can help with weight management."

According to The NPD Group survey, more than half the responders indicated they would expect to pay about 50 cents more for products fortified with protein to increase satiety. "This insight is crucial for manufacturers of foods and drinks to consider when developing new products," Gottschalk said.

Delivering Protein

For generations, parents have told their children breakfast is the most important meal of the day; research has shown this advice is important for all ages. The NPD Group survey showed consumers believe morning is the most important time of day to eat something satiating. "Today, there are many options such as nutrition bars, smoothies and oatmeal that are fortified with whey protein," Gottschalk said. "This is important market information for food and beverage manufacturers to consider, as many consumers are trying to decrease between-meal snacking."

Protein needs vary and satiety benefits for individuals are dictated by food choices made throughout the day. Increasing the protein content of the diet to achieve a satiety benefit depends on the current protein intake, age, weight, gender, activity level and overall health of the individual. The Institute of Medicine recommends a range from 10 percent to 35 percent of an adult's daily caloric intake to be protein. The amount of dietary protein shown to increase satiety in some studies ranges from about 100 g/d to 150 g/d.



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Beyond satiety, whey protein offers numerous health and workout benefits that appeal to consumers. Whey protein is considered to be one of the best sources of the branched chain amino acids, especially leucine, which is unique in its ability to initiate or "turn-on" muscle protein synthesis. According to a research team from McMaster University, Hamilton, Ontario, study participants who consumed 10 g of whey protein with 21 g of fructose following resistance exercise saw a greater rise in muscle protein synthesis compared to a group that consumed a beverage containing an equal amount of carbohydrates only.⁴

Whey's Functional Properties

In addition, whey protein provides a number of functional benefits to food and beverage formulators. Beverage manufacturers are reaching more for whey protein as a product enhancement to compete in the fast-growing functional beverage industry, which has grown significantly in the last decade. Whey protein is highly soluble and has the unique ability to remain clear at the low pH range of 2.8 to 3.5 found in high-acid beverages, such as isotonic. Due to whey protein's clarity and solubility, formulators can pack more protein into a beverage drink than with soy protein, which is not as soluble as whey protein below 3.8 pH. With a clean, neutral taste, whey protein is well-suited for use in many flavored beverages.

Whey protein also provides functional properties for a wide range of other applications, including bread, baked goods, ice cream mixes, and meat and seafood products, with new applications continuously being identified. Many varieties of whey ingredients are available to provide desired results based on application and function. For example, whey protein concentrate (WPC), acting as an emulsifier, aids in the dispersion of shortening in many bakery products, reducing the amount of eggs required. WPC also supplies gloss and color to pastries and biscuits when applied as a pre-bake glaze.

Consumer Interest on the Rise

According to data collected by The NPD Group, approximately 53 percent of adults are trying to get more protein in their diets versus a year ago. In a DMI-sponsored survey on protein and the consumer, most consumers

said adding whey protein to a food product would have a positive effect on purchase interest.

Consumers can look to whey protein-enhanced products as a natural way to increase their protein intake, helping them achieve a higher protein diet, which can help curb their appetite, fitting into their weight management plans. Manufacturers will continue to find whey protein is a solution for product innovations that could help address consumers' nutrition and weight problems. □

Kara McDonald is director of ingredient marketing for Dairy Management Inc. (DMI) and has worked in the dairy industry for 12 years in various marketing and communications roles. She holds a bachelor's degree in animal science from Penn State University, a dual MS/MBA degree in food and agribusiness management from Purdue University and Indiana University Kelley School of Business.

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