

Dairy and Probiotics Are A Good Pair



■ Contributed by *Christopher J. Cifelli, Erin E. Quann and Gregory D. Miller*

More than a century ago, the Nobel Prize-winning Russian immunologist Elie Metchnikoff linked the long, healthy life of Bulgarian peasants to their high intake of fermented dairy products containing lactic acid bacteria. Since this initial observation, scientists have actively examined the health benefits associated with the consumption of probiotics.

The most widely accepted definition of probiotics is that they are live microorganisms that, when consumed in appropriate amounts, confer a health benefit to the host. A growing body of scientific evidence indicates that the consumption of specific probiotics can beneficially affect certain aspects of health, including, but not limited to, digestive health.

Most probiotics are strains of different species of *Lactobacillus* and *Bifidobacterium*. Although the research indicates that probiotics can confer numerous health benefits, it is important to note that the function of a given probiotic is dependent upon strain, the amount consumed and the mode of delivery.

Approximately 95 million people in the United States suffer from digestive problems. In 2008, foods and beverages that were marketed for digestive health topped the list of new functional products introduced in the marketplace. UK-based *New Nutrition Business* predicts that the top food, nutrition and health trend for 2011 will be digestive health, which after energy drinks, represents the largest portion of the functional foods market. *New Nutrition Business* indicated that “it is also possibly the fastest-growing segment of health, and the evidence is that its growth will continue.” Similarly, an August 2009 report by Chicago-based Mintel stated that U.S. sales of functional dairy products grew by 43% between 2004 and 2009.

Further, the report predicted that sales will continue to rise to \$6.34 billion in 2014.

What to know about labeling and claims

Probiotics are available in the market as dietary supplements and in foods. There are no Food and Drug Administration-approved health claims for probiotics in the United States. The most common claims for probiotics on food labels are structure/function claims, which describe the effect of a nutrient or substance on the normal structure or function of the body. Like all other information on a food label, structure/function claims must be truthful and not misleading, and manufacturers making the claim must have credible scientific evidence to substantiate the specific claim. Examples of structure/function claims for specific probiotic strains in the marketplace include claims about strengthening the body’s defenses, supporting the digestive system, helping naturally regulate the digestive tract and helping to reduce intestinal transit time. Generalized claims about probiotics should not be made since there are thousands of unique strains.

Probiotics have been associated with dairy for centuries, and fermented dairy products continue to be predominant in foods and beverages for delivering probiotics. Beyond the natural and historical association between dairy and probiotics, dairy products may be the optimal delivery vehicle for probiotics for several reasons:

- Consuming probiotics with food, especially dairy products, may help neutralize stomach and bile acids, increasing the possibility that the probiotics survive digestion and reach the intestine.

- The refrigerated storage and short shelf-life of dairy products promote probiotic stability, helping to ensure that adequate amounts of the probiotic remain viable throughout shelf-life.
- Because of the historic link between lactic acid bacteria and dairy products, the presence of live cultures in dairy foods is viewed positively by consumers.
- Dairy products are already a substantial contributor of a number of essential nutrients that provide health benefits to consumers.

Research continues to investigate potential synergistic interactions between dairy and probiotics to determine if dairy directly enhances the survival and activity of probiotics. Recently, genomic experiments have shown that dairy can increase the expression of genes associated with stress tolerance and cell adhesion, which could possibly allow the probiotic to survive and thrive in the harsh digestive environment. In addition, studies have demonstrated that lactose is a preferred energy source for certain probiotics.

The dairy industry has a unique opportunity to leverage the beneficial relationship between dairy and probiotics to develop innovative new products and increase the demand for dairy products. Also, the opportunity exists to continue to educate consumers on the historical association of dairy products and probiotics as well as the healthful properties of probiotics. While additional research is needed on the interplay between dairy and probiotics, the combination of dairy products with probiotics can make for a healthy, functional food package. ■

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