

Probiotics are found in products ranging from yogurt and ice cream to snacks and supplements.



Lindsay Holmes/The Wall Street Journal

Bug Crazy: Assessing The Benefits of Probiotics

BY LAURA JOHANNES

Bacteria are everywhere, and in the view of many people that's a good thing.

Many medical experts believe that consuming healthy bacteria, called probiotics, improves the body's overall balance of good versus bad microorganisms, boosting general health. But nutritionists warn that not all the probiotic-containing products found on store shelves provide the health benefits they claim.

ACHES & CLAIMS

Companies have sought to attract health-conscious consumers in recent years by putting probiotics in products as diverse as yogurt, juices, muffins and even pizza, as well as in dietary supplements. Last year, 231 new probiotic-containing products hit grocery and pharmacy shelves, up from just 34 in 2005, according to market-research firm Datamonitor PLC.

To be sure, some regular foods contain healthy bacteria, from common yogurt to naturally fermented pickles. But pasteurization has eliminated much of the flora found in modern foods. The recent boom in probiotic products reflects an effort to re-introduce bacteria believed to promote good health. Probiotics are generally considered safe to eat, but scientists say people with immune deficiencies should consult their doctor first.

Companies that sell products with added probiotics claim they offer a range of health benefits, from helping with digestion to boosting the immune system and preventing cavities. Some of the claims are based on reputable scientific study. But others are unproved, and advertising pitches are sometimes exaggerated. The quality of probiotic supplements also varies widely. As a result, consumers might have a difficult time choosing among a host of products.

Of several hundred probiotic-product lines on

the market in North America, "15 to 20 have clinical studies behind them," says Gregor Reid, a professor of microbiology at the University of Western Ontario's Lawson Research Institute.

Probiotics are defined as "live microorganisms which when administered in adequate amounts confer a health benefit," according to 2002 guidelines developed by the World Health Organization and the United Nations. Exactly how this works isn't fully understood, but scientists be-

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lieve that good types of bacteria have long lived in symbiosis with humans and that the positive health effects may have evolved over time.

In choosing a probiotic, consumers should look for products that list a specific strain of bacteria on their label or on a Web site. Look for three names—in *Lactobacillus rhamnosus* GG, for example, the final two letters identify the strain. The GG strain has been well tested scientifically and has shown health benefits. A product that simply uses the first two names may include a similar, but not identical, bacterium that doesn't have the same science behind it.

The best evidence is when the actual product—not just the bacterium—has been tested in humans. Such studies are sometimes posted on manufacturers' Web sites. Otherwise, consumers can do an Internet search of the specific bacterial strain to see if there is credible evidence of a product's health claims. This can take some legwork.

Say, for example, you want information on the active bacteria in Activia, a probiotic-enhanced yogurt from Dannon Co. The product label identifies the strain as Bifidus Regularis, but this is only a marketing name. The Activia Web site, under the tab "for health-care professionals," links you to summaries of scientific papers that use the scientific name, *Bifidobacterium animalis* DN-173 010, which has been found to hasten digestion. For additional information, you can do an Internet search of that name and many of the scientific studies on the strain pop up.

Probiotic dietary supplements also may be confusing. In a 2006 study, ConsumerLab.com, which tests nutritional products, found that just eight of 13 probiotic supplements met its quality standards. While there's no guarantee, consumers stand a better chance of getting quality products from well known, reputable manufacturers, scientists say.

Some additional tips when buying probiotic foods: Look for the word "live" on the package, since organisms killed by processing won't be helpful, says Gary B. Huffnagle, a professor at the University of Michigan Medical Center in Ann Arbor. Respecting the expiration date is particularly important, because even if a product still tastes good

Meet the Bacteria

These microorganisms have been shown to boost health in scientific studies:

Strain	Benefits	Products
Bifidobacterium animalis DN-173 010 (marketing name: Bifidus Regularis)	Gut health and faster digestion	Dannon Activia yogurt
Bifidobacterium infantis 35624	Alleviates symptoms of irritable bowel syndrome	Procter & Gamble's Align supplement
Bifidobacterium lactis Bb-12	Helps immune system and digestive health	Yo-Plus yogurt, Nestle Good Start infant formula
Lactobacillus casei Shirota	Helps immune system and digestive health	Yakult fermented dairy drink
Lactobacillus casei DN-114 001 (marketing name: L. casei Immunitas)	Helps immune system; lessens duration of colds and flus in older people	Dannon's DanActive dairy drink
Lactobacillus rhamnosus GR-1 in combination with Lactobacillus reuteri	Improved vaginal health; helps eradicate vaginal infections	RepHresh Pro-B and Fem-Dophilus dietary supplements
Lactobacillus reuteri 55730	Helps treat colic, gingivitis, antibiotic-associated diarrhea	BioGaia tablets, drops and lozenges
Saccharomyces boulardii yeast	Helps prevent and treat antibiotic-associated diarrhea	Florastor dietary supplement

bacteria may no longer be alive. For maximum benefit, scientists say, try to consume a variety of different bacteria, as each may contribute something slightly different.

