Acidophilus and Other Probiotics

En Español (Spanish Version)

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Supplement Forms/Alternate Names

• B. bifidus; Bifidobacterium; L. acidophilus; L. bulgaricus; L. casei; L. gasseri; L. reuteri; L. plantarum; L. sakei; Lactobacillus; Lactobacillus GG; Lactobacillus LB; Probiotics; S. salivarius; S. thermophilus; Saccharomyces boulardii

Principal Proposed Uses

• Various Forms of Diarrhea, Including "Travelers Diarrhea," Diarrhea Caused by Antibiotics, and Viral Diarrhea (in Children); Gastrointestinal Side Effects of Cancer Therapy; Irritable Bowel Syndrome; Ulcers (as an Adjunct to Standard Therapy)

Other Proposed Uses

• Allergic Rhinitis; Behcet’s Syndrome; Canker Sores; Colds (Prevention); Colon Cancer (Prevention); Constipation (Chronic); Diverticular Disease; Dyspepsia; Eczema; High Cholesterol; Immune Support; Inflammatory Bowel Disease (Ulcerative Colitis and Crohn’s Disease); Insomnia; Liver Disease; Milk Allergies; Probiotics; Rheumatoid Arthritis; Ulcers; Vaginal Infection; Yeast Hypersensitivity Syndrome

Lactobacillus acidophilus is a "friendly" strain of bacteria used to make yogurt and cheese. Although we are born without it, acidophilus soon establishes itself in our intestines and helps prevent intestinal infections. Acidophilus also flourishes in the vagina, where it protects women against yeast infections.

Acidophilus is one of several microbes known collectively as probiotics (literally, "pro life," indicating that they are bacteria and yeasts that help rather than harm). Others include the bacteria L. bulgaricus, L. reuteri, L. plantarum, L. casei, B. bifidus, S. salivarius, and S. thermophilus and the yeast Saccharomyces boulardii. Your digestive tract is like a rain forest ecosystem with billions of bacteria and yeasts rather than trees, frogs, and leopards. Some of these internal inhabitants are more helpful to your body than others. Acidophilus and related probiotics not only help the digestive tract function, they also reduce the presence of less healthful organisms by competing with them for the limited space available. For this reason, use of probiotics can help prevent infectious diarrhea.

Antibiotics can disturb the balance of your "inner rain forest" by killing friendly bacteria. When this happens, harmful bacteria and yeasts can move in and flourish. This can lead to vaginal yeast infections. Conversely, it appears that the regular use of probiotics can help prevent vaginal infections and generally improve the health of the gastrointestinal system. Whenever you take antibiotics, you should probably take probiotics as well and continue them for some time after you are done with the course of treatment.

Sources

Although we believe that they are helpful and perhaps even necessary for human health, we don't have a daily requirement for probiotic bacteria. They are living creatures, not chemicals, so they can sustain themselves in your body unless something comes along to damage them, such as antibiotics.

Cultured dairy products, such as yogurt and kefir, are good sources of acidophilus and other probiotic bacteria. Supplements are widely available in powder, liquid, capsule, or tablet form. Grocery stores and natural food...
stores both carry milk that contains live acidophilus. In addition to probiotics, related substances known as prebiotics may enhance the colonization of healthy bacteria in the intestinal tract.\textsuperscript{140}

**Therapeutic Dosages**

Dosages of acidophilus are expressed not in grams or milligrams, but in billions of organisms. A typical daily dose should supply about 3 to 5 billion live organisms. Other probiotic bacteria are used similarly. The typical dose of \textit{S. boulardii} yeast is 500 mg twice daily (standardized to provide $3 \times 10^{10}$ -colony-forming units per gram), to be taken while traveling or at the start of using antibiotics, and continued for a few days after antibiotics are stopped.

Because probiotics are not drugs, but rather living organisms that you are trying to transplant to your digestive tract, it is necessary to take the treatment regularly. Each time you do, you reinforce the beneficial bacterial colonies in your body, which may gradually push out harmful bacteria and yeasts growing there.

