

Clarify When Probiotics May Be Helpful for GI Problems

You'll get more questions about **whether probiotics improve GI disorders**...due to new Am Gastroenterological Assn guidelines.

MANY patients use probiotics for "GI health." But evidence they help is limited, and study results are often conflicting.

Plus data from one species or strain can't be applied to another.

Clarify when probiotics may be helpful.

Possibly effective. Probiotics may prevent antibiotic-associated diarrhea in about 1 in 13 patients. But experts disagree over whether probiotics help reduce the risk of *C. diff* from antibiotics.

If you suggest a product, aim for one with *L. rhamnosus* GG (*Culturelle*, etc) or *S. boulardii* (*Florastor*, etc)...these have the best evidence. There's not enough evidence that yogurt helps.

Advise starting these within 2 to 3 days of beginning an antibiotic...and continuing about 3 days after the course.

Suggest trying to separate probiotics from antimicrobials by 2 hours...since the antimicrobial could theoretically kill the "good" microbes in the probiotic.

Also consider *S. boulardii* for patients with RECURRENT *C. diff*...in addition to standard meds. But point out that evidence of benefit is with patients who take the probiotic for 4 weeks.

And explain it's okay to try *B. lactis* (*Activia*, etc) for constipation...*B. infantis* (*Align*) for irritable bowel syndrome...or *L. rhamnosus* GG or *S. boulardii* to prevent travelers' diarrhea.

Likely ineffective. Educate that probiotics don't reduce the duration or severity of acute gastroenteritis.

And point out there's not much evidence that probiotics are useful for other GI problems...including Crohn's disease, ulcerative colitis, or diverticulitis.

If patients still want to try a probiotic, explain they're generally harmless...outside of cost. But advise immunocompromised patients to avoid probiotics...due to possible risk of infection.

Expect to start seeing new scientific names for some probiotics...to better align groupings of similar bugs. For example, *Lactobacillus rhamnosus* will change to *Lacticaseibacillus rhamnosus*.

Review our chart, *Comparison of Common Probiotic Products*, for suggested dosing and details on the efficacy of specific products. Use our *Natural Medicines* as the go-to resource to answer questions.

Key References:

- Gastroenterology Published online Jun 9, 2020; doi:10.1053/j.gastro.2020.05.059
- Gastroenterology Published online Jun 9, 2020; doi:10.1053/j.gastro.2020.05.060
- JAMA 2012;307(18):1959-69
- Clin Infect Dis 2018;66(7):e1-e48

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Comparison of Common Probiotic Products

Probiotics are live organisms that provide therapeutic or preventative benefit for the host. The most commonly used probiotics are the lactic acid-producing bacteria, bifidobacteria and lactobacilli. Probiotics also include the yeast *Saccharomyces boulardii*. Probiotics are commonly promoted to strengthen the immune system or recolonize the gut or vagina with beneficial microbes. Accordingly, patients may express interest in using them to protect against infectious disease (e.g., influenza, COVID-19), antibiotic-associated diarrhea, or vaginitis. They are probably harmless in healthy patients.⁷ In rare cases (e.g., in immunocompromised patients, patients with central venous catheters), probiotics can cause infection.^{7,74,77} Avoid them in seriously ill patients unless there is a medical indication.⁷⁷ Treating 13 patients with a probiotic prevents one case of antibiotic-associated diarrhea, but don't rely on them to prevent *C. difficile* (*C. diff*) diarrhea.^{73,81,99} Do not recommend them for Crohn's disease or acute infectious diarrhea.^{7,45,99} They have not been proven as effective as antibiotics for prevention of recurrent UTIs.⁷⁵ There is also not much evidence for ulcerative colitis or diverticulitis. Patients with celiac disease often try probiotics⁶⁰ despite insufficient evidence of efficacy for disease symptoms. Caution patients that probiotics may contain gluten, even those with labeling to the contrary.⁶⁰ **Efficacy of one probiotic formulation can't be extrapolated to other strains, species, or products.**⁷ Use the chart below to help choose a product studied for the indication of interest.

See footnotes for definitions of efficacy designations. CFU = colony-forming units; GI = gastrointestinal

| Product | Contents | Promoted Use | Manufacturer's Suggested Dose or Dose Used in Studies ^L | Efficacy |
|--|---|--|---|---|
| Activia yogurt ^a (Dannon/Danone [Canada]) | <i>Bifidobacterium animalis lactis</i> DN-173 010/CNCM 1-2494). ^b <i>Streptococcus thermophilus</i> , <i>Lactobacillus bulgaricus</i> , <i>Lactococcus lactis</i> ^{4,5} | Reduces minor GI discomfort (U.S.); ⁴ contributes to proper GI function and healthy gut flora (Canada) ⁵ | Consume two containers daily as part of a balanced diet and healthy lifestyle. Benefits begin after about two weeks (U.S.). ⁴ | Possibly Effective^c for functional constipation and minor digestive discomfort ^{1,2,7} |
| Align ^a (Procter & Gamble) | <i>Bifidobacterium infantis</i> 35624 ^{3,87} At least 1 x 10 ⁷ CFU/capsule or tablet ^{3,87} | Fortifies GI system ^{3,87} | 1 capsule or tablet daily (age ≥6 years [U.S.]) ^{3,87} Contains milk. ^{3,87} | <i>B. infantis</i> is Possibly Effective^c for abdominal pain, bloating, and difficult bowel movements associated with irritable bowel syndrome ^{28,98} |
| BioGaia ^a (BioGaia) <i>Continued...</i> | <i>Lactobacillus reuteri</i> Protectis (DSM 17938) ³⁶ or <i>Lactobacillus reuteri</i> Gastrus (DSM 17938 and ATCC PTA 6475) ³⁶ or | Colic (drops); GI comfort (<i>Protectis</i>); GI health (<i>Gastrus</i> [U.S.]); healthy gums and teeth (<i>Prodentis</i> ; drops); bone health (<i>Osfortis</i> [U.S.]) | General use: 1 chew tab, two capsules, one to two lozenges, or 5 drops daily ³⁶ | Possibly Effective^c for prevention of antibiotic- associated diarrhea in hospitalized adults; <i>H.</i> <i>pylori</i> eradication (with “triple therapy”); infantile |

