

# July 9, 2003 – USA Today

## A bug for what's bugging you

### Probiotic products tout live bacteria for health

By Rita Rubin - USA TODAY

Most days Donna Holt has a salad for lunch, sometimes with chicken, sometimes with tuna. But no matter what's on the menu, she religiously downs billions of live bacteria as an appetizer.

Holt, 56, is one of an increasing number of people worldwide who have become believers in probiotics -- dietary supplements and dairy products such as yogurt that contain living bacteria thought to help prevent disease. The bacteria are so tiny that Holt, of Columbus, Ga., gets her entire daily dose from four chewable tablets.

"It's one of those things people used to think you had to be a health nut in order to understand it," she says. "Now it's become accepted." Some signs of the growing interest in probiotics:

- \* Actimel, a probiotic drink marketed by U.S. yogurt maker Dannon, recently became available nationwide. Sold in Europe for years, the fermented milk drink packs 10 billion *Lactobacillus casei* into a 3.3-ounce serving.

- \* In May, two major scientific meetings featured presentations about probiotics on the same day.

- \* Digestive-disease doctors at such esteemed institutions as Harvard are beginning to recommend probiotics to their patients.

Although the concept of probiotics -- derived from a combination of Latin and Greek words meaning "for life" -- is more than a century old, it has become the focus of scientific scrutiny only recently. So far, the most promising research has focused on digestive-tract problems. But some scientists speculate that probiotics may help prevent or treat just about anything that ails humans, from kidney stones to cancer.

Think of probiotics as good bugs (not to be confused with antibiotics, drugs that kill bugs good and bad). The two main categories of probiotic bacteria, lactobacilli and bifidobacteria, are normal inhabitants of the healthy human

gut. There, they wrap up the digestive process and make the neighborhood inhospitable for harmful bacteria.

Animal studies suggest probiotic bacteria also help keep the immune system humming along.

"This is a legitimate area," says probiotics researcher Gregor Reid of the University of Western Ontario, who spoke on a panel about the subject last month at the annual meeting of the American Society of Microbiology. "It's not snake oil anymore."

Grant Ferrier, editor of *Nutrition Business Journal*, estimates that U.S. sales of probiotic supplements have increased 10% to 15% annually over the past five years, reaching \$170 million in 2002.

Still, many of the potential benefits of probiotics have yet to be tested in large trials comparing them to a placebo, a type of study regarded as the gold standard. It's not yet clear which bacteria are best for which use. And, because virtually all probiotics are supplements or foods, neither their ingredients nor their health claims are subject to the same strict government regulations as drugs. "In some respects, the marketing has preceded the science," says Mary Ellen Sanders, president of an international organization devoted to probiotics research.

### **How they work is a mystery**

Actimel is a bigger seller in Spain than Coke, the *Nutrition Business Journal* reports. According to its label, Actimel "helps strengthen your body's natural defenses." But, as the label notes: "This statement has not been evaluated by the Food and Drug Administration."

For the uninitiated, the thought of tossing down 10 billion live bacteria -- in fermented milk, no less -- is enough to make them toss up whatever they've consumed recently.

"People tend to recoil when they hear the word 'bacteria,' " acknowledges probiotics researcher Glen Gibson of the University of Reading in England. In reality, Gibson says, "the vast majority of microbes are benign or perhaps beneficial."

More than 400 types of bacteria are thought to reside in and on the body. In perfectly healthy people, they outnumber human cells 10 to 1.

"They coexist with us," says Todd Klaenhammer, a food scientist at North

Carolina State University. "They're very beneficial to our overall health." But, he says, "what we don't understand is how they do it."

Holt, a former registered nurse who left the field after serving in Vietnam, has been taking a probiotics supplement containing two strains of lactobacilli for five years, ever since a course of antibiotics gave her severe diarrhea.

When she developed an infection a few months after knee-replacement surgery last year, Holt says, it was a whole different story. Although she had to be readmitted to the hospital and treated with heavy-duty intravenous antibiotics, she never had diarrhea. Holt credits her probiotics tablets. Currently she's on antibiotics for bronchitis, so she's doubled her daily dose.

Preventing antibiotic-induced diarrhea is one of several probiotics benefits suggested by a small but growing body of evidence. Others include treating vaginal infections, reducing the risk of infection after surgery for ulcerative colitis and protecting against respiratory infections and eczema, a skin disorder. Scientists also are intrigued by the possibility that probiotics could lower blood pressure and cholesterol and reduce the risk of cancer and kidney stones, although research into these areas is preliminary.

"Large randomized controlled trials will be done, at least in Europe, where new legislation will make it essential for companies wishing to make health claims for the products," says G.T. Macfarlane, a bacteriology professor at the University of Dundee in Scotland.

### **Claims hard to verify**

For now, says gastroenterologist Jeffrey Katz of Case Western Reserve University in Cleveland, many questions remain.

"Are all probiotics the same? The answer to that is probably not," Katz says. "If one probiotic works for disease X, is it also going to work for disease Y? Maybe, maybe not. There's a huge range in dosing, and nobody knows what the right doses are."

Some health claims made for probiotic products may not apply to the types or numbers of live bacteria they contain, cautions Sanders, a food scientist who is a consultant to the dairy industry in Centennial, Colo.

In fact, some products may not even contain what their labels say they contain. When the FDA proposed stricter regulation of dietary supplements in March, the agency noted that eight of 25 probiotic supplements tested contained fewer than 1% of the number of live bacteria consumers would

expect them to have.

The overall risk of infection from ingesting lactobacilli or bifidobacteria is extremely low, experts say, but questions remain about the safety of some other, less commonly used types of bacteria in probiotic supplements.

"I understand the tendency to say, 'Take one. It really can't do any harm,' " says probiotics researcher Fergus Shanahan, a gastroenterologist at the University of Cork in Ireland. But, he says, "Some of these preparations cost a lot of money. They can spend a fortune on stuff that has no chance of working. Doctors shouldn't abandon the traditional principles of treatment just because probiotics seem safe."

For now, Sanders says, she prefers to get her daily dose of bacteria by eating yogurt, even though she can't be sure how many microbes she's actually getting with each spoonful. Although the best-selling yogurts bear labels stating they contain live active cultures, that doesn't help consumers hoping to reap added health benefits from probiotic bacteria.

Yogurt is made by adding *Lactobacillus bulgaris* to milk. Though named for hardy Bulgarians who consumed large quantities of fermented milk, the strain is no match for digestive-tract acids. While *Lactobacillus bulgaris* does help lactose-intolerant individuals digest yogurt, it doesn't survive and grow in the gut as true probiotic bacteria do.

Even if sturdier probiotic strains of lactobacilli have been added, the active-cultures label provides no clue as to how many bacteria the product contains, Sanders notes.

It's unlikely yogurt makers will add such information to their labels until more consumers begin demanding it, she says.

Although the stuff racks up \$2 billion a year in U.S. sales, Sanders says, "a very small percentage of people eating yogurt are eating it because of the probiotic bacteria."

But eventually, many more might.

"It would be arrogant and stupid and extreme to dismiss probiotics," says Shanahan, who is leading two trials comparing probiotic bacteria to a placebo in inflammatory-bowel-disease patients. "They're not magic bullets, though."