The downside of using a living organism is that probiotics may die on the shelf. In fact, a study reported in 1990 found that most acidophilus capsules on the market contained no living acidophilus.\textsuperscript{1} The situation has improved in subsequent evaluations, but still some products are substandard.\textsuperscript{99} The container label should guarantee living organisms at the time of purchase, not just at the time of manufacture. Another approach is to eat acidophilus-rich foods such as yogurt, in which the bacteria are most likely still alive.

To treat or prevent vaginal infections, mix 2 tablespoons of yogurt or the contents of a couple of capsules of acidophilus with warm water and use as a douche.

Finally, in addition to increasing your intake of probiotics, you can take fructo-oligosaccharides, supplements that can promote thriving colonies of helpful bacteria in the digestive tract. (Fructo-oligosaccharides are carbohydrates found in fruit. \textit{Fructo} means "fruit," and an \textit{oligosaccharide} is a type of carbohydrate.) Taking this supplement is like putting manure in a garden; it is thought to foster a healthy environment for the bacteria you want to have inside you. The typical daily dose of fructo-oligosaccharides is between 2 g and 8 g.

**Therapeutic Uses**

Evidence from many but not all double-blind, placebo-controlled trials suggests that probiotics may be helpful for many types of diarrhea, as well as for irritable bowel syndrome.\textsuperscript{2,28,53-57,68,70,71,130,148,156,157,171,214,215,216,220}

Additionally, probiotics have shown some promise for preventing or treating eczema.\textsuperscript{29,30,51,52,125,126,139,203,205}

Probiotics may be helpful for controlling symptoms and maintaining remission in ulcerative colitis.\textsuperscript{37,39,82,204,222} However, probiotics may be less useful for inducing remission; when probiotics were added to standard medications used for induction of remission, no additional benefits were seen in a study of people with mild-to-moderate ulcerative colitis.\textsuperscript{43}

Probiotics might help prevent colds,\textsuperscript{43} possibly by improving immunity.\textsuperscript{40-42,83,164} On a related note, one small, double-blind study found evidence that use of the probiotic bacteria \textit{Lactobacillus fermentum} improved the effectiveness of the influenza vaccine.\textsuperscript{135} (The probiotic supplement was taken in two doses. One was taken two weeks before the vaccine, and the other was taken two weeks after.)

Although probiotics are widely used to prevent or treat vaginal yeast infections (\textit{Candida albicans}), evidence regarding potential benefit remains incomplete and inconsistent.\textsuperscript{51-56,48,84-85} A small trial of 55 women with vulvovaginal candidiasis did demonstrate that daily \textit{Lactobacillus rhamnosus} and \textit{L. reuteri} supplementation for 4 weeks combined with single dose fluconazole (an anti-fungal medication) decreased symptoms compared to
fluconazole alone. Another large, well-designed trial, however, failed to find a Lactobacillus preparation helpful for preventing yeast infections caused by antibiotics. One study did find that probiotics might reduce levels of Candida albicans in the mouth.

The bacteria Gardnerella vaginalis can cause a different type of vaginal infections; as with vaginal yeast infections, probiotics have shown some promise for this condition, but evidence remains inconclusive. A trial of 64 women taking a single dose of tinidazole for bacterial vaginosis suggests that women who also took daily probiotics capsules had better cure rates at 4 weeks. A larger trial involving 120 women with a history of bacterial vaginosis found that taking one capsule daily of the probiotics Lactobacillus rhamnosus, acidophilus, and Streptococcus thermophilus reduced recurrence.

The bacteria Helicobacter pylori is the main cause of ulcers in the stomach and duodenum. Antibiotics can kill H. pylori, but more than one must be used at the same time, and, even then, the bacteria is not necessarily eradicated. Probiotics may be helpful. Evidence suggests that various probiotics can inhibit the growth of H. pylori on its own, preliminary evidence, including several small double-blind trials, suggest that various probiotics may help standard antibiotic therapy work better, reducing side effects and possibly increasing rate of eradication. For example, over a 2-week period, 82 adults with dyspepsia and H. pylori infection were randomized to receive lansoprazole (30 mg), amoxicillin (1,000 mg), clarithromycin (500 mg), plus kefir (a cultured dairy product rich in probiotics) or the medications plus placebo. Those in the kefir group experienced a better rate of H. pylori eradication and an improvement in their symptoms (eg, diarrhea, nausea, abdominal pain) compared to the placebo group.