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| Product | Contents | Promoted Use | Manufacturer's Suggested Dose or Dose Used in Studies ^L | Efficacy |
|---|---|---|---|---|
| <i>BioGaia</i> , continued | <p><i>Lactobacillus reuteri</i> Prodentis (DSM 17938 and ATCC PTA 5289)³⁶ or <i>Lactobacillus reuteri</i> Osfortis (ATCC PTA 6475)³⁶</p> <p>At least 100 million CFU per five <i>Protectis</i> drops or one <i>Protectis</i> chew tab³⁶</p> <p>At least 200 million CFU/<i>Gastrus</i> chew tab (U.S.) or one <i>Prodentis</i> lozenge³⁶</p> <p>At least 10 billion CFU and vit D 10 mcg/two <i>Osfortis</i> (U.S.) capsules³⁶</p> | | To prevent necrotizing enterocolitis (in infants): 1 drop/kg in 0.5 mL of distilled water twice daily ¹⁰⁰ | colic; prevention of daycare diarrhea; infant regurgitation; functional constipation in infants, children, and adults; functional abdominal pain in children; treatment of non-rotaviral diarrhea, ^{6,80,82-85} prevention of necrotizing enterocolitis ^{99,100} Insufficient Evidence: ^h treatment of rotaviral diarrhea, periodontitis ^{7,85} |
| <p><i>Bio-K</i>⁺^a (Bio-K+ International)</p> <p>Delayed-release; do not open capsule.^{46,47}</p> <p>Take with or without food.^{46,47}</p> <p>Refrigeration recommended.^{46,47}</p> | <p><i>Lactobacillus acidophilus</i> CL1285, <i>L. casei</i> LBC80R, <i>L. rhamnosus</i> CLR2^{8,9}</p> <p><i>Bio-Kidz</i> beverage, 12.5 billion CFU/bottle; other beverages, 50 billion CFU/bottle^{8,46,47}</p> <p>12.5 (Canada), 25 (Canada), 30, 50, 80 (U.S.) billion CFU/capsule^{8,9}</p> <p>50 billion CFU/capsule product is only for ages ≥12 years (Canada);⁹ other capsules suitable for ages ≥6 years^{8,9}</p> | GI health (U.S.); ⁸ irritable bowel syndrome; travel protection; intestinal flora health (Canada) ⁹ | <p>Travel Protection product (Canada): 1 cap/day starting 3 to 5 days before travel, then 1 to 2 caps/day during trip, then 1 cap/day for 3 to 5 days afterward⁹</p> <p>Capsules: 1 cap/day (U.S.); 1 to 2 cap/day (Canada)^{8,9}</p> <p>Antibiotic-associated diarrhea prevention^e: 50 to 100 billion CFU daily during and for 5 days after antibiotics (100 billion CFU to prevent <i>C. diff</i> diarrhea during hospitalization)⁴⁷</p> <p>Beverage: <i>Bio-Kidz</i>, 1 bottle daily.^{46,47} Other beverages, ¼, ½, or 1 bottle daily to maintain, improve, or optimize intestinal flora health, respectively.^{46,47}</p> | Possibly Effective^c for reducing incidence and duration of antibiotic-associated diarrhea (including <i>C. diff</i> colitis) ^{49-51,99} |