Here are some claims probiotic manufacturers make for their products:

Faster Digestion: Dannon's Activia yogurt and Yoplait Yo-Plus yogurt, made by General Mills Inc., contain bacteria that have been shown in scientific studies to reduce "transit time" of waste through the intestines. Slow digestion isn't necessarily bad but can cause discomfort, such as bloating or constipation.

Dannon points to four published studies testing a formulation similar to its product in humans. General Mills says a large body of scientific evidence backs up the efficacy of the bacteria in Yo-Plus. And the company says a recent study, presented at a conference of the American College of Gastroenterology, found that a dairy drink with the same active ingredients as a four-ounce container of Yo-Plus reduced transit time to 21 hours from 31 hours, compared with no change with a placebo. The study was funded by General Mills.

Irritable Bowel Syndrome: This disorder, including cramping, abdominal pain, bloating, constipation and diarrhea, can be disabling. A scientific task force, which published its find-

ings in the American Journal of Gastroenterology this month, concluded that certain probiotic bacteria—primarily bifidobacteria—have shown "some efficacy" in treating the condition.

One bacterium with solid science behind it is *Bifidobacterium infantis* 35624, the main ingredient in Procter & Gamble Co.'s Align dietary supplement. In a 2006 published study, partially funded by P&G, a daily dose of the product was shown to relieve a wide range of symptoms better than a placebo.

Colic: When babies scream or cry with no apparent reason, it's called colic. A study of 83 infants, published last year in the journal Pediatrics found that five drops a day of a probiotic supplement from Sweden's BioGaia AB reduced median crying time from 197 minutes a day to 51 minutes. A control group of babies was given a liquid medication commonly used to treat colic but not widely viewed as effective; this group's crying fell to a median of 145 minutes a day.

Immune Health: Studies have long found that probiotics help regulate the immune system on a biochemical level. A small but growing number of studies are showing concrete health benefits in humans. Among them is an Israeli study that looked at *Lactobacillus reuteri* 55730 and *Bifidobacterium lactis* Bb-12. Published in 2005 in

Pediatrics, the three-month study of 201 infants found that babies fed with either of the two probiotic formulas had fewer episodes of fever and diarrhea than babies fed a control formula. Of the two bacteria, *L. reuteri* was more effective in preventing illness, the study found.

B. lactis Bb-12 is available in Yo-Plus yogurt and Nestle SA's Good Start Natural Cultures infant formula. The *L. reuteri* strain is in BioGaia's dietary supplements, as well as in Nestle's Boost Kid Essentials boxed dairy drink. The bacteria are in the straw and are intended to be ingested with the juice.

Other bacteria with scientifically demonstrated immune-health properties include *Lactobacillus casei* DN-114 001, the bacteria in Dannon's DanActive dairy drink, and *L. rhamnosus* GG, in Dannon's Danimals children's drink.

Oral Health: A small number of studies have found benefits for probiotics in preventing cavities and easing gum disease.

A two-week, 42-patient study published last year found that daily chewing of gum with BioGaia's *L. reuteri* strains improved gum health compared with a placebo gum. The study was funded in part by BioGaia. The gum product is not available in the U.S. But the company sells lozenges that BioGaia says it believes will be as effective as the gum.

A seven-month Finnish study of 594 children, published in 2001 in the journal Caries Research, found that children who drank milk infused with *L. rhamnosus* GG had significantly fewer cavities than those who drank regular milk. The study received funding from Valio Ltd., a Helsinki company that supplies the bacteria to food and dietary supplement companies, including Dannon for use in Danimals.

Antibiotic-associated diarrhea: Regular yogurt has long been used to stave off this unpleasant side effect of taking antibiotics. However, supplements and foods fortified with additional probiotics may provide further relief, scientists say. So far there is good scientific evidence for several strains, including *L. rhamnosus* GG and *Saccharomyces boulardii* lyo, a yeast sold by France's Laboratoires Biocodex SA as a dietary supplement under the brand name Florastor. Dannon's DanActive drink has also been shown effective.