Some, but not all, preliminary double-blind trials suggest that probiotics might improve cholesterol profile. In addition, milk fermented by probiotics may slightly improve blood pressure levels. Various probiotics might be helpful for allergic rhinitis (hay fever). While there is some evidence that probiotics can help reduce symptoms of milk allergies, one study found that adding probiotics to infant cow’s milk formula was not helpful. One interesting study found that the use of probiotics during pregnancy and breastfeeding may decrease the likelihood that a highly allergic mother will pass her allergic tendencies to her breastfed infant.

One double-blind, placebo-controlled study of 70 people with chronic constipation found some evidence of benefit with Lactobacillus casei Shiroti. Another study found that Lactobacillus rhamnosus was helpful for chronic constipation in children. A small trial also found benefits in children, this time with a mixture of bifidobacteria and lactobacilli. In another study, a combination of B. lactis and B. longus showed promise for improving bowel regularity in nursing home residents. Finally, in a 6-week double-blind, placebo-controlled trial of 274 people with constipation-predominant irritable bowel syndrome, use of a probiotic formula containing B. animalis significantly improved stool frequency.

A preliminary double-blind, placebo-controlled study found evidence that Lactobacillus GG might potentially be helpful for treating antibiotic-resistant bacteria. This small study followed 23 people with severe kidney disease who tested positive for vancomycin-resistant bacteria in the stool. (Vancomycin is one of the main “last-ditch” antibiotics for treatment of resistant bacteria.) Use of a yogurt product containing L. rhamnosus appeared to be more effective at ridding the gastrointestinal tract of these bacteria than placebo. However, the study suffered from a number of flaws, especially its small size. Note also that participants in this study did not have active infection with antibiotic-resistant bacteria; they were carriers for it. Do not attempt to use probiotics as sole treatment for active infection with resistant bacteria.

On a related note, preventive use of probiotics does not appear to help prevent the development of resistant bacterial strains that may arise during antibiotic treatment.

Probiotic treatment has also been proposed as a treatment for canker sores and as a preventative measure against colon cancer, but there is no solid evidence that it is effective.

Probiotics have shown some promise for helping to prevent cavities by antagonizing cavity-causing bacteria.
One study found that giving probiotics to certain critically ill people could help prevent multiple organ failure. One small, placebo-controlled study found that use of *L. helveticus* might improve sleep quality in seniors, for reasons that are not at all clear.

An open study found hints that probiotics might be helpful for mouth sores caused by Behcet’s syndrome.

As noted above, probiotics have shown some promise in the treatment of infections with the yeast *Candida albicans*. Probiotics are also proposed for the treatment of a theoretically related, but markedly controversial condition, known as *yeast hypersensitivity syndrome* (also known as chronic candidiasis, chronic candida, systemic candidiasis, or just candida). As described by some alternative medicine practitioners, yeast hypersensitivity syndrome is a common problem that consists of a population explosion of the normally benign candida yeast that live in the vagina and elsewhere in the body, coupled with a type of allergic sensitivity to it. Probiotic supplements are widely recommended for this proposed condition because they establish large, healthy populations of friendly bacteria that compete with the candida that is trying to take up residence. However, there is no evidence that yeast hypersensitivity is a common problem, and virtually none that it exists at all.

In one small, 12-week study, *Lactobacillus GG* failed to prove more effective than placebo for the treatment of rheumatoid arthritis.

A study failed to find *Lactobacillus GG* helpful for dyspepsia (stomach discomfort of unknown origin) in children.

A year-long open trial of 150 women failed to find *Lactobacillus* probiotics effective for preventing urinary tract infections as compared to cranberry juice or no treatment. Other studies, however, including a large (453-participant), 3-month, double-blind, placebo-controlled study of a special healthy *E. coli* probiotic, did find benefits.

A substantial study failed to find a mixture of *L. casei, L. bulgaricus*, and *S. thermophilus* in yogurt and milk helpful for asthma in children. But, another study found that the combination of a probiotic (*Bifidobacterium breve*) and a prebiotic (galacto/fructo-oligosaccharide) may help reduce wheezing in infants with eczema.