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| Product | Contents | Promoted Use | Manufacturer's Suggested Dose or Dose Used in Studies ^L | Efficacy |
|---|--|--|---|--|
| <p><i>Culturelle</i>^a (i-Health)</p> <p>Products contain <i>Lactobacillus rhamnosus GG</i> unless otherwise denoted.</p> <p>*Plus inulin^{k,10} **proprietary blend = <i>Lactobacillus GG</i>, <i>L. crispatus</i> LBV 88, <i>L. rhamnosus</i> LBV 96, <i>L. gasseri</i> LBV 150N, <i>L. jensenii</i> LBV 116 ***proprietary blend = <i>Lactobacillus GG</i>, <i>L. rhamnosus</i> DSM 16104, <i>L. paracasei</i> DSM 16105</p> <p><i>Continued...</i></p> | <p><i>Digestive Daily</i> (ages ≥12 years): 10 billion CFU/cap* or chew tab¹⁰</p> <p><i>Ultimate Strength</i>, and <i>Ultimate Balance for Antibiotics</i> (ages ≥12 years): 20 billion CFU/cap*¹⁰</p> <p><i>Women's Healthy Balance</i>: 15 billion CFU proprietary blend**/cap¹⁰</p> <p><i>Health & Wellness</i> (ages ≥12 years): 15 billion CFU/cap¹⁰</p> <p><i>3-in-1 Complete</i> (ages ≥12 years): 10 billion CFU/cap plus 70 mg omega-3¹⁰</p> <p><i>Prenatal Wellness</i>: 12 billion CFU proprietary blend**/chew tab¹⁰</p> <p><i>Total Balance</i> (ages ≥12 years): 11 billion CFU proprietary blend***cap¹⁰</p> <p><i>Probiotic Gummies</i> and <i>Kids Probiotic Gummies</i>: 1.5 billion CFU <i>Bacillus subtilis</i> DE111/gummy</p> <p><i>Probiotic + Multivitamin</i>, 1 billion CFU/gummy*)</p> | <p><i>Digestive Daily</i>: supports microbiome and helps GI system work better; occasional GI upset, diarrhea, gas, bloating¹⁰</p> <p><i>Ultimate Strength</i>: balances GI system, even with antibiotics¹⁰</p> <p><i>Ultimate Balance for Antibiotics</i> (adults/kids): balances GI system, supports immune function¹⁰</p> <p><i>Women's Healthy Balance</i>: supports GI, vaginal, and immune health. Balances good bacteria & yeast.¹⁰</p> <p><i>Health & Wellness</i>: supports immune and GI function¹⁰</p> <p><i>3-in-1 Complete</i>: promotes heart health, helps GI system work better, supports immune function¹⁰</p> <p><i>Prenatal Wellness</i>: promotes baby's development; supports GI, immune, and feminine health.¹⁰</p> <p><i>Total Balance</i>: ease occasional constipation, diarrhea, gas, bloating¹⁰</p> | <p>General use: 1 tab, cap, packet, or gummy daily (exceptions: <i>Probiotic</i> [adult] and <i>Probiotic + Multivitamin Gummies</i>: 2 daily).¹⁰</p> <p>GI discomfort: one twice daily for discomfort (<i>Digestive Daily</i>; <i>Kids Purely Probiotics</i>)¹⁰</p> <p>Travel: one twice daily starting two to three days before travel (<i>Digestive Daily</i>, <i>Ultimate Strength</i>)¹⁰</p> <p>Doses below pertain to <i>Lactobacillus rhamnosus GG</i>.</p> <p>To prevent antibiotic-associated diarrhea in children: 10 to 20 billion CFU once daily OR 20 billion CFU twice daily during treatment^{7,c}</p> <p>Prevention of allergic disease: 10 to 20 billion CFU daily for 2 to 4 weeks before delivery, or for the first 3 to 36 months of life⁷</p> <p>Chemo-associated diarrhea: 5 to 10 billion CFU twice daily⁷</p> <p>Nosocomial diarrhea prevention in children: 6 billion CFU twice daily during hospitalization⁷</p> | <p>Possibly Effective^e for prevention of antibiotic-associated diarrhea in children,^e travelers' diarrhea,^e daycare-associated respiratory infections, and non-rotaviral diarrhea in hospitalized or malnourished children; for prevention of allergic disease (e.g., eczema) in at-risk infants when taken during pregnancy, lactation, and bottle-feeding; for treatment of eczema in infants allergic to cow's milk; and treatment of chemo-associated diarrhea^{6,59}</p> <p>Insufficient Evidence:^h prevention of ventilator-associated pneumonia, necrotizing enterocolitis, irritable bowel⁶</p> <p>Possibly Ineffective:^g Crohn's disease, <i>C. diff</i> prevention, treatment of rotavirus diarrhea or acute gastroenteritis in infants & young children^{6,45}</p> |

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| Product | Contents | Promoted Use | Manufacturer's Suggested Dose or Dose Used in Studies ^L | Efficacy |
|---|---|--|--|--|
| <i>Culturelle</i> , continued | <i>Kids</i> packets (ages ≥1 year) or chew tab (ages 3 to 12 years): 2.5 (<i>Probiotic + Fiber</i> ; <i>Multivitamin + Probiotic</i>), 5 (<i>Purely Probiotics</i> ; <i>Probiotic + Multivitamin</i>), or 10 billion (<i>Ultimate Balance for Antibiotics</i>) CFU per packet/tab ¹⁰ (Available <i>Baby</i> formulations not included in this chart.) | <i>Kids Purely Probiotics</i> : support immune and GI system (chewable: and oral health) ¹⁰ <i>Kids Probiotics + Fiber</i> : regularity ¹⁰ <i>Kids Multivitamin + Probiotics</i> : growth and development ¹⁰ <i>Kids Probiotic + Multivitamin</i> : supports growth and development, and immune, GI, and oral health | | |
| <i>DanActive</i> ^a (Dannon/ Danone [Canada]) | <i>Lactobacillus casei</i> . Strain used in product is trademarked <i>L. casei Immunitas</i> in the U.S. (<i>L. casei</i> Danone DN-114 001 [CNCM I-1518] Canada). ^{11,12} Also contains <i>L. bulgaricus</i> and <i>Streptococcus thermophilus</i> . ²⁹ 10 billion live and active <i>L. casei</i> per 93 mL bottle ^{11,12} | May help support immune system (U.S.). ¹¹ | Consume daily. ^{11,48} Prevention of antibiotic-associated diarrhea (hospitalized adults): 1 bottle twice daily during treatment and for one week afterward ^{29,e} | Possibly Effective^c for preventing non-rotaviral diarrhea in infants and young children, and prevention of antibiotic-associated diarrhea (including <i>C. diff</i> diarrhea) in hospitalized adults ^{6,13,14,29,e} |
| <i>Fem-dophilus</i> : see <i>RepHresh</i> , below | | | | |
| <i>Florajen</i> ^a (American Lifeline, Inc.) (U.S.) <i>Continued...</i> | <i>Florajen Acidophilus</i> : <i>Lactobacillus acidophilus</i> 20 billion CFU/cap ⁶⁴ <i>Florajen Digestion</i> : <i>Lactobacillus acidophilus</i> , <i>Bifidobacterium lactis</i> , <i>B. longum</i> 15 billion CFU/cap ⁶⁵ | <i>Florajen Acidophilus</i> : supports immune, GI, vaginal, and urinary health. Promotes healthy flora balance for good health. ⁶⁴ <i>Florajen Digestion</i> : promotes healthy GI flora | General use : 1 capsule daily ⁶⁴⁻⁶⁷ Prevention of antibiotic-associated diarrhea : 1 capsule (<i>Florajen Acidophilus</i>) 3 times daily during treatment and for seven to 14 days after the last dose of antibiotic ^{6,70} | Possibly Effective^c for preventing antibiotic-associated diarrhea in hospitalized adults ^{6,70} |