Probiotics have also been studied as possible treatment for liver disease. In one such study, 84 adults (aged 18-65) with liver disease (cirrhosis or hepatitis) were randomized to receive yogurt (1 cup, 3 times daily) with or without the probiotics *B. bifidus, L. acidophilus, L. bulgaricus*, and *S. thermophilus*. After 2 weeks, the people in the probiotics group experienced an improvement in their symptoms (eg, improved food intake and appetite). Chronic liver disease with cirrhosis can lead to a potentially life-threatening brain abnormality, called hepatic encephalopathy. A 2011 review of 7 randomized trials involving 550 people found inconclusive evidence to support the use of probiotics as a treatment for this condition.

What Is the Scientific Evidence for Acidophilus and Other Probiotics?

Traveler’s Diarrhea

According to several studies, it appears that regular use of acidophilus and other probiotics can help prevent "traveler's diarrhea" (an illness caused by eating contaminated food, usually in developing countries). One double-blind, placebo-controlled study followed 820 people traveling to southern Turkey, and found that use of *Lactobacillus GG* significantly protected against intestinal infection.

Other studies using *S. boulardii* have found similar benefits, including a double-blind, placebo-controlled trial enrolling 3,000 Austrian travelers. The greatest benefits were seen in travelers who visited North Africa and Turkey. The researchers noted that the benefit depended on consistent use of the product, and that a dosage of 1,000 mg daily was more effective than 250 mg daily.
Infectious Diarrhea

Probiotics may also help prevent or treat acute infectious diarrhea in children and adults.

A 2001 review found 13 double-blind, placebo-controlled trials on the use of probiotics for acute infectious diarrhea in infants and children; 10 of these trials involved treatment and 3 involved prevention. Overall, the evidence suggests that probiotics can significantly reduce the duration of diarrhea and perhaps help prevent it. The evidence is strongest for the probiotic Lactobacillus GG and for infection with a particular virus called rotavirus, which causes severe diarrhea in children.

Another more recent review of 63 trials involving over 8,000 people (mainly infants and children) found that probiotics reduced how long the episode of diarrhea lasted. However, the authors concluded that more research needs to be done to determine which probiotics work best for infectious diarrhea.

And, in a subsequent smaller review focusing on persistent diarrhea (lasting for 2 weeks or longer), researchers concluded that probiotics are capable of reducing both the duration of the diarrhea episode as well as the stool frequency. Another study that was part of this same review suggested that probiotics may help to reduce how long a child is hospitalized due to diarrhea.

One double-blind, placebo-controlled trial of 269 children (ages 1 month to 3 years) with acute diarrhea found that those treated with Lactobacillus GG recovered more quickly than those given placebo. The best results were seen among children with rotavirus infection. Similar results with Lactobacillus GG were seen in a double-blind study of 71 children. However, 224 young Chinese children with severe, acute diarrhea found no benefit from lactose-free formula supplemented with Bifidobacteria and S. thermophilus, suggesting that probiotics may not be as useful for cases of severe, dehydrating diarrhea. Also, Lactobacillus rhamnosus GG is not always associated with improvement. When given for 10 days to 229 infants from rural India hospitalized with acute diarrhea it did not reduce the severity of the diarrhea during that time period.

In addition, a double-blind study evaluated the possible benefits of the probiotic L. reuteri in 66 children with rotavirus diarrhea. The study found that treatment shortened the duration of symptoms, and the higher the dose, the better the effect. Similar benefits were seen in a placebo-controlled trial of 151 infants and children given the probiotic Escherichia coli Nissle 1917 (a safe strain of E. coli) for 21 days for nonspecific (presumably viral) cases of mild to moderate diarrhea.

A double-blind, placebo-controlled study of 81 hospitalized children found that treatment with Lactobacillus GG reduced the risk of developing diarrhea, particularly rotavirus infection. A double-blind, placebo-controlled study found that Lactobacillus GG helped prevent diarrhea in 204 undernourished children.

Other studies, though not entirely consistent, generally indicate that the probiotics B. bifidum, S. thermophilus, L. casei, Lactobacillus LB, and S. bouardi —both individually and combined with L. reuteri and L. rhamnosus —may also help prevent or treat diarrhea in infants and children. One study found that bacteria in the B. bifidum family can kill numerous bacteria that cause diarrhea.

Researchers also studied whether adding Lactobacillus fermentum could have preventive benefits. Two hundred and fifteen healthy infants were randomized to receive formula with prebiotics plus L. fermentum or the formula and prebiotics only. The infants in the L. fermentum group had fewer cases of gastrointestinal and upper respiratory infection.

Keep in mind that diarrhea in young children can be serious. If it persists for more than a day, consult a physician.

A large (211-participant), double-blind, placebo-controlled study found that adults with diarrhea can benefit from probiotic treatment as well. Another study found that regular use of probiotics could help prevent gastrointestinal infections in adults.

Antibiotic-related Diarrhea
The results of many, but not all, double-blind and open trials suggest that probiotics, especially *S. boulardii* and *Lactobacillus GG*, may help prevent or treat antibiotic-related diarrhea. For example, one study evaluated 180 people, who received either placebo or 1,000 mg of saccharomyces daily along with their antibiotic treatment, and found that the treated group developed diarrhea significantly less often. A similar study of 193 people also found benefit. Three additional studies involving adults found that various species of *Lactobacillus*, taken either alone or in combination, to be beneficial, even in cases of *Clostridium difficile*, the most serious cause of antibiotic-induced diarrhea.

The pooled results of 16 randomized trials further add to this evidence. This review included many different strains of probiotics (e.g., *Lactobacilli, Lactococcus, Bifidobacterium*), which were used alone or in combination. Bacteria that appeared to lack evidence of benefit included *L. rhamnosus, L. sporogenes, B. lactis*, and *S. thermophilus*.

However, a study of 302 people found no benefit with *Lactobacillus GG*. And, a review of four probiotic studies found insufficient evidence for their effectiveness in the treatment of *Clostridium difficile*, the most serious cause of antibiotic-induced diarrhea.

Although taking probiotic organisms in the proper concentration may be beneficial for antibiotic-induced diarrhea, at least one study found that consuming fresh yogurt during antibiotic treatments had no significant effect on the incidence of diarrhea.

**Note:** Diarrhea that occurs in the context of antibiotics may be dangerous; for this reason, physician consultation is essential.

### Other Forms of Diarrhea

Two double-blind, placebo-controlled studies enrolling a total of almost 700 people undergoing radiation therapy for cancer found that use of probiotics significantly improved radiation-induced diarrhea. Similar evidence supports the use of *Lactobacillus rhamnosus*, as well as a special, nonpathogenic form of *E. coli*. However, of 85 women receiving pelvic radiation for cervical or uterine cancer, those who consumed a liquid yogurt preparation enriched with *Lactobacillus casei* had no less diarrhea than those who took a placebo drink.

Small double-blind studies suggest *S. boulardii* might be helpful for treating chronic diarrhea in people with HIV, hospitalized patients being tube-fed, and people with Crohn’s disease.

Premature infants weighing less than 2,500 grams (5.5 pounds) are at risk for a life-threatening intestinal condition called necrotizing enterocolitis (NEC). In a study that pooled the results of 9 randomized, placebo-controlled trials involving 1,425 infants, probiotic supplementation significantly reduced the occurrence of NEC and death associated with it. A subsequent study found similar benefits in very low birth weight infants weighing less than 1,500 grams (3.3 pounds). For one probiotic strain, *L. reuteri*, there may be other benefits, as well. In another study involving 249 premature infants, those treated with *L. reuteri* experienced fewer gastrointestinal symptoms, received fewer antibiotics, and were hospitalized less frequently than those treated with *L. rhamnosus* or no probiotic.

### Inflammatory Bowel Disease (Ulcerative Colitis and Crohn’s Disease)

The conditions Crohn’s disease and ulcerative colitis fall into the family of conditions known as inflammatory bowel disease. Chronic diarrhea is a common feature of these conditions.