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| Product | Contents | Promoted Use | Manufacturer's Suggested Dose or Dose Used in Studies ^L | Efficacy |
|--|--|---|--|---|
| <p><i>Florajen</i>, continued</p> <p>Refrigeration recommended. Can store at room temp for up to 2 weeks.⁶⁴⁻⁶⁷</p> <p>Can open capsules.⁶⁴⁻⁶⁷</p> | <p><i>Florajen Kids</i> (ages ≥6 months): <i>Lactobacillus acidophilus</i> NCFM, <i>L. rhamnosus</i> HN001, <i>Bifidobacterium lactis</i> Bi-07 and HN019 6 billion CFU/cap⁶⁶</p> <p><i>Florajen Women</i>: <i>Lactobacillus acidophilus</i> LA-14 and NCFM, <i>L. rhamnosus</i> HN001 15 billion CFU/cap⁶⁷</p> | <p>balance. Relieves occasional gas, bloating, constipation, diarrhea, and antibiotic side effects.⁶⁵</p> <p><i>Florajen4Kids</i>: promotes healthy GI flora balance, and regularity. Relieves antibiotic side effects.⁶⁶</p> <p><i>Florajen Women</i>: promotes healthy vaginal flora balance and pH. Relieves antibiotic side effects.⁶⁷</p> | <p>Take 1 to 2 hours before or after antibiotic (product labeling).^{65,66,67}</p> <p>(Note: Other sources recommend separating from antibiotics by at least 2 hours.)⁶</p> | |
| <p><i>Florastor</i>^{a,i} (Florastor)</p> <p>Do not refrigerate.²⁰</p> <p>Appropriate for ages ≥2 months.²⁰</p> <p><i>Continued...</i></p> | <p><i>Florastor</i>, <i>FlorastorKids</i>, <i>Florastor Baby</i>: <i>Saccharomyces boulardii lyo</i> 250 mg/cap or sachet^{54,72,79}</p> <p><i>FlorastorPre</i> (adults): <i>Saccharomyces boulardii lyo</i> 250 mg plus inulin^k 300 mg/cap⁵²</p> <p><i>FlorastorPlus</i> (ages ≥14 years): <i>Saccharomyces boulardii lyo</i> 250 mg/cap plus vitamins⁵³</p> | <p>Supports healthy immune system and promotes GI balance.^{52-54,72,79}</p> | <p>General use: Up to 500 mg/day (≥3 months of age), or for GI symptoms or with antibiotic use, 1,000 mg/day (≥4 years of age)²⁰</p> <p>Prevention of antibiotic-associated diarrhea: 250 mg once or twice daily in kids or 250 to 500 mg 2 to 4 x/day in adults (max 1,000 mg daily) beginning within 3 days of antibiotics, and continuing for 3 days after discontinuation^{7,15}</p> <p>Prevention of travelers' diarrhea: 1 or 2 capsules daily beginning 5 days before travel and continued for duration of trip²²</p> <p>To prevent <i>C. diff</i> recurrence: 500 mg twice daily for 4 weeks</p> | <p>Likely Effective^d for diarrhea in tube-fed patients⁷</p> <p>Possibly Effective^e for travelers' diarrhea;^f prevention of antibiotic-associated diarrhea; prevention of recurrence of <i>C. diff</i> colitis (adjunctive therapy); treatment of HIV-associated diarrhea; <i>H. pylori</i> eradication (adjunct)^{7,22}</p> <p>Likely Ineffective^d for treatment of acute diarrhea in children⁹⁹</p> |