A double-blind trial of 116 people with ulcerative colitis compared probiotic treatment against a relatively low dose of the standard drug mesalazine. The results suggest that probiotic treatment might be equally effective as low-dose mesalazine for controlling symptoms and maintaining remission. Evidence of benefit was seen in other trials, as well. For example, a 2011 review of 4 randomized trials with a total of 587 patients seemed to support the use of probiotics to reduce the relapse rates in people with ulcerative colitis. The authors, though, pointed out the need for better designed trials.
One preliminary study found *S. boulardii* helpful for mild diarrhea in stable Crohn’s disease. However, two studies failed to find benefit with *Lactobacillus* probiotics, and in an analysis of 8 randomized, placebo-controlled studies, probiotics were ineffective at maintaining remission in Crohn’s disease patients.

Probiotics might be useful for people with ulcerative colitis who have had part or all of the colon removed. Such people frequently develop a complication called pouchitis, inflammation of part of the remaining intestine. A 9-month, double-blind trial of 40 people found that a combination of three probiotic bacteria could significantly reduce the risk of a pouchitis flare-up in people with chronic pouchitis. Participants were given either placebo or a mixture of various probiotics, including four strains of *Lactobacilli*, three strains of *Bifidobacteria*, and one strain of *Streptococcus salivarius*. The results showed that treated people were far less likely to have relapses of pouchitis. Another study found that probiotics used right after surgery can help prevent pouchitis from developing at all. One study, however, failed to find benefit with *Lactobacillus johnsonii* in people with Crohn’s disease who have undergone a similar operation.

Finally, some evidence hints that probiotics might reduce the joint pain that commonly occurs in people with either kind of inflammatory bowel disease.

## Irritable Bowel Syndrome

People with irritable bowel syndrome (IBS) experience crampy digestive pain as well as alternating diarrhea and constipation and other symptoms. Although the cause of irritable bowel syndrome is not known, one possibility is a disturbance in healthy intestinal bacteria. Based on this theory, probiotics have been tried as a treatment for IBS, with some success.

For example, in a 6-week double-blind, placebo-controlled trial of 274 people with constipation-predominant irritable bowel syndrome, use of a probiotic formula containing *Bifidobacterium animalis* significantly reduced discomfort and increased stool frequency. In another trial of 298 IBS patients, 8 weeks of treatment with beneficial *Escherichia coli* reduced typical symptoms compared to placebo.

Benefits were seen in 8 other small, double-blind trials as well, using *L. plantarum*, *L. acidophilus*, *L. rhamnosus*, *L. salivarius* and *Bifidobacterium* in addition to proprietary probiotic combinations including various strains. One such combination, called VSL#3, contains *Bifidobacterium longum*, *B. infantis*, *Lactobacillus acidophilus*, *L. plantarum*, *L. casei*, *L. bulgaricus*, and *Streptococcus thermophilus*. In a double-blind, crossover trial, 59 children aged 5-18 years old were randomized to receive VSL#3 or placebo for 6 weeks. After a 2-week “wash-out” period, the children were switched to the other treatment. VSL#3 was associated with a reduction in symptoms, including abdominal pain, bloating, and gas. Benefits have also been seen with combination prebiotic/probiotic formulas and prebiotics alone.

Of course, other studies have failed to find probiotics more effective than placebo. One randomized trial involving 90 people with diarrhea-predominant IBS found *Saccharomyces boulardii* to be more effective than placebo at improving quality of life. But, the probiotic did not seem to improve the actual symptoms of IBS. Two studies that pooled previous randomized trials on the use of probiotics for IBS came to similar conclusions: probiotics appear to offer some benefit, most notably for global symptoms and abdominal discomfort. However, these two studies were unable to determine which probiotic species were most effective.

## Eczema

Use of probiotics during pregnancy and after childbirth may reduce risk of childhood eczema. In a very large, long-term, double-blind study, 1,223 pregnant women were given either placebo or a probiotic mixture (containing *Lactobacilli* and *Bifidobacteria*) beginning 2-4 weeks before delivery. Their newborn children then received either probiotics or placebo for six months. The results showed that the probiotics mixture markedly reduced the incidence of eczema (though not of other allergic diseases). However, in a follow-up to this study, researchers found that the probiotic supplementation was not associated with reduced eczema in children followed through age 5. The probiotics also had no effect on allergic rhinitis or asthma.

Another study also yielded marginal results, and a third study involving only lactobacillus found no benefit at all for the prevention of eczema. This latter study actually demonstrated a modestly increased the risk of...
wheezing bronchitis in infants who took the probiotic. But, some probiotics combined with prebiotics may help to reduce wheezing in infants with eczema. For example, Bifidobacterium breve and a galacto-/fructo-oligosaccharide mixture (Immunofortis) showed benefit in one randomized study involving 90 infants.

Bifidobacterium longum and Lactobacillus rhamnosus supplementation did not reduce incidence of eczema atopic dermatitis or allergic sensitization at 12 months among Asian infants at risk of allergic diseases.

Researchers in another study concluded that not all probiotics are created equal. In this placebo-controlled study involving pregnant women and their infants, Lactobacillus rhamnosus reduced the incidence of eczema in the children, but a strain of Bifidobacterium animalis did not.

According to some but not all studies, infants who already have eczema may benefit from probiotics. However, a careful review of 12 studies involving a total of 781 children found no convincing evidence that probiotics can effectively treat eczema in this age group.

If probiotics are beneficial for childhood eczema, they are probably more effective at preventing the condition rather than treating it. A carefully conducted review of numerous studies cautiously concluded that probiotics may help reduce the risk of eczema in infants and children, particularly those at high risk. And two subsequent reviews found that probiotics were more effective at preventing childhood eczema, particularly when given both to mother (before birth) and infant.

Immunity

A number of studies suggest that various probiotics can enhance immune function. One 12-week, double-blind, placebo-controlled trial evaluated 25 healthy elderly people, half of whom were given milk containing a particular strain of Bifidobacterium lactis, the others milk alone. The results showed various changes in immune parameters which the researchers took as possibly indicating improved immune function. Another double-blind, placebo-controlled study of 50 people using B. lactis had similar results.

A 7-month, double-blind, placebo-controlled study of 571 children in daycare centers in Finland found that use of milk fortified with Lactobacillus GG reduced the number and severity of respiratory infections. In another controlled trial, probiotics (Lactobacillus rhamnosus GG and Bifidobacterium lactis Bb-12) given daily to infants in their formula significantly reduced the risk of acute otitis media and recurrent respiratory infections during the first year of life compared to placebo.

Benefits were seen in three other large studies, in which probiotics combined with multivitamins and minerals helped prevent colds (or reduce their duration and severity) in adults. However, a smaller and shorter study failed to find any effect on respiratory infections. Similarly, Lactobacillus fermentum given to 20 healthy elite distance runners over a 4-month period during winter training was significantly more effective at reducing the number and severity of respiratory symptoms compared with a placebo.

One study found that Lactobacillus GG or L. acidophilus may improve the immune response to vaccinations.

Cholesterol

An 8-week, double-blind, placebo-controlled trial of 70 overweight people found that a probiotic treatment containing S. thermophilus and Enterococcus faecium could reduce LDL (“bad”) cholesterol by about 8%. Similarly positive results were seen in other short-term trials of various probiotics. However, a 6-month, double-blind, placebo-controlled trial found no long-term benefit. Researchers speculate that participants stopped using the product regularly toward the later parts of the study.

Sinusitis

The addition of the probiotic Lactobacillus rhamnosus to regular was no better than than placebo in 77 patients with chronic rhinosinusitis.
Safety Issues

Probiotics may occasionally cause a temporary increase in digestive gas. But, beyond that, they do not present any known risks for most people. In one trial of 140 healthy infants, formula supplemented with long-chain polyunsaturated fatty acids and probiotics appeared as safe as standard formula, and did not have any effect on infant growth by the end of the 7-month trial. However, individuals who are immunosuppressed could conceivably be at risk for developing a dangerous infection with the probiotic organism itself; at least one person taking immunosuppressive medications has died in this manner.

In a detailed review of four studies, researchers concluded that the use probiotics did not benefit patients with severe acute pancreatitis. Furthermore, according to one study, the use of probiotics led to an increased risk of mortality in patients with severe acute pancreatitis, and should, therefore, be avoided under these circumstances.

Interactions You Should Know About

- If you are taking antibiotics: It may be beneficial to take probiotic supplements at the same time, and to continue them for a couple of weeks after you have finished the course of drug treatment. This will help restore the balance of natural bacteria in your digestive tract.

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