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| Product | Contents | Promoted Use | Manufacturer's Suggested Dose or Dose Used in Studies ^L | Efficacy |
|---|---|---|--|---|
| <i>Florastor</i> , continued | | | (with appropriate antibiotics) ¹⁶ HIV-associated diarrhea: 1 gram 3 times daily, tapered to 1 gram daily to control diarrhea ¹⁷ Tube feed diarrhea: 500 mg 4 times daily has been used for up to 28 days ^{18,19} Treatment of diarrhea in infants and children (with rehydration): 250 mg daily has been used in ages 3 months to 7 years ⁷¹ H. pylori eradication (adjunct): consider 500 mg daily for 1 to 4 weeks. ⁸⁸ | |
| <i>Jamieson</i> probiotics (Jamieson Natural Sources) (Canada) (Available <i>Baby</i> formulations not included in this chart.) <i>Continued...</i> | Daily Maintenance: ³⁵ <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> , <i>B. breve</i> , <i>B. longum</i> subsp. <i>longum</i> , <i>B. longum</i> subsp. <i>infantis</i> , <i>B. bifidum</i> , <i>Lactobacillus paracasei</i> , <i>L. casei</i> , <i>L. gasseri</i> , <i>L. rhamnosus</i> , <i>L. acidophilus</i> , <i>L. plantarum</i> , <i>L. reuteri</i> , <i>L. lactis</i> 10 billion CFU/cap Digestive Care: <i>Lactobacillus plantarum</i> (299v) 10 billion CFU/cap ⁹² Digestive Care Delayed Release: ³⁸ <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> , <i>B. breve</i> , <i>B. longum</i> subsp. <i>longum</i> , <i>B. bifidum</i> , <i>Lactobacillus paracasei</i> , <i>L. casei</i> , <i>L. acidophilus</i> , <i>L. plantarum</i> , <i>L. rhamnosus</i> | Daily Maintenance: for GI health. ³⁵ Digestive Care: irritable bowel symptoms (e.g., gas, bloating, abdominal discomfort) ⁹² Digestive Care Delayed Release: for GI health ³⁸ Acidophilus Probiotic Complex: GI health ⁴⁴ Adult 50+ Probiotic: GI health ⁸⁹ Probiotic Travel: GI | Daily Maintenance (age ≥3 years): 1 cap daily with meal. Can open cap and mix with food. ³⁵ Digestive Care (adults): 1 cap daily ⁹² Digestive Care Delayed Release (adults): 1 cap daily with a meal. ^{38,e} Acidophilus Probiotic Complex (age ≥3 years): 1 cap daily with meal. Can open capsule and mix with food. ⁴⁴ Adult 50+ Probiotic Complex: | <i>Lactobacillus plantarum</i> (299v) is Possibly Effective^c for irritable bowel syndrome ¹⁰¹⁻¹⁰³ <i>Lactobacillus plantarum</i> (299v) has Insufficient Evidence^h for prevention of <i>C. diff</i> recurrence ⁹⁷ <i>Lactobacillus plantarum</i> (299v) is Possibly Ineffective^g for prevention of antibiotic-associated diarrhea ⁹⁶ |

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| Product | Contents | Promoted Use | Manufacturer's Suggested Dose or Dose Used in Studies ^L | Efficacy |
|--|--|---|---|----------|
| <p>Jamieson probiotics, continued</p> <p><i>Continued...</i></p> | <p>60 billion CFU/cap</p> <p>Acidophilus Probiotic Complex:⁴⁴ <i>Lactobacillus acidophilus</i>, <i>L. rhamnosus</i>, <i>L. paracasei</i>, <i>L. gasseri</i>, <i>L. lactis</i>, <i>L. reuteri</i>, <i>Bifidobacterium animalis</i> subsp. <i>lactis</i>, <i>B. breve</i>, <i>B. bifidum</i>, <i>B. longum</i> subsp. <i>longum</i> 1 billion CFU/capsule</p> <p>Adult 50+ Probiotic:⁸⁹ <i>Bifidobacterium animalis</i> subsp. <i>lactis</i>, <i>B. breve</i>, <i>B. longum</i> subsp. <i>longum</i>, <i>B. infantis</i>, <i>B. bifidum</i>, <i>Lactobacillus paracasei</i>, <i>L. casei</i>, <i>L. rhamnosus</i>, <i>L. acidophilus</i>, <i>L. plantarum</i> 15 billion CFU/capsule or caplet</p> <p>Probiotic Travel:⁶⁹ <i>Bifidobacterium animalis</i> subsp. <i>lactis</i>, <i>Lactobacillus acidophilus</i>, <i>L. delbrueckii</i>, <i>Streptococcus thermophilus</i> 2 billion CFU/cap</p> <p>Probiotic Sticks:⁵⁷ <i>Bifidobacterium longum</i>, <i>Lactobacillus helveticus</i> 3 billion CFU/stick</p> <p>Chewable Probiotic:^{90,94} <i>Bifidobacterium animalis</i> subsp. <i>lactis</i>, <i>Lactobacillus paracasei</i>, <i>L. acidophilus</i>, <i>L. rhamnosus</i>, <i>L. salivarius</i></p> | <p>health⁶⁹</p> <p>Probiotic Sticks: GI health⁵⁷</p> <p>Chewable Probiotic: GI health^{90,94}</p> <p>Women's Probiotic Complex: for women's health⁹¹</p> <p>Extra Strength Probiotic Gummies: GI health⁹³</p> | <p>1 cap daily with a meal⁵⁷</p> <p>Probiotic Travel (adults): 1 cap 3 times daily with a meal, starting 2 days before travel and for 2 days after return^{69,e}</p> <p>Probiotic Sticks (age ≥1 years): 1 daily with meal. Mix with baby food, yogurt, etc., but not water. Alternatively, can dissolve on tongue.³⁵</p> <p>Chewable Probiotic (age ≥3 years): 1 tablet daily^{90,94}</p> <p>Women's Probiotic Complex: 1 daily with a meal⁹¹</p> <p>Extra Strength Probiotic Gummies (adults):⁹³ 1 gummy daily</p> | |

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|---|--|--|--|--|
| Jamieson probiotics, continued | <p>5 billion CFU/tab (for Kids) 2 billion CFU/tab</p> <p>Women's Probiotic Complex:⁹¹ <i>Bifidobacterium lactis</i>, <i>Lactobacillus acidophilus</i>, <i>L. plantarum</i>, <i>L. rhamnosus</i>, <i>L. gasseri</i> 7 billion CFU/cap</p> <p>Extra Strength Probiotic Gummies with Prebiotics:⁹³ <i>Bacillus subtilis</i>, chicory root fibre^k 5 billion CFU/gummy</p> | | | |
| <i>Kefir</i> (Lifeway) | <p><i>Lactobacillus lactis</i>, <i>L. rhamnosus</i>, <i>L. plantarum</i>, <i>L. casei</i>, <i>L. acidophilus</i>, <i>L. reuteri</i>, <i>Leuconostoc cremoris</i>, <i>Streptococcus diacetylactis</i>, <i>Saccharomyces florentinus</i>, <i>Bifidobacterium longum</i>, <i>B. breve</i>, <i>B. lactis</i>³⁹ 25 to 30 billion CFU/240 mL</p> | May help keep the digestive system regulated ³⁹ | One or two 240 mL servings daily for maximum probiotic health. ³⁹ | Insufficient Evidence^h for preventing antibiotic-associated diarrhea ^{40,95,e} |
| <i>Lactinex^a</i> (Becton, Dickinson and Company) (Refrigeration recommended.) ³⁴ Do not use if sensitive to milk. ³⁴ | <p><i>Lactobacillus acidophilus</i>, <i>L. helveticus (bulgaricus)</i>³⁴</p> <p>1,000,000 live cells/tablet 100,000,000 live cells/packet</p> | Not specified | Not specified | Possibly Ineffective^g for antibiotic-associated diarrhea, ^e infectious diarrhea, and travelers' diarrhea ²³⁻²⁵ |

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| Product | Contents | Promoted Use | Manufacturer's Suggested Dose or Dose Used in Studies ^L | Efficacy |
|---|---|---|---|---|
| <i>Probiac</i> (Nicar Laboratories, Inc.) (Canada) | <p>GI: <i>Lactobacillus rhamnosus</i> GG, <i>L. casei</i>, <i>Bifidobacterium longum</i>, <i>B. breve</i>, <i>B. bifidum</i> 15 billion CFU/cap⁴¹</p> <p>Vaginal: <i>Lactobacillus acidophilus</i>, <i>L. rhamnosus</i>, <i>Streptococcus thermophilus</i> 8 billion CFU/vaginal capsule⁵⁸</p> <p>Cranberry: <i>Lactobacillus acidophilus</i>, <i>L. casei</i>, <i>L. gasseri</i>, <i>L. paracasei</i>, <i>L. plantarum</i>, <i>L. reuteri</i>, <i>L. rhamnosus</i>, <i>Bifidobacterium bifidum</i>, <i>B. longum</i>, cranberry extract 5 billion CFU/cap⁵⁵</p> <p>Extra Strength: <i>Lactobacillus acidophilus</i>, <i>L. bulgaricus</i>, <i>L. casei</i>, <i>L. rhamnosus</i>, <i>Bifidobacterium bifidum</i>, <i>B. breve</i>, <i>B. longum</i>, <i>Streptococcus thermophilus</i> 10.5 billion CFU/cap³³</p> <p>Medic: <i>Saccharomyces boulardii</i> 5 billion CFU/cap⁵⁶</p> <p>Kids: <i>Lactobacillus acidophilus</i>, <i>L. reuteri</i>, <i>L. rhamnosus</i> GG, <i>Bifidobacterium bifidum</i>, <i>B. infantis</i> 2 billion CFU/cap⁴²</p> <p>Chewable: <i>Bifidobacterium</i></p> | <p>GI: helps manage infectious diarrhea and reduce the risk of antibiotic-associated diarrhea⁴¹</p> <p>Vaginal: for recurrence of bacterial vaginosis⁵⁸</p> <p>Cranberry: helps support gastrointestinal health and prevent UTIs.⁵⁵</p> <p>Extra Strength: helps support GI health³³</p> <p>Medic: reduces risk of diarrhea caused by antibiotics⁵⁶</p> <p>Kids: Helps to manage acute infectious diarrhea and helps support children's GI health⁴²</p> <p>Chewable: helps support GI health²¹</p> <p>Adult and Adult 50+: helps supports GI health^{30,31}</p> <p>Travelers: helps support GI health³²</p> | <p>GI (age ≥12 years): 1 cap at breakfast and supper. For use with antibiotics, take 1 cap twice daily, 2 hours after antibiotic for 3 to 5 days after stopping antibiotic.^{41,e}</p> <p>Vaginal: insert 1 at bedtime x 14 days⁵⁸</p> <p>Chewable (ages ≥3 years): 1 tab at breakfast and supper. Crush or dissolve tab for children <6 years.²¹</p> <p>Cranberry (adult): 1 cap twice daily at breakfast and supper for at least 4 weeks^{55,e}</p> <p>Extra Strength (age ≥12 years): 1 cap twice daily at breakfast and supper⁵⁵</p> <p>Medic (age ≥6 years): 1 cap twice daily with breakfast and supper^{56,i}</p> <p>Kids (ages 1 to 3 years): 1 cap once daily. Can mix capsule content in food.⁴²</p> <p>Adult and Adult 50+: 1 cap twice daily at breakfast and supper^{30,31}</p> | <p><i>Saccharomyces boulardii</i> (as in Medic formulation) is Possibly Effective^c prevention of antibiotic-associated diarrhea (including <i>C. diff</i>)^{7,99}</p> |
| <i>Continued...</i> | | | | |

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| Product | Contents | Promoted Use | Manufacturer's Suggested Dose or Dose Used in Studies ^L | Efficacy |
|----------------------------------|---|--------------|--|----------|
| <p><i>Probiac</i>, continued</p> | <p><i>breve</i>, <i>B. longum</i>, <i>Lactobacillus acidophilus</i>, <i>L. casei</i>, <i>L. paracasei</i>, <i>L. rhamnosus</i> 3 billion CFU/chew tab²¹</p> <p>Adult (12 to 50 years of age): <i>Lactobacillus acidophilus</i>, <i>L. bulgaricus</i>, <i>L. casei</i>, <i>L. rhamnosus</i>, <i>Bifidobacterium bifidum</i>, <i>B. longum</i>, <i>Streptococcus thermophilus</i> 6.5 billion CFU/cap³⁰</p> <p>Adult 50+: <i>Lactobacillus acidophilus</i>, <i>L. rhamnosus</i>, <i>L. bulgaricus</i>, <i>Streptococcus thermophilus</i>, <i>Bifidobacterium bifidum</i>, <i>B. longum</i>, <i>B. breve</i> 8.5 billion CFU/capsule³¹</p> <p>Travelers: <i>Lactobacillus acidophilus</i>, <i>L. rhamnosus</i>, <i>L. bulgaricus</i>, <i>L. casei</i>, <i>L. plantarum</i>, <i>Streptococcus thermophilus</i>, <i>Bifidobacterium bifidum</i>, <i>B. breve</i>, <i>B. longum</i> 5.5 billion CFU/capsule³²</p> | | <p>Travelers (age ≥12 years): 1 cap twice daily at breakfast and supper^{32,e}</p> | |

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| Product | Contents | Promoted Use | Manufacturer's Suggested Dose or Dose Used in Studies ^L | Efficacy |
|---|--|---|--|---|
| <p><i>RepHresh Pro-B</i>^a (Church & Dwight)</p> <p><i>Fem-dophilus</i>^a (Jarrow Formulas)</p> <p>(Also called <i>Urex-Cap-5</i>.)⁶³</p> <p>(Keep refrigerated.)⁶¹</p> | <p><i>Lactobacillus rhamnosus</i> GR-1, <i>L. reuteri</i> RC-14⁶¹</p> <p>5 billion CFU/cap⁶¹</p> | <p>Helps balance yeast and bacteria to maintain vaginal flora in normal range (<i>RepHresh Pro-B</i>)⁷⁶</p> <p>For women's internal balance (<i>Fem-dophilus</i>)⁶¹</p> | <p><i>RepHresh Pro-B</i>: 1 capsule daily⁷⁶</p> <p><i>Fem-dophilus</i>: 1 capsule daily, increased to 2, if needed, or take as directed by healthcare professional⁶¹</p> <p>Bacterial vaginosis: 1 capsule twice daily for 30 days (with metronidazole 500 mg twice daily for 7 days)⁶²</p> <p>UTI prevention: 1 capsule twice daily⁷⁵</p> | <p>Possibly Effective^e as an adjunct to oral metronidazole for treatment of bacterial vaginosis,^{62,e} and for prevention of recurrent urinary tract infections in postmenopausal women^{75,e}</p> |
| <p><i>Tuzen</i> (Ferring) (Canada)</p> | <p><i>Lactobacillus plantarum</i> 299v^{7,86}</p> <p>10 billion CFU per capsule⁸⁶</p> | <p>Reduce gas and abdominal pain associated with irritable bowel syndrome⁸⁶</p> | <p>1 to 2 capsules daily⁸⁶</p> | <p><i>Lactobacillus plantarum</i> (299v) is Possibly Effective^c for irritable bowel syndrome¹⁰¹⁻¹⁰³</p> <p><i>Lactobacillus plantarum</i> (299v) has Insufficient Evidence^h for prevention of <i>C. diff</i> recurrence⁹⁷</p> <p><i>Lactobacillus plantarum</i> (299v) is Possibly Ineffective^g for prevention of antibiotic-associated diarrhea⁹⁶</p> |

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| Product | Contents | Promoted Use | Manufacturer's Suggested Dose or Dose Used in Studies ^L | Efficacy |
|--|--|--|--|--|
| <p><i>Visbiome</i>^{a,j} (ExeGi Pharma)</p> <p>(Requires refrigeration, but can be kept at room temperature for up to 1 week without a major effect on potency)⁷⁸</p> <p>(Original <i>VSL#3</i> formulation.)</p> | <p><i>Lactobacillus acidophilus</i>, <i>L. plantarum</i>, <i>L. paracasei</i>, <i>L. delbrueckii</i> subsp. <i>bulgaricus</i> (<i>helveticus</i>), <i>Bifidobacterium breve</i>, <i>B. infantis</i> (<i>lactis</i>), <i>B. longum</i> (<i>lactis</i>), and <i>Streptococcus thermophilus</i>⁷⁸</p> <p>450 billion CFU/regular packet⁷⁸</p> <p>112.5 billion CFU/cap⁷⁸</p> <p>900 billion CFU/ES packet⁷⁸</p> | <p>Dietary management of ulcerative colitis, irritable bowel syndrome, and ileal pouch.⁷⁸ ES product is for ulcerative colitis and ileal pouch only.⁷⁸</p> | <p>Bloating and gas associated with diarrhea-predominant irritable bowel syndrome: 1/2 to 1 regular packet, 2 to 4 capsules, or 1/4 to 1/2 ES packet daily⁷⁸</p> <p>Pouchitis, remission (maintenance): 2 to 4 regular packets or 1 to 2 ES packets daily⁷⁸</p> <p>Ulcerative colitis, remission (maintenance) or hepatic encephalopathy: 4 to 8 capsules, 1 to 2 regular packets, or 1/2 to 1 ES packet daily⁷⁸</p> <p>Ulcerative colitis, active (adjunct): 4 to 8 regular packets, or 2 to 4 ES packets daily⁷⁸</p> <p>NOTE: Peds dosing is based on age and whether indication is ulcerative colitis flare or maintenance, or irritable bowel. See product website at https://www.visbiome.com.</p> | <p>Possibly Effective^c for maintenance of remission in pouchitis, irritable bowel (diarrhea-predominant)⁹⁸</p> <p>Insufficient Evidence^h for ulcerative colitis⁷</p> |
| <p><i>Yakult</i>^a (Yakult U.S.A. Inc.)</p> | <p><i>Lactobacillus casei</i> Shirota³⁷</p> <p>8 billion CFU/80 mL bottle</p> | <p>Not stated</p> | <p>1 to 2 bottles daily²⁶</p> <p>Chronic constipation: 1 bottle daily⁴³</p> | <p>Possibly Effective^c for chronic constipation⁴³</p> <p>Insufficient Evidence^h for irritable bowel syndrome⁷</p> <p>Possibly Ineffective^g for primary prevention of <i>C. diff.</i> colitis⁷</p> |

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| Product | Contents | Promoted Use | Manufacturer's Suggested Dose or Dose Used in Studies ^L | Efficacy |
|---------|--|--------------|--|--|
| Yogurt | Content varies. Most are made with <i>Lactobacillus bulgaricus</i> and <i>Streptococcus thermophiles</i> . ²⁷ | N/A | Prevention of antibiotic-associated diarrhea : consider 4 to 8 ounces (~100 to 200 g) twice daily ^{27,e} Prevention of recurrent vaginal candidiasis : 150 mL of <i>Lactobacillus acidophilus</i> -containing yogurt daily ²⁷ | Possibly Effective^e for prevention of vaginal candidiasis ²⁷ Insufficient Evidence^h for prevention of antibiotic-associated diarrhea, and recurrent bacterial vaginosis, or UTI. ²⁷ |

Definitions of Effectiveness Ratings and Helpful Notes:

- a. Brand used in studies
- b. Also referred to as BL Regularis (Canadian product).⁵
- c. **Possibly Effective:** A randomized trial, meta-analysis, or at least two epidemiologic studies show positive outcomes without substantial evidence to the contrary. The studies have low to moderate risk of bias and moderate to high validity. However, the evidence is limited by quantity, quality, or contradictory findings. **There is insufficient high-quality evidence to recommend for most people.**
- d. **Likely Effective:** Two or more randomized trials or meta-analysis including several hundred patients consistently show positive outcomes. The studies have low risk of bias and high validity. **Evidence supports recommending.**
- e. Separate from antibiotics by at least two hours. Antibiotic may kill bacterial probiotics.⁷ To prevent antibiotic-associated diarrhea, start within two days of starting the antibiotic, and continue for three days afterward.⁶ This advice may differ from product labeling.
- f. Study used *Perenterol*, a similar product not readily available in North America.
- g. **Possibly Ineffective:** A randomized trial, meta-analysis, or at least two epidemiologic studies show negative outcomes without substantial evidence to the contrary. The studies have low to moderate risk of bias and moderate to high validity. **Use should not be advised.**
- h. **Insufficient Evidence:** There is not enough reliable scientific evidence to provide an Effectiveness Rating.
- i. Systemic antifungals (e.g., fluconazole, itraconazole, ketoconazole, posaconazole, voriconazole) could reduce efficacy.⁸⁸ Some products recommend taking at least 2 hrs before or after antifungal.⁵⁶
- j. A medical food intended for use under medical supervision.⁷⁸
- k. Inulin is a nonabsorbable oligosaccharide found in many fruits and vegetables. Commercially, it is usually obtained by hot water extraction from chicory root. It is used as a **prebiotic**, a “food” for **probiotics**.⁶⁸
- L. Dosing information is **for adults** unless otherwise noted.

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Users of this resource are cautioned to use their own professional judgment and consult any other necessary or appropriate sources prior to making clinical judgments based on the content of this document. Our editors have researched the information with input from experts, government agencies, and national organizations. Information and internet links in this article were current as of the date of publication.

Project Leader in preparation of this clinical resource (360902): Melanie Cupp, Pharm.D., BCPS